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DRAFT
Environmental Impact Report
Tracy Village Project EIR
City of Tracy, San Joaquin County, California

State Clearinghouse Number 2016112016

APPENDICES

Prepared for:



City of Tracy
333 Civic Center Dr.
Tracy, CA 95376
209.831.6000

Contact: Victoria Lombardo, Senior Planner

Prepared by:

FirstCarbon Solutions
1350 Treat Boulevard, Suite 380
Walnut Creek, CA 94597
925.357.2562

Contact: Mary Bean, Project Director

Report Date: August 16, 2017

List of Appendices

Appendix A: Notice of Preparation and Responses
- A.1 - Notice of Preparation
- A.2 - Responses

Appendix B: Air Quality Calculations and Greenhouse Gas Calculations

Appendix C: Biological Resources
- C.1 - Biological Resources Evaluation
- C.2 - Biological Resources Evaluation Peer Review
- C.3 - Biological Resources Assessment of Additional Annexation Properties

Appendix D: Cultural Resources Assessment

Appendix E: Geotechnical Report

Appendix F: Phase I Environmental Assessment

Appendix G: Noise Supporting Information

Appendix H: Traffic Study

Appendix I: Water Supply Assessment

Appendix J: Public Service Letters and Responses

Appendix K: City of Tracy Measure K

Appendix A:
Notice of Preparation and Responses

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A.1 - Notice of Preparation

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City of Tracy, California
Notice of Preparation and Notice of Public Scoping Meeting
Tracy Village Project

Date: November 4, 2016

To: Public Agencies and Interested Parties

From: Victoria Lombardo, Senior Planner
Brian Millar, Contract Planner

Subject: **Notice of Preparation of an Environmental Impact Report and Public Scoping Meeting for the Tracy Village Project**

The City of Tracy is the Lead Agency and will prepare an Environmental Impact Report (EIR) for the Tracy Village Project (Project) identified herein.

The project description, location, and probable environmental effects of the Tracy Village development—along with the proposed annexation into the City of an additional 42 residential properties fronting Corral Hollow Road and Valpico Road and an adjoining drainage canal north of Valpico Road—are described in the attached materials.

The City of Tracy is soliciting comments from public agencies, organizations, and members of the public regarding the scope and content of the EIR, and the environmental issues and alternatives to be addressed in the EIR. Public agencies may need to use the EIR when considering permitting or other approvals that are germane to the agencies' responsibilities in connection with the projects.

Because of time limits mandated by state law, public agencies must submit any comments in response to this notice at the earliest possible date but not later than 30 days after receipt of this notice. The City of Tracy will also accept comments from other interested parties regarding this notice during this time period. Accordingly, please provide your written response to the address shown below by December 5, 2016. If you wish to be placed on the notification list for this project, or if you have any questions or need additional information, please contact the person below.

Victoria Lombardo, Senior Planner
City of Tracy
Development and Engineering Services
333 Civic Center Plaza
Tracy, CA 95376
Phone: 209.831.6428
Email: victoria.lombardo@ci.tracy.ca.us

Public Scoping Meeting

A public scoping meeting, convened by the Tracy Planning Commission, will be held at on **November 16, 2016** starting at **7:00 p.m.**at **the City Council Chambers, 333 Civic Center Plaza, Tracy.** At this meeting, public agencies, organizations, and members of the public will be able to review the proposed project application materials and provide comments on the scope of the environmental review process.

TRACY VILLAGE PROJECT

Project Location

The proposed Tracy Village development site is located on 134 acres in unincorporated San Joaquin County, adjacent to the Tracy city limits (Exhibit 1). The project boundaries are located on the U.S. Geological Survey (USGS) Tracy 7.5-minute quadrangle in the northwest quadrant of Section 5, Township 3 South, Range 5 East of the Mt. Diablo Meridian (Assessor's Parcel Number 244-04-001). The project site is located on the south side of West Valpico Road, just east of Corral Hollow Road. Corral Hollow Road is the main north-south collector on the west side of the City of Tracy, and Valpico Road is an important east-west collector (Exhibit 2). For EIR evaluation and annexation/prezoning purposes, the Project also includes an additional 21 residential properties fronting Corral Hollow Road, and 21 residential properties along the north side of Valpico Road and an adjoining drainage canal north of Valpico Road, also depicted on Exhibit 2. Of these 42 lots, 39 are developed with residences.

1.1.1 - Surrounding Land Uses

The land to the west of the project site includes the existing residential properties along Corral Hollow Road, with lands in agricultural use west of the roadway. The land use to the north of the project consists of the existing single-family homes on the north side of Valpico Road, along with a Westside Irrigation District canal. The neighboring properties to the south and east of the project site consist of single-family homes, separated by a wall from the project site.

Existing Conditions

The Tracy Village development site is currently vacant land. The neighboring properties to the north, south and east are primarily residential, as described above.

The Tracy Village development site is relatively flat and is comprised largely of cultivated fields, with annual grassland and scattered native wild scrubs of different varieties along the margins. The site provides suitable habitat with potential to support a number of special status species, including the blunt-nosed leopard lizard, Nelson's antelope ground squirrel, and the San Joaquin woolly threads. The project site is not located within a 100-year floodplain. The Project site does not contain any Prime Farmland, Farmland of Statewide Importance, or Unique Farmland as mapped by the California Department of Conservation Farmland Mapping and Monitoring Program. However, the site is designated as farmland of local importance. The site does not contain any parcels under Farmland Security Zone contract and is not bound by a Williamson Act contract. The project site is designated "Resource Conservation (OS/RC)" by the County of San Joaquin General Plan and zoned "Agriculture-Urban Reserve (AU-20)" by the San Joaquin County Zoning Ordinance.

Access to the Tracy Village development site is currently available off Valpico Road. A narrow flag lot also connects the site to Corral Hollow Road to the west.

The 42 parcels along Corral Hollow and Valpico Roads planned for annexation and prezoning as part of the Tracy Village project are primarily developed with single-family detached residences on lot

sizes ranging from approximately 0.35 acre to 2.2 acres. The 39 developed lots and three vacant lots have direct driveway access connections to either Corral Hollow Road or Valpico Road.

There is a storm drain located along Corral Hollow Road, and the nearest retention basin is located approximately 0.25 mile south of the project site. The Tracy Municipal Airport is located approximately 0.86 mile south of the project site. The southern half of the project site is located within the Airport Land Use Compatibility Zone 5 (SSZ). An Altamont Corridor Express (ACE) Rail Line and station is located one mile south of the project site and runs east to west. The City of Tracy TRACER bus service's Route D runs along Tracy Boulevard and serves the residential area east of the project site, connecting to the ACE station on Linne Road and the downtown Tracy transit station.

Project Description

1.1.2 - Proposed Project

The proposed project is a specific plan, with annexation and pre-zoning and focused General Plan Amendments, for the Tracy Village Project and adjoining residential properties. The Tracy Village Project is a proposed active adult, age-restricted and gated community consisting of up to 600 single-family detached residential homes. The Tracy Village Specific Plan would utilize the Tracy General Plan land use designation of Residential Low, and providing for an Active Adult Residential land use. The Specific Plan serves as pre-zoning to meet the requirements for future development. The Specific Plan for Tracy Village includes the development of up to 600 lots that would support dwelling units ranging from 1,450 square feet to 3,000 square feet. The project would feature three man-made lakes totaling approximately ten acres, along with a community recreation center with pool, spa and bocce courts, open space, parks, and trails/pathways. The proposed Specific Plan diagram is shown in Exhibit 3.

In addition to the 134-acre Tracy Village development, the City seeks annexation of the 42 residential lots to the north and east (fronting Corral Hollow and Valpico Roads) in tandem with the annexation of the Tracy Village development site. The EIR will include analysis of the potential impacts of these additional 42 lots for annexation and prezoning. The 42 lots are tentatively planned for Residential Estate pre-zoning. The majority of these lots are developed with detached single-family residences, and served by private wells and septic systems. Connection to city water and sewer systems would be voluntary, unless new residential development (building permits) is proposed by the property owners. Accordingly, the EIR will identify those impacts separately from those of the Tracy Village site, allowing the City and LAFCo to consider the effects of the project as a whole while taking action on either or both of the proposed annexations.

1.1.3 - Project Components

Housing

Up to 600 single-family lots would be located in 5 distinct neighborhoods of varying lot sizes. All of the homes would be single-level to accommodate ease of access and aging-in-place, with an optional second-floor living space. The proposed lot sizes and square footage ranges are shown in Table 1, reflecting the Specific Plan, which shows 600 units. The project is being evaluated for up to 600 units to allow for minor changes in unit count, which may occur in the final design process.

Table 1: Lot Types (600 Total)

Approximate Lot Size (square feet)	Number of Units	Housing Square Footage (Approximations)
6,000	104	2,400 to 3,000
5,500	98	2,200 to 2,800
5,225	110	1,800 to 2,350
4,500	182	1,350 to 1,850
4,275	106	1,450 to 1,850

Lakes

The Tracy Village Specific Plan would feature a man-made lake system to provide a focal aesthetic feature for the community, serve as the primary drainage conveyance and peak attenuation/storage facility, and provides water quality treatment for urban stormwater runoff.

This lake system would consist of a series of three lakes, totaling approximately ten acres, with the incorporation of wetlands to serve as natural filtration systems. During periods of abundant precipitation, lake water levels would be reduced to accommodate stormwater flows. Reclaimed water would supply the lake system and water would be pumped into the highest lake to then flow to the lowest lake. A solar and natural gas powered co-generation facility would power this water pumping system and would simultaneously provide a continuous heat source for the community pool.

Recreation/Open Space

The proposed Project would include a full-service community center. The community center would include amenities such as a pool and spa, bocce courts, open space/park areas, a pet park, covered and open outdoor seating, a putting green, a community building, and other potential uses. The community building would include casual living areas, a kitchen for daily and event use, a coffee bar, a library, a multi-media room, meeting rooms for social groups, exercise facilities, and bathrooms. In addition to the community center, the project may provide smaller neighborhood recreational areas.

The Project would also include a walking promenade along the circular main project roadway, which surrounds the lake system. This walking path would consist of an eight-foot-wide concrete pathway, landscaping, and seating areas. Pedestrian and bicycle trails will connect to pedestrian and bicycle facilities on Valpico Road and Middlefield Drive. All proposed project recreational and open space amenities will be private.

1.1.4 - Discretionary and Ministerial Actions

Discretionary approvals and permits are required by the City of Tracy for implementation of the proposed project. The Project application would require the following discretionary approvals and actions, including:

- Annexation and Prezoning
- General Plan Amendment
- Specific Plan
- Tentative Subdivision Map (Tracy Village development site only)

Subsequent ministerial actions would be required for the implementation of the proposed Project, including issuance of grading and building permits.

1.1.5 - Responsible and Trustee Agencies

A number of other agencies in addition to the City of Tracy will serve as Responsible and Trustee Agencies, pursuant to CEQA Guidelines Section 15381 and Section 15386, respectively. This Draft EIR will provide environmental information to these agencies and other public agencies, which may be required to grant approvals or coordinate with other agencies, as part of project implementation. These agencies may include, but are not limited to, the following:

- United States Army Corps of Engineers
- United States Fish and Wildlife Service
- California Department of Fish and Wildlife
- California Department of Transportation
- California Public Utilities Commission
- San Francisco Bay Area Regional Water Quality Control Board
- County of San Joaquin
- San Joaquin Local Agency Formation Commission (LAFCo)

Actions that are necessary to implement the project that must be taken by other agencies are:

- Annexation, with Prezoning, of the Project into the City of Tracy (San Joaquin LAFCo)
- Airport Land Use Consistency Determination (San Joaquin County Council of Governments)
- Obtain coverage under General Construction Stormwater Permit (State Water Resources Control Board/San Francisco Bay Regional Water Quality Control Board)
- San Joaquin Valley Air Pollution Control District
- Issuance of Encroachment Permits for roadway, trail, or utility improvements within facilities under the jurisdiction of the California Department of Transportation (Caltrans), the County of San Joaquin, or the Zone 2 Water Agency.

Environmental Review

1.1.6 - Potential Environmental Effects

The EIR will evaluate potentially significant environmental impacts associated with the approval and implementation of the Project. Consistent with the CEQA Guidelines (Appendix G), the following environmental resource categories will be analyzed in relation to the Project:

- Aesthetics, Light, and Glare
- Agriculture Resources and Forest Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Geology, Soils, and Seismicity
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Mineral Resources
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation and Traffic
- Utilities and Service Systems

All of the resource categories listed above will be considered in the EIR; however, given the local context of the Project site, it is anticipated that the following issues will be central to the environmental analysis:

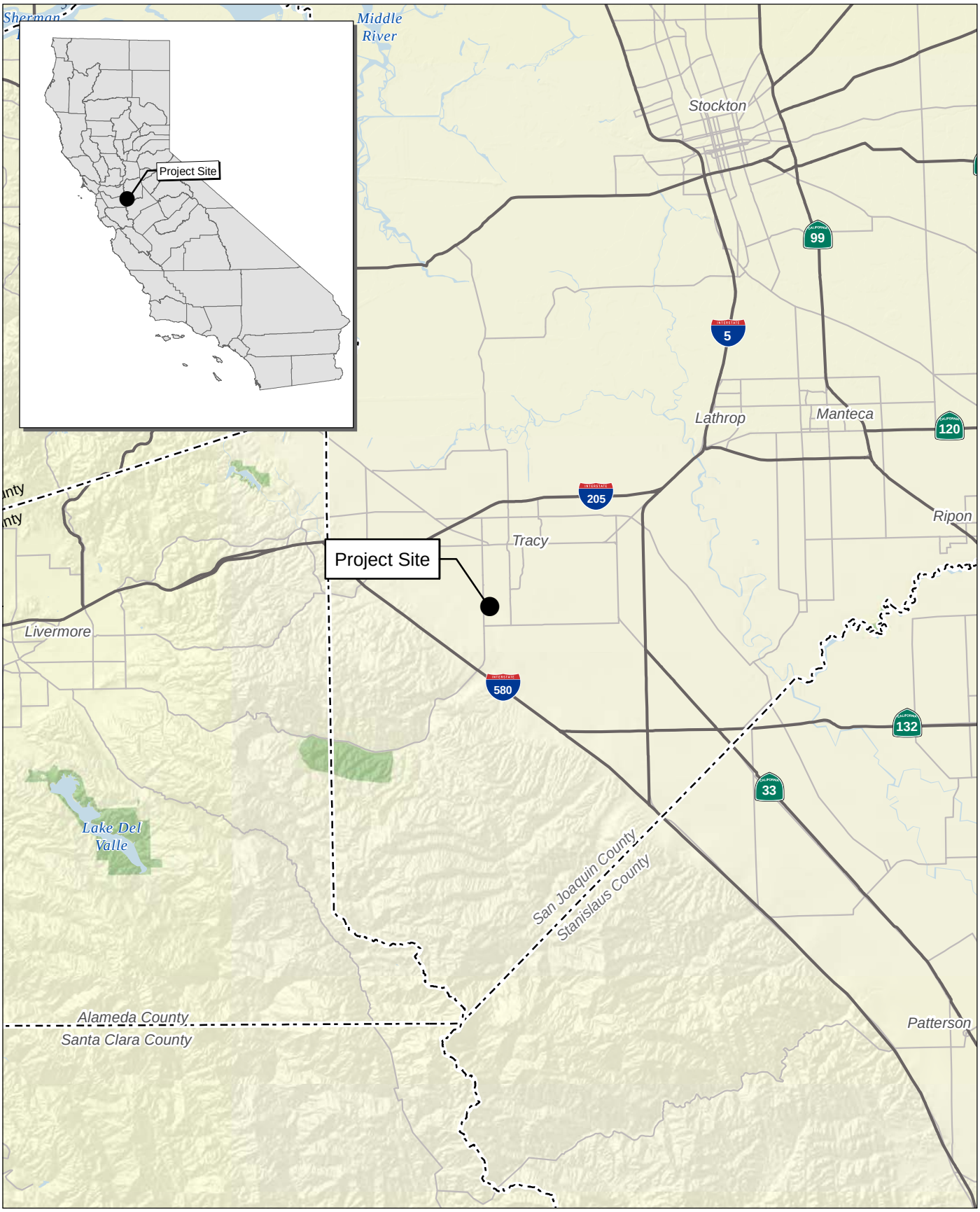
- Impacts on the visual character of the Project site and surrounding area, as well as impacts related to light and glare from the Project on adjacent uses;
- Conversion of agricultural land to non-agricultural uses, including the potential direct, indirect and cumulative impacts;
- Impacts to sensitive plant and animal species in the area—including special-status species that may be present as well as habitat that can support them—and to migration corridors;
- Air quality and greenhouse gas emissions impacts during the construction and operational phases of the Project in view of the existing cumulative conditions in the San Joaquin Valley;
- Land use compatibility and any growth-inducing impacts, and buffering of the proposed residential uses from surrounding rural uses;
- Traffic and circulation impacts on local roadways in the vicinity of the Project site; and
- Water quality impacts as well as impacts on water supply, wastewater treatment, and solid waste disposal capacity to accommodate the Project.

Scoping Meeting

A public scoping meeting, to be convened by the Planning Commission, will be held on **November 16, 2016** starting at **7:00 p.m.,** at the following location:

City Council Chambers
333 Civic Center Plaza
Tracy, CA 95376

At this meeting, agencies, organizations, and members of the public will be able to review the proposed project and provide comments on the scope of the environmental review process.



Source: Census 2000 Data, The CaSIL, FCS GIS 2016.

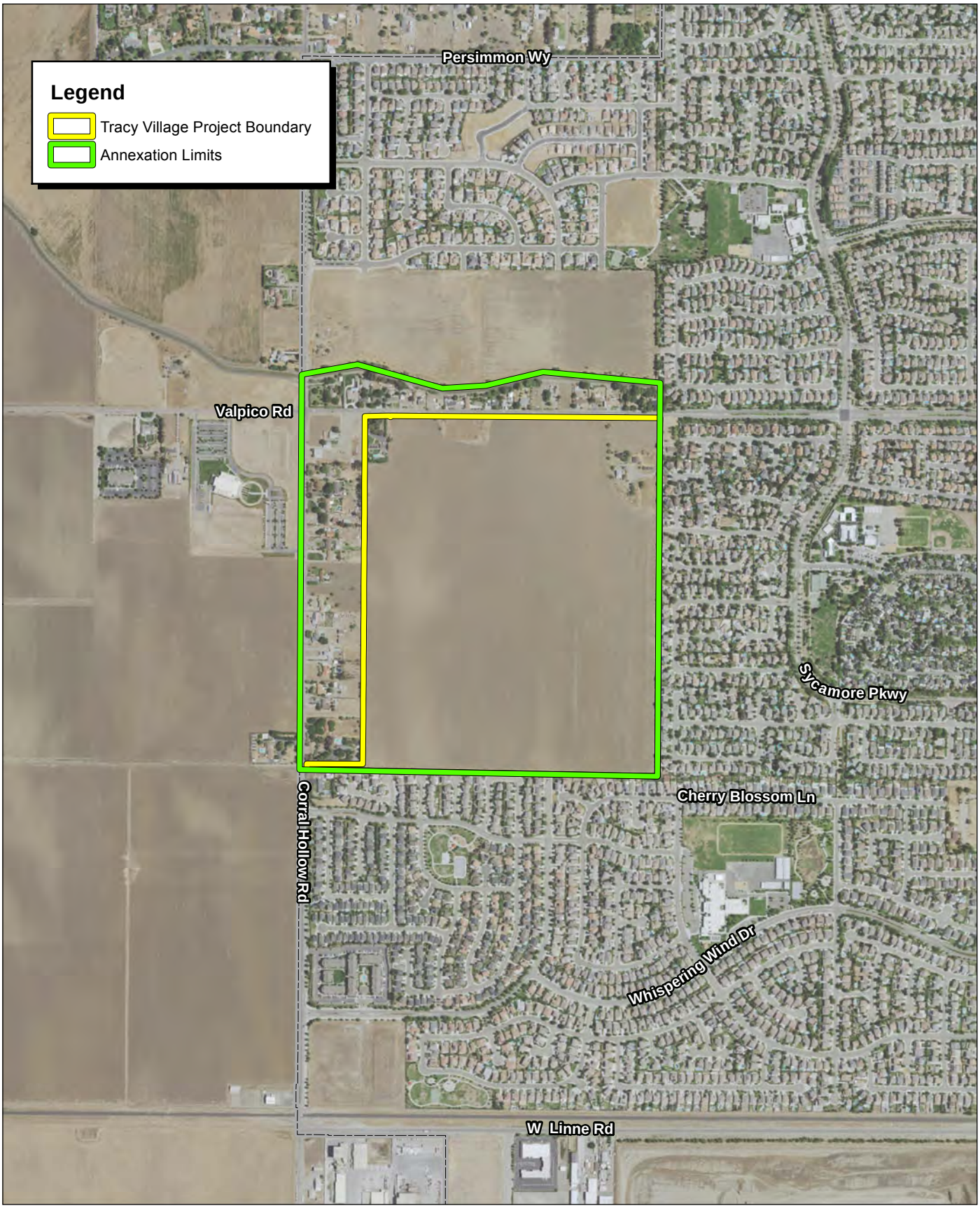
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Exhibit 1
Regional Location Map

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CITY OF TRACY • TRACY VILLAGE PROJECT
NOTICE OF PREPARATION

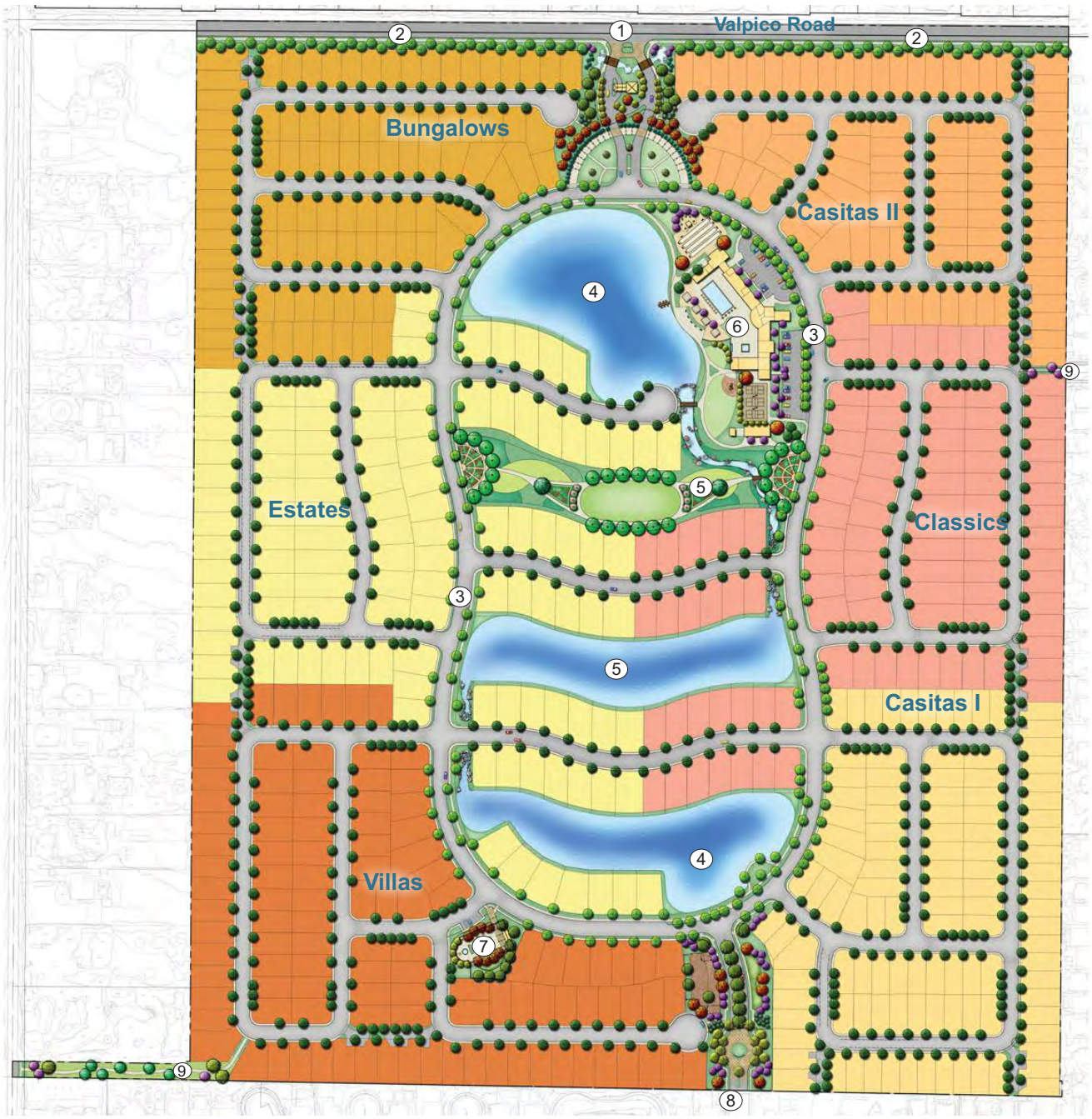


Source: ESRI Imagery, 2015

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1,000 500 0 1,000 Feet

Exhibit 2
Local Vicinity Map
Aerial Base



Legend

① Main Entrance	⑤ Parks
② PublicROW	⑥ MainRecreation
③ MainLoopRoad	⑦ MinorRecreation
④ Lake	⑧ Secondary Entrance
	⑨ PedestrianConnections

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Exhibit 3
Conceptual Specific Plan

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A.2 - Responses

SAN JOAQUIN COUNCIL OF GOVERNMENTS

555 E. Weber Avenue • Stockton, California 95202 • P 209.235.0600 • F 209.235.0438 • www.sjcog.org

San Joaquin County Airport Land Use Commission/Congestion Management Agency

Steve DeBrum
CHAIR
Katherine Miller
VICE CHAIR
Andrew T. Chesley
EXECUTIVE DIRECTOR
Member Agencies
CITIES OF ESCALON, LATHROP, LODI, MANTECA, RIPON, STOCKTON, TRACY, AND THE COUNTY OF SAN JOAQUIN

December 4, 2016

Victoria Lombardo
City of Tracy Development and Engineering Services
333 Civic Center Plaza
Tracy, CA 95376

Re: Tracy Village Notice of Preparation (Deadline: 12/4/2016)

Dear Victoria Lombardo,

The San Joaquin Council of Governments (SJCOG), acting as the Airport Land Use Commission (ALUC) and Congestion Management Agency (CMA), has reviewed the Notice of Preparation (NOP) of a Draft Environmental Impact Report (DEIR) for Tracy Village. Tracy Village will develop 39 residences on 134 acres of land east of Corral Hollow Road and south of Valpico Road (APN: 244-04-001).

CONGESTION MANAGEMENT AGENCY'S REVIEW

SJCOG adopted the 2016 Update to the Regional Congestion Management Program (RCMP) (http://www.sjcog-rcmp.org/_literature_231152/2016_RCMP_Update_Adopted_Report) on March 24, 2016. Chapter 6 of the RCMP describes the updated Land Use Analysis Program, including Tier 1 and Tier 2 review/analysis requirements, analysis methods, impact significance criteria, and mitigation.

SJCOG determined that this project may fall under Tier 2 Review based on estimated trip generation greater than 500 total daily trips during the average weekday and Saturday and greater than 125 trips during the AM or PM peak commute period. SJCOG respectively requests a copy of the DEIR, upon completion, to verify traffic impacts of this project were identified and mitigated.

The following intersections and roadway segments are along the Regional Congestion Management Programs' roadway network:

- Corral Hollow Road
- Eleventh Street
- Grant Line Road
- Lammers Road
- Linne Road
- Interstate 205
- Interstate 580
- Intersection of Tracy Boulevard and Eastbound Interstate 205 On/Off Ramps
- Intersection of Tracy Boulevard and Westbound Interstate 205 On/Off Ramps
- Intersection of Corral Hollow Road and Eleventh Street
- Intersection of Eleventh Street and Tracy Boulevard

- Intersection of Eleventh Street and Lammers Road
- Intersection of Corral Hollow Road and Linne Road
- Intersection of Corral Hollow Road and Southbound Interstate 580 On/Off Ramps
- Intersection of Corral Hollow Road and Northbound Interstate 580 On/Off Ramps

As stipulated within the RCMP Project Review Criteria in Chapter 6 of the 2016 RCMP, the environmental document is required to show consistency with all applicable regional transportation planning documents, such as:

- Regional Transportation Demand Management Plan
- Park-and-Ride Master Plan
- Regional Bicycle, Pedestrian, and Safe Routes to School Master Plan
- Regional Smart Growth Transit Oriented Development Plan
- Regional Transit Systems Plan
- Regional Transportation Impact Fee Program
- 2014 Regional Transportation Plan/Sustainable Communities Strategy
- Interregional STAA Study for I-5 and SR-99

SJCOG staff is available to assist with project specific guidance and narrowing the scope of the relevant regional plans that need to be included. Additionally, SJCOG has completed updating the RCMP including traffic count data of all the segments and intersections on the CMP network. SJCOG would be pleased to provide this data to the City and its consultants to assist in the traffic analysis for this project.

AIRPORT LAND USE COMMISION'S REVIEW

This project is located within the Traffic Pattern Zone and Airport Influence Area of Tracy Airport (ATTACHMENT B), pursuant to the State Aeronautics Act (Public Utilities Code Section 21676), the project is subject to a Consistency Determination by the San Joaquin County ALUC. All projects, within San Joaquin County, must comply with the 2009 Airport Land Use Compatibility Plan (ALUCP).

The proposed land use is compatible with the 2009 ALUCP for San Joaquin County (ATTACHMENT C). The 2009 San Joaquin County ALUCP can be accessed at http://www.sjcog.org/DocumentCenter/View/17. The following standards and project design conditions that comply with the ALUCP and should be carried through as conditions of approval:

1. New land uses that may cause visual, electronic, or increased bird strike hazards to aircraft in flight shall not be permitted within any airport's influence area. Specific characteristics to be avoided include:
    a. Glare or distracting lights which could be mistaken for airport lights. Reflective materials are not permitted to be used in structures or signs (excluding traffic directing signs).
    b. Sources of dust, steam, or smoke which may impair pilot visibility.
    c. Sources of electrical interference with aircraft communications or navigation. No transmissions which would interfere with aircraft radio communications or navigational signals are permitted.
    d. Occupied structures must be soundproofed to reduce interior noise to 45 decibel(dB) according to State guidelines.

e. Within the airport's influence area, ALUC review is required for any proposed object taller than 100 feet above ground level (AGL).

2. Regardless of location within San Joaquin County, ALUC review is required in addition to Federal Aviation Administration (FAA) notification in accordance with Code of Federal Regulations, Part 77, (https://oeaaa.faa.gov/oeaaa/external/portal.jsp) for any proposal for construction or alteration under the following conditions:

    a. If requested by the FAA.
    b. Any construction or alteration that is more than 200 ft. AGL at its site.
    c. Any construction or alteration that exceeds an imaginary surface extending outward and upward at any of the following slopes:
    d. 100 to 1 for a horizontal distance of 20,000 ft. of a public use or military airport from any point on the runway of each airport with its longest runway more than 3,200 ft.
    e. 50 to 1 for a horizontal distance of 10,000 ft. of a public use or military airport from any point on the runway of each airport with its longest runway no more than 3,200 ft.
    f. 25 to 1 for a horizontal distance of 5,000 ft. of the nearest take off and landing area of a public use heliport
    g. Any highway, railroad or other traverse way whose prescribed adjusted height would exceed the above noted standards
    h. Any construction or alteration located on a public use airport or heliport regardless of height or location.

Thank you again for the opportunity to comment. Please contact CMA and ALUC staff Travis Yokoyama (209-235-0451 or yokoyama@sjcog.org) if you have any questions or comments.

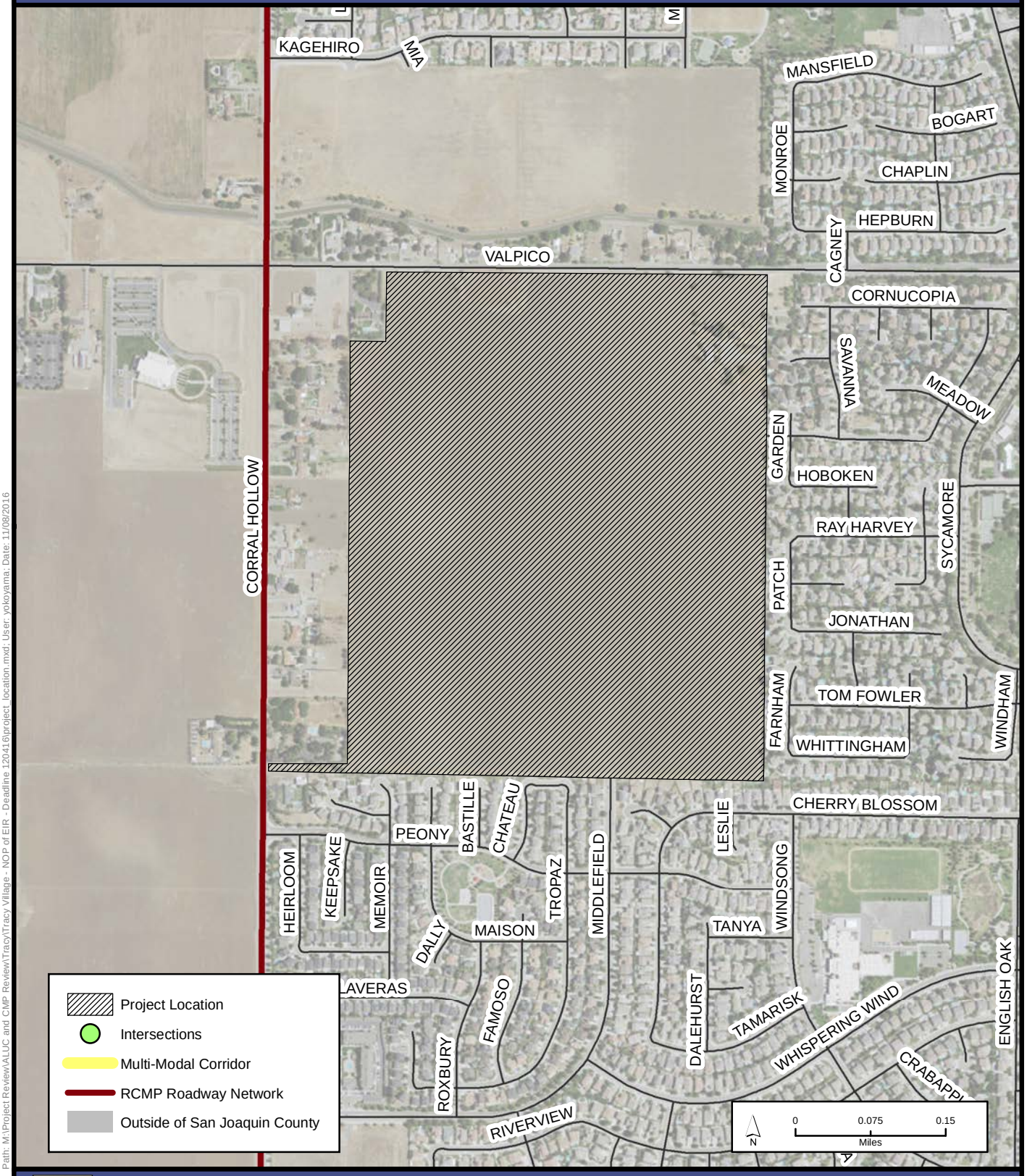
Sincerely,



Travis Yokoyama

ATTACHMENT A – Exhibit of Project Site Location in relation to RCMP Network
ATTACHMENT B – Exhibit of Project Site Location in relation to ALUC
ATTACHMENT C – Land Use Restrictions

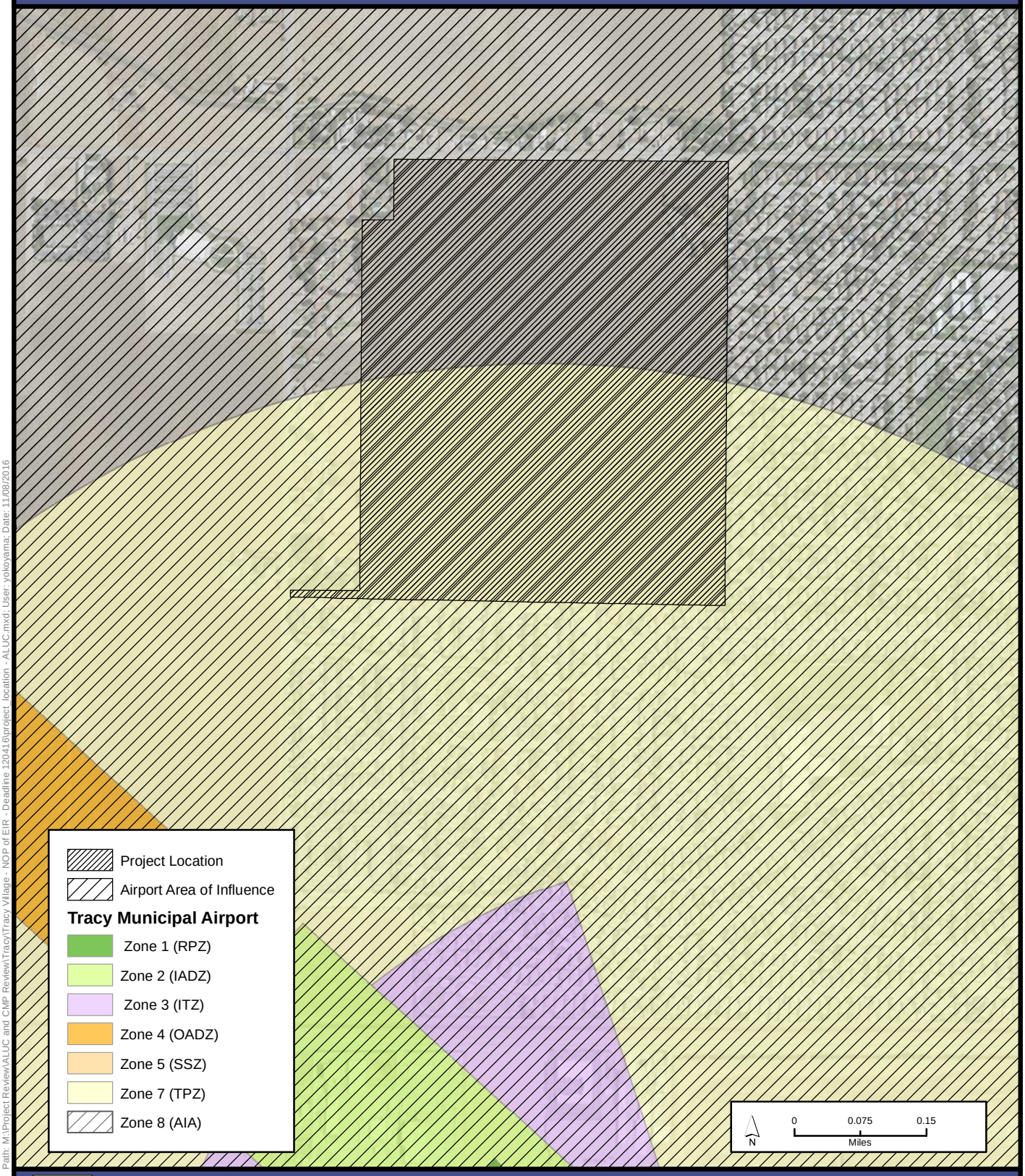
Tracy Village
Tracy, CA 95376
APN: 244-04-001



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REGIONAL CONGESTION MANAGEMENT PROGRAM

Tracy Village
Tracy, CA 95376
APN: 244-04-001



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AIRPORT LAND USE COMMISSION

TABLE 3A (Continued)
Safety Criteria Matrix

	Maximum Densities/Intensities/Required Open Land			Additional Criteria	
Zone	**Dwelling Units per Acre[1]**	**Maximum Non-residential Intensity[2]**	**Req'd Open Land[3]**	**Prohibited Uses[4]**	**Other Development Conditions[5]**
Zone 5 (SSZ)	1 d.u. per 2 acres	160 persons per acre	25%	Same as Zone 2	Same as Zone 2
Zone 6 (AP)	None	No Limit	No Requirement	• Hazards to flight[6]	• Airspace review required for objects >70 feet tall[10]
Zone 7 (TPZ)	No Limit	450 persons per acre	10%	• Hazards to flight[6] • Outdoor stadiums	• Airspace review required for objects >100 feet tall[10]
Zone 8 (AIA)	No Limit	No Limit	No Requirement	• Hazards to flight[6]	• Airspace review required for objects >100 feet tall[10]

Notes:

1 Residential development must not contain more than the indicated number of dwelling units (excluding secondary units) per gross acre (d.u./ac). Clustering of units is encouraged. Gross acreage includes the property at issue plus a share of adjacent roads and any adjacent, permanently dedicated, open lands.

2 Usage intensity calculations shall include all people (e.g., employees, customers/visitors, etc.) who may be on the property at a single point in time, whether indoors or outside. Multiplier bonus for Special Risk-Reduction Bldg. Design is 1.5 for Zone 2 and 2.0 for Zones 3, 4, 5, and 7. (Appropriate risk reduction measures are specified in the California Code of Regulations, Title 24, Part 2.)

3 Open land requirements are intended to be applied with respect to an entire zone. This is typically accomplished as part of a community general plan or a specific plan, but may also apply to large (10 acres or more) development projects.

4 The uses listed here are ones that are explicitly prohibited regardless of whether they meet the intensity criteria. In addition to these explicitly prohibited uses, other uses will normally not be permitted in the respective compatibility zones because they do not meet the usage intensity criteria.

5 As part of certain real estate transactions involving residential property within any compatibility zone (that is, anywhere within an airport influence area), information regarding airport proximity and the existence of aircraft overflights must be disclosed. This requirement is set by state law. Easement dedication and deed notice requirements indicated for specific compatibility zones apply only to new development and to reuse if discretionary approval is required.

6 Hazards to flight include physical (e.g., tall objects), visual, and electronic forms of interference with the safety of aircraft operations. Land use development that may cause the attraction of birds to increase is also prohibited.

7 Examples of highly noise-sensitive outdoor nonresidential uses that should be prohibited include amphitheaters and drive-in theaters. Caution should be exercised with respect to uses such as poultry farms and nature preserves.

8. NLR = Noise Level Reduction, the outside-to-inside sound level attenuation that the structure provides.

9 Objects up to 35 feet in height are permitted. However, the Federal Aviation Administration may require marking and lighting of certain objects.

10 This height criterion is for general guidance. Shorter objects normally will not be airspace obstructions unless situated at a ground elevation well above that of the airport. Taller objects may be acceptable if determined not be obstructions.

11 Natural gas & petroleum pipelines less than 36 inches below the surface.

RPZ Runway Protection Zone
IADZ Inner Approach/Departure Zone
ITZ Inner Turning Zone
OADZ Outer Approach/Departure Zone
SSZ - Sideline Safety Zone
AP - Airport Property
TPZ - Traffic Pattern Zone
AIA - Airport Influence Area

CALIFORNIA Water Boards

Central Valley Regional Water Quality Control Board

EDMUND G. BROWN JR. GOVERNOR

MATTHEW RODRIQUEZ SECRETARY FOR ENVIRONMENTAL PROTECTION

RECEIVED
DEC 5 2016
CITY OF TRACY
DEVELOPMENT SERVICES

30 November 2016

Victoria Lombardo
City of Tracy
333 Civic Center Plaza
Tracy, CA 95376

CERTIFIED MAIL
91 7199 9991 7035 8417 5224

COMMENTS TO REQUEST FOR REVIEW FOR THE NOTICE OF PREPARATION FOR THE DRAFT ENVIRONMENTAL IMPACT REPORT, TRACY VILLAGE PROJECT, SCH# 2016112016, SAN JOAQUIN COUNTY

Pursuant to the State Clearinghouse's 4 November 2016 request, the Central Valley Regional Water Quality Control Board (Central Valley Water Board) has reviewed the *Request for Review for the Notice of Preparation for the Draft Environment Impact Report* for the Tracy Village Project, located in San Joaquin County.

Our agency is delegated with the responsibility of protecting the quality of surface and groundwaters of the state; therefore our comments will address concerns surrounding those issues.

I. Regulatory Setting

Basin Plan

The Central Valley Water Board is required to formulate and adopt Basin Plans for all areas within the Central Valley region under Section 13240 of the Porter-Cologne Water Quality Control Act. Each Basin Plan must contain water quality objectives to ensure the reasonable protection of beneficial uses, as well as a program of implementation for achieving water quality objectives with the Basin Plans. Federal regulations require each state to adopt water quality standards to protect the public health or welfare, enhance the quality of water and serve the purposes of the Clean Water Act. In California, the beneficial uses, water quality objectives, and the Antidegradation Policy are the State's water quality standards. Water quality standards are also contained in the National Toxics Rule, 40 CFR Section 131.36, and the California Toxics Rule, 40 CFR Section 131.38.

The Basin Plan is subject to modification as necessary, considering applicable laws, policies, technologies, water quality conditions and priorities. The original Basin Plans were adopted in 1975, and have been updated and revised periodically as required, using Basin Plan amendments. Once the Central Valley Water Board has adopted a Basin Plan amendment in noticed public hearings, it must be approved by the State Water Resources Control Board (State Water Board), Office of Administrative Law (OAL) and in some cases,

the United States Environmental Protection Agency (USEPA). Basin Plan amendments only become effective after they have been approved by the OAL and in some cases, the USEPA. Every three (3) years, a review of the Basin Plan is completed that assesses the appropriateness of existing standards and evaluates and prioritizes Basin Planning issues.

For more information on the *Water Quality Control Plan for the Sacramento and San Joaquin River Basins*, please visit our website:
http://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/.

Antidegradation Considerations

All wastewater discharges must comply with the Antidegradation Policy (State Water Board Resolution 68-16) and the Antidegradation Implementation Policy contained in the Basin Plan. The Antidegradation Policy is available on page IV-15.01 at:
http://www.waterboards.ca.gov/centralvalleywater_issues/basin_plans/sacsjr.pdf

In part it states:

> *Any discharge of waste to high quality waters must apply best practicable treatment or control not only to prevent a condition of pollution or nuisance from occurring, but also to maintain the highest water quality possible consistent with the maximum benefit to the people of the State.*
>
> *This information must be presented as an analysis of the impacts and potential impacts of the discharge on water quality, as measured by background concentrations and applicable water quality objectives.*

The antidegradation analysis is a mandatory element in the National Pollutant Discharge Elimination System and land discharge Waste Discharge Requirements (WDRs) permitting processes. The environmental review document should evaluate potential impacts to both surface and groundwater quality.

II. Permitting Requirements

Construction Storm Water General Permit

Dischargers whose project disturb one or more acres of soil or where projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the General Permit for Storm Water Discharges Associated with Construction Activities (Construction General Permit), Construction General Permit Order No. 2009-009-DWQ. Construction activity subject to this permit includes clearing, grading, grubbing, disturbances to the ground, such as stockpiling, or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility. The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan

(SWPPP).

For more information on the Construction General Permit, visit the State Water Resources Control Board website at:
http://www.waterboards.ca.gov/water_issues/programs/stormwater/constpermits.shtml.

Phase I and II Municipal Separate Storm Sewer System (MS4) Permits[1]

The Phase I and II MS4 permits require the Permittees reduce pollutants and runoff flows from new development and redevelopment using Best Management Practices (BMPs) to the maximum extent practicable (MEP). MS4 Permittees have their own development standards, also known as Low Impact Development (LID)/post-construction standards that include a hydromodification component. The MS4 permits also require specific design concepts for LID/post-construction BMPs in the early stages of a project during the entitlement and CEQA process and the development plan review process.

For more information on which Phase I MS4 Permit this project applies to, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/municipal_permits/.

For more information on the Phase II MS4 permit and who it applies to, visit the State Water Resources Control Board at:
http://www.waterboards.ca.gov/water_issues/programs/stormwater/phase_ii_municipal.shtml

Industrial Storm Water General Permit

Storm water discharges associated with industrial sites must comply with the regulations contained in the Industrial Storm Water General Permit Order No. 2014-0057-DWQ.

For more information on the Industrial Storm Water General Permit, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/industrial_general_permits/index.shtml.

Clean Water Act Section 404 Permit

If the project will involve the discharge of dredged or fill material in navigable waters or wetlands, a permit pursuant to Section 404 of the Clean Water Act may be needed from the United States Army Corps of Engineers (USACOE). If a Section 404 permit is required by the USACOE, the Central Valley Water Board will review the permit application to ensure that discharge will not violate water quality standards. If the project requires surface water

[1] Municipal Permits = The Phase I Municipal Separate Storm Water System (MS4) Permit covers medium sized Municipalities (serving between 100,000 and 250,000 people) and large sized municipalities (serving over 250,000 people). The Phase II MS4 provides coverage for small municipalities, including non-traditional Small MS4s, which include military bases, public campuses, prisons and hospitals.

drainage realignment, the applicant is advised to contact the Department of Fish and Game for information on Streambed Alteration Permit requirements.

If you have any questions regarding the Clean Water Act Section 404 permits, please contact the Regulatory Division of the Sacramento District of USACOE at (916) 557-5250.

Clean Water Act Section 401 Permit – Water Quality Certification

If an USACOE permit (e.g., Non-Reporting Nationwide Permit, Nationwide Permit, Letter of Permission, Individual Permit, Regional General Permit, Programmatic General Permit), or any other federal permit (e.g., Section 10 of the Rivers and Harbors Act or Section 9 from the United States Coast Guard), is required for this project due to the disturbance of waters of the United States (such as streams and wetlands), then a Water Quality Certification must be obtained from the Central Valley Water Board prior to initiation of project activities. There are no waivers for 401 Water Quality Certifications.

Waste Discharge Requirements – Discharges to Waters of the State

If USACOE determines that only non-jurisdictional waters of the State (i.e., "non-federal" waters of the State) are present in the proposed project area, the proposed project may require a Waste Discharge Requirement (WDR) permit to be issued by Central Valley Water Board. Under the California Porter-Cologne Water Quality Control Act, discharges to all waters of the State, including all wetlands and other waters of the State including, but not limited to, isolated wetlands, are subject to State regulation.

For more information on the Water Quality Certification and WDR processes, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/help/business_help/permit2.shtml.

Dewatering Permit

If the proposed project includes construction or groundwater dewatering to be discharged to land, the proponent may apply for coverage under State Water Board General Water Quality Order (Low Risk General Order) 2003-0003 or the Central Valley Water Board's Waiver of Report of Waste Discharge and Waste Discharge Requirements (Low Risk Waiver) R5-2013-0145. Small temporary construction dewatering projects are projects that discharge groundwater to land from excavation activities or dewatering of underground utility vaults. Dischargers seeking coverage under the General Order or Waiver must file a Notice of Intent with the Central Valley Water Board prior to beginning discharge.

For more information regarding the Low Risk General Order and the application process, visit the Central Valley Water Board website at:

http://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2003/wqo/wqo2003-0003.pdf

For more information regarding the Low Risk Waiver and the application process, visit the Central Valley Water Board website at:

http://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/waivers/r5-2013-0145_res.pdf

Regulatory Compliance for Commercially Irrigated Agriculture

If the property will be used for commercial irrigated agricultural, the discharger will be required to obtain regulatory coverage under the Irrigated Lands Regulatory Program. There are two options to comply:

1. **Obtain Coverage Under a Coalition Group.** Join the local Coalition Group that supports land owners with the implementation of the Irrigated Lands Regulatory Program. The Coalition Group conducts water quality monitoring and reporting to the Central Valley Water Board on behalf of its growers. The Coalition Groups charge an annual membership fee, which varies by Coalition Group. To find the Coalition Group in your area, visit the Central Valley Water Board's website at: http://www.waterboards.ca.gov/centralvalley/water_issues/irrigated_lands/app_approval/index.shtml; or contact water board staff at (916) 464-4611 or via email at IrrLands@waterboards.ca.gov.

2. **Obtain Coverage Under the General Waste Discharge Requirements for Individual Growers, General Order R5-2013-0100.** Dischargers not participating in a third-party group (Coalition) are regulated individually. Depending on the specific site conditions, growers may be required to monitor runoff from their property, install monitoring wells, and submit a notice of intent, farm plan, and other action plans regarding their actions to comply with their General Order. Yearly costs would include State administrative fees (for example, annual fees for farm sizes from 10-100 acres are currently $1,084 + $6.70/Acre); the cost to prepare annual monitoring reports; and water quality monitoring costs. To enroll as an Individual Discharger under the Irrigated Lands Regulatory Program, call the Central Valley Water Board phone line at (916) 464-4611 or e-mail board staff at IrrLands@waterboards.ca.gov.

Low or Limited Threat General NPDES Permit

If the proposed project includes construction dewatering and it is necessary to discharge the groundwater to waters of the United States, the proposed project will require coverage under a National Pollutant Discharge Elimination System (NPDES) permit. Dewatering discharges are typically considered a low or limited threat to water quality and may be covered under the General Order for *Dewatering and Other Low Threat Discharges to Surface Waters* (Low Threat General Order) or the General Order for *Limited Threat Discharges of Treated/Untreated Groundwater from Cleanup Sites, Wastewater from Superchlorination Projects, and Other Limited Threat Wastewaters to Surface Water* (Limited Threat General Order). A complete application must be submitted to the Central Valley Water Board to obtain coverage under these General NPDES permits.

For more information regarding the Low Threat General Order and the application process, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/general_orders/r5-2013-0074.pdf

For more information regarding the Limited Threat General Order and the application process, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/general_orders/r5-2013-0073.pdf

NPDES Permit

If the proposed project discharges waste that could affect the quality of the waters of the State, other than into a community sewer system, the proposed project will require coverage under a National Pollutant Discharge Elimination System (NPDES) permit. A complete Report of Waste Discharge must be submitted with the Central Valley Water Board to obtain a NPDES Permit.

For more information regarding the NPDES Permit and the application process, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/help/business_help/permit3.shtml

If you have questions regarding these comments, please contact me at (916) 464-4644 or Stephanie.Tadlock@waterboards.ca.gov.

Stephanie Tadlock

Stephanie Tadlock
Environmental Scientist

cc: State Clearinghouse unit, Governor's Office of Planning and Research, Sacramento

STATE OF CALIFORNIA
NATIVE AMERICAN HERITAGE COMMISSION
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
Phone (916) 373-3710
Fax (916) 373-5471
Email: nahc@nahc.ca.gov
Website: http://www.nahc.ca.gov
Twitter: @CA_NAHC

Edmund G. Brown Jr., Governor

December 2, 2016

Victoria Lombardo
City of Tracy
333 Civic Center Plaza
Tracy, CA 95376

Sent Via Email: victoria.lombardo@ci.tracy.ca.us

RE: SCH#2016112016, Tracy Village, San Joaquin County

Dear Ms. Lombardo:

The Native American Heritage Commission has received the Notice of Preparation (NOP) for the project referenced above. The California Environmental Quality Act (CEQA) (Pub. Resources Code § 21000 et seq.), specifically Public Resources Code section 21084.1, states that a project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment. (Pub. Resources Code § 21084.1; Cal. Code Regs., tit.14, § 15064.5 (b) (CEQA Guidelines Section 15064.5 (b)). If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an environmental impact report (EIR) shall be prepared. (Pub. Resources Code § 21080 (d); Cal. Code Regs., tit. 14, § 15064 subd.(a)(1) (CEQA Guidelines § 15064 (a)(1)). In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources with the area of project effect (APE).

CEQA was amended significantly in 2014. Assembly Bill 52 (Gatto, Chapter 532, Statutes of 2014) (AB 52) amended CEQA to create a separate category of cultural resources, "tribal cultural resources" (Pub. Resources Code § 21074) and provides that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment. (Pub. Resources Code § 21084.2). Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource. (Pub. Resources Code § 21084.3 (a)). **AB 52 applies to any project for which a notice of preparation or a notice of negative declaration or mitigated negative declaration is filed on or after July 1, 2015.** If your project involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space, on or after March 1, 2005, it may also be subject to Senate Bill 18 (Burton, Chapter 905, Statutes of 2004) (SB 18). **Both SB 18 and AB 52 have tribal consultation requirements**. If your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the tribal consultation requirements of Section 106 of the National Historic Preservation Act of 1966 (154 U.S.C. 300101, 36 C.F.R. § 800 et seq.) may also apply.

The NAHC recommends consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources. Below is a brief summary of portions of AB 52 and SB 18 as well as the NAHC's recommendations for conducting cultural resources assessments. **Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws**.

AB 52

AB 52 has added to CEQA the additional requirements listed below, along with many other requirements:

1. Fourteen Day Period to Provide Notice of Completion of an Application/Decision to Undertake a Project: Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public

agency to undertake a project, a lead agency shall provide formal notification to a designated contact of, or tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, to be accomplished by at least one written notice that includes:

   a. A brief description of the project.
   b. The lead agency contact information.
   c. Notification that the California Native American tribe has 30 days to request consultation. (Pub. Resources Code § 21080.3.1 (d)).
   d. A "California Native American tribe" is defined as a Native American tribe located in California that is on the contact list maintained by the NAHC for the purposes of Chapter 905 of Statutes of 2004 (SB 18). (Pub. Resources Code § 21073).

2. Begin Consultation Within 30 Days of Receiving a Tribe's Request for Consultation and Before Releasing a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report: A lead agency shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project. (Pub. Resources Code § 21080.3.1, subds. (d) and (e)) and prior to the release of a negative declaration, mitigated negative declaration or environmental impact report. (Pub. Resources Code § 21080.3.1(b)).
   a. For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code § 65352.4 (SB 18). (Pub. Resources Code § 21080.3.1 (b)).

3. Mandatory Topics of Consultation If Requested by a Tribe: The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:
   a. Alternatives to the project.
   b. Recommended mitigation measures.
   c. Significant effects. (Pub. Resources Code § 21080.3.2 (a)).

4. Discretionary Topics of Consultation: The following topics are discretionary topics of consultation:
   a. Type of environmental review necessary.
   b. Significance of the tribal cultural resources.
   c. Significance of the project's impacts on tribal cultural resources.
   d. If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency. (Pub. Resources Code § 21080.3.2 (a)).

5. Confidentiality of Information Submitted by a Tribe During the Environmental Review Process: With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code sections 6254 (r) and 6254.10. Any information submitted by a California Native American tribe during the consultation or environmental review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public. (Pub. Resources Code § 21082.3 (c)(1)).

6. Discussion of Impacts to Tribal Cultural Resources in the Environmental Document: If a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document shall discuss both of the following:
   a. Whether the proposed project has a significant impact on an identified tribal cultural resource.
   b. Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code section 21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource. (Pub. Resources Code § 21082.3 (b)).

7. Conclusion of Consultation: Consultation with a tribe shall be considered concluded when either of the following occurs:
   a. The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or
   b. A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached. (Pub. Resources Code § 21080.3.2 (b)).

8. Recommending Mitigation Measures Agreed Upon in Consultation in the Environmental Document: Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code section 21080.3.2 shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program, if determined to avoid or lessen the impact pursuant to Public Resources Code section 21082.3, subdivision (b), paragraph 2, and shall be fully enforceable. (Pub. Resources Code § 21082.3 (a)).

9. Required Consideration of Feasible Mitigation: If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, the lead agency shall consider feasible mitigation pursuant to Public Resources Code section 21084.3 (b). (Pub. Resources Code § 21082.3 (e)).

10. Examples of Mitigation Measures That, If Feasible, May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:
    a. Avoidance and preservation of the resources in place, including, but not limited to:
        i. Planning and construction to avoid the resources and protect the cultural and natural context.
        ii. Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.
    b. Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:
        i. Protecting the cultural character and integrity of the resource.
        ii. Protecting the traditional use of the resource.
        iii. Protecting the confidentiality of the resource.
    c. Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.
    d. Protecting the resource. (Pub. Resource Code § 21084.3 (b)).
    e. Please note that a federally recognized California Native American tribe or a nonfederally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed. (Civ. Code § 815.3 (c)).
    f. Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated. (Pub. Resources Code § 5097.991).

11. Prerequisites for Certifying an Environmental Impact Report or Adopting a Mitigated Negative Declaration or Negative Declaration with a Significant Impact on an Identified Tribal Cultural Resource: An environmental impact report may not be certified, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:
    a. The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code sections 21080.3.1 and 21080.3.2 and concluded pursuant to Public Resources Code section 21080.3.2.
    b. The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.
    c. The lead agency provided notice of the project to the tribe in compliance with Public Resources Code section 21080.3.1 (d) and the tribe failed to request consultation within 30 days. (Pub. Resources Code § 21082.3 (d)).

The NAHC's PowerPoint presentation titled, "Tribal Consultation Under AB 52: Requirements and Best Practices" may be found online at: http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation_CalEPAPDF.pdf

SB 18

SB 18 applies to local governments and requires local governments to contact, provide notice to, refer plans to, and consult with tribes prior to the adoption or amendment of a general plan or a specific plan, or the designation of open space. (Gov. Code § 65352.3). Local governments should consult the Governor's Office of Planning and Research's "Tribal Consultation Guidelines," which can be found online at: https://www.opr.ca.gov/docs/09_14_05_Updated_Guidelines_922.pdf

Some of SB 18's provisions include:

1. Tribal Consultation: If a local government considers a proposal to adopt or amend a general plan or a specific plan, or to designate open space it is required to contact the appropriate tribes identified by the NAHC by requesting a "Tribal Consultation List." If a tribe, once contacted, requests consultation the local government must consult with the tribe on the plan proposal. **A tribe has 90 days from the date of receipt of notification to request consultation unless a shorter timeframe has been agreed to by the tribe.** (Gov. Code § 65352.3 (a)(2)).
2. No Statutory Time Limit on SB 18 Tribal Consultation. There is no statutory time limit on SB 18 tribal consultation.
3. Confidentiality: Consistent with the guidelines developed and adopted by the Office of Planning and Research pursuant to Gov. Code section 65040.2, the city or county shall protect the confidentiality of the information concerning the specific identity, location, character, and use of places, features and objects described in Public Resources Code sections 5097.9 and 5097.993 that are within the city's or county's jurisdiction. (Gov. Code § 65352.3 (b)).
4. Conclusion of SB 18 Tribal Consultation: Consultation should be concluded at the point in which:
    a. The parties to the consultation come to a mutual agreement concerning the appropriate measures for preservation or mitigation; or
    b. Either the local government or the tribe, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached concerning the appropriate measures of preservation or mitigation. (Tribal Consultation Guidelines, Governor's Office of Planning and Research (2005) at p. 18).

Agencies should be aware that neither AB 52 nor SB 18 precludes agencies from initiating tribal consultation with tribes that are traditionally and culturally affiliated with their jurisdictions before the timeframes provided in AB 52 and SB 18. For that reason, we urge you to continue to request Native American Tribal Contact Lists and "Sacred Lands File" searches from the NAHC. The request forms can be found online at: http://nahc.ca.gov/resources/forms/

NAHC Recommendations for Cultural Resources Assessments

To adequately assess the existence and significance of tribal cultural resources and plan for avoidance, preservation in place, or barring both, mitigation of project-related impacts to tribal cultural resources, the NAHC recommends the following actions:

1. Contact the appropriate regional California Historical Research Information System (CHRIS) Center (http://ohp.parks.ca.gov/?page_id=1068) for an archaeological records search. The records search will determine:
    a. If part or all of the APE has been previously surveyed for cultural resources.
    b. If any known cultural resources have been already been recorded on or adjacent to the APE.
    c. If the probability is low, moderate, or high that cultural resources are located in the APE.
    d. If a survey is required to determine whether previously unrecorded cultural resources are present.

2. If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
    a. The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum and not be made available for public disclosure.
    b. The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

3. Contact the NAHC for:
    a. A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.

b. A Native American Tribal Consultation List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.

4. Remember that the lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.
   a. Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources per Cal. Code Regs., tit. 14, section 15064.5(f) (CEQA Guidelines section 15064.5(f)). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.
   b. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.
   c. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code section 7050.5, Public Resources Code section 5097.98, and Cal. Code Regs., tit. 14, section 15064.5, subdivisions (d) and (e) (CEQA Guidelines section 15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

If you have any questions, please contact me at my email address: sharaya.souza@nahc.ca.gov.

Sincerely,



Sharaya Souza
Staff Services Analyst
cc: State Clearinghouse

Appendix B:
Air Quality Calculations and Greenhouse Gas Calculations

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CalEEMod Output

Table of Contents

Construction - Site Grading, Community Facilities, and Neighborhoods 1 and 2 (Annual) **B-1**

Construction - Site Grading, Community Facilities, and Neighborhoods 1 and 2 (Summer) **B-20**

Construction - Site Grading, Community Facilities, and Neighborhoods 1 and 2 (Winter) **B-38**

Construction – Neighborhoods 3 and 4 (Annual) **B-56**

Construction – Neighborhoods 3 and 4 (Summer) **B-69**

Construction – Neighborhoods 3 and 4 (Winter) **B-82**

Construction – Neighborhoods 5 and 6 (Annual) **B-95**

Construction – Neighborhoods 5 and 6 (Summer) **B-110**

Construction – Neighborhoods 5 and 6 (Winter) **B-124**

Project Operations 2019 (Annual) **B-138**

Onsite Project Operations 2019 (Summer) **B-151**

Onsite Project Operations 2019 (Winter) **B-160**

Project Operations (BAU) **B-169**

Unmitigated Project Operations (2020) **B-182**

Mitigated Project Operations (2020) **B-196**

Note: Each neighborhood consists of 100 dwelling units

Tracy Village Construction - Site Grading, Community Facilities, and Neighborhoods 1 + 2

San Joaquin County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	29.50	Acre	29.50	1,285,020.00	0
Other Non-Asphalt Surfaces	18.94	Acre	18.94	825,026.40	0
Parking Lot	45.00	Space	0.41	18,000.00	0
City Park	5.80	Acre	5.80	252,648.00	0
Recreational Swimming Pool	3.80	1000sqft	0.09	3,800.00	0
User Defined Recreational	12.00	User Defined Unit	0.28	12,000.00	0
Single Family Housing	200.00	Dwelling Unit	80.10	360,000.00	634

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	51
Climate Zone	2			**Operational Year**	2019
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Tracy Village Construction - Site Grading, Community Facilities, and Neighborhoods 1 + 2 of 6

Land Use - Based on project description and site plans. Site grading for the entire site.
200 of 600 homes

Construction Phase - Expected construction schedule

Off-road Equipment - Equipment increased to account for underground utilities

Off-road Equipment - Expected grading equipment

Trips and VMT - Expected construction worker trips and vendor trips per day (3 times the default values for 200 homes)

Grading - Grading of the total site (135.12 acres)

Architectural Coating - SJVAPCD Rule 4601

Woodstoves - Construction only run

Construction Off-road Equipment Mitigation - SJVAPCD Regulation VIII

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	65.00
tblArchitecturalCoating	EF_Nonresidential_Interior	150.00	65.00
tblArchitecturalCoating	EF_Residential_Exterior	150.00	65.00
tblArchitecturalCoating	EF_Residential_Interior	150.00	65.00
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	0
tblConstructionPhase	NumDays	220.00	73.00
tblConstructionPhase	NumDays	3,100.00	740.00
tblConstructionPhase	NumDays	310.00	210.00
tblConstructionPhase	NumDays	220.00	130.00
tblConstructionPhase	PhaseEndDate	3/3/2022	1/11/2022
tblConstructionPhase	PhaseEndDate	5/24/2021	12/2/2021
tblConstructionPhase	PhaseEndDate	11/22/2021	3/5/2019
tblConstructionPhase	PhaseStartDate	11/23/2021	10/1/2021
tblConstructionPhase	PhaseStartDate	9/5/2018	2/1/2019
tblConstructionPhase	PhaseStartDate	5/25/2021	9/5/2018
tblFireplaces	NumberGas	110.00	330.00
tblFireplaces	NumberNoFireplace	90.00	270.00
tblGrading	AcresOfGrading	525.00	135.12
tblLandUse	BuildingSpaceSquareFeet	0.00	12,000.00
tblLandUse	LandUseSquareFeet	0.00	12,000.00
tblLandUse	LotAcreage	0.00	0.28
tblLandUse	LotAcreage	64.94	80.10
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00

tblOffRoadEquipment	PhaseName		Paving/Underground Utilities Neighborhoods 1+2
tblOffRoadEquipment	PhaseName		Paving/Underground Utilities Neighborhoods 1+2
tblProjectCharacteristics	OperationalYear	2018	2019
tblTripsAndVMT	VendorTripNumber	414.00	63.00
tblTripsAndVMT	WorkerTripNumber	23.00	25.00
tblTripsAndVMT	WorkerTripNumber	23.00	69.00
tblTripsAndVMT	WorkerTripNumber	1,079.00	216.00
tblTripsAndVMT	WorkerTripNumber	216.00	42.00
tblWoodstoves	NumberCatalytic	10.00	80.10
tblWoodstoves	NumberNoncatalytic	10.00	80.10

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					
2017	0.1227	1.3936	0.7729	1.2500e-003	0.7073	0.0653	0.7726	0.3562	0.0601	0.4163	0.0000	116.0115	116.0115	0.0347	0.0000	116.8787
2018	0.7293	7.7015	4.8214	8.3500e-003	0.7447	0.3652	1.1099	0.3661	0.3360	0.7021	0.0000	762.4277	762.4277	0.2267	0.0000	768.0954
2019	0.5013	4.0848	3.6353	8.3100e-003	0.2669	0.1913	0.4582	0.0721	0.1793	0.2514	0.0000	750.9177	750.9177	0.1098	0.0000	753.6614
2020	0.4241	3.5705	3.2146	8.0700e-003	0.2799	0.1533	0.4332	0.0757	0.1442	0.2198	0.0000	724.9649	724.9649	0.0933	0.0000	727.2972
2021	2.1188	3.0217	2.9188	7.5000e-003	0.2675	0.1219	0.3893	0.0723	0.1148	0.1870	0.0000	673.1773	673.1773	0.0843	0.0000	675.2840
2022	0.1877	5.2700e-003	9.8000e-003	2.0000e-005	1.1700e-003	2.9000e-004	1.4600e-003	3.1000e-004	2.9000e-004	6.0000e-004	0.0000	1.8574	1.8574	8.0000e-005	0.0000	1.8594
Maximum	**2.1188**	**7.7015**	**4.8214**	**8.3500e-003**	**0.7447**	**0.3652**	**1.1099**	**0.3661**	**0.3360**	**0.7021**	**0.0000**	**762.4277**	**762.4277**	**0.2267**	**0.0000**	**768.0954**

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					
2017	0.1227	1.3936	0.7729	1.2500e-003	0.3201	0.0653	0.3854	0.1608	0.0601	0.2208	0.0000	116.0113	116.0113	0.0347	0.0000	116.8785
2018	0.7293	7.7015	4.8214	8.3500e-003	0.3575	0.3652	0.7227	0.1707	0.3360	0.5067	0.0000	762.4268	762.4268	0.2267	0.0000	768.0945
2019	0.5013	4.0848	3.6353	8.3100e-003	0.2669	0.1913	0.4582	0.0721	0.1793	0.2514	0.0000	750.9172	750.9172	0.1098	0.0000	753.6610
2020	0.4241	3.5705	3.2146	8.0700e-003	0.2799	0.1533	0.4332	0.0757	0.1442	0.2198	0.0000	724.9646	724.9646	0.0933	0.0000	727.2968
2021	2.1188	3.0217	2.9188	7.5000e-003	0.2675	0.1219	0.3893	0.0723	0.1148	0.1870	0.0000	673.1769	673.1769	0.0843	0.0000	675.2837
2022	0.1877	5.2700e-003	9.8000e-003	2.0000e-005	1.1700e-003	2.9000e-004	1.4600e-003	3.1000e-004	2.9000e-004	6.0000e-004	0.0000	1.8574	1.8574	8.0000e-005	0.0000	1.8594
Maximum	**2.1188**	**7.7015**	**4.8214**	**8.3500e-003**	**0.3575**	**0.3652**	**0.7227**	**0.1707**	**0.3360**	**0.5067**	**0.0000**	**762.4268**	**762.4268**	**0.2267**	**0.0000**	**768.0945**

	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**	**34.15**	**0.00**	**24.47**	**41.46**	**0.00**	**21.99**	**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	11-15-2017	2-14-2018	2.8521	2.8521
2	2-15-2018	5-14-2018	2.5892	2.5892
3	5-15-2018	8-14-2018	2.6763	2.6763
4	8-15-2018	11-14-2018	1.3500	1.3500
5	11-15-2018	2-14-2019	1.0695	1.0695
6	2-15-2019	5-14-2019	1.2424	1.2424
7	5-15-2019	8-14-2019	1.1006	1.1006
8	8-15-2019	11-14-2019	1.1047	1.1047
9	11-15-2019	2-14-2020	1.0586	1.0586
10	2-15-2020	5-14-2020	0.9810	0.9810
11	5-15-2020	8-14-2020	0.9993	0.9993
12	8-15-2020	11-14-2020	1.0026	1.0026
13	11-15-2020	2-14-2021	0.9598	0.9598
14	2-15-2021	5-14-2021	0.8793	0.8793
15	5-15-2021	8-14-2021	0.9063	0.9063
16	8-15-2021	11-14-2021	1.7976	1.7976
17	11-15-2021	2-14-2022	1.3232	1.3232
		Highest	2.8521	2.8521

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 + Grading	Grading	11/15/2017	9/4/2018	5	210	
2	Paving/Underground Utilities Neighborhoods 1+2	Paving	9/5/2018	3/5/2019	5	130	2 out of 6 Neighborhoods
3	Building Construction	Building Construction	2/1/2019	12/2/2021	5	740	2 out of 6 Neighborhoods + Community
4	Architectural Coating	Architectural Coating	10/1/2021	1/11/2022	5	73	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 48.85

Residential Indoor: 729,000; Residential Outdoor: 243,000; Non-Residential Indoor: 18,000; Non-Residential Outdoor: 6,000; Striped

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation + Grading	Excavators	2	8.00	158	0.38
Site Preparation + Grading	Graders	1	8.00	187	0.41
Site Preparation + Grading	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation + Grading	Scrapers	2	8.00	367	0.48
Site Preparation + Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving/Underground Utilities Neighborhoods 1+2	Excavators	1	7.00	158	0.38
Paving/Underground Utilities Neighborhoods 1+2	Pavers	2	8.00	130	0.42
Paving/Underground Utilities Neighborhoods 1+2	Paving Equipment	2	8.00	132	0.36
Paving/Underground Utilities Neighborhoods 1+2	Rollers	2	8.00	80	0.38
Paving/Underground Utilities Neighborhoods 1+2	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48

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 + Grading	9	25.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving/Underground Utilities	9	69.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	216.00	63.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	42.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation + Grading - 2017

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					0.7040	0.0000	0.7040	0.3553	0.0000	0.3553	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1204	1.3918	0.7558	1.2200e-003		0.0653	0.0653		0.0601	0.0601	0.0000	112.8197	112.8197	0.0346	0.0000	113.6839
Total	**0.1204**	**1.3918**	**0.7558**	**1.2200e-003**	**0.7040**	**0.0653**	**0.7692**	**0.3553**	**0.0601**	**0.4154**	**0.0000**	**112.8197**	**112.8197**	**0.0346**	**0.0000**	**113.6839**

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	2.2600e-003	1.7700e-003	0.0171	4.0000e-005	3.2900e-003	3.0000e-005	3.3100e-003	8.7000e-004	2.0000e-005	9.0000e-004	0.0000	3.1918	3.1918	1.2000e-004	0.0000	3.1948
Total	**2.2600e-003**	**1.7700e-003**	**0.0171**	**4.0000e-005**	**3.2900e-003**	**3.0000e-005**	**3.3100e-003**	**8.7000e-004**	**2.0000e-005**	**9.0000e-004**	**0.0000**	**3.1918**	**3.1918**	**1.2000e-004**	**0.0000**	**3.1948**

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					0.3168	0.0000	0.3168	0.1599	0.0000	0.1599	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1204	1.3918	0.7558	1.2200e-003		0.0653	0.0653		0.0601	0.0601	0.0000	112.8195	112.8195	0.0346	0.0000	113.6837
Total	**0.1204**	**1.3918**	**0.7558**	**1.2200e-003**	**0.3168**	**0.0653**	**0.3821**	**0.1599**	**0.0601**	**0.2199**	**0.0000**	**112.8195**	**112.8195**	**0.0346**	**0.0000**	**113.6837**

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	2.2600e-003	1.7700e-003	0.0171	4.0000e-005	3.2900e-003	3.0000e-005	3.3100e-003	8.7000e-004	2.0000e-005	9.0000e-004	0.0000	3.1918	3.1918	1.2000e-004	0.0000	3.1948
Total	**2.2600e-003**	**1.7700e-003**	**0.0171**	**4.0000e-005**	**3.2900e-003**	**3.0000e-005**	**3.3100e-003**	**8.7000e-004**	**2.0000e-005**	**9.0000e-004**	**0.0000**	**3.1918**	**3.1918**	**1.2000e-004**	**0.0000**	**3.1948**

3.2 Site Preparation + Grading - 2018

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					0.7040	0.0000	0.7040	0.3553	0.0000	0.3553	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.5772	6.6120	3.6995	6.5200e-003		0.3036	0.3036		0.2793	0.2793	0.0000	595.5105	595.5105	0.1854	0.0000	600.1452
Total	**0.5772**	**6.6120**	**3.6995**	**6.5200e-003**	**0.7040**	**0.3036**	**1.0076**	**0.3553**	**0.2793**	**0.6346**	**0.0000**	**595.5105**	**595.5105**	**0.1854**	**0.0000**	**600.1452**

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	0.0107	8.2100e-003	0.0796	1.8000e-004	0.0176	1.3000e-004	0.0178	4.6900e-003	1.2000e-004	4.8000e-003	0.0000	16.6035	16.6035	5.6000e-004	0.0000	16.6175
Total	**0.0107**	**8.2100e-003**	**0.0796**	**1.8000e-004**	**0.0176**	**1.3000e-004**	**0.0178**	**4.6900e-003**	**1.2000e-004**	**4.8000e-003**	**0.0000**	**16.6035**	**16.6035**	**5.6000e-004**	**0.0000**	**16.6175**

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					0.3168	0.0000	0.3168	0.1599	0.0000	0.1599	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.5772	6.6120	3.6995	6.5200e-003		0.3036	0.3036		0.2793	0.2793	0.0000	595.5098	595.5098	0.1854	0.0000	600.1445
Total	**0.5772**	**6.6120**	**3.6995**	**6.5200e-003**	**0.3168**	**0.3036**	**0.6204**	**0.1599**	**0.2793**	**0.4392**	**0.0000**	**595.5098**	**595.5098**	**0.1854**	**0.0000**	**600.1445**

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	0.0107	8.2100e-003	0.0796	1.8000e-004	0.0176	1.3000e-004	0.0178	4.6900e-003	1.2000e-004	4.8000e-003	0.0000	16.6035	16.6035	5.6000e-004	0.0000	16.6175
Total	**0.0107**	**8.2100e-003**	**0.0796**	**1.8000e-004**	**0.0176**	**1.3000e-004**	**0.0178**	**4.6900e-003**	**1.2000e-004**	**4.8000e-003**	**0.0000**	**16.6035**	**16.6035**	**5.6000e-004**	**0.0000**	**16.6175**

3.3 Paving/Underground Utilities Neighborhoods 1+2 - 2018

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	0.1020	1.0706	0.9381	1.4100e-003		0.0613	0.0613		0.0564	0.0564	0.0000	128.5659	128.5659	0.0400	0.0000	129.5665
Paving	0.0253					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.1273**	**1.0706**	**0.9381**	**1.4100e-003**		**0.0613**	**0.0613**		**0.0564**	**0.0564**	**0.0000**	**128.5659**	**128.5659**	**0.0400**	**0.0000**	**129.5665**

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	0.0141	0.0108	0.1042	2.4000e-004	0.0231	1.7000e-004	0.0233	6.1400e-003	1.5000e-004	6.2900e-003	0.0000	21.7478	21.7478	7.3000e-004	0.0000	21.7661
Total	**0.0141**	**0.0108**	**0.1042**	**2.4000e-004**	**0.0231**	**1.7000e-004**	**0.0233**	**6.1400e-003**	**1.5000e-004**	**6.2900e-003**	**0.0000**	**21.7478**	**21.7478**	**7.3000e-004**	**0.0000**	**21.7661**

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	0.1020	1.0706	0.9381	1.4100e-003		0.0613	0.0613		0.0564	0.0564	0.0000	128.5658	128.5658	0.0400	0.0000	129.5664
Paving	0.0253					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.1273**	**1.0706**	**0.9381**	**1.4100e-003**		**0.0613**	**0.0613**		**0.0564**	**0.0564**	**0.0000**	**128.5658**	**128.5658**	**0.0400**	**0.0000**	**129.5664**

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	0.0141	0.0108	0.1042	2.4000e-004	0.0231	1.7000e-004	0.0233	6.1400e-003	1.5000e-004	6.2900e-003	0.0000	21.7478	21.7478	7.3000e-004	0.0000	21.7661
Total	**0.0141**	**0.0108**	**0.1042**	**2.4000e-004**	**0.0231**	**1.7000e-004**	**0.0233**	**6.1400e-003**	**1.5000e-004**	**6.2900e-003**	**0.0000**	**21.7478**	**21.7478**	**7.3000e-004**	**0.0000**	**21.7661**

3.3 Paving/Underground Utilities Neighborhoods 1+2 - 2019

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	0.0494	0.5121	0.5089	7.7000e-004		0.0288	0.0288		0.0265	0.0265	0.0000	69.2585	69.2585	0.0219	0.0000	69.8063
Paving	0.0139					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0633**	**0.5121**	**0.5089**	**7.7000e-004**		**0.0288**	**0.0288**		**0.0265**	**0.0265**	**0.0000**	**69.2585**	**69.2585**	**0.0219**	**0.0000**	**69.8063**

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	6.9400e-003	5.1600e-003	0.0504	1.3000e-004	0.0126	9.0000e-005	0.0127	3.3600e-003	8.0000e-005	3.4400e-003	0.0000	11.5643	11.5643	3.5000e-004	0.0000	11.5731
Total	**6.9400e-003**	**5.1600e-003**	**0.0504**	**1.3000e-004**	**0.0126**	**9.0000e-005**	**0.0127**	**3.3600e-003**	**8.0000e-005**	**3.4400e-003**	**0.0000**	**11.5643**	**11.5643**	**3.5000e-004**	**0.0000**	**11.5731**

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	0.0494	0.5121	0.5089	7.7000e-004		0.0288	0.0288		0.0265	0.0265	0.0000	69.2584	69.2584	0.0219	0.0000	69.8062
Paving	0.0139					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0633**	**0.5121**	**0.5089**	**7.7000e-004**		**0.0288**	**0.0288**		**0.0265**	**0.0265**	**0.0000**	**69.2584**	**69.2584**	**0.0219**	**0.0000**	**69.8062**

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	6.9400e-003	5.1600e-003	0.0504	1.3000e-004	0.0126	9.0000e-005	0.0127	3.3600e-003	8.0000e-005	3.4400e-003	0.0000	11.5643	11.5643	3.5000e-004	0.0000	11.5731
Total	**6.9400e-003**	**5.1600e-003**	**0.0504**	**1.3000e-004**	**0.0126**	**9.0000e-005**	**0.0127**	**3.3600e-003**	**8.0000e-005**	**3.4400e-003**	**0.0000**	**11.5643**	**11.5643**	**3.5000e-004**	**0.0000**	**11.5731**

3.4 Building Construction - 2019

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	0.2810	2.5084	2.0425	3.2000e-003		0.1535	0.1535		0.1443	0.1443	0.0000	279.7740	279.7740	0.0682	0.0000	281.4779
Total	**0.2810**	**2.5084**	**2.0425**	**3.2000e-003**		**0.1535**	**0.1535**		**0.1443**	**0.1443**	**0.0000**	**279.7740**	**279.7740**	**0.0682**	**0.0000**	**281.4779**

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	0.0376	0.9756	0.2180	2.1400e-003	0.0495	7.4800e-003	0.0570	0.0143	7.1500e-003	0.0215	0.0000	203.0195	203.0195	0.0136	0.0000	203.3592
Worker	0.1125	0.0836	0.8156	2.0700e-003	0.2047	1.4400e-003	0.2062	0.0544	1.3300e-003	0.0558	0.0000	187.3015	187.3015	5.7400e-003	0.0000	187.4450
Total	**0.1501**	**1.0592**	**1.0336**	**4.2100e-003**	**0.2543**	**8.9200e-003**	**0.2632**	**0.0687**	**8.4800e-003**	**0.0772**	**0.0000**	**390.3210**	**390.3210**	**0.0193**	**0.0000**	**390.8042**

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	0.2810	2.5084	2.0425	3.2000e-003		0.1535	0.1535		0.1443	0.1443	0.0000	279.7737	279.7737	0.0682	0.0000	281.4776
Total	**0.2810**	**2.5084**	**2.0425**	**3.2000e-003**		**0.1535**	**0.1535**		**0.1443**	**0.1443**	**0.0000**	**279.7737**	**279.7737**	**0.0682**	**0.0000**	**281.4776**

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	0.0376	0.9756	0.2180	2.1400e-003	0.0495	7.4800e-003	0.0570	0.0143	7.1500e-003	0.0215	0.0000	203.0195	203.0195	0.0136	0.0000	203.3592
Worker	0.1125	0.0836	0.8156	2.0700e-003	0.2047	1.4400e-003	0.2062	0.0544	1.3300e-003	0.0558	0.0000	187.3015	187.3015	5.7400e-003	0.0000	187.4450
Total	**0.1501**	**1.0592**	**1.0336**	**4.2100e-003**	**0.2543**	**8.9200e-003**	**0.2632**	**0.0687**	**8.4800e-003**	**0.0772**	**0.0000**	**390.3210**	**390.3210**	**0.0193**	**0.0000**	**390.8042**

3.4 Building Construction - 2020

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	0.2777	2.5134	2.2072	3.5300e-003		0.1463	0.1463		0.1376	0.1376	0.0000	303.4091	303.4091	0.0740	0.0000	305.2596
Total	**0.2777**	**2.5134**	**2.2072**	**3.5300e-003**		**0.1463**	**0.1463**		**0.1376**	**0.1376**	**0.0000**	**303.4091**	**303.4091**	**0.0740**	**0.0000**	**305.2596**

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	0.0335	0.9760	0.2077	2.3300e-003	0.0545	5.3800e-003	0.0599	0.0158	5.1500e-003	0.0209	0.0000	221.6755	221.6755	0.0138	0.0000	222.0195
Worker	0.1129	0.0811	0.7997	2.2100e-003	0.2254	1.5300e-003	0.2269	0.0599	1.4100e-003	0.0613	0.0000	199.8803	199.8803	5.5100e-003	0.0000	200.0181
Total	**0.1464**	**1.0571**	**1.0074**	**4.5400e-003**	**0.2799**	**6.9100e-003**	**0.2868**	**0.0757**	**6.5600e-003**	**0.0823**	**0.0000**	**421.5559**	**421.5559**	**0.0193**	**0.0000**	**422.0375**

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	0.2777	2.5134	2.2072	3.5300e-003		0.1463	0.1463		0.1376	0.1376	0.0000	303.4087	303.4087	0.0740	0.0000	305.2592
Total	**0.2777**	**2.5134**	**2.2072**	**3.5300e-003**		**0.1463**	**0.1463**		**0.1376**	**0.1376**	**0.0000**	**303.4087**	**303.4087**	**0.0740**	**0.0000**	**305.2592**

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	0.0335	0.9760	0.2077	2.3300e-003	0.0545	5.3800e-003	0.0599	0.0158	5.1500e-003	0.0209	0.0000	221.6755	221.6755	0.0138	0.0000	222.0195
Worker	0.1129	0.0811	0.7997	2.2100e-003	0.2254	1.5300e-003	0.2269	0.0599	1.4100e-003	0.0613	0.0000	199.8803	199.8803	5.5100e-003	0.0000	200.0181
Total	**0.1464**	**1.0571**	**1.0074**	**4.5400e-003**	**0.2799**	**6.9100e-003**	**0.2868**	**0.0757**	**6.5600e-003**	**0.0823**	**0.0000**	**421.5559**	**421.5559**	**0.0193**	**0.0000**	**422.0375**

3.4 Building Construction - 2021

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	0.2281	2.0919	1.9890	3.2300e-003		0.1150	0.1150		0.1082	0.1082	0.0000	277.9647	277.9647	0.0671	0.0000	279.6413
Total	**0.2281**	**2.0919**	**1.9890**	**3.2300e-003**		**0.1150**	**0.1150**		**0.1082**	**0.1082**	**0.0000**	**277.9647**	**277.9647**	**0.0671**	**0.0000**	**279.6413**

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	0.0251	0.8098	0.1669	2.1200e-003	0.0500	2.3000e-003	0.0523	0.0144	2.2000e-003	0.0166	0.0000	201.1731	201.1731	0.0119	0.0000	201.4704
Worker	0.0955	0.0661	0.6672	1.9500e-003	0.2065	1.3500e-003	0.2078	0.0549	1.2500e-003	0.0561	0.0000	176.1923	176.1923	4.5000e-003	0.0000	176.3048
Total	**0.1206**	**0.8759**	**0.8341**	**4.0700e-003**	**0.2564**	**3.6500e-003**	**0.2601**	**0.0693**	**3.4500e-003**	**0.0728**	**0.0000**	**377.3654**	**377.3654**	**0.0164**	**0.0000**	**377.7752**

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	0.2281	2.0919	1.9890	3.2300e-003		0.1150	0.1150		0.1082	0.1082	0.0000	277.9644	277.9644	0.0671	0.0000	279.6409
Total	**0.2281**	**2.0919**	**1.9890**	**3.2300e-003**		**0.1150**	**0.1150**		**0.1082**	**0.1082**	**0.0000**	**277.9644**	**277.9644**	**0.0671**	**0.0000**	**279.6409**

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	0.0251	0.8098	0.1669	2.1200e-003	0.0500	2.3000e-003	0.0523	0.0144	2.2000e-003	0.0166	0.0000	201.1731	201.1731	0.0119	0.0000	201.4704
Worker	0.0955	0.0661	0.6672	1.9500e-003	0.2065	1.3500e-003	0.2078	0.0549	1.2500e-003	0.0561	0.0000	176.1923	176.1923	4.5000e-003	0.0000	176.3048
Total	**0.1206**	**0.8759**	**0.8341**	**4.0700e-003**	**0.2564**	**3.6500e-003**	**0.2601**	**0.0693**	**3.4500e-003**	**0.0728**	**0.0000**	**377.3654**	**377.3654**	**0.0164**	**0.0000**	**377.7752**

3.5 Architectural Coating - 2021

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	1.7578					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.2200e-003	0.0504	0.0600	1.0000e-004		3.1100e-003	3.1100e-003		3.1100e-003	3.1100e-003	0.0000	8.4257	8.4257	5.8000e-004	0.0000	8.4402
Total	**1.7650**	**0.0504**	**0.0600**	**1.0000e-004**		**3.1100e-003**	**3.1100e-003**		**3.1100e-003**	**3.1100e-003**	**0.0000**	**8.4257**	**8.4257**	**5.8000e-004**	**0.0000**	**8.4402**

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	5.1100e-003	3.5400e-003	0.0357	1.0000e-004	0.0110	7.0000e-005	0.0111	2.9400e-003	7.0000e-005	3.0000e-003	0.0000	9.4214	9.4214	2.4000e-004	0.0000	9.4274
Total	**5.1100e-003**	**3.5400e-003**	**0.0357**	**1.0000e-004**	**0.0110**	**7.0000e-005**	**0.0111**	**2.9400e-003**	**7.0000e-005**	**3.0000e-003**	**0.0000**	**9.4214**	**9.4214**	**2.4000e-004**	**0.0000**	**9.4274**

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	1.7578					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.2200e-003	0.0504	0.0600	1.0000e-004		3.1100e-003	3.1100e-003		3.1100e-003	3.1100e-003	0.0000	8.4257	8.4257	5.8000e-004	0.0000	8.4402
Total	**1.7650**	**0.0504**	**0.0600**	**1.0000e-004**		**3.1100e-003**	**3.1100e-003**		**3.1100e-003**	**3.1100e-003**	**0.0000**	**8.4257**	**8.4257**	**5.8000e-004**	**0.0000**	**8.4402**

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	5.1100e-003	3.5400e-003	0.0357	1.0000e-004	0.0110	7.0000e-005	0.0111	2.9400e-003	7.0000e-005	3.0000e-003	0.0000	9.4214	9.4214	2.4000e-004	0.0000	9.4274
Total	**5.1100e-003**	**3.5400e-003**	**0.0357**	**1.0000e-004**	**0.0110**	**7.0000e-005**	**0.0111**	**2.9400e-003**	**7.0000e-005**	**3.0000e-003**	**0.0000**	**9.4214**	**9.4214**	**2.4000e-004**	**0.0000**	**9.4274**

3.5 Architectural Coating - 2022

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	0.1864					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.2000e-004	4.9300e-003	6.3500e-003	1.0000e-005		2.9000e-004	2.9000e-004		2.9000e-004	2.9000e-004	0.0000	0.8936	0.8936	6.0000e-005	0.0000	0.8951
Total	**0.1872**	**4.9300e-003**	**6.3500e-003**	**1.0000e-005**		**2.9000e-004**	**2.9000e-004**		**2.9000e-004**	**2.9000e-004**	**0.0000**	**0.8936**	**0.8936**	**6.0000e-005**	**0.0000**	**0.8951**

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	5.0000e-004	3.4000e-004	3.4500e-003	1.0000e-005	1.1700e-003	1.0000e-005	1.1800e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	0.9637	0.9637	2.0000e-005	0.0000	0.9643
Total	**5.0000e-004**	**3.4000e-004**	**3.4500e-003**	**1.0000e-005**	**1.1700e-003**	**1.0000e-005**	**1.1800e-003**	**3.1000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**0.9637**	**0.9637**	**2.0000e-005**	**0.0000**	**0.9643**

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	0.1864					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.2000e-004	4.9300e-003	6.3500e-003	1.0000e-005		2.9000e-004	2.9000e-004		2.9000e-004	2.9000e-004	0.0000	0.8936	0.8936	6.0000e-005	0.0000	0.8951
Total	**0.1872**	**4.9300e-003**	**6.3500e-003**	**1.0000e-005**		**2.9000e-004**	**2.9000e-004**		**2.9000e-004**	**2.9000e-004**	**0.0000**	**0.8936**	**0.8936**	**6.0000e-005**	**0.0000**	**0.8951**

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	5.0000e-004	3.4000e-004	3.4500e-003	1.0000e-005	1.1700e-003	1.0000e-005	1.1800e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	0.9637	0.9637	2.0000e-005	0.0000	0.9643
Total	**5.0000e-004**	**3.4000e-004**	**3.4500e-003**	**1.0000e-005**	**1.1700e-003**	**1.0000e-005**	**1.1800e-003**	**3.1000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**0.9637**	**0.9637**	**2.0000e-005**	**0.0000**	**0.9643**

Tracy Village Unmitigated Construction - Site Grading, Community Facilities, and Neighborhoods 1 + 2

San Joaquin County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	29.50	Acre	29.50	1,285,020.00	0
Other Non-Asphalt Surfaces	18.94	Acre	18.94	825,026.40	0
Parking Lot	45.00	Space	0.41	18,000.00	0
City Park	5.80	Acre	5.80	252,648.00	0
Recreational Swimming Pool	3.80	1000sqft	0.09	3,800.00	0
User Defined Recreational	12.00	User Defined Unit	0.28	12,000.00	0
Single Family Housing	200.00	Dwelling Unit	80.10	360,000.00	634

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	51
Climate Zone	2			**Operational Year**	2019
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Tracy Village Construction - Site Grading, Community Facilities, and Neighborhoods 1 + 2 of 6

Land Use - Based on project description and site plans. Site grading for the entire site.
200 of 600 homes

Construction Phase - Expected construction schedule

Off-road Equipment - Equipment increased to account for underground utilities

Off-road Equipment - Expected grading equipment

Trips and VMT - Expected construction worker trips and vendor trips per day (3 times the default values for 200 homes)

Grading - Grading of the total site (135.12 acres)

Architectural Coating - SJVAPCD Rule 4601

Woodstoves - Construction only run

Construction Off-road Equipment Mitigation - SJVAPCD Regulation VIII

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	65.00
tblArchitecturalCoating	EF_Nonresidential_Interior	150.00	65.00
tblArchitecturalCoating	EF_Residential_Exterior	150.00	65.00
tblArchitecturalCoating	EF_Residential_Interior	150.00	65.00
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	0
tblConstructionPhase	NumDays	220.00	73.00
tblConstructionPhase	NumDays	3,100.00	740.00
tblConstructionPhase	NumDays	310.00	210.00
tblConstructionPhase	NumDays	220.00	130.00
tblConstructionPhase	PhaseEndDate	3/3/2022	1/11/2022
tblConstructionPhase	PhaseEndDate	5/24/2021	12/2/2021
tblConstructionPhase	PhaseEndDate	11/22/2021	3/5/2019
tblConstructionPhase	PhaseStartDate	11/23/2021	10/1/2021
tblConstructionPhase	PhaseStartDate	9/5/2018	2/1/2019
tblConstructionPhase	PhaseStartDate	5/25/2021	9/5/2018
tblFireplaces	NumberGas	110.00	330.00
tblFireplaces	NumberNoFireplace	90.00	270.00
tblGrading	AcresOfGrading	525.00	135.12
tblLandUse	BuildingSpaceSquareFeet	0.00	12,000.00
tblLandUse	LandUseSquareFeet	0.00	12,000.00
tblLandUse	LotAcreage	0.00	0.28
tblLandUse	LotAcreage	64.94	80.10
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	PhaseName		Paving/Underground Utilities Neighborhoods 1+2
tblOffRoadEquipment	PhaseName		Paving/Underground Utilities Neighborhoods 1+2
tblProjectCharacteristics	OperationalYear	2018	2019
tblTripsAndVMT	VendorTripNumber	414.00	63.00
tblTripsAndVMT	WorkerTripNumber	23.00	25.00
tblTripsAndVMT	WorkerTripNumber	23.00	69.00
tblTripsAndVMT	WorkerTripNumber	1,079.00	216.00
tblTripsAndVMT	WorkerTripNumber	216.00	42.00
tblWoodstoves	NumberCatalytic	10.00	80.10
tblWoodstoves	NumberNoncatalytic	10.00	80.10

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

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	lb/day										lb/day					
2017	7.4471	84.4470	46.9612	0.0760	6.9098	3.9574	10.8673	3.4384	3.6409	7.0792	0.0000	7,768.9779	7,768.9779	2.3181	0.0000	7,826.9290
2018	6.6563	74.7953	42.8101	0.0759	6.9098	3.4321	10.3419	3.4384	3.1575	6.5959	0.0000	7,642.2999	7,642.2999	2.3167	0.0000	7,700.2178
2019	6.8045	52.2451	51.1705	0.1037	2.7680	2.6180	5.3861	0.7439	2.4369	3.1808	0.0000	10,305.7424	10,305.7424	1.8778	0.0000	10,352.6876
2020	3.3259	27.0887	25.2080	0.0633	2.2012	1.1695	3.3707	0.5935	1.1001	1.6936	0.0000	6,272.0643	6,272.0643	0.7836	0.0000	6,291.6531
2021	56.6437	26.2192	27.1872	0.0689	2.5463	1.0851	3.6313	0.6851	1.0258	1.7109	0.0000	6,809.5657	6,809.5657	0.7930	0.0000	6,829.3905
2022	53.6295	1.4952	2.9306	6.2800e-003	0.3450	0.0838	0.4289	0.0915	0.0837	0.1752	0.0000	611.5863	611.5863	0.0262	0.0000	612.2410
Maximum	**56.6437**	**84.4470**	**51.1705**	**0.1037**	**6.9098**	**3.9574**	**10.8673**	**3.4384**	**3.6409**	**7.0792**	**0.0000**	**10,305.7424**	**10,305.7424**	**2.3181**	**0.0000**	**10,352.6876**

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	lb/day										lb/day					
2017	7.4471	84.4470	46.9612	0.0760	3.2224	3.9574	7.1798	1.5772	3.6409	5.2181	0.0000	7,768.9779	7,768.9779	2.3181	0.0000	7,826.9290
2018	6.6563	74.7953	42.8101	0.0759	3.2224	3.4321	6.6544	1.5772	3.1575	4.7347	0.0000	7,642.2999	7,642.2999	2.3167	0.0000	7,700.2178
2019	6.8045	52.2451	51.1705	0.1037	2.7680	2.6180	5.3861	0.7439	2.4369	3.1808	0.0000	10,305.7424	10,305.7424	1.8778	0.0000	10,352.6876
2020	3.3259	27.0887	25.2080	0.0633	2.2012	1.1695	3.3707	0.5935	1.1001	1.6936	0.0000	6,272.0643	6,272.0643	0.7836	0.0000	6,291.6531
2021	56.6437	26.2192	27.1872	0.0689	2.5463	1.0851	3.6313	0.6851	1.0258	1.7109	0.0000	6,809.5657	6,809.5657	0.7930	0.0000	6,829.3905
2022	53.6295	1.4952	2.9306	6.2800e-003	0.3450	0.0838	0.4289	0.0915	0.0837	0.1752	0.0000	611.5863	611.5863	0.0262	0.0000	612.2410
Maximum	**56.6437**	**84.4470**	**51.1705**	**0.1037**	**3.2224**	**3.9574**	**7.1798**	**1.5772**	**3.6409**	**5.2181**	**0.0000**	**10,305.7424**	**10,305.7424**	**2.3181**	**0.0000**	**10,352.6876**

	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**	**34.02**	**0.00**	**21.67**	**41.40**	**0.00**	**18.21**	**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 + Grading	Grading	11/15/2017	9/4/2018	5	210	
2	Paving/Underground Utilities Neighborhoods 1+2	Paving	9/5/2018	3/5/2019	5	130	2 out of 6 Neighborhoods
3	Building Construction	Building Construction	2/1/2019	12/2/2021	5	740	2 out of 6 Neighborhoods + Community
4	Architectural Coating	Architectural Coating	10/1/2021	1/11/2022	5	73	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 48.85

Residential Indoor: 729,000; Residential Outdoor: 243,000; Non-Residential Indoor: 18,000; Non-Residential Outdoor: 6,000; Striped

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation + Grading	Excavators	2	8.00	158	0.38
Site Preparation + Grading	Graders	1	8.00	187	0.41
Site Preparation + Grading	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation + Grading	Scrapers	2	8.00	367	0.48
Site Preparation + Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving/Underground Utilities Neighborhoods 1+2	Excavators	1	7.00	158	0.38
Paving/Underground Utilities Neighborhoods 1+2	Pavers	2	8.00	130	0.42
Paving/Underground Utilities Neighborhoods 1+2	Paving Equipment	2	8.00	132	0.36
Paving/Underground Utilities Neighborhoods 1+2	Rollers	2	8.00	80	0.38
Paving/Underground Utilities Neighborhoods 1+2	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48

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 + Grading	9	25.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving/Underground Utilities	9	69.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	216.00	63.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	42.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation + Grading - 2017

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	lb/day										lb/day					
Fugitive Dust					6.7044	0.0000	6.7044	3.3839	0.0000	3.3839			0.0000			0.0000
Off-Road	7.2963	84.3501	45.8031	0.0737		3.9559	3.9559		3.6395	3.6395		7,537.1147	7,537.1147	2.3094		7,594.8486
Total	**7.2963**	**84.3501**	**45.8031**	**0.0737**	**6.7044**	**3.9559**	**10.6604**	**3.3839**	**3.6395**	**7.0234**		**7,537.1147**	**7,537.1147**	**2.3094**		**7,594.8486**

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	lb/day										lb/day					
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
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
Worker	0.1508	0.0969	1.1582	2.3300e-003	0.2054	1.5200e-003	0.2069	0.0545	1.4000e-003	0.0559		231.8633	231.8633	8.6900e-003		232.0804
Total	**0.1508**	**0.0969**	**1.1582**	**2.3300e-003**	**0.2054**	**1.5200e-003**	**0.2069**	**0.0545**	**1.4000e-003**	**0.0559**		**231.8633**	**231.8633**	**8.6900e-003**		**232.0804**

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	lb/day										lb/day					
Fugitive Dust					3.0170	0.0000	3.0170	1.5228	0.0000	1.5228			0.0000			0.0000
Off-Road	7.2963	84.3501	45.8031	0.0737		3.9559	3.9559		3.6395	3.6395	0.0000	7,537.1147	7,537.1147	2.3094		7,594.8486
Total	**7.2963**	**84.3501**	**45.8031**	**0.0737**	**3.0170**	**3.9559**	**6.9729**	**1.5228**	**3.6395**	**5.1622**	**0.0000**	**7,537.1147**	**7,537.1147**	**2.3094**		**7,594.8486**

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	lb/day										lb/day					
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
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
Worker	0.1508	0.0969	1.1582	2.3300e-003	0.2054	1.5200e-003	0.2069	0.0545	1.4000e-003	0.0559		231.8633	231.8633	8.6900e-003		232.0804
Total	**0.1508**	**0.0969**	**1.1582**	**2.3300e-003**	**0.2054**	**1.5200e-003**	**0.2069**	**0.0545**	**1.4000e-003**	**0.0559**		**231.8633**	**231.8633**	**8.6900e-003**		**232.0804**

3.2 Site Preparation + Grading - 2018

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	lb/day										lb/day					
Fugitive Dust					6.7044	0.0000	6.7044	3.3839	0.0000	3.3839			0.0000			0.0000
Off-Road	6.5223	74.7115	41.8026	0.0737		3.4306	3.4306		3.1562	3.1562		7,417.3777	7,417.3777	2.3091		7,475.1060
Total	**6.5223**	**74.7115**	**41.8026**	**0.0737**	**6.7044**	**3.4306**	**10.1351**	**3.3839**	**3.1562**	**6.5401**		**7,417.3777**	**7,417.3777**	**2.3091**		**7,475.1060**

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	lb/day										lb/day					
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
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
Worker	0.1340	0.0838	1.0075	2.2600e-003	0.2054	1.4500e-003	0.2068	0.0545	1.3300e-003	0.0558		224.9221	224.9221	7.5900e-003		225.1118
Total	**0.1340**	**0.0838**	**1.0075**	**2.2600e-003**	**0.2054**	**1.4500e-003**	**0.2068**	**0.0545**	**1.3300e-003**	**0.0558**		**224.9221**	**224.9221**	**7.5900e-003**		**225.1118**

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	lb/day										lb/day					
Fugitive Dust					3.0170	0.0000	3.0170	1.5228	0.0000	1.5228			0.0000			0.0000
Off-Road	6.5223	74.7115	41.8026	0.0737		3.4306	3.4306		3.1562	3.1562	0.0000	7,417.3777	7,417.3777	2.3091		7,475.1060
Total	**6.5223**	**74.7115**	**41.8026**	**0.0737**	**3.0170**	**3.4306**	**6.4476**	**1.5228**	**3.1562**	**4.6789**	**0.0000**	**7,417.3777**	**7,417.3777**	**2.3091**		**7,475.1060**

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	lb/day										lb/day					
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
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
Worker	0.1340	0.0838	1.0075	2.2600e-003	0.2054	1.4500e-003	0.2068	0.0545	1.3300e-003	0.0558		224.9221	224.9221	7.5900e-003		225.1118
Total	**0.1340**	**0.0838**	**1.0075**	**2.2600e-003**	**0.2054**	**1.4500e-003**	**0.2068**	**0.0545**	**1.3300e-003**	**0.0558**		**224.9221**	**224.9221**	**7.5900e-003**		**225.1118**

3.3 Paving/Underground Utilities Neighborhoods 1+2 - 2018

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	lb/day										lb/day					
Off-Road	2.4289	25.4893	22.3360	0.0335		1.4601	1.4601		1.3433	1.3433		3,374.2776	3,374.2776	1.0505		3,400.5390
Paving	0.6028					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**3.0317**	**25.4893**	**22.3360**	**0.0335**		**1.4601**	**1.4601**		**1.3433**	**1.3433**		**3,374.2776**	**3,374.2776**	**1.0505**		**3,400.5390**

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	lb/day										lb/day					
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
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
Worker	0.3699	0.2314	2.7808	6.2400e-003	0.5668	3.9900e-003	0.5708	0.1504	3.6800e-003	0.1540		620.7851	620.7851	0.0209		621.3086
Total	**0.3699**	**0.2314**	**2.7808**	**6.2400e-003**	**0.5668**	**3.9900e-003**	**0.5708**	**0.1504**	**3.6800e-003**	**0.1540**		**620.7851**	**620.7851**	**0.0209**		**621.3086**

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	lb/day										lb/day					
Off-Road	2.4289	25.4893	22.3360	0.0335		1.4601	1.4601		1.3433	1.3433	0.0000	3,374.2776	3,374.2776	1.0505		3,400.5390
Paving	0.6028					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**3.0317**	**25.4893**	**22.3360**	**0.0335**		**1.4601**	**1.4601**		**1.3433**	**1.3433**	**0.0000**	**3,374.2776**	**3,374.2776**	**1.0505**		**3,400.5390**

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	lb/day										lb/day					
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
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
Worker	0.3699	0.2314	2.7808	6.2400e-003	0.5668	3.9900e-003	0.5708	0.1504	3.6800e-003	0.1540		620.7851	620.7851	0.0209		621.3086
Total	**0.3699**	**0.2314**	**2.7808**	**6.2400e-003**	**0.5668**	**3.9900e-003**	**0.5708**	**0.1504**	**3.6800e-003**	**0.1540**		**620.7851**	**620.7851**	**0.0209**		**621.3086**

3.3 Paving/Underground Utilities Neighborhoods 1+2 - 2019

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	lb/day										lb/day					
Off-Road	2.1482	22.2654	22.1255	0.0335		1.2498	1.2498		1.1499	1.1499		3,319.3211	3,319.3211	1.0502		3,345.5760
Paving	0.6028					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.7510**	**22.2654**	**22.1255**	**0.0335**		**1.2498**	**1.2498**		**1.1499**	**1.1499**		**3,319.3211**	**3,319.3211**	**1.0502**		**3,345.5760**

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	lb/day										lb/day					
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
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
Worker	0.3343	0.2027	2.4622	6.0600e-003	0.5668	3.8600e-003	0.5707	0.1504	3.5600e-003	0.1539		602.8572	602.8572	0.0185		603.3199
Total	**0.3343**	**0.2027**	**2.4622**	**6.0600e-003**	**0.5668**	**3.8600e-003**	**0.5707**	**0.1504**	**3.5600e-003**	**0.1539**		**602.8572**	**602.8572**	**0.0185**		**603.3199**

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	lb/day										lb/day					
Off-Road	2.1482	22.2654	22.1255	0.0335		1.2498	1.2498		1.1499	1.1499	0.0000	3,319.3211	3,319.3211	1.0502		3,345.5760
Paving	0.6028					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.7510**	**22.2654**	**22.1255**	**0.0335**		**1.2498**	**1.2498**		**1.1499**	**1.1499**	**0.0000**	**3,319.3211**	**3,319.3211**	**1.0502**		**3,345.5760**

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	lb/day										lb/day					
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
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
Worker	0.3343	0.2027	2.4622	6.0600e-003	0.5668	3.8600e-003	0.5707	0.1504	3.5600e-003	0.1539		602.8572	602.8572	0.0185		603.3199
Total	**0.3343**	**0.2027**	**2.4622**	**6.0600e-003**	**0.5668**	**3.8600e-003**	**0.5707**	**0.1504**	**3.5600e-003**	**0.1539**		**602.8572**	**602.8572**	**0.0185**		**603.3199**

3.4 Building Construction - 2019

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	lb/day										lb/day					
Off-Road	2.3612	21.0788	17.1638	0.0269		1.2899	1.2899		1.2127	1.2127		2,591.5802	2,591.5802	0.6313		2,607.3635
Total	**2.3612**	**21.0788**	**17.1638**	**0.0269**		**1.2899**	**1.2899**		**1.2127**	**1.2127**		**2,591.5802**	**2,591.5802**	**0.6313**		**2,607.3635**

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	lb/day										lb/day					
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
Vendor	0.3114	8.0635	1.7112	0.0182	0.4268	0.0624	0.4892	0.1229	0.0597	0.1826		1,904.7787	1,904.7787	0.1198		1,907.7747
Worker	1.0466	0.6346	7.7078	0.0190	1.7744	0.0121	1.7865	0.4707	0.0111	0.4818		1,887.2052	1,887.2052	0.0579		1,888.6536
Total	**1.3580**	**8.6981**	**9.4190**	**0.0372**	**2.2012**	**0.0745**	**2.2757**	**0.5935**	**0.0708**	**0.6644**		**3,791.9839**	**3,791.9839**	**0.1778**		**3,796.4282**

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	lb/day										lb/day					
Off-Road	2.3612	21.0788	17.1638	0.0269		1.2899	1.2899		1.2127	1.2127	0.0000	2,591.5802	2,591.5802	0.6313		2,607.3635
Total	**2.3612**	**21.0788**	**17.1638**	**0.0269**		**1.2899**	**1.2899**		**1.2127**	**1.2127**	**0.0000**	**2,591.5802**	**2,591.5802**	**0.6313**		**2,607.3635**

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	lb/day										lb/day					
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
Vendor	0.3114	8.0635	1.7112	0.0182	0.4268	0.0624	0.4892	0.1229	0.0597	0.1826		1,904.7787	1,904.7787	0.1198		1,907.7747
Worker	1.0466	0.6346	7.7078	0.0190	1.7744	0.0121	1.7865	0.4707	0.0111	0.4818		1,887.2052	1,887.2052	0.0579		1,888.6536
Total	**1.3580**	**8.6981**	**9.4190**	**0.0372**	**2.2012**	**0.0745**	**2.2757**	**0.5935**	**0.0708**	**0.6644**		**3,791.9839**	**3,791.9839**	**0.1778**		**3,796.4282**

3.4 Building Construction - 2020

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	lb/day										lb/day					
Off-Road	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503		2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**		**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

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	lb/day										lb/day					
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
Vendor	0.2511	7.3428	1.4755	0.0181	0.4268	0.0408	0.4676	0.1229	0.0390	0.1619		1,889.4487	1,889.4487	0.1101		1,892.2004
Worker	0.9550	0.5599	6.8840	0.0184	1.7744	0.0117	1.7861	0.4707	0.0108	0.4814		1,829.5525	1,829.5525	0.0506		1,830.8182
Total	**1.2061**	**7.9026**	**8.3595**	**0.0364**	**2.2012**	**0.0525**	**2.2537**	**0.5935**	**0.0498**	**0.6433**		**3,719.0012**	**3,719.0012**	**0.1607**		**3,723.0187**

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	lb/day										lb/day					
Off-Road	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503	0.0000	2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**	**0.0000**	**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

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	lb/day										lb/day					
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
Vendor	0.2511	7.3428	1.4755	0.0181	0.4268	0.0408	0.4676	0.1229	0.0390	0.1619		1,889.4487	1,889.4487	0.1101		1,892.2004
Worker	0.9550	0.5599	6.8840	0.0184	1.7744	0.0117	1.7861	0.4707	0.0108	0.4814		1,829.5525	1,829.5525	0.0506		1,830.8182
Total	**1.2061**	**7.9026**	**8.3595**	**0.0364**	**2.2012**	**0.0525**	**2.2537**	**0.5935**	**0.0498**	**0.6433**		**3,719.0012**	**3,719.0012**	**0.1607**		**3,723.0187**

3.4 Building Construction - 2021

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	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013		2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**		**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

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	lb/day										lb/day					
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
Vendor	0.2049	6.6648	1.2889	0.0179	0.4268	0.0189	0.4457	0.1229	0.0181	0.1410		1,871.9222	1,871.9222	0.1037		1,874.5150
Worker	0.8817	0.4985	6.2838	0.0177	1.7744	0.0113	1.7857	0.4707	0.0104	0.4810		1,760.5102	1,760.5102	0.0452		1,761.6393
Total	**1.0865**	**7.1633**	**7.5726**	**0.0356**	**2.2012**	**0.0302**	**2.2314**	**0.5935**	**0.0285**	**0.6220**		**3,632.4323**	**3,632.4323**	**0.1489**		**3,636.1544**

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	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013	0.0000	2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**	**0.0000**	**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

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	lb/day										lb/day					
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
Vendor	0.2049	6.6648	1.2889	0.0179	0.4268	0.0189	0.4457	0.1229	0.0181	0.1410		1,871.9222	1,871.9222	0.1037		1,874.5150
Worker	0.8817	0.4985	6.2838	0.0177	1.7744	0.0113	1.7857	0.4707	0.0104	0.4810		1,760.5102	1,760.5102	0.0452		1,761.6393
Total	**1.0865**	**7.1633**	**7.5726**	**0.0356**	**2.2012**	**0.0302**	**2.2314**	**0.5935**	**0.0285**	**0.6220**		**3,632.4323**	**3,632.4323**	**0.1489**		**3,636.1544**

3.5 Architectural Coating - 2021

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	lb/day										lb/day					
Archit. Coating	53.2660					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941		281.4481	281.4481	0.0193		281.9309
Total	**53.4849**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**		**281.4481**	**281.4481**	**0.0193**		**281.9309**

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	lb/day										lb/day					
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
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
Worker	0.1714	0.0969	1.2218	3.4400e-003	0.3450	2.1900e-003	0.3472	0.0915	2.0200e-003	0.0935		342.3214	342.3214	8.7800e-003		342.5410
Total	**0.1714**	**0.0969**	**1.2218**	**3.4400e-003**	**0.3450**	**2.1900e-003**	**0.3472**	**0.0915**	**2.0200e-003**	**0.0935**		**342.3214**	**342.3214**	**8.7800e-003**		**342.5410**

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	lb/day										lb/day					
Archit. Coating	53.2660					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941	0.0000	281.4481	281.4481	0.0193		281.9309
Total	**53.4849**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**	**0.0000**	**281.4481**	**281.4481**	**0.0193**		**281.9309**

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	lb/day										lb/day					
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
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
Worker	0.1714	0.0969	1.2218	3.4400e-003	0.3450	2.1900e-003	0.3472	0.0915	2.0200e-003	0.0935		342.3214	342.3214	8.7800e-003		342.5410
Total	**0.1714**	**0.0969**	**1.2218**	**3.4400e-003**	**0.3450**	**2.1900e-003**	**0.3472**	**0.0915**	**2.0200e-003**	**0.0935**		**342.3214**	**342.3214**	**8.7800e-003**		**342.5410**

3.5 Architectural Coating - 2022

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	lb/day										lb/day					
Archit. Coating	53.2660					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**53.4705**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

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	lb/day										lb/day					
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
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
Worker	0.1590	0.0868	1.1170	3.3100e-003	0.3450	2.1300e-003	0.3472	0.0915	1.9600e-003	0.0935		330.1383	330.1383	7.8600e-003		330.3348
Total	**0.1590**	**0.0868**	**1.1170**	**3.3100e-003**	**0.3450**	**2.1300e-003**	**0.3472**	**0.0915**	**1.9600e-003**	**0.0935**		**330.1383**	**330.1383**	**7.8600e-003**		**330.3348**

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	lb/day										lb/day					
Archit. Coating	53.2660					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**53.4705**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

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	lb/day										lb/day					
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
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
Worker	0.1590	0.0868	1.1170	3.3100e-003	0.3450	2.1300e-003	0.3472	0.0915	1.9600e-003	0.0935		330.1383	330.1383	7.8600e-003		330.3348
Total	**0.1590**	**0.0868**	**1.1170**	**3.3100e-003**	**0.3450**	**2.1300e-003**	**0.3472**	**0.0915**	**1.9600e-003**	**0.0935**		**330.1383**	**330.1383**	**7.8600e-003**		**330.3348**

Tracy Village Construction - Site Grading, Community Facilities, and Neighborhoods 1 + 2

San Joaquin County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	29.50	Acre	29.50	1,285,020.00	0
Other Non-Asphalt Surfaces	18.94	Acre	18.94	825,026.40	0
Parking Lot	45.00	Space	0.41	18,000.00	0
City Park	5.80	Acre	5.80	252,648.00	0
Recreational Swimming Pool	3.80	1000sqft	0.09	3,800.00	0
User Defined Recreational	12.00	User Defined Unit	0.28	12,000.00	0
Single Family Housing	200.00	Dwelling Unit	80.10	360,000.00	634

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	51
Climate Zone	2			**Operational Year**	2019
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Tracy Village Construction - Site Grading, Community Facilities, and Neighborhoods 1 + 2 of 6

Land Use - Based on project description and site plans. Site grading for the entire site.
200 of 600 homes

Construction Phase - Expected construction schedule

Off-road Equipment - Equipment increased to account for underground utilities

Off-road Equipment - Expected grading equipment

Trips and VMT - Expected construction worker trips and vendor trips per day (3 times the default values for 200 homes)

Grading - Grading of the total site (135.12 acres)

Architectural Coating - SJVAPCD Rule 4601

Woodstoves - Construction only run

Construction Off-road Equipment Mitigation - SJVAPCD Regulation VIII

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	65.00
tblArchitecturalCoating	EF_Nonresidential_Interior	150.00	65.00
tblArchitecturalCoating	EF_Residential_Exterior	150.00	65.00
tblArchitecturalCoating	EF_Residential_Interior	150.00	65.00
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	0
tblConstructionPhase	NumDays	220.00	73.00
tblConstructionPhase	NumDays	3,100.00	740.00
tblConstructionPhase	NumDays	310.00	210.00
tblConstructionPhase	NumDays	220.00	130.00
tblConstructionPhase	PhaseEndDate	3/3/2022	1/11/2022
tblConstructionPhase	PhaseEndDate	5/24/2021	12/2/2021
tblConstructionPhase	PhaseEndDate	11/22/2021	3/5/2019
tblConstructionPhase	PhaseStartDate	11/23/2021	10/1/2021
tblConstructionPhase	PhaseStartDate	9/5/2018	2/1/2019
tblConstructionPhase	PhaseStartDate	5/25/2021	9/5/2018
tblFireplaces	NumberGas	110.00	330.00
tblFireplaces	NumberNoFireplace	90.00	270.00
tblGrading	AcresOfGrading	525.00	135.12
tblLandUse	BuildingSpaceSquareFeet	0.00	12,000.00
tblLandUse	LandUseSquareFeet	0.00	12,000.00
tblLandUse	LotAcreage	0.00	0.28
tblLandUse	LotAcreage	64.94	80.10
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	PhaseName		Paving/Underground Utilities Neighborhoods 1+2
tblOffRoadEquipment	PhaseName		Paving/Underground Utilities Neighborhoods 1+2
tblProjectCharacteristics	OperationalYear	2018	2019
tblTripsAndVMT	VendorTripNumber	414.00	63.00
tblTripsAndVMT	WorkerTripNumber	23.00	25.00
tblTripsAndVMT	WorkerTripNumber	23.00	69.00
tblTripsAndVMT	WorkerTripNumber	1,079.00	216.00
tblTripsAndVMT	WorkerTripNumber	216.00	42.00
tblWoodstoves	NumberCatalytic	10.00	80.10
tblWoodstoves	NumberNoncatalytic	10.00	80.10

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

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	lb/day										lb/day					
2017	7.4446	84.4681	46.8539	0.0758	6.9098	3.9574	10.8673	3.4384	3.6409	7.0792	0.0000	7,744.4773	7,744.4773	2.3174	0.0000	7,802.4112
2018	6.6533	74.8135	42.7081	0.0757	6.9098	3.4321	10.3419	3.4384	3.1575	6.5959	0.0000	7,618.4730	7,618.4730	2.3161	0.0000	7,676.3745
2019	6.7838	52.5554	50.3582	0.1005	2.7680	2.6191	5.3872	0.7439	2.4380	3.1819	0.0000	9,984.0591	9,984.0591	1.8850	0.0000	10,031.1831
2020	3.3136	27.3049	24.6896	0.0608	2.2012	1.1703	3.3716	0.5935	1.1009	1.6944	0.0000	6,020.4396	6,020.4396	0.7920	0.0000	6,040.2390
2021	56.6281	26.4123	26.5542	0.0661	2.5463	1.0858	3.6320	0.6851	1.0265	1.7116	0.0000	6,529.4465	6,529.4465	0.8006	0.0000	6,549.4610
2022	53.6255	1.5139	2.7979	5.9300e-003	0.3450	0.0838	0.4289	0.0915	0.0837	0.1752	0.0000	576.5779	576.5779	0.0254	0.0000	577.2127
Maximum	**56.6281**	**84.4681**	**50.3582**	**0.1005**	**6.9098**	**3.9574**	**10.8673**	**3.4384**	**3.6409**	**7.0792**	**0.0000**	**9,984.0591**	**9,984.0591**	**2.3174**	**0.0000**	**10,031.1831**

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	lb/day										lb/day					
2017	7.4446	84.4681	46.8539	0.0758	3.2224	3.9574	7.1798	1.5772	3.6409	5.2181	0.0000	7,744.4773	7,744.4773	2.3174	0.0000	7,802.4112
2018	6.6533	74.8135	42.7081	0.0757	3.2224	3.4321	6.6544	1.5772	3.1575	4.7347	0.0000	7,618.4730	7,618.4730	2.3161	0.0000	7,676.3745
2019	6.7838	52.5554	50.3582	0.1005	2.7680	2.6191	5.3872	0.7439	2.4380	3.1819	0.0000	9,984.0591	9,984.0591	1.8850	0.0000	10,031.1831
2020	3.3136	27.3049	24.6896	0.0608	2.2012	1.1703	3.3716	0.5935	1.1009	1.6944	0.0000	6,020.4396	6,020.4396	0.7920	0.0000	6,040.2390
2021	56.6281	26.4123	26.5542	0.0661	2.5463	1.0858	3.6320	0.6851	1.0265	1.7116	0.0000	6,529.4465	6,529.4465	0.8006	0.0000	6,549.4610
2022	53.6255	1.5139	2.7979	5.9300e-003	0.3450	0.0838	0.4289	0.0915	0.0837	0.1752	0.0000	576.5779	576.5779	0.0254	0.0000	577.2127
Maximum	**56.6281**	**84.4681**	**50.3582**	**0.1005**	**3.2224**	**3.9574**	**7.1798**	**1.5772**	**3.6409**	**5.2181**	**0.0000**	**9,984.0591**	**9,984.0591**	**2.3174**	**0.0000**	**10,031.1831**

	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**	**34.02**	**0.00**	**21.67**	**41.40**	**0.00**	**18.21**	**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 + Grading	Grading	11/15/2017	9/4/2018	5	210	
2	Paving/Underground Utilities Neighborhoods 1+2	Paving	9/5/2018	3/5/2019	5	130	2 out of 6 Neighborhoods
3	Building Construction	Building Construction	2/1/2019	12/2/2021	5	740	2 out of 6 Neighborhoods + Community
4	Architectural Coating	Architectural Coating	10/1/2021	1/11/2022	5	73	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 48.85

Residential Indoor: 729,000; Residential Outdoor: 243,000; Non-Residential Indoor: 18,000; Non-Residential Outdoor: 6,000; Striped

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation + Grading	Excavators	2	8.00	158	0.38
Site Preparation + Grading	Graders	1	8.00	187	0.41
Site Preparation + Grading	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation + Grading	Scrapers	2	8.00	367	0.48
Site Preparation + Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving/Underground Utilities Neighborhoods 1+2	Excavators	1	7.00	158	0.38
Paving/Underground Utilities Neighborhoods 1+2	Pavers	2	8.00	130	0.42
Paving/Underground Utilities Neighborhoods 1+2	Paving Equipment	2	8.00	132	0.36
Paving/Underground Utilities Neighborhoods 1+2	Rollers	2	8.00	80	0.38
Paving/Underground Utilities Neighborhoods 1+2	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Architectural Coating	Air Compressors	1	6.00	78	0.48

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 + Grading	9	25.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving/Underground Utilities	9	69.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	216.00	63.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	42.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation + Grading - 2017

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	lb/day										lb/day					
Fugitive Dust					6.7044	0.0000	6.7044	3.3839	0.0000	3.3839			0.0000			0.0000
Off-Road	7.2963	84.3501	45.8031	0.0737		3.9559	3.9559		3.6395	3.6395		7,537.1147	7,537.1147	2.3094		7,594.8486
Total	**7.2963**	**84.3501**	**45.8031**	**0.0737**	**6.7044**	**3.9559**	**10.6604**	**3.3839**	**3.6395**	**7.0234**		**7,537.1147**	**7,537.1147**	**2.3094**		**7,594.8486**

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	lb/day										lb/day					
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
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
Worker	0.1482	0.1180	1.0508	2.0900e-003	0.2054	1.5200e-003	0.2069	0.0545	1.4000e-003	0.0559		207.3626	207.3626	8.0000e-003		207.5625
Total	**0.1482**	**0.1180**	**1.0508**	**2.0900e-003**	**0.2054**	**1.5200e-003**	**0.2069**	**0.0545**	**1.4000e-003**	**0.0559**		**207.3626**	**207.3626**	**8.0000e-003**		**207.5625**

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	lb/day										lb/day					
Fugitive Dust					3.0170	0.0000	3.0170	1.5228	0.0000	1.5228			0.0000			0.0000
Off-Road	7.2963	84.3501	45.8031	0.0737		3.9559	3.9559		3.6395	3.6395	0.0000	7,537.1147	7,537.1147	2.3094		7,594.8486
Total	**7.2963**	**84.3501**	**45.8031**	**0.0737**	**3.0170**	**3.9559**	**6.9729**	**1.5228**	**3.6395**	**5.1622**	**0.0000**	**7,537.1147**	**7,537.1147**	**2.3094**		**7,594.8486**

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	lb/day										lb/day					
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
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
Worker	0.1482	0.1180	1.0508	2.0900e-003	0.2054	1.5200e-003	0.2069	0.0545	1.4000e-003	0.0559		207.3626	207.3626	8.0000e-003		207.5625
Total	**0.1482**	**0.1180**	**1.0508**	**2.0900e-003**	**0.2054**	**1.5200e-003**	**0.2069**	**0.0545**	**1.4000e-003**	**0.0559**		**207.3626**	**207.3626**	**8.0000e-003**		**207.5625**

3.2 Site Preparation + Grading - 2018

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	lb/day										lb/day					
Fugitive Dust					6.7044	0.0000	6.7044	3.3839	0.0000	3.3839			0.0000			0.0000
Off-Road	6.5223	74.7115	41.8026	0.0737		3.4306	3.4306		3.1562	3.1562		7,417.3777	7,417.3777	2.3091		7,475.1060
Total	**6.5223**	**74.7115**	**41.8026**	**0.0737**	**6.7044**	**3.4306**	**10.1351**	**3.3839**	**3.1562**	**6.5401**		**7,417.3777**	**7,417.3777**	**2.3091**		**7,475.1060**

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	lb/day										lb/day					
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
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
Worker	0.1310	0.1020	0.9055	2.0200e-003	0.2054	1.4500e-003	0.2068	0.0545	1.3300e-003	0.0558		201.0953	201.0953	6.9300e-003		201.2685
Total	**0.1310**	**0.1020**	**0.9055**	**2.0200e-003**	**0.2054**	**1.4500e-003**	**0.2068**	**0.0545**	**1.3300e-003**	**0.0558**		**201.0953**	**201.0953**	**6.9300e-003**		**201.2685**

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	lb/day										lb/day					
Fugitive Dust					3.0170	0.0000	3.0170	1.5228	0.0000	1.5228			0.0000			0.0000
Off-Road	6.5223	74.7115	41.8026	0.0737		3.4306	3.4306		3.1562	3.1562	0.0000	7,417.3777	7,417.3777	2.3091		7,475.1060
Total	**6.5223**	**74.7115**	**41.8026**	**0.0737**	**3.0170**	**3.4306**	**6.4476**	**1.5228**	**3.1562**	**4.6789**	**0.0000**	**7,417.3777**	**7,417.3777**	**2.3091**		**7,475.1060**

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	lb/day										lb/day					
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
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
Worker	0.1310	0.1020	0.9055	2.0200e-003	0.2054	1.4500e-003	0.2068	0.0545	1.3300e-003	0.0558		201.0953	201.0953	6.9300e-003		201.2685
Total	**0.1310**	**0.1020**	**0.9055**	**2.0200e-003**	**0.2054**	**1.4500e-003**	**0.2068**	**0.0545**	**1.3300e-003**	**0.0558**		**201.0953**	**201.0953**	**6.9300e-003**		**201.2685**

3.3 Paving/Underground Utilities Neighborhoods 1+2 - 2018

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	lb/day										lb/day					
Off-Road	2.4289	25.4893	22.3360	0.0335		1.4601	1.4601		1.3433	1.3433		3,374.2776	3,374.2776	1.0505		3,400.5390
Paving	0.6028					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**3.0317**	**25.4893**	**22.3360**	**0.0335**		**1.4601**	**1.4601**		**1.3433**	**1.3433**		**3,374.2776**	**3,374.2776**	**1.0505**		**3,400.5390**

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	lb/day										lb/day					
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
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
Worker	0.3616	0.2816	2.4992	5.5800e-003	0.5668	3.9900e-003	0.5708	0.1504	3.6800e-003	0.1540		555.0230	555.0230	0.0191		555.5012
Total	**0.3616**	**0.2816**	**2.4992**	**5.5800e-003**	**0.5668**	**3.9900e-003**	**0.5708**	**0.1504**	**3.6800e-003**	**0.1540**		**555.0230**	**555.0230**	**0.0191**		**555.5012**

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	lb/day										lb/day					
Off-Road	2.4289	25.4893	22.3360	0.0335		1.4601	1.4601		1.3433	1.3433	0.0000	3,374.2776	3,374.2776	1.0505		3,400.5390
Paving	0.6028					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**3.0317**	**25.4893**	**22.3360**	**0.0335**		**1.4601**	**1.4601**		**1.3433**	**1.3433**	**0.0000**	**3,374.2776**	**3,374.2776**	**1.0505**		**3,400.5390**

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	lb/day										lb/day					
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
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
Worker	0.3616	0.2816	2.4992	5.5800e-003	0.5668	3.9900e-003	0.5708	0.1504	3.6800e-003	0.1540		555.0230	555.0230	0.0191		555.5012
Total	**0.3616**	**0.2816**	**2.4992**	**5.5800e-003**	**0.5668**	**3.9900e-003**	**0.5708**	**0.1504**	**3.6800e-003**	**0.1540**		**555.0230**	**555.0230**	**0.0191**		**555.5012**

3.3 Paving/Underground Utilities Neighborhoods 1+2 - 2019

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	lb/day										lb/day					
Off-Road	2.1482	22.2654	22.1255	0.0335		1.2498	1.2498		1.1499	1.1499		3,319.3211	3,319.3211	1.0502		3,345.5760
Paving	0.6028					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.7510**	**22.2654**	**22.1255**	**0.0335**		**1.2498**	**1.2498**		**1.1499**	**1.1499**		**3,319.3211**	**3,319.3211**	**1.0502**		**3,345.5760**

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	lb/day										lb/day					
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
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
Worker	0.3260	0.2467	2.1987	5.4200e-003	0.5668	3.8600e-003	0.5707	0.1504	3.5600e-003	0.1539		538.9120	538.9120	0.0168		539.3323
Total	**0.3260**	**0.2467**	**2.1987**	**5.4200e-003**	**0.5668**	**3.8600e-003**	**0.5707**	**0.1504**	**3.5600e-003**	**0.1539**		**538.9120**	**538.9120**	**0.0168**		**539.3323**

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	lb/day										lb/day					
Off-Road	2.1482	22.2654	22.1255	0.0335		1.2498	1.2498		1.1499	1.1499	0.0000	3,319.3211	3,319.3211	1.0502		3,345.5760
Paving	0.6028					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.7510**	**22.2654**	**22.1255**	**0.0335**		**1.2498**	**1.2498**		**1.1499**	**1.1499**	**0.0000**	**3,319.3211**	**3,319.3211**	**1.0502**		**3,345.5760**

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	lb/day										lb/day					
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
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
Worker	0.3260	0.2467	2.1987	5.4200e-003	0.5668	3.8600e-003	0.5707	0.1504	3.5600e-003	0.1539		538.9120	538.9120	0.0168		539.3323
Total	**0.3260**	**0.2467**	**2.1987**	**5.4200e-003**	**0.5668**	**3.8600e-003**	**0.5707**	**0.1504**	**3.5600e-003**	**0.1539**		**538.9120**	**538.9120**	**0.0168**		**539.3323**

3.4 Building Construction - 2019

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	lb/day										lb/day					
Off-Road	2.3612	21.0788	17.1638	0.0269		1.2899	1.2899		1.2127	1.2127		2,591.5802	2,591.5802	0.6313		2,607.3635
Total	**2.3612**	**21.0788**	**17.1638**	**0.0269**		**1.2899**	**1.2899**		**1.2127**	**1.2127**		**2,591.5802**	**2,591.5802**	**0.6313**		**2,607.3635**

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	lb/day										lb/day					
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
Vendor	0.3252	8.1924	1.9875	0.0177	0.4268	0.0635	0.4903	0.1229	0.0607	0.1836		1,847.2172	1,847.2172	0.1340		1,850.5665
Worker	1.0204	0.7721	6.8828	0.0170	1.7744	0.0121	1.7865	0.4707	0.0111	0.4818		1,687.0287	1,687.0287	0.0526		1,688.3447
Total	**1.3457**	**8.9645**	**8.8702**	**0.0346**	**2.2012**	**0.0756**	**2.2768**	**0.5935**	**0.0719**	**0.6654**		**3,534.2459**	**3,534.2459**	**0.1866**		**3,538.9112**

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	lb/day										lb/day					
Off-Road	2.3612	21.0788	17.1638	0.0269		1.2899	1.2899		1.2127	1.2127	0.0000	2,591.5802	2,591.5802	0.6313		2,607.3635
Total	**2.3612**	**21.0788**	**17.1638**	**0.0269**		**1.2899**	**1.2899**		**1.2127**	**1.2127**	**0.0000**	**2,591.5802**	**2,591.5802**	**0.6313**		**2,607.3635**

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	lb/day										lb/day					
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
Vendor	0.3252	8.1924	1.9875	0.0177	0.4268	0.0635	0.4903	0.1229	0.0607	0.1836		1,847.2172	1,847.2172	0.1340		1,850.5665
Worker	1.0204	0.7721	6.8828	0.0170	1.7744	0.0121	1.7865	0.4707	0.0111	0.4818		1,687.0287	1,687.0287	0.0526		1,688.3447
Total	**1.3457**	**8.9645**	**8.8702**	**0.0346**	**2.2012**	**0.0756**	**2.2768**	**0.5935**	**0.0719**	**0.6654**		**3,534.2459**	**3,534.2459**	**0.1866**		**3,538.9112**

3.4 Building Construction - 2020

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	lb/day										lb/day					
Off-Road	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503		2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**		**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

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	lb/day										lb/day					
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
Vendor	0.2635	7.4382	1.7258	0.0175	0.4268	0.0416	0.4684	0.1229	0.0398	0.1627		1,831.9931	1,831.9931	0.1234		1,835.0779
Worker	0.9303	0.6807	6.1153	0.0164	1.7744	0.0117	1.7861	0.4707	0.0108	0.4814		1,635.3834	1,635.3834	0.0457		1,636.5266
Total	**1.1938**	**8.1189**	**7.8411**	**0.0339**	**2.2012**	**0.0533**	**2.2545**	**0.5935**	**0.0506**	**0.6441**		**3,467.3765**	**3,467.3765**	**0.1691**		**3,471.6045**

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	lb/day										lb/day					
Off-Road	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503	0.0000	2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**	**0.0000**	**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

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	lb/day										lb/day					
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
Vendor	0.2635	7.4382	1.7258	0.0175	0.4268	0.0416	0.4684	0.1229	0.0398	0.1627		1,831.9931	1,831.9931	0.1234		1,835.0779
Worker	0.9303	0.6807	6.1153	0.0164	1.7744	0.0117	1.7861	0.4707	0.0108	0.4814		1,635.3834	1,635.3834	0.0457		1,636.5266
Total	**1.1938**	**8.1189**	**7.8411**	**0.0339**	**2.2012**	**0.0533**	**2.2545**	**0.5935**	**0.0506**	**0.6441**		**3,467.3765**	**3,467.3765**	**0.1691**		**3,471.6045**

3.4 Building Construction - 2021

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	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013		2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**		**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

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	lb/day										lb/day					
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
Vendor	0.2165	6.7298	1.5207	0.0173	0.4268	0.0196	0.4464	0.1229	0.0188	0.1416		1,814.8928	1,814.8928	0.1166		1,817.8084
Worker	0.8588	0.6058	5.5597	0.0158	1.7744	0.0113	1.7857	0.4707	0.0104	0.4810		1,573.7373	1,573.7373	0.0407		1,574.7551
Total	**1.0753**	**7.3355**	**7.0804**	**0.0331**	**2.2012**	**0.0309**	**2.2321**	**0.5935**	**0.0291**	**0.6227**		**3,388.6301**	**3,388.6301**	**0.1573**		**3,392.5635**

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	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013	0.0000	2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**	**0.0000**	**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

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	lb/day										lb/day					
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
Vendor	0.2165	6.7298	1.5207	0.0173	0.4268	0.0196	0.4464	0.1229	0.0188	0.1416		1,814.8928	1,814.8928	0.1166		1,817.8084
Worker	0.8588	0.6058	5.5597	0.0158	1.7744	0.0113	1.7857	0.4707	0.0104	0.4810		1,573.7373	1,573.7373	0.0407		1,574.7551
Total	**1.0753**	**7.3355**	**7.0804**	**0.0331**	**2.2012**	**0.0309**	**2.2321**	**0.5935**	**0.0291**	**0.6227**		**3,388.6301**	**3,388.6301**	**0.1573**		**3,392.5635**

3.5 Architectural Coating - 2021

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	lb/day										lb/day					
Archit. Coating	53.2660					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941		281.4481	281.4481	0.0193		281.9309
Total	**53.4849**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**		**281.4481**	**281.4481**	**0.0193**		**281.9309**

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	lb/day										lb/day					
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
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
Worker	0.1670	0.1178	1.0811	3.0700e-003	0.3450	2.1900e-003	0.3472	0.0915	2.0200e-003	0.0935		306.0045	306.0045	7.9200e-003		306.2024
Total	**0.1670**	**0.1178**	**1.0811**	**3.0700e-003**	**0.3450**	**2.1900e-003**	**0.3472**	**0.0915**	**2.0200e-003**	**0.0935**		**306.0045**	**306.0045**	**7.9200e-003**		**306.2024**

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	lb/day										lb/day					
Archit. Coating	53.2660					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941	0.0000	281.4481	281.4481	0.0193		281.9309
Total	**53.4849**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**	**0.0000**	**281.4481**	**281.4481**	**0.0193**		**281.9309**

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	lb/day										lb/day					
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
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
Worker	0.1670	0.1178	1.0811	3.0700e-003	0.3450	2.1900e-003	0.3472	0.0915	2.0200e-003	0.0935		306.0045	306.0045	7.9200e-003		306.2024
Total	**0.1670**	**0.1178**	**1.0811**	**3.0700e-003**	**0.3450**	**2.1900e-003**	**0.3472**	**0.0915**	**2.0200e-003**	**0.0935**		**306.0045**	**306.0045**	**7.9200e-003**		**306.2024**

3.5 Architectural Coating - 2022

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	lb/day										lb/day					
Archit. Coating	53.2660					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**53.4705**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

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	lb/day										lb/day					
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
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
Worker	0.1550	0.1054	0.9843	2.9600e-003	0.3450	2.1300e-003	0.3472	0.0915	1.9600e-003	0.0935		295.1298	295.1298	7.0700e-003		295.3066
Total	**0.1550**	**0.1054**	**0.9843**	**2.9600e-003**	**0.3450**	**2.1300e-003**	**0.3472**	**0.0915**	**1.9600e-003**	**0.0935**		**295.1298**	**295.1298**	**7.0700e-003**		**295.3066**

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	lb/day										lb/day					
Archit. Coating	53.2660					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**53.4705**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

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	lb/day										lb/day					
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
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
Worker	0.1550	0.1054	0.9843	2.9600e-003	0.3450	2.1300e-003	0.3472	0.0915	1.9600e-003	0.0935		295.1298	295.1298	7.0700e-003		295.3066
Total	**0.1550**	**0.1054**	**0.9843**	**2.9600e-003**	**0.3450**	**2.1300e-003**	**0.3472**	**0.0915**	**1.9600e-003**	**0.0935**		**295.1298**	**295.1298**	**7.0700e-003**		**295.3066**

Tracy Village Construction - Neighborhoods 3 and 4

San Joaquin County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	200.00	Dwelling Unit	26.70	360,000.00	634

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	51
Climate Zone	2			**Operational Year**	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Tracy Village Construction - Neighborhoods 3 and 4 (2 neighborhoods out of 6)

Land Use - Neighborhoods 3 & 4 (2 neighborhoods out of 6)

Construction Phase - Neighborhoods 3 and 4

Off-road Equipment - Equipment increased to account for underground utilities

Architectural Coating - SJVAPCD Rule 4601

Vehicle Trips - Construction only

Energy Use -

Construction Off-road Equipment Mitigation - SJVAPCD Regulation VIII

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Residential_Exterior	150.00	65.00
tblArchitecturalCoating	EF_Residential_Interior	150.00	65.00
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	0
tblConstructionPhase	NumDays	35.00	73.00
tblConstructionPhase	NumDays	440.00	709.00
tblConstructionPhase	NumDays	35.00	130.00
tblConstructionPhase	PhaseEndDate	12/31/2019	4/11/2025
tblConstructionPhase	PhaseEndDate	12/31/2019	7/9/2025
tblConstructionPhase	PhaseEndDate	12/31/2019	6/30/2020
tblConstructionPhase	PhaseStartDate	1/1/2020	1/1/2025
tblConstructionPhase	PhaseStartDate	1/1/2020	10/21/2022
tblLandUse	LotAcreage	64.94	26.70
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblProjectCharacteristics	OperationalYear	2018	2022

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					
2020	0.1373	1.3487	1.5033	2.3400e-003	0.0119	0.0739	0.0858	3.1700e-003	0.0680	0.0711	0.0000	205.7090	205.7090	0.0634	0.0000	207.2941
2022	0.0514	0.4567	0.4713	9.7000e-004	0.0182	0.0209	0.0390	4.9100e-003	0.0196	0.0245	0.0000	85.2432	85.2432	0.0152	0.0000	85.6242
2023	0.2402	2.1041	2.3589	4.9000e-003	0.0926	0.0917	0.1842	0.0250	0.0862	0.1113	0.0000	430.6556	430.6556	0.0758	0.0000	432.5514
2024	0.2266	1.9931	2.3484	4.9000e-003	0.0933	0.0810	0.1743	0.0252	0.0762	0.1014	0.0000	430.9428	430.9428	0.0758	0.0000	432.8384
2025	1.5814	1.0092	1.2802	2.6700e-003	0.0525	0.0381	0.0906	0.0142	0.0360	0.0501	0.0000	234.6026	234.6026	0.0396	0.0000	235.5935
Maximum	**1.5814**	**2.1041**	**2.3589**	**4.9000e-003**	**0.0933**	**0.0917**	**0.1842**	**0.0252**	**0.0862**	**0.1113**	**0.0000**	**430.9428**	**430.9428**	**0.0758**	**0.0000**	**432.8384**

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					
2020	0.1373	1.3487	1.5033	2.3400e-003	0.0119	0.0739	0.0858	3.1700e-003	0.0680	0.0711	0.0000	205.7087	205.7087	0.0634	0.0000	207.2939
2022	0.0514	0.4567	0.4713	9.7000e-004	0.0182	0.0209	0.0390	4.9100e-003	0.0196	0.0245	0.0000	85.2431	85.2431	0.0152	0.0000	85.6241
2023	0.2402	2.1041	2.3589	4.9000e-003	0.0926	0.0917	0.1842	0.0250	0.0862	0.1113	0.0000	430.6552	430.6552	0.0758	0.0000	432.5510
2024	0.2266	1.9931	2.3484	4.9000e-003	0.0933	0.0810	0.1743	0.0252	0.0762	0.1014	0.0000	430.9424	430.9424	0.0758	0.0000	432.8380
2025	1.5814	1.0092	1.2802	2.6700e-003	0.0525	0.0381	0.0906	0.0142	0.0360	0.0501	0.0000	234.6024	234.6024	0.0396	0.0000	235.5933
Maximum	**1.5814**	**2.1041**	**2.3589**	**4.9000e-003**	**0.0933**	**0.0917**	**0.1842**	**0.0252**	**0.0862**	**0.1113**	**0.0000**	**430.9424**	**430.9424**	**0.0758**	**0.0000**	**432.8380**

	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	1-1-2020	3-31-2020	0.7434	0.7434
2	4-1-2020	6-30-2020	0.7431	0.7431
12	10-1-2022	12-31-2022	0.5132	0.5132
13	1-1-2023	3-31-2023	0.5806	0.5806
14	4-1-2023	6-30-2023	0.5859	0.5859
15	7-1-2023	9-30-2023	0.5923	0.5923
16	10-1-2023	12-31-2023	0.5935	0.5935
17	1-1-2024	3-31-2024	0.5516	0.5516
18	4-1-2024	6-30-2024	0.5505	0.5505
19	7-1-2024	9-30-2024	0.5566	0.5566
20	10-1-2024	12-31-2024	0.5576	0.5576
21	1-1-2025	3-31-2025	1.8433	1.8433
22	4-1-2025	6-30-2025	0.6771	0.6771
23	7-1-2025	9-30-2025	0.0508	0.0508
		Highest	1.8433	1.8433

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Architectural Coating	Architectural Coating	1/1/2025	4/11/2025	5	73	
2	Building Construction	Building Construction	10/21/2022	7/9/2025	5	709	
3	Paving/Underground Utilities	Paving	1/1/2020	6/30/2020	5	130	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 729,000; Residential Outdoor: 243,000; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area:

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving/Underground Utilities	Excavators	1	8.00	158	0.38
Paving/Underground Utilities	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving/Underground Utilities	Pavers	2	8.00	130	0.42
Paving/Underground Utilities	Rollers	2	8.00	80	0.38
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Paving/Underground Utilities	Paving Equipment	2	8.00	132	0.36
Building Construction	Welders	1	8.00	46	0.45

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
Architectural Coating	1	14.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	72.00	21.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving/Underground Utilities	9	23.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Clean Paved Roads

3.2 Architectural Coating - 2025

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	1.4642					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.2400e-003	0.0418	0.0660	1.1000e-004		1.8800e-003	1.8800e-003		1.8800e-003	1.8800e-003	0.0000	9.3194	9.3194	5.1000e-004	0.0000	9.3321
Total	**1.4704**	**0.0418**	**0.0660**	**1.1000e-004**		**1.8800e-003**	**1.8800e-003**		**1.8800e-003**	**1.8800e-003**	**0.0000**	**9.3194**	**9.3194**	**5.1000e-004**	**0.0000**	**9.3321**

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	1.4200e-003	8.5000e-004	9.2900e-003	3.0000e-005	4.0700e-003	2.0000e-005	4.0900e-003	1.0800e-003	2.0000e-005	1.1000e-003	0.0000	2.9646	2.9646	6.0000e-005	0.0000	2.9661
Total	**1.4200e-003**	**8.5000e-004**	**9.2900e-003**	**3.0000e-005**	**4.0700e-003**	**2.0000e-005**	**4.0900e-003**	**1.0800e-003**	**2.0000e-005**	**1.1000e-003**	**0.0000**	**2.9646**	**2.9646**	**6.0000e-005**	**0.0000**	**2.9661**

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	1.4642					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.2400e-003	0.0418	0.0660	1.1000e-004		1.8800e-003	1.8800e-003		1.8800e-003	1.8800e-003	0.0000	9.3194	9.3194	5.1000e-004	0.0000	9.3321
Total	**1.4704**	**0.0418**	**0.0660**	**1.1000e-004**		**1.8800e-003**	**1.8800e-003**		**1.8800e-003**	**1.8800e-003**	**0.0000**	**9.3194**	**9.3194**	**5.1000e-004**	**0.0000**	**9.3321**

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	1.4200e-003	8.5000e-004	9.2900e-003	3.0000e-005	4.0700e-003	2.0000e-005	4.0900e-003	1.0800e-003	2.0000e-005	1.1000e-003	0.0000	2.9646	2.9646	6.0000e-005	0.0000	2.9661
Total	**1.4200e-003**	**8.5000e-004**	**9.2900e-003**	**3.0000e-005**	**4.0700e-003**	**2.0000e-005**	**4.0900e-003**	**1.0800e-003**	**2.0000e-005**	**1.1000e-003**	**0.0000**	**2.9646**	**2.9646**	**6.0000e-005**	**0.0000**	**2.9661**

3.3 Building Construction - 2022

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	0.0435	0.3982	0.4173	6.9000e-004		0.0206	0.0206		0.0194	0.0194	0.0000	59.0899	59.0899	0.0142	0.0000	59.4438
Total	**0.0435**	**0.3982**	**0.4173**	**6.9000e-004**		**0.0206**	**0.0206**		**0.0194**	**0.0194**	**0.0000**	**59.0899**	**59.0899**	**0.0142**	**0.0000**	**59.4438**

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	1.6500e-003	0.0543	0.0109	1.5000e-004	3.5400e-003	1.4000e-004	3.6800e-003	1.0200e-003	1.4000e-004	1.1600e-003	0.0000	14.1166	14.1166	8.0000e-004	0.0000	14.1366
Worker	6.2800e-003	4.1900e-003	0.0431	1.3000e-004	0.0146	9.0000e-005	0.0147	3.8900e-003	9.0000e-005	3.9700e-003	0.0000	12.0366	12.0366	2.9000e-004	0.0000	12.0437
Total	**7.9300e-003**	**0.0585**	**0.0540**	**2.8000e-004**	**0.0182**	**2.3000e-004**	**0.0184**	**4.9100e-003**	**2.3000e-004**	**5.1300e-003**	**0.0000**	**26.1532**	**26.1532**	**1.0900e-003**	**0.0000**	**26.1803**

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	0.0435	0.3982	0.4173	6.9000e-004		0.0206	0.0206		0.0194	0.0194	0.0000	59.0899	59.0899	0.0142	0.0000	59.4438
Total	**0.0435**	**0.3982**	**0.4173**	**6.9000e-004**		**0.0206**	**0.0206**		**0.0194**	**0.0194**	**0.0000**	**59.0899**	**59.0899**	**0.0142**	**0.0000**	**59.4438**

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	1.6500e-003	0.0543	0.0109	1.5000e-004	3.5400e-003	1.4000e-004	3.6800e-003	1.0200e-003	1.4000e-004	1.1600e-003	0.0000	14.1166	14.1166	8.0000e-004	0.0000	14.1366
Worker	6.2800e-003	4.1900e-003	0.0431	1.3000e-004	0.0146	9.0000e-005	0.0147	3.8900e-003	9.0000e-005	3.9700e-003	0.0000	12.0366	12.0366	2.9000e-004	0.0000	12.0437
Total	**7.9300e-003**	**0.0585**	**0.0540**	**2.8000e-004**	**0.0182**	**2.3000e-004**	**0.0184**	**4.9100e-003**	**2.3000e-004**	**5.1300e-003**	**0.0000**	**26.1532**	**26.1532**	**1.0900e-003**	**0.0000**	**26.1803**

3.3 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	0.2045	1.8700	2.1117	3.5000e-003		0.0910	0.0910		0.0856	0.0856	0.0000	301.3462	301.3462	0.0717	0.0000	303.1383
Total	**0.2045**	**1.8700**	**2.1117**	**3.5000e-003**		**0.0910**	**0.0910**		**0.0856**	**0.0856**	**0.0000**	**301.3462**	**301.3462**	**0.0717**	**0.0000**	**303.1383**

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	5.9600e-003	0.2150	0.0468	7.4000e-004	0.0180	2.2000e-004	0.0183	5.2100e-003	2.1000e-004	5.4200e-003	0.0000	70.2300	70.2300	2.8500e-003	0.0000	70.3013
Worker	0.0298	0.0191	0.2003	6.5000e-004	0.0746	4.6000e-004	0.0750	0.0198	4.2000e-004	0.0203	0.0000	59.0794	59.0794	1.3000e-003	0.0000	59.1118
Total	**0.0357**	**0.2341**	**0.2471**	**1.3900e-003**	**0.0926**	**6.8000e-004**	**0.0933**	**0.0250**	**6.3000e-004**	**0.0257**	**0.0000**	**129.3094**	**129.3094**	**4.1500e-003**	**0.0000**	**129.4131**

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	0.2045	1.8700	2.1117	3.5000e-003		0.0910	0.0910		0.0856	0.0856	0.0000	301.3458	301.3458	0.0717	0.0000	303.1380
Total	**0.2045**	**1.8700**	**2.1117**	**3.5000e-003**		**0.0910**	**0.0910**		**0.0856**	**0.0856**	**0.0000**	**301.3458**	**301.3458**	**0.0717**	**0.0000**	**303.1380**

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	5.9600e-003	0.2150	0.0468	7.4000e-004	0.0180	2.2000e-004	0.0183	5.2100e-003	2.1000e-004	5.4200e-003	0.0000	70.2300	70.2300	2.8500e-003	0.0000	70.3013
Worker	0.0298	0.0191	0.2003	6.5000e-004	0.0746	4.6000e-004	0.0750	0.0198	4.2000e-004	0.0203	0.0000	59.0794	59.0794	1.3000e-003	0.0000	59.1118
Total	**0.0357**	**0.2341**	**0.2471**	**1.3900e-003**	**0.0926**	**6.8000e-004**	**0.0933**	**0.0250**	**6.3000e-004**	**0.0257**	**0.0000**	**129.3094**	**129.3094**	**4.1500e-003**	**0.0000**	**129.4131**

3.3 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	0.1928	1.7611	2.1179	3.5300e-003		0.0803	0.0803		0.0756	0.0756	0.0000	303.7223	303.7223	0.0718	0.0000	305.5179
Total	**0.1928**	**1.7611**	**2.1179**	**3.5300e-003**		**0.0803**	**0.0803**		**0.0756**	**0.0756**	**0.0000**	**303.7223**	**303.7223**	**0.0718**	**0.0000**	**305.5179**

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	5.8100e-003	0.2147	0.0446	7.4000e-004	0.0182	2.2000e-004	0.0184	5.2500e-003	2.1000e-004	5.4600e-003	0.0000	70.2451	70.2451	2.8300e-003	0.0000	70.3159
Worker	0.0280	0.0173	0.1860	6.3000e-004	0.0751	4.5000e-004	0.0756	0.0200	4.1000e-004	0.0204	0.0000	56.9753	56.9753	1.1700e-003	0.0000	57.0046
Total	**0.0338**	**0.2320**	**0.2306**	**1.3700e-003**	**0.0933**	**6.7000e-004**	**0.0940**	**0.0252**	**6.2000e-004**	**0.0259**	**0.0000**	**127.2204**	**127.2204**	**4.0000e-003**	**0.0000**	**127.3205**

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	0.1928	1.7611	2.1179	3.5300e-003		0.0803	0.0803		0.0756	0.0756	0.0000	303.7220	303.7220	0.0718	0.0000	305.5175
Total	**0.1928**	**1.7611**	**2.1179**	**3.5300e-003**		**0.0803**	**0.0803**		**0.0756**	**0.0756**	**0.0000**	**303.7220**	**303.7220**	**0.0718**	**0.0000**	**305.5175**

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	5.8100e-003	0.2147	0.0446	7.4000e-004	0.0182	2.2000e-004	0.0184	5.2500e-003	2.1000e-004	5.4600e-003	0.0000	70.2451	70.2451	2.8300e-003	0.0000	70.3159
Worker	0.0280	0.0173	0.1860	6.3000e-004	0.0751	4.5000e-004	0.0756	0.0200	4.1000e-004	0.0204	0.0000	56.9753	56.9753	1.1700e-003	0.0000	57.0046
Total	**0.0338**	**0.2320**	**0.2306**	**1.3700e-003**	**0.0933**	**6.7000e-004**	**0.0940**	**0.0252**	**6.2000e-004**	**0.0259**	**0.0000**	**127.2204**	**127.2204**	**4.0000e-003**	**0.0000**	**127.3205**

3.3 Building Construction - 2025

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	0.0930	0.8479	1.0938	1.8300e-003		0.0359	0.0359		0.0338	0.0338	0.0000	157.7052	157.7052	0.0371	0.0000	158.6320
Total	**0.0930**	**0.8479**	**1.0938**	**1.8300e-003**		**0.0359**	**0.0359**		**0.0338**	**0.0338**	**0.0000**	**157.7052**	**157.7052**	**0.0371**	**0.0000**	**158.6320**

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	2.9300e-003	0.1104	0.0221	3.8000e-004	9.4300e-003	1.1000e-004	9.5500e-003	2.7300e-003	1.1000e-004	2.8300e-003	0.0000	36.2086	36.2086	1.4500e-003	0.0000	36.2449
Worker	0.0136	8.1400e-003	0.0890	3.1000e-004	0.0390	2.3000e-004	0.0392	0.0104	2.1000e-004	0.0106	0.0000	28.4048	28.4048	5.5000e-004	0.0000	28.4185
Total	**0.0166**	**0.1186**	**0.1111**	**6.9000e-004**	**0.0484**	**3.4000e-004**	**0.0488**	**0.0131**	**3.2000e-004**	**0.0134**	**0.0000**	**64.6134**	**64.6134**	**2.0000e-003**	**0.0000**	**64.6634**

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	0.0930	0.8479	1.0938	1.8300e-003		0.0359	0.0359		0.0338	0.0338	0.0000	157.7050	157.7050	0.0371	0.0000	158.6318
Total	**0.0930**	**0.8479**	**1.0938**	**1.8300e-003**		**0.0359**	**0.0359**		**0.0338**	**0.0338**	**0.0000**	**157.7050**	**157.7050**	**0.0371**	**0.0000**	**158.6318**

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	2.9300e-003	0.1104	0.0221	3.8000e-004	9.4300e-003	1.1000e-004	9.5500e-003	2.7300e-003	1.1000e-004	2.8300e-003	0.0000	36.2086	36.2086	1.4500e-003	0.0000	36.2449
Worker	0.0136	8.1400e-003	0.0890	3.1000e-004	0.0390	2.3000e-004	0.0392	0.0104	2.1000e-004	0.0106	0.0000	28.4048	28.4048	5.5000e-004	0.0000	28.4185
Total	**0.0166**	**0.1186**	**0.1111**	**6.9000e-004**	**0.0484**	**3.4000e-004**	**0.0488**	**0.0131**	**3.2000e-004**	**0.0134**	**0.0000**	**64.6134**	**64.6134**	**2.0000e-003**	**0.0000**	**64.6634**

3.4 Paving/Underground Utilities - 2020

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	0.1313	1.3444	1.4610	2.2200e-003		0.0738	0.0738		0.0679	0.0679	0.0000	195.1484	195.1484	0.0631	0.0000	196.7263
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.1313**	**1.3444**	**1.4610**	**2.2200e-003**		**0.0738**	**0.0738**		**0.0679**	**0.0679**	**0.0000**	**195.1484**	**195.1484**	**0.0631**	**0.0000**	**196.7263**

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	5.9700e-003	4.2800e-003	0.0423	1.2000e-004	0.0119	8.0000e-005	0.0120	3.1700e-003	7.0000e-005	3.2400e-003	0.0000	10.5605	10.5605	2.9000e-004	0.0000	10.5678
Total	**5.9700e-003**	**4.2800e-003**	**0.0423**	**1.2000e-004**	**0.0119**	**8.0000e-005**	**0.0120**	**3.1700e-003**	**7.0000e-005**	**3.2400e-003**	**0.0000**	**10.5605**	**10.5605**	**2.9000e-004**	**0.0000**	**10.5678**

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	0.1313	1.3444	1.4610	2.2200e-003		0.0738	0.0738		0.0679	0.0679	0.0000	195.1482	195.1482	0.0631	0.0000	196.7261
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.1313**	**1.3444**	**1.4610**	**2.2200e-003**		**0.0738**	**0.0738**		**0.0679**	**0.0679**	**0.0000**	**195.1482**	**195.1482**	**0.0631**	**0.0000**	**196.7261**

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	5.9700e-003	4.2800e-003	0.0423	1.2000e-004	0.0119	8.0000e-005	0.0120	3.1700e-003	7.0000e-005	3.2400e-003	0.0000	10.5605	10.5605	2.9000e-004	0.0000	10.5678
Total	**5.9700e-003**	**4.2800e-003**	**0.0423**	**1.2000e-004**	**0.0119**	**8.0000e-005**	**0.0120**	**3.1700e-003**	**7.0000e-005**	**3.2400e-003**	**0.0000**	**10.5605**	**10.5605**	**2.9000e-004**	**0.0000**	**10.5678**

Tracy Village Construction - Neighborhoods 3 and 4

San Joaquin County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	200.00	Dwelling Unit	26.70	360,000.00	634

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	51
Climate Zone	2			**Operational Year**	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Tracy Village Construction - Neighborhoods 3 and 4 (2 neighborhoods out of 6)

Land Use - Neighborhoods 3 & 4 (2 neighborhoods out of 6)

Construction Phase - Neighborhoods 3 and 4

Off-road Equipment - Equipment increased to account for underground utilities

Architectural Coating - SJVAPCD Rule 4601

Vehicle Trips - Construction only

Construction Off-road Equipment Mitigation - SJVAPCD Regulation VIII

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Residential_Exterior	150.00	65.00
tblArchitecturalCoating	EF_Residential_Interior	150.00	65.00
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	0
tblConstructionPhase	NumDays	35.00	73.00
tblConstructionPhase	NumDays	440.00	709.00
tblConstructionPhase	NumDays	35.00	130.00
tblConstructionPhase	PhaseEndDate	12/31/2019	4/11/2025
tblConstructionPhase	PhaseEndDate	12/31/2019	7/9/2025
tblConstructionPhase	PhaseEndDate	12/31/2019	6/30/2020
tblConstructionPhase	PhaseStartDate	1/1/2020	1/1/2025
tblConstructionPhase	PhaseStartDate	1/1/2020	10/21/2022
tblLandUse	LotAcreage	64.94	26.70
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblProjectCharacteristics	OperationalYear	2018	2022

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

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	lb/day										lb/day					
2020	2.1218	20.7431	23.2102	0.0361	0.1889	1.1367	1.3256	0.0501	1.0457	1.0958	0.0000	3,504.2643	3,504.2643	1.0757	0.0000	3,531.1576
2022	2.0421	17.8711	18.6742	0.0385	0.7337	0.8181	1.5518	0.1979	0.7697	0.9676	0.0000	3,738.4781	3,738.4781	0.6582	0.0000	3,754.9331
2023	1.8709	16.1572	18.3294	0.0382	0.7337	0.7050	1.4387	0.1979	0.6633	0.8611	0.0000	3,703.3059	3,703.3059	0.6428	0.0000	3,719.3761
2024	1.7511	15.1884	18.0993	0.0379	0.7337	0.6184	1.3522	0.1979	0.5817	0.7795	0.0000	3,675.7947	3,675.7947	0.6377	0.0000	3,691.7381
2025	41.9600	15.3548	19.9777	0.0416	0.8488	0.5847	1.4335	0.2284	0.5530	0.7814	0.0000	4,030.4834	4,030.4834	0.6502	0.0000	4,046.7390
Maximum	**41.9600**	**20.7431**	**23.2102**	**0.0416**	**0.8488**	**1.1367**	**1.5518**	**0.2284**	**1.0457**	**1.0958**	**0.0000**	**4,030.4834**	**4,030.4834**	**1.0757**	**0.0000**	**4,046.7390**

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	lb/day										lb/day					
2020	2.1218	20.7431	23.2102	0.0361	0.1889	1.1367	1.3256	0.0501	1.0457	1.0958	0.0000	3,504.2643	3,504.2643	1.0757	0.0000	3,531.1576
2022	2.0421	17.8711	18.6742	0.0385	0.7337	0.8181	1.5518	0.1979	0.7697	0.9676	0.0000	3,738.4781	3,738.4781	0.6582	0.0000	3,754.9331
2023	1.8709	16.1572	18.3294	0.0382	0.7337	0.7050	1.4387	0.1979	0.6633	0.8611	0.0000	3,703.3059	3,703.3059	0.6428	0.0000	3,719.3761
2024	1.7511	15.1884	18.0993	0.0379	0.7337	0.6184	1.3522	0.1979	0.5817	0.7795	0.0000	3,675.7947	3,675.7947	0.6377	0.0000	3,691.7381
2025	41.9600	15.3548	19.9777	0.0416	0.8488	0.5847	1.4335	0.2284	0.5530	0.7814	0.0000	4,030.4834	4,030.4834	0.6502	0.0000	4,046.7390
Maximum	**41.9600**	**20.7431**	**23.2102**	**0.0416**	**0.8488**	**1.1367**	**1.5518**	**0.2284**	**1.0457**	**1.0958**	**0.0000**	**4,030.4834**	**4,030.4834**	**1.0757**	**0.0000**	**4,046.7390**

	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	Architectural Coating	Architectural Coating	1/1/2025	4/11/2025	5	73	
2	Building Construction	Building Construction	10/21/2022	7/9/2025	5	709	
3	Paving/Underground Utilities	Paving	1/1/2020	6/30/2020	5	130	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 729,000; Residential Outdoor: 243,000; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area:

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving/Underground Utilities	Excavators	1	8.00	158	0.38
Paving/Underground Utilities	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving/Underground Utilities	Pavers	2	8.00	130	0.42
Paving/Underground Utilities	Rollers	2	8.00	80	0.38
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Paving/Underground Utilities	Paving Equipment	2	8.00	132	0.36
Building Construction	Welders	1	8.00	46	0.45

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
Architectural Coating	1	14.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	72.00	21.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving/Underground Utilities	9	23.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Clean Paved Roads

3.2 Architectural Coating - 2025

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	lb/day										lb/day					
Archit. Coating	40.1150					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**40.2858**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

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	lb/day										lb/day					
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
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
Worker	0.0431	0.0211	0.2899	9.8000e-004	0.1150	6.6000e-004	0.1157	0.0305	6.0000e-004	0.0311		97.3710	97.3710	1.8900e-003		97.4183
Total	**0.0431**	**0.0211**	**0.2899**	**9.8000e-004**	**0.1150**	**6.6000e-004**	**0.1157**	**0.0305**	**6.0000e-004**	**0.0311**		**97.3710**	**97.3710**	**1.8900e-003**		**97.4183**

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	lb/day										lb/day					
Archit. Coating	40.1150					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**40.2858**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

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	lb/day										lb/day					
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
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
Worker	0.0431	0.0211	0.2899	9.8000e-004	0.1150	6.6000e-004	0.1157	0.0305	6.0000e-004	0.0311		97.3710	97.3710	1.8900e-003		97.4183
Total	**0.0431**	**0.0211**	**0.2899**	**9.8000e-004**	**0.1150**	**6.6000e-004**	**0.1157**	**0.0305**	**6.0000e-004**	**0.0311**		**97.3710**	**97.3710**	**1.8900e-003**		**97.4183**

3.3 Building Construction - 2022

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	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**		**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

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	lb/day										lb/day					
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
Vendor	0.0633	2.1067	0.3960	5.9000e-003	0.1423	5.4400e-003	0.1477	0.0410	5.2000e-003	0.0462		618.1932	618.1932	0.0328		619.0127
Worker	0.2725	0.1487	1.9148	5.6800e-003	0.5915	3.6500e-003	0.5951	0.1569	3.3600e-003	0.1602		565.9513	565.9513	0.0135		566.2883
Total	**0.3358**	**2.2555**	**2.3108**	**0.0116**	**0.7337**	**9.0900e-003**	**0.7428**	**0.1979**	**8.5600e-003**	**0.2064**		**1,184.1445**	**1,184.1445**	**0.0463**		**1,185.3009**

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	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**	**0.0000**	**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

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	lb/day										lb/day					
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
Vendor	0.0633	2.1067	0.3960	5.9000e-003	0.1423	5.4400e-003	0.1477	0.0410	5.2000e-003	0.0462		618.1932	618.1932	0.0328		619.0127
Worker	0.2725	0.1487	1.9148	5.6800e-003	0.5915	3.6500e-003	0.5951	0.1569	3.3600e-003	0.1602		565.9513	565.9513	0.0135		566.2883
Total	**0.3358**	**2.2555**	**2.3108**	**0.0116**	**0.7337**	**9.0900e-003**	**0.7428**	**0.1979**	**8.5600e-003**	**0.2064**		**1,184.1445**	**1,184.1445**	**0.0463**		**1,185.3009**

3.3 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	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**		**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

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	lb/day										lb/day					
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
Vendor	0.0450	1.6390	0.3363	5.7600e-003	0.1423	1.6800e-003	0.1440	0.0410	1.6100e-003	0.0426		603.2295	603.2295	0.0229		603.8026
Worker	0.2532	0.1333	1.7491	5.4700e-003	0.5915	3.5400e-003	0.5950	0.1569	3.2600e-003	0.1601		544.8665	544.8665	0.0120		545.1674
Total	**0.2981**	**1.7723**	**2.0854**	**0.0112**	**0.7337**	**5.2200e-003**	**0.7390**	**0.1979**	**4.8700e-003**	**0.2027**		**1,148.0960**	**1,148.0960**	**0.0350**		**1,148.9700**

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	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**	**0.0000**	**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

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	lb/day										lb/day					
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
Vendor	0.0450	1.6390	0.3363	5.7600e-003	0.1423	1.6800e-003	0.1440	0.0410	1.6100e-003	0.0426		603.2295	603.2295	0.0229		603.8026
Worker	0.2532	0.1333	1.7491	5.4700e-003	0.5915	3.5400e-003	0.5950	0.1569	3.2600e-003	0.1601		544.8665	544.8665	0.0120		545.1674
Total	**0.2981**	**1.7723**	**2.0854**	**0.0112**	**0.7337**	**5.2200e-003**	**0.7390**	**0.1979**	**4.8700e-003**	**0.2027**		**1,148.0960**	**1,148.0960**	**0.0350**		**1,148.9700**

3.3 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	lb/day										lb/day					
Off-Road	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769		2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**		**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

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	lb/day										lb/day					
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
Vendor	0.0434	1.6248	0.3177	5.7200e-003	0.1423	1.6600e-003	0.1439	0.0410	1.5900e-003	0.0426		598.6744	598.6744	0.0226		599.2397
Worker	0.2361	0.1198	1.6148	5.2300e-003	0.5915	3.4400e-003	0.5949	0.1569	3.1700e-003	0.1601		521.4214	521.4214	0.0108		521.6908
Total	**0.2795**	**1.7446**	**1.9325**	**0.0110**	**0.7337**	**5.1000e-003**	**0.7388**	**0.1979**	**4.7600e-003**	**0.2026**		**1,120.0958**	**1,120.0958**	**0.0334**		**1,120.9305**

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	lb/day										lb/day					
Off-Road	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769	0.0000	2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**	**0.0000**	**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

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	lb/day										lb/day					
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
Vendor	0.0434	1.6248	0.3177	5.7200e-003	0.1423	1.6600e-003	0.1439	0.0410	1.5900e-003	0.0426		598.6744	598.6744	0.0226		599.2397
Worker	0.2361	0.1198	1.6148	5.2300e-003	0.5915	3.4400e-003	0.5949	0.1569	3.1700e-003	0.1601		521.4214	521.4214	0.0108		521.6908
Total	**0.2795**	**1.7446**	**1.9325**	**0.0110**	**0.7337**	**5.1000e-003**	**0.7388**	**0.1979**	**4.7600e-003**	**0.2026**		**1,120.0958**	**1,120.0958**	**0.0334**		**1,120.9305**

3.3 Building Construction - 2025

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	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	lb/day										lb/day					
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
Vendor	0.0422	1.6101	0.3032	5.6800e-003	0.1423	1.6400e-003	0.1439	0.0410	1.5700e-003	0.0425		594.4249	594.4249	0.0223		594.9822
Worker	0.2215	0.1084	1.4908	5.0200e-003	0.5915	3.3700e-003	0.5948	0.1569	3.1000e-003	0.1600		500.7650	500.7650	9.7400e-003		501.0086
Total	**0.2637**	**1.7186**	**1.7940**	**0.0107**	**0.7337**	**5.0100e-003**	**0.7388**	**0.1979**	**4.6700e-003**	**0.2025**		**1,095.1900**	**1,095.1900**	**0.0320**		**1,095.9908**

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	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	lb/day										lb/day					
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
Vendor	0.0422	1.6101	0.3032	5.6800e-003	0.1423	1.6400e-003	0.1439	0.0410	1.5700e-003	0.0425		594.4249	594.4249	0.0223		594.9822
Worker	0.2215	0.1084	1.4908	5.0200e-003	0.5915	3.3700e-003	0.5948	0.1569	3.1000e-003	0.1600		500.7650	500.7650	9.7400e-003		501.0086
Total	**0.2637**	**1.7186**	**1.7940**	**0.0107**	**0.7337**	**5.0100e-003**	**0.7388**	**0.1979**	**4.6700e-003**	**0.2025**		**1,095.1900**	**1,095.1900**	**0.0320**		**1,095.9908**

3.4 Paving/Underground Utilities - 2020

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	lb/day										lb/day					
Off-Road	2.0201	20.6835	22.4771	0.0342		1.1354	1.1354		1.0446	1.0446		3,309.4508	3,309.4508	1.0703		3,336.2094
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.0201**	**20.6835**	**22.4771**	**0.0342**		**1.1354**	**1.1354**		**1.0446**	**1.0446**		**3,309.4508**	**3,309.4508**	**1.0703**		**3,336.2094**

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	lb/day										lb/day					
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
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
Worker	0.1017	0.0596	0.7330	1.9600e-003	0.1889	1.2500e-003	0.1902	0.0501	1.1500e-003	0.0513		194.8135	194.8135	5.3900e-003		194.9482
Total	**0.1017**	**0.0596**	**0.7330**	**1.9600e-003**	**0.1889**	**1.2500e-003**	**0.1902**	**0.0501**	**1.1500e-003**	**0.0513**		**194.8135**	**194.8135**	**5.3900e-003**		**194.9482**

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	lb/day										lb/day					
Off-Road	2.0201	20.6835	22.4771	0.0342		1.1354	1.1354		1.0446	1.0446	0.0000	3,309.4508	3,309.4508	1.0703		3,336.2094
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.0201**	**20.6835**	**22.4771**	**0.0342**		**1.1354**	**1.1354**		**1.0446**	**1.0446**	**0.0000**	**3,309.4508**	**3,309.4508**	**1.0703**		**3,336.2094**

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	lb/day										lb/day					
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
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
Worker	0.1017	0.0596	0.7330	1.9600e-003	0.1889	1.2500e-003	0.1902	0.0501	1.1500e-003	0.0513		194.8135	194.8135	5.3900e-003		194.9482
Total	**0.1017**	**0.0596**	**0.7330**	**1.9600e-003**	**0.1889**	**1.2500e-003**	**0.1902**	**0.0501**	**1.1500e-003**	**0.0513**		**194.8135**	**194.8135**	**5.3900e-003**		**194.9482**

Tracy Village Construction - Neighborhoods 3 and 4

San Joaquin County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	200.00	Dwelling Unit	26.70	360,000.00	634

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	51
Climate Zone	2			**Operational Year**	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Tracy Village Construction - Neighborhoods 3 and 4 (2 neighborhoods out of 6)

Land Use - Neighborhoods 3 & 4 (2 neighborhoods out of 6)

Construction Phase - Neighborhoods 3 and 4

Off-road Equipment - Equipment increased to account for underground utilities

Architectural Coating - SJVAPCD Rule 4601

Vehicle Trips - Construction only

Construction Off-road Equipment Mitigation - SJVAPCD Regulation VIII

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Residential_Exterior	150.00	65.00
tblArchitecturalCoating	EF_Residential_Interior	150.00	65.00
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	0
tblConstructionPhase	NumDays	35.00	73.00
tblConstructionPhase	NumDays	440.00	709.00
tblConstructionPhase	NumDays	35.00	130.00

tblConstructionPhase	PhaseEndDate	12/31/2019	4/11/2025
tblConstructionPhase	PhaseEndDate	12/31/2019	7/9/2025
tblConstructionPhase	PhaseEndDate	12/31/2019	6/30/2020
tblConstructionPhase	PhaseStartDate	1/1/2020	1/1/2025
tblConstructionPhase	PhaseStartDate	1/1/2020	10/21/2022
tblLandUse	LotAcreage	64.94	26.70
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblProjectCharacteristics	OperationalYear	2018	2022

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

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	lb/day										lb/day					
2020	2.1191	20.7560	23.1283	0.0359	0.1889	1.1367	1.3256	0.0501	1.0457	1.0958	0.0000	3,483.5889	3,483.5889	1.0752	0.0000	3,510.4692
2022	2.0390	17.9207	18.5190	0.0377	0.7337	0.8183	1.5521	0.1979	0.7699	0.9678	0.0000	3,659.5154	3,659.5154	0.6610	0.0000	3,676.0402
2023	1.8677	16.1947	18.1687	0.0374	0.7337	0.7050	1.4387	0.1979	0.6633	0.8612	0.0000	3,627.1642	3,627.1642	0.6444	0.0000	3,643.2748
2024	1.7488	15.2224	17.9475	0.0372	0.7337	0.6185	1.3522	0.1979	0.5817	0.7795	0.0000	3,602.4964	3,602.4964	0.6394	0.0000	3,618.4826
2025	41.9575	15.3904	19.7989	0.0408	0.8488	0.5848	1.4335	0.2284	0.5531	0.7814	0.0000	3,949.3912	3,949.3912	0.6518	0.0000	3,965.6864
Maximum	**41.9575**	**20.7560**	**23.1283**	**0.0408**	**0.8488**	**1.1367**	**1.5521**	**0.2284**	**1.0457**	**1.0958**	**0.0000**	**3,949.3912**	**3,949.3912**	**1.0752**	**0.0000**	**3,965.6864**

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	lb/day										lb/day					
2020	2.1191	20.7560	23.1283	0.0359	0.1889	1.1367	1.3256	0.0501	1.0457	1.0958	0.0000	3,483.5889	3,483.5889	1.0752	0.0000	3,510.4692
2022	2.0390	17.9207	18.5190	0.0377	0.7337	0.8183	1.5521	0.1979	0.7699	0.9678	0.0000	3,659.5154	3,659.5154	0.6610	0.0000	3,676.0402
2023	1.8677	16.1947	18.1687	0.0374	0.7337	0.7050	1.4387	0.1979	0.6633	0.8612	0.0000	3,627.1642	3,627.1642	0.6444	0.0000	3,643.2748
2024	1.7488	15.2224	17.9475	0.0372	0.7337	0.6185	1.3522	0.1979	0.5817	0.7795	0.0000	3,602.4964	3,602.4964	0.6394	0.0000	3,618.4826
2025	41.9575	15.3904	19.7989	0.0408	0.8488	0.5848	1.4335	0.2284	0.5531	0.7814	0.0000	3,949.3912	3,949.3912	0.6518	0.0000	3,965.6864
Maximum	**41.9575**	**20.7560**	**23.1283**	**0.0408**	**0.8488**	**1.1367**	**1.5521**	**0.2284**	**1.0457**	**1.0958**	**0.0000**	**3,949.3912**	**3,949.3912**	**1.0752**	**0.0000**	**3,965.6864**

	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	Architectural Coating	Architectural Coating	1/1/2025	4/11/2025	5	73	
2	Building Construction	Building Construction	10/21/2022	7/9/2025	5	709	
3	Paving/Underground Utilities	Paving	1/1/2020	6/30/2020	5	130	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 729,000; Residential Outdoor: 243,000; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area:

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving/Underground Utilities	Excavators	1	8.00	158	0.38
Paving/Underground Utilities	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving/Underground Utilities	Pavers	2	8.00	130	0.42
Paving/Underground Utilities	Rollers	2	8.00	80	0.38
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Paving/Underground Utilities	Paving Equipment	2	8.00	132	0.36
Building Construction	Welders	1	8.00	46	0.45

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
Architectural Coating	1	14.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	72.00	21.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving/Underground Utilities	9	23.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Clean Paved Roads

3.2 Architectural Coating - 2025

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	lb/day										lb/day					
Archit. Coating	40.1150					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**40.2858**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

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	lb/day										lb/day					
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
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
Worker	0.0423	0.0256	0.2528	8.7000e-004	0.1150	6.6000e-004	0.1157	0.0305	6.0000e-004	0.0311		87.0628	87.0628	1.6900e-003		87.1051
Total	**0.0423**	**0.0256**	**0.2528**	**8.7000e-004**	**0.1150**	**6.6000e-004**	**0.1157**	**0.0305**	**6.0000e-004**	**0.0311**		**87.0628**	**87.0628**	**1.6900e-003**		**87.1051**

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	lb/day										lb/day					
Archit. Coating	40.1150					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**40.2858**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

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	lb/day										lb/day					
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
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
Worker	0.0423	0.0256	0.2528	8.7000e-004	0.1150	6.6000e-004	0.1157	0.0305	6.0000e-004	0.0311		87.0628	87.0628	1.6900e-003		87.1051
Total	**0.0423**	**0.0256**	**0.2528**	**8.7000e-004**	**0.1150**	**6.6000e-004**	**0.1157**	**0.0305**	**6.0000e-004**	**0.0311**		**87.0628**	**87.0628**	**1.6900e-003**		**87.1051**

3.3 Building Construction - 2022

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	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**		**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

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	lb/day										lb/day					
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
Vendor	0.0670	2.1244	0.4681	5.7200e-003	0.1423	5.6700e-003	0.1480	0.0410	5.4200e-003	0.0464		599.2449	599.2449	0.0369		600.1682
Worker	0.2658	0.1806	1.6874	5.0800e-003	0.5915	3.6500e-003	0.5951	0.1569	3.3600e-003	0.1602		505.9369	505.9369	0.0121		506.2398
Total	**0.3327**	**2.3050**	**2.1556**	**0.0108**	**0.7337**	**9.3200e-003**	**0.7431**	**0.1979**	**8.7800e-003**	**0.2066**		**1,105.1818**	**1,105.1818**	**0.0491**		**1,106.4080**

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	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**	**0.0000**	**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

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	lb/day										lb/day					
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
Vendor	0.0670	2.1244	0.4681	5.7200e-003	0.1423	5.6700e-003	0.1480	0.0410	5.4200e-003	0.0464		599.2449	599.2449	0.0369		600.1682
Worker	0.2658	0.1806	1.6874	5.0800e-003	0.5915	3.6500e-003	0.5951	0.1569	3.3600e-003	0.1602		505.9369	505.9369	0.0121		506.2398
Total	**0.3327**	**2.3050**	**2.1556**	**0.0108**	**0.7337**	**9.3200e-003**	**0.7431**	**0.1979**	**8.7800e-003**	**0.2066**		**1,105.1818**	**1,105.1818**	**0.0491**		**1,106.4080**

3.3 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	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**		**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

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	lb/day										lb/day					
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
Vendor	0.0476	1.6481	0.3900	5.5900e-003	0.1423	1.7300e-003	0.1440	0.0410	1.6500e-003	0.0426		584.8392	584.8392	0.0258		585.4838
Worker	0.2473	0.1618	1.5348	4.8900e-003	0.5915	3.5400e-003	0.5950	0.1569	3.2600e-003	0.1601		487.1151	487.1151	0.0108		487.3850
Total	**0.2949**	**1.8098**	**1.9247**	**0.0105**	**0.7337**	**5.2700e-003**	**0.7390**	**0.1979**	**4.9100e-003**	**0.2028**		**1,071.9543**	**1,071.9543**	**0.0366**		**1,072.8688**

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	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**	**0.0000**	**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

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	lb/day										lb/day					
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
Vendor	0.0476	1.6481	0.3900	5.5900e-003	0.1423	1.7300e-003	0.1440	0.0410	1.6500e-003	0.0426		584.8392	584.8392	0.0258		585.4838
Worker	0.2473	0.1618	1.5348	4.8900e-003	0.5915	3.5400e-003	0.5950	0.1569	3.2600e-003	0.1601		487.1151	487.1151	0.0108		487.3850
Total	**0.2949**	**1.8098**	**1.9247**	**0.0105**	**0.7337**	**5.2700e-003**	**0.7390**	**0.1979**	**4.9100e-003**	**0.2028**		**1,071.9543**	**1,071.9543**	**0.0366**		**1,072.8688**

3.3 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	lb/day										lb/day					
Off-Road	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769		2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**		**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

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	lb/day										lb/day					
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
Vendor	0.0460	1.6334	0.3688	5.5400e-003	0.1423	1.7000e-003	0.1440	0.0410	1.6200e-003	0.0426		580.6077	580.6077	0.0255		581.2440
Worker	0.2312	0.1453	1.4119	4.6800e-003	0.5915	3.4400e-003	0.5949	0.1569	3.1700e-003	0.1601		466.1898	466.1898	9.6400e-003		466.4309
Total	**0.2772**	**1.7787**	**1.7807**	**0.0102**	**0.7337**	**5.1400e-003**	**0.7389**	**0.1979**	**4.7900e-003**	**0.2026**		**1,046.7975**	**1,046.7975**	**0.0351**		**1,047.6749**

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	lb/day										lb/day					
Off-Road	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769	0.0000	2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**	**0.0000**	**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

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	lb/day										lb/day					
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
Vendor	0.0460	1.6334	0.3688	5.5400e-003	0.1423	1.7000e-003	0.1440	0.0410	1.6200e-003	0.0426		580.6077	580.6077	0.0255		581.2440
Worker	0.2312	0.1453	1.4119	4.6800e-003	0.5915	3.4400e-003	0.5949	0.1569	3.1700e-003	0.1601		466.1898	466.1898	9.6400e-003		466.4309
Total	**0.2772**	**1.7787**	**1.7807**	**0.0102**	**0.7337**	**5.1400e-003**	**0.7389**	**0.1979**	**4.7900e-003**	**0.2026**		**1,046.7975**	**1,046.7975**	**0.0351**		**1,047.6749**

3.3 Building Construction - 2025

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	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	lb/day										lb/day					
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
Vendor	0.0447	1.6182	0.3522	5.5100e-003	0.1423	1.6700e-003	0.1440	0.0410	1.6000e-003	0.0426		576.6545	576.6545	0.0251		577.2823
Worker	0.2174	0.1315	1.3001	4.4900e-003	0.5915	3.3700e-003	0.5948	0.1569	3.1000e-003	0.1600		447.7515	447.7515	8.7000e-003		447.9691
Total	**0.2620**	**1.7497**	**1.6523**	**0.0100**	**0.7337**	**5.0400e-003**	**0.7388**	**0.1979**	**4.7000e-003**	**0.2026**		**1,024.4060**	**1,024.4060**	**0.0338**		**1,025.2513**

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	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	lb/day										lb/day					
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
Vendor	0.0447	1.6182	0.3522	5.5100e-003	0.1423	1.6700e-003	0.1440	0.0410	1.6000e-003	0.0426		576.6545	576.6545	0.0251		577.2823
Worker	0.2174	0.1315	1.3001	4.4900e-003	0.5915	3.3700e-003	0.5948	0.1569	3.1000e-003	0.1600		447.7515	447.7515	8.7000e-003		447.9691
Total	**0.2620**	**1.7497**	**1.6523**	**0.0100**	**0.7337**	**5.0400e-003**	**0.7388**	**0.1979**	**4.7000e-003**	**0.2026**		**1,024.4060**	**1,024.4060**	**0.0338**		**1,025.2513**

3.4 Paving/Underground Utilities - 2020

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	lb/day										lb/day					
Off-Road	2.0201	20.6835	22.4771	0.0342		1.1354	1.1354		1.0446	1.0446		3,309.4508	3,309.4508	1.0703		3,336.2094
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.0201**	**20.6835**	**22.4771**	**0.0342**		**1.1354**	**1.1354**		**1.0446**	**1.0446**		**3,309.4508**	**3,309.4508**	**1.0703**		**3,336.2094**

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	lb/day										lb/day					
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
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
Worker	0.0991	0.0725	0.6512	1.7500e-003	0.1889	1.2500e-003	0.1902	0.0501	1.1500e-003	0.0513		174.1381	174.1381	4.8700e-003		174.2598
Total	**0.0991**	**0.0725**	**0.6512**	**1.7500e-003**	**0.1889**	**1.2500e-003**	**0.1902**	**0.0501**	**1.1500e-003**	**0.0513**		**174.1381**	**174.1381**	**4.8700e-003**		**174.2598**

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	lb/day										lb/day					
Off-Road	2.0201	20.6835	22.4771	0.0342		1.1354	1.1354		1.0446	1.0446	0.0000	3,309.4508	3,309.4508	1.0703		3,336.2094
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.0201**	**20.6835**	**22.4771**	**0.0342**		**1.1354**	**1.1354**		**1.0446**	**1.0446**	**0.0000**	**3,309.4508**	**3,309.4508**	**1.0703**		**3,336.2094**

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	lb/day										lb/day					
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
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
Worker	0.0991	0.0725	0.6512	1.7500e-003	0.1889	1.2500e-003	0.1902	0.0501	1.1500e-003	0.0513		174.1381	174.1381	4.8700e-003		174.2598
Total	**0.0991**	**0.0725**	**0.6512**	**1.7500e-003**	**0.1889**	**1.2500e-003**	**0.1902**	**0.0501**	**1.1500e-003**	**0.0513**		**174.1381**	**174.1381**	**4.8700e-003**		**174.2598**

Tracy Village - Building Construction - Neighborhoods 5 and 6

San Joaquin County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	200.00	Dwelling Unit	26.70	360,000.00	634

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	51
Climate Zone	2			**Operational Year**	2019
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Tracy Village - Building Construction - Neighborhoods 5 and 6

Land Use - Construction - Neighborhoods 5 & 6 out of 6

Construction Phase - Neighborhoods 5 and 6

Off-road Equipment - Equipment increased to account for underground utilities

Architectural Coating - SJVAPCD Rule 4601

Vehicle Trips - Construction only

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Residential_Exterior	150.00	65.00
tblArchitecturalCoating	EF_Residential_Interior	150.00	65.00
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	0
tblConstructionPhase	NumDays	35.00	73.00
tblConstructionPhase	NumDays	440.00	669.00
tblConstructionPhase	NumDays	35.00	130.00
tblConstructionPhase	PhaseEndDate	3/29/2017	2/9/2028
tblConstructionPhase	PhaseEndDate	3/29/2017	2/1/2028
tblConstructionPhase	PhaseEndDate	3/29/2017	7/1/2021
tblConstructionPhase	PhaseStartDate	3/30/2017	11/1/2027
tblConstructionPhase	PhaseStartDate	3/30/2017	7/10/2025
tblConstructionPhase	PhaseStartDate	3/30/2017	1/1/2021
tblLandUse	LotAcreage	64.94	26.70
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblProjectCharacteristics	OperationalYear	2018	2019
tblVehicleTrips	ST_TR	9.91	0.00
tblVehicleTrips	SU_TR	8.62	0.00
tblVehicleTrips	WD_TR	9.52	0.00

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					
2021	0.1263	1.2297	1.4973	2.3300e-003	0.0119	0.0654	0.0773	3.1700e-003	0.0602	0.0634	0.0000	205.2997	205.2997	0.0634	0.0000	206.8840
2025	0.1007	0.8883	1.1074	2.3200e-003	0.0445	0.0333	0.0778	0.0120	0.0313	0.0433	0.0000	204.3370	204.3370	0.0359	0.0000	205.2347
2026	0.2086	1.8514	2.2998	4.8300e-003	0.0930	0.0695	0.1624	0.0251	0.0654	0.0905	0.0000	424.2117	424.2117	0.0749	0.0000	426.0829
2027	1.1143	1.8744	2.3330	4.8900e-003	0.0955	0.0706	0.1661	0.0258	0.0665	0.0923	0.0000	429.4855	429.4855	0.0751	0.0000	431.3619
2028	0.5818	0.1719	0.2201	4.6000e-004	9.4000e-003	6.5800e-003	0.0160	2.5300e-003	6.2300e-003	8.7700e-003	0.0000	40.0145	40.0145	6.5000e-003	0.0000	40.1770
Maximum	**1.1143**	**1.8744**	**2.3330**	**4.8900e-003**	**0.0955**	**0.0706**	**0.1661**	**0.0258**	**0.0665**	**0.0923**	**0.0000**	**429.4855**	**429.4855**	**0.0751**	**0.0000**	**431.3619**

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					
2021	0.1263	1.2297	1.4973	2.3300e-003	0.0119	0.0654	0.0773	3.1700e-003	0.0602	0.0634	0.0000	205.2995	205.2995	0.0634	0.0000	206.8838
2025	0.1007	0.8883	1.1074	2.3200e-003	0.0445	0.0333	0.0778	0.0120	0.0313	0.0433	0.0000	204.3368	204.3368	0.0359	0.0000	205.2346
2026	0.2086	1.8514	2.2998	4.8300e-003	0.0930	0.0695	0.1624	0.0251	0.0654	0.0905	0.0000	424.2113	424.2113	0.0749	0.0000	426.0825
2027	1.1143	1.8744	2.3330	4.8900e-003	0.0955	0.0706	0.1661	0.0258	0.0665	0.0923	0.0000	429.4851	429.4851	0.0751	0.0000	431.3616
2028	0.5818	0.1719	0.2201	4.6000e-004	9.4000e-003	6.5800e-003	0.0160	2.5300e-003	6.2300e-003	8.7700e-003	0.0000	40.0145	40.0145	6.5000e-003	0.0000	40.1770
Maximum	**1.1143**	**1.8744**	**2.3330**	**4.8900e-003**	**0.0955**	**0.0706**	**0.1661**	**0.0258**	**0.0665**	**0.0923**	**0.0000**	**429.4851**	**429.4851**	**0.0751**	**0.0000**	**431.3616**

	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)
16	12-30-2020	3-29-2021	0.6561	0.6561
17	3-30-2021	6-29-2021	0.6856	0.6856
18	6-30-2021	9-29-2021	0.0149	0.0149
34	6-30-2025	9-29-2025	0.4633	0.4633
35	9-30-2025	12-29-2025	0.5151	0.5151
36	12-30-2025	3-29-2026	0.5082	0.5082
37	3-30-2026	6-29-2026	0.5185	0.5185
38	6-30-2026	9-29-2026	0.5185	0.5185
39	9-30-2026	12-29-2026	0.5138	0.5138
40	12-30-2026	3-29-2027	0.5069	0.5069
41	3-30-2027	6-29-2027	0.5173	0.5173
42	6-30-2027	9-29-2027	0.5173	0.5173
43	9-30-2027	12-29-2027	1.3868	1.3868
44	12-30-2027	3-29-2028	0.8134	0.8134
		Highest	1.3868	1.3868

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Architectural Coating	Architectural Coating	11/1/2027	2/9/2028	5	73	
2	Building Construction	Building Construction	7/10/2025	2/1/2028	5	669	2 out of 6 neighborhoods
3	Paving/Underground Utilities	Paving	1/1/2021	7/1/2021	5	130	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 729,000; Residential Outdoor: 243,000; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area:

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving/Underground Utilities	Excavators	1	8.00	158	0.38
Paving/Underground Utilities	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving/Underground Utilities	Pavers	2	8.00	130	0.42
Paving/Underground Utilities	Rollers	2	8.00	80	0.38
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Paving/Underground Utilities	Paving Equipment	2	8.00	132	0.36
Building Construction	Welders	1	8.00	46	0.45

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
Architectural Coating	1	14.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	72.00	21.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving/Underground Utilities	9	23.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Clean Paved Roads

3.2 Architectural Coating - 2027

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	0.9026					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.8400e-003	0.0258	0.0407	7.0000e-005		1.1600e-003	1.1600e-003		1.1600e-003	1.1600e-003	0.0000	5.7448	5.7448	3.1000e-004	0.0000	5.7527
Total	**0.9064**	**0.0258**	**0.0407**	**7.0000e-005**		**1.1600e-003**	**1.1600e-003**		**1.1600e-003**	**1.1600e-003**	**0.0000**	**5.7448**	**5.7448**	**3.1000e-004**	**0.0000**	**5.7527**

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	7.8000e-004	4.4000e-004	4.9900e-003	2.0000e-005	2.5100e-003	1.0000e-005	2.5200e-003	6.7000e-004	1.0000e-005	6.8000e-004	0.0000	1.7006	1.7006	3.0000e-005	0.0000	1.7013
Total	**7.8000e-004**	**4.4000e-004**	**4.9900e-003**	**2.0000e-005**	**2.5100e-003**	**1.0000e-005**	**2.5200e-003**	**6.7000e-004**	**1.0000e-005**	**6.8000e-004**	**0.0000**	**1.7006**	**1.7006**	**3.0000e-005**	**0.0000**	**1.7013**

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	0.9026					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.8400e-003	0.0258	0.0407	7.0000e-005		1.1600e-003	1.1600e-003		1.1600e-003	1.1600e-003	0.0000	5.7448	5.7448	3.1000e-004	0.0000	5.7527
Total	**0.9064**	**0.0258**	**0.0407**	**7.0000e-005**		**1.1600e-003**	**1.1600e-003**		**1.1600e-003**	**1.1600e-003**	**0.0000**	**5.7448**	**5.7448**	**3.1000e-004**	**0.0000**	**5.7527**

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	7.8000e-004	4.4000e-004	4.9900e-003	2.0000e-005	2.5100e-003	1.0000e-005	2.5200e-003	6.7000e-004	1.0000e-005	6.8000e-004	0.0000	1.7006	1.7006	3.0000e-005	0.0000	1.7013
Total	**7.8000e-004**	**4.4000e-004**	**4.9900e-003**	**2.0000e-005**	**2.5100e-003**	**1.0000e-005**	**2.5200e-003**	**6.7000e-004**	**1.0000e-005**	**6.8000e-004**	**0.0000**	**1.7006**	**1.7006**	**3.0000e-005**	**0.0000**	**1.7013**

3.2 Architectural Coating - 2028

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	0.5616					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.3900e-003	0.0160	0.0253	4.0000e-005		7.2000e-004	7.2000e-004		7.2000e-004	7.2000e-004	0.0000	3.5746	3.5746	1.9000e-004	0.0000	3.5794
Total	**0.5640**	**0.0160**	**0.0253**	**4.0000e-005**		**7.2000e-004**	**7.2000e-004**		**7.2000e-004**	**7.2000e-004**	**0.0000**	**3.5746**	**3.5746**	**1.9000e-004**	**0.0000**	**3.5794**

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	4.6000e-004	2.5000e-004	2.9000e-003	1.0000e-005	1.5600e-003	1.0000e-005	1.5700e-003	4.2000e-004	1.0000e-005	4.2000e-004	0.0000	1.0251	1.0251	2.0000e-005	0.0000	1.0255
Total	**4.6000e-004**	**2.5000e-004**	**2.9000e-003**	**1.0000e-005**	**1.5600e-003**	**1.0000e-005**	**1.5700e-003**	**4.2000e-004**	**1.0000e-005**	**4.2000e-004**	**0.0000**	**1.0251**	**1.0251**	**2.0000e-005**	**0.0000**	**1.0255**

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	0.5616					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.3900e-003	0.0160	0.0253	4.0000e-005		7.2000e-004	7.2000e-004		7.2000e-004	7.2000e-004	0.0000	3.5746	3.5746	1.9000e-004	0.0000	3.5794
Total	**0.5640**	**0.0160**	**0.0253**	**4.0000e-005**		**7.2000e-004**	**7.2000e-004**		**7.2000e-004**	**7.2000e-004**	**0.0000**	**3.5746**	**3.5746**	**1.9000e-004**	**0.0000**	**3.5794**

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	4.6000e-004	2.5000e-004	2.9000e-003	1.0000e-005	1.5600e-003	1.0000e-005	1.5700e-003	4.2000e-004	1.0000e-005	4.2000e-004	0.0000	1.0251	1.0251	2.0000e-005	0.0000	1.0255
Total	**4.6000e-004**	**2.5000e-004**	**2.9000e-003**	**1.0000e-005**	**1.5600e-003**	**1.0000e-005**	**1.5700e-003**	**4.2000e-004**	**1.0000e-005**	**4.2000e-004**	**0.0000**	**1.0251**	**1.0251**	**2.0000e-005**	**0.0000**	**1.0255**

3.3 Building Construction - 2025

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	0.0855	0.7794	1.0053	1.6900e-003		0.0330	0.0330		0.0310	0.0310	0.0000	144.9497	144.9497	0.0341	0.0000	145.8015
Total	**0.0855**	**0.7794**	**1.0053**	**1.6900e-003**		**0.0330**	**0.0330**		**0.0310**	**0.0310**	**0.0000**	**144.9497**	**144.9497**	**0.0341**	**0.0000**	**145.8015**

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	2.6900e-003	0.1015	0.0203	3.5000e-004	8.6700e-003	1.0000e-004	8.7700e-003	2.5100e-003	1.0000e-004	2.6000e-003	0.0000	33.2800	33.2800	1.3300e-003	0.0000	33.3133
Worker	0.0125	7.4800e-003	0.0818	2.9000e-004	0.0358	2.1000e-004	0.0361	9.5300e-003	1.9000e-004	9.7200e-003	0.0000	26.1073	26.1073	5.0000e-004	0.0000	26.1199
Total	**0.0152**	**0.1090**	**0.1021**	**6.4000e-004**	**0.0445**	**3.1000e-004**	**0.0448**	**0.0120**	**2.9000e-004**	**0.0123**	**0.0000**	**59.3873**	**59.3873**	**1.8300e-003**	**0.0000**	**59.4332**

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	0.0855	0.7794	1.0053	1.6900e-003		0.0330	0.0330		0.0310	0.0310	0.0000	144.9495	144.9495	0.0341	0.0000	145.8013
Total	**0.0855**	**0.7794**	**1.0053**	**1.6900e-003**		**0.0330**	**0.0330**		**0.0310**	**0.0310**	**0.0000**	**144.9495**	**144.9495**	**0.0341**	**0.0000**	**145.8013**

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	2.6900e-003	0.1015	0.0203	3.5000e-004	8.6700e-003	1.0000e-004	8.7700e-003	2.5100e-003	1.0000e-004	2.6000e-003	0.0000	33.2800	33.2800	1.3300e-003	0.0000	33.3133
Worker	0.0125	7.4800e-003	0.0818	2.9000e-004	0.0358	2.1000e-004	0.0361	9.5300e-003	1.9000e-004	9.7200e-003	0.0000	26.1073	26.1073	5.0000e-004	0.0000	26.1199
Total	**0.0152**	**0.1090**	**0.1021**	**6.4000e-004**	**0.0445**	**3.1000e-004**	**0.0448**	**0.0120**	**2.9000e-004**	**0.0123**	**0.0000**	**59.3873**	**59.3873**	**1.8300e-003**	**0.0000**	**59.4332**

3.3 Building Construction - 2026

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	0.1785	1.6273	2.0991	3.5200e-003		0.0689	0.0689		0.0648	0.0648	0.0000	302.6549	302.6549	0.0711	0.0000	304.4335
Total	**0.1785**	**1.6273**	**2.0991**	**3.5200e-003**		**0.0689**	**0.0689**		**0.0648**	**0.0648**	**0.0000**	**302.6549**	**302.6549**	**0.0711**	**0.0000**	**304.4335**

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	5.4800e-003	0.2099	0.0408	7.3000e-004	0.0181	2.1000e-004	0.0183	5.2300e-003	2.0000e-004	5.4400e-003	0.0000	69.0474	69.0474	2.7400e-003	0.0000	69.1158
Worker	0.0247	0.0142	0.1599	5.8000e-004	0.0748	4.3000e-004	0.0753	0.0199	4.0000e-004	0.0203	0.0000	52.5095	52.5095	9.6000e-004	0.0000	52.5336
Total	**0.0302**	**0.2242**	**0.2008**	**1.3100e-003**	**0.0930**	**6.4000e-004**	**0.0936**	**0.0251**	**6.0000e-004**	**0.0257**	**0.0000**	**121.5568**	**121.5568**	**3.7000e-003**	**0.0000**	**121.6494**

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	0.1784	1.6273	2.0991	3.5200e-003		0.0689	0.0689		0.0648	0.0648	0.0000	302.6545	302.6545	0.0711	0.0000	304.4331
Total	**0.1784**	**1.6273**	**2.0991**	**3.5200e-003**		**0.0689**	**0.0689**		**0.0648**	**0.0648**	**0.0000**	**302.6545**	**302.6545**	**0.0711**	**0.0000**	**304.4331**

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	5.4800e-003	0.2099	0.0408	7.3000e-004	0.0181	2.1000e-004	0.0183	5.2300e-003	2.0000e-004	5.4400e-003	0.0000	69.0474	69.0474	2.7400e-003	0.0000	69.1158
Worker	0.0247	0.0142	0.1599	5.8000e-004	0.0748	4.3000e-004	0.0753	0.0199	4.0000e-004	0.0203	0.0000	52.5095	52.5095	9.6000e-004	0.0000	52.5336
Total	**0.0302**	**0.2242**	**0.2008**	**1.3100e-003**	**0.0930**	**6.4000e-004**	**0.0936**	**0.0251**	**6.0000e-004**	**0.0257**	**0.0000**	**121.5568**	**121.5568**	**3.7000e-003**	**0.0000**	**121.6494**

3.3 Building Construction - 2027

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	0.1785	1.6273	2.0991	3.5200e-003		0.0689	0.0689		0.0648	0.0648	0.0000	302.6549	302.6549	0.0711	0.0000	304.4335
Total	**0.1785**	**1.6273**	**2.0991**	**3.5200e-003**		**0.0689**	**0.0689**		**0.0648**	**0.0648**	**0.0000**	**302.6549**	**302.6549**	**0.0711**	**0.0000**	**304.4335**

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	5.3600e-003	0.2079	0.0395	7.2000e-004	0.0181	2.1000e-004	0.0183	5.2300e-003	2.0000e-004	5.4300e-003	0.0000	68.6599	68.6599	2.6900e-003	0.0000	68.7273
Worker	0.0233	0.0130	0.1488	5.6000e-004	0.0748	4.1000e-004	0.0753	0.0199	3.8000e-004	0.0203	0.0000	50.7253	50.7253	8.8000e-004	0.0000	50.7472
Total	**0.0286**	**0.2209**	**0.1883**	**1.2800e-003**	**0.0930**	**6.2000e-004**	**0.0936**	**0.0251**	**5.8000e-004**	**0.0257**	**0.0000**	**119.3852**	**119.3852**	**3.5700e-003**	**0.0000**	**119.4745**

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	0.1784	1.6273	2.0991	3.5200e-003		0.0689	0.0689		0.0648	0.0648	0.0000	302.6545	302.6545	0.0711	0.0000	304.4331
Total	**0.1784**	**1.6273**	**2.0991**	**3.5200e-003**		**0.0689**	**0.0689**		**0.0648**	**0.0648**	**0.0000**	**302.6545**	**302.6545**	**0.0711**	**0.0000**	**304.4331**

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	5.3600e-003	0.2079	0.0395	7.2000e-004	0.0181	2.1000e-004	0.0183	5.2300e-003	2.0000e-004	5.4300e-003	0.0000	68.6599	68.6599	2.6900e-003	0.0000	68.7273
Worker	0.0233	0.0130	0.1488	5.6000e-004	0.0748	4.1000e-004	0.0753	0.0199	3.8000e-004	0.0203	0.0000	50.7253	50.7253	8.8000e-004	0.0000	50.7472
Total	**0.0286**	**0.2209**	**0.1883**	**1.2800e-003**	**0.0930**	**6.2000e-004**	**0.0936**	**0.0251**	**5.8000e-004**	**0.0257**	**0.0000**	**119.3852**	**119.3852**	**3.5700e-003**	**0.0000**	**119.4745**

3.3 Building Construction - 2028

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	0.0150	0.1372	0.1769	3.0000e-004		5.8000e-003	5.8000e-003		5.4600e-003	5.4600e-003	0.0000	25.5111	25.5111	6.0000e-003	0.0000	25.6611
Total	**0.0150**	**0.1372**	**0.1769**	**3.0000e-004**		**5.8000e-003**	**5.8000e-003**		**5.4600e-003**	**5.4600e-003**	**0.0000**	**25.5111**	**25.5111**	**6.0000e-003**	**0.0000**	**25.6611**

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	4.4000e-004	0.0174	3.2400e-003	6.0000e-005	1.5300e-003	2.0000e-005	1.5400e-003	4.4000e-004	2.0000e-005	4.6000e-004	0.0000	5.7614	5.7614	2.2000e-004	0.0000	5.7670
Worker	1.8400e-003	1.0000e-003	0.0117	5.0000e-005	6.3100e-003	3.0000e-005	6.3400e-003	1.6800e-003	3.0000e-005	1.7100e-003	0.0000	4.1423	4.1423	7.0000e-005	0.0000	4.1440
Total	**2.2800e-003**	**0.0184**	**0.0150**	**1.1000e-004**	**7.8400e-003**	**5.0000e-005**	**7.8800e-003**	**2.1200e-003**	**5.0000e-005**	**2.1700e-003**	**0.0000**	**9.9037**	**9.9037**	**2.9000e-004**	**0.0000**	**9.9110**

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	0.0150	0.1372	0.1769	3.0000e-004		5.8000e-003	5.8000e-003		5.4600e-003	5.4600e-003	0.0000	25.5111	25.5111	6.0000e-003	0.0000	25.6610
Total	**0.0150**	**0.1372**	**0.1769**	**3.0000e-004**		**5.8000e-003**	**5.8000e-003**		**5.4600e-003**	**5.4600e-003**	**0.0000**	**25.5111**	**25.5111**	**6.0000e-003**	**0.0000**	**25.6610**

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	4.4000e-004	0.0174	3.2400e-003	6.0000e-005	1.5300e-003	2.0000e-005	1.5400e-003	4.4000e-004	2.0000e-005	4.6000e-004	0.0000	5.7614	5.7614	2.2000e-004	0.0000	5.7670
Worker	1.8400e-003	1.0000e-003	0.0117	5.0000e-005	6.3100e-003	3.0000e-005	6.3400e-003	1.6800e-003	3.0000e-005	1.7100e-003	0.0000	4.1423	4.1423	7.0000e-005	0.0000	4.1440
Total	**2.2800e-003**	**0.0184**	**0.0150**	**1.1000e-004**	**7.8400e-003**	**5.0000e-005**	**7.8800e-003**	**2.1200e-003**	**5.0000e-005**	**2.1700e-003**	**0.0000**	**9.9037**	**9.9037**	**2.9000e-004**	**0.0000**	**9.9110**

3.4 Paving/Underground Utilities - 2021

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	0.1208	1.2259	1.4588	2.2200e-003		0.0654	0.0654		0.0601	0.0601	0.0000	195.1374	195.1374	0.0631	0.0000	196.7152
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.1208**	**1.2259**	**1.4588**	**2.2200e-003**		**0.0654**	**0.0654**		**0.0601**	**0.0601**	**0.0000**	**195.1374**	**195.1374**	**0.0631**	**0.0000**	**196.7152**

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	5.5100e-003	3.8100e-003	0.0385	1.1000e-004	0.0119	8.0000e-005	0.0120	3.1700e-003	7.0000e-005	3.2400e-003	0.0000	10.1623	10.1623	2.6000e-004	0.0000	10.1688
Total	**5.5100e-003**	**3.8100e-003**	**0.0385**	**1.1000e-004**	**0.0119**	**8.0000e-005**	**0.0120**	**3.1700e-003**	**7.0000e-005**	**3.2400e-003**	**0.0000**	**10.1623**	**10.1623**	**2.6000e-004**	**0.0000**	**10.1688**

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	0.1208	1.2259	1.4588	2.2200e-003		0.0654	0.0654		0.0601	0.0601	0.0000	195.1372	195.1372	0.0631	0.0000	196.7150
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.1208**	**1.2259**	**1.4588**	**2.2200e-003**		**0.0654**	**0.0654**		**0.0601**	**0.0601**	**0.0000**	**195.1372**	**195.1372**	**0.0631**	**0.0000**	**196.7150**

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	5.5100e-003	3.8100e-003	0.0385	1.1000e-004	0.0119	8.0000e-005	0.0120	3.1700e-003	7.0000e-005	3.2400e-003	0.0000	10.1623	10.1623	2.6000e-004	0.0000	10.1688
Total	**5.5100e-003**	**3.8100e-003**	**0.0385**	**1.1000e-004**	**0.0119**	**8.0000e-005**	**0.0120**	**3.1700e-003**	**7.0000e-005**	**3.2400e-003**	**0.0000**	**10.1623**	**10.1623**	**2.6000e-004**	**0.0000**	**10.1688**

Tracy Village - Building Construction - Neighborhoods 5 and 6

San Joaquin County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	200.00	Dwelling Unit	26.70	360,000.00	634

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	51
Climate Zone	2			**Operational Year**	2019
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Tracy Village - Building Construction - Neighborhoods 5 and 6

Land Use - Construction - Neighborhoods 5 & 6 out of 6

Construction Phase - Neighborhoods 5 and 6

Off-road Equipment - Equipment increased to account for underground utilities

Architectural Coating - SJVAPCD Rule 4601

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Residential_Exterior	150.00	65.00
tblArchitecturalCoating	EF_Residential_Interior	150.00	65.00
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	0
tblConstructionPhase	NumDays	35.00	73.00
tblConstructionPhase	NumDays	440.00	669.00
tblConstructionPhase	NumDays	35.00	130.00
tblConstructionPhase	PhaseEndDate	3/29/2017	2/9/2028
tblConstructionPhase	PhaseEndDate	3/29/2017	2/1/2028
tblConstructionPhase	PhaseEndDate	3/29/2017	7/1/2021
tblConstructionPhase	PhaseStartDate	3/30/2017	11/1/2027
tblConstructionPhase	PhaseStartDate	3/30/2017	7/10/2025
tblConstructionPhase	PhaseStartDate	3/30/2017	1/1/2021
tblLandUse	LotAcreage	64.94	26.70
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblProjectCharacteristics	OperationalYear	2018	2019
tblVehicleTrips	ST_TR	9.91	0.00
tblVehicleTrips	SU_TR	8.62	0.00
tblVehicleTrips	WD_TR	9.52	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

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	lb/day										lb/day					
2021	1.9528	18.9126	23.1127	0.0361	0.1889	1.0065	1.1955	0.0501	0.9260	0.9761	0.0000	3,496.7260	3,496.7260	1.0751	0.0000	3,523.6033
2025	1.6311	14.1882	17.8787	0.0377	0.7337	0.5326	1.2663	0.1979	0.5009	0.6988	0.0000	3,651.6643	3,651.6643	0.6330	0.0000	3,667.4888
2026	1.6174	14.1639	17.7752	0.0374	0.7337	0.5325	1.2662	0.1979	0.5008	0.6987	0.0000	3,629.4011	3,629.4011	0.6318	0.0000	3,645.1963
2027	41.9282	15.3036	19.7327	0.0411	0.8488	0.5844	1.4332	0.2284	0.5527	0.7811	0.0000	3,981.7141	3,981.7141	0.6476	0.0000	3,997.9035
2028	41.9126	15.2834	19.6254	0.0409	0.8488	0.5841	1.4329	0.2284	0.5525	0.7809	0.0000	3,961.6926	3,961.6926	0.6464	0.0000	3,977.8520
Maximum	**41.9282**	**18.9126**	**23.1127**	**0.0411**	**0.8488**	**1.0065**	**1.4332**	**0.2284**	**0.9260**	**0.9761**	**0.0000**	**3,981.7141**	**3,981.7141**	**1.0751**	**0.0000**	**3,997.9035**

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	lb/day										lb/day					
2021	1.9528	18.9126	23.1127	0.0361	0.1889	1.0065	1.1955	0.0501	0.9260	0.9761	0.0000	3,496.7259	3,496.7259	1.0751	0.0000	3,523.6033
2025	1.6311	14.1882	17.8787	0.0377	0.7337	0.5326	1.2663	0.1979	0.5009	0.6988	0.0000	3,651.6643	3,651.6643	0.6330	0.0000	3,667.4888
2026	1.6174	14.1639	17.7752	0.0374	0.7337	0.5325	1.2662	0.1979	0.5008	0.6987	0.0000	3,629.4011	3,629.4011	0.6318	0.0000	3,645.1963
2027	41.9282	15.3036	19.7327	0.0411	0.8488	0.5844	1.4332	0.2284	0.5527	0.7811	0.0000	3,981.7141	3,981.7141	0.6476	0.0000	3,997.9035
2028	41.9126	15.2834	19.6254	0.0409	0.8488	0.5841	1.4329	0.2284	0.5525	0.7809	0.0000	3,961.6926	3,961.6926	0.6464	0.0000	3,977.8520
Maximum	**41.9282**	**18.9126**	**23.1127**	**0.0411**	**0.8488**	**1.0065**	**1.4332**	**0.2284**	**0.9260**	**0.9761**	**0.0000**	**3,981.7141**	**3,981.7141**	**1.0751**	**0.0000**	**3,997.9035**

	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	Architectural Coating	Architectural Coating	11/1/2027	2/9/2028	5	73	
2	Building Construction	Building Construction	7/10/2025	2/1/2028	5	669	2 out of 6 neighborhoods
3	Paving/Underground Utilities	Paving	1/1/2021	7/1/2021	5	130	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 729,000; Residential Outdoor: 243,000; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area:

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving/Underground Utilities	Excavators	1	8.00	158	0.38
Paving/Underground Utilities	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving/Underground Utilities	Pavers	2	8.00	130	0.42
Paving/Underground Utilities	Rollers	2	8.00	80	0.38
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Paving/Underground Utilities	Paving Equipment	2	8.00	132	0.36
Building Construction	Welders	1	8.00	46	0.45

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
Architectural Coating	1	14.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	72.00	21.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving/Underground Utilities	9	23.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Clean Paved Roads

3.2 Architectural Coating - 2027

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	lb/day										lb/day					
Archit. Coating	40.1150					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**40.2858**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

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	lb/day										lb/day					
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
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
Worker	0.0382	0.0176	0.2534	9.1000e-004	0.1150	6.1000e-004	0.1156	0.0305	5.6000e-004	0.0311		90.6036	90.6036	1.5800e-003		90.6431
Total	**0.0382**	**0.0176**	**0.2534**	**9.1000e-004**	**0.1150**	**6.1000e-004**	**0.1156**	**0.0305**	**5.6000e-004**	**0.0311**		**90.6036**	**90.6036**	**1.5800e-003**		**90.6431**

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	lb/day										lb/day					
Archit. Coating	40.1150					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**40.2858**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

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	lb/day										lb/day					
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
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
Worker	0.0382	0.0176	0.2534	9.1000e-004	0.1150	6.1000e-004	0.1156	0.0305	5.6000e-004	0.0311		90.6036	90.6036	1.5800e-003		90.6431
Total	**0.0382**	**0.0176**	**0.2534**	**9.1000e-004**	**0.1150**	**6.1000e-004**	**0.1156**	**0.0305**	**5.6000e-004**	**0.0311**		**90.6036**	**90.6036**	**1.5800e-003**		**90.6431**

3.2 Architectural Coating - 2028

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	lb/day										lb/day					
Archit. Coating	40.1150					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**40.2858**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

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	lb/day										lb/day					
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
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
Worker	0.0358	0.0161	0.2372	8.8000e-004	0.1150	5.7000e-004	0.1156	0.0305	5.2000e-004	0.0310		87.7808	87.7808	1.4500e-003		87.8170
Total	**0.0358**	**0.0161**	**0.2372**	**8.8000e-004**	**0.1150**	**5.7000e-004**	**0.1156**	**0.0305**	**5.2000e-004**	**0.0310**		**87.7808**	**87.7808**	**1.4500e-003**		**87.8170**

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	lb/day										lb/day					
Archit. Coating	40.1150					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**40.2858**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

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	lb/day										lb/day					
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
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
Worker	0.0358	0.0161	0.2372	8.8000e-004	0.1150	5.7000e-004	0.1156	0.0305	5.2000e-004	0.0310		87.7808	87.7808	1.4500e-003		87.8170
Total	**0.0358**	**0.0161**	**0.2372**	**8.8000e-004**	**0.1150**	**5.7000e-004**	**0.1156**	**0.0305**	**5.2000e-004**	**0.0310**		**87.7808**	**87.7808**	**1.4500e-003**		**87.8170**

3.3 Building Construction - 2025

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	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	lb/day										lb/day					
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
Vendor	0.0422	1.6101	0.3032	5.6800e-003	0.1423	1.6400e-003	0.1439	0.0410	1.5700e-003	0.0425		594.4249	594.4249	0.0223		594.9822
Worker	0.2215	0.1084	1.4908	5.0200e-003	0.5915	3.3700e-003	0.5948	0.1569	3.1000e-003	0.1600		500.7650	500.7650	9.7400e-003		501.0086
Total	**0.2637**	**1.7186**	**1.7940**	**0.0107**	**0.7337**	**5.0100e-003**	**0.7388**	**0.1979**	**4.6700e-003**	**0.2025**		**1,095.1900**	**1,095.1900**	**0.0320**		**1,095.9908**

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	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	lb/day										lb/day					
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
Vendor	0.0422	1.6101	0.3032	5.6800e-003	0.1423	1.6400e-003	0.1439	0.0410	1.5700e-003	0.0425		594.4249	594.4249	0.0223		594.9822
Worker	0.2215	0.1084	1.4908	5.0200e-003	0.5915	3.3700e-003	0.5948	0.1569	3.1000e-003	0.1600		500.7650	500.7650	9.7400e-003		501.0086
Total	**0.2637**	**1.7186**	**1.7940**	**0.0107**	**0.7337**	**5.0100e-003**	**0.7388**	**0.1979**	**4.6700e-003**	**0.2025**		**1,095.1900**	**1,095.1900**	**0.0320**		**1,095.9908**

3.3 Building Construction - 2026

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	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	lb/day										lb/day					
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
Vendor	0.0412	1.5953	0.2918	5.6400e-003	0.1423	1.6200e-003	0.1439	0.0410	1.5500e-003	0.0425		590.5865	590.5865	0.0219		591.1350
Worker	0.2088	0.0989	1.3987	4.8400e-003	0.5915	3.2900e-003	0.5948	0.1569	3.0300e-003	0.1599		482.3403	482.3403	8.9200e-003		482.5632
Total	**0.2500**	**1.6942**	**1.6905**	**0.0105**	**0.7337**	**4.9100e-003**	**0.7387**	**0.1979**	**4.5800e-003**	**0.2024**		**1,072.9268**	**1,072.9268**	**0.0309**		**1,073.6983**

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	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	lb/day										lb/day					
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
Vendor	0.0412	1.5953	0.2918	5.6400e-003	0.1423	1.6200e-003	0.1439	0.0410	1.5500e-003	0.0425		590.5865	590.5865	0.0219		591.1350
Worker	0.2088	0.0989	1.3987	4.8400e-003	0.5915	3.2900e-003	0.5948	0.1569	3.0300e-003	0.1599		482.3403	482.3403	8.9200e-003		482.5632
Total	**0.2500**	**1.6942**	**1.6905**	**0.0105**	**0.7337**	**4.9100e-003**	**0.7387**	**0.1979**	**4.5800e-003**	**0.2024**		**1,072.9268**	**1,072.9268**	**0.0309**		**1,073.6983**

3.3 Building Construction - 2027

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	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	lb/day										lb/day					
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
Vendor	0.0402	1.5806	0.2821	5.6100e-003	0.1423	1.5900e-003	0.1439	0.0410	1.5200e-003	0.0425		587.2268	587.2268	0.0216		587.7662
Worker	0.1965	0.0903	1.3034	4.6700e-003	0.5915	3.1300e-003	0.5946	0.1569	2.8800e-003	0.1598		465.9613	465.9613	8.1200e-003		466.1643
Total	**0.2367**	**1.6709**	**1.5855**	**0.0103**	**0.7337**	**4.7200e-003**	**0.7385**	**0.1979**	**4.4000e-003**	**0.2023**		**1,053.1881**	**1,053.1881**	**0.0297**		**1,053.9305**

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	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	lb/day										lb/day					
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
Vendor	0.0402	1.5806	0.2821	5.6100e-003	0.1423	1.5900e-003	0.1439	0.0410	1.5200e-003	0.0425		587.2268	587.2268	0.0216		587.7662
Worker	0.1965	0.0903	1.3034	4.6700e-003	0.5915	3.1300e-003	0.5946	0.1569	2.8800e-003	0.1598		465.9613	465.9613	8.1200e-003		466.1643
Total	**0.2367**	**1.6709**	**1.5855**	**0.0103**	**0.7337**	**4.7200e-003**	**0.7385**	**0.1979**	**4.4000e-003**	**0.2023**		**1,053.1881**	**1,053.1881**	**0.0297**		**1,053.9305**

3.3 Building Construction - 2028

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	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	lb/day										lb/day					
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
Vendor	0.0395	1.5695	0.2746	5.5800e-003	0.1423	1.5800e-003	0.1439	0.0410	1.5100e-003	0.0425		584.5451	584.5451	0.0212		585.0750
Worker	0.1841	0.0827	1.2198	4.5300e-003	0.5915	2.9200e-003	0.5944	0.1569	2.6800e-003	0.1596		451.4443	451.4443	7.4300e-003		451.6301
Total	**0.2236**	**1.6522**	**1.4944**	**0.0101**	**0.7337**	**4.5000e-003**	**0.7382**	**0.1979**	**4.1900e-003**	**0.2021**		**1,035.9894**	**1,035.9894**	**0.0286**		**1,036.7051**

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	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	lb/day										lb/day					
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
Vendor	0.0395	1.5695	0.2746	5.5800e-003	0.1423	1.5800e-003	0.1439	0.0410	1.5100e-003	0.0425		584.5451	584.5451	0.0212		585.0750
Worker	0.1841	0.0827	1.2198	4.5300e-003	0.5915	2.9200e-003	0.5944	0.1569	2.6800e-003	0.1596		451.4443	451.4443	7.4300e-003		451.6301
Total	**0.2236**	**1.6522**	**1.4944**	**0.0101**	**0.7337**	**4.5000e-003**	**0.7382**	**0.1979**	**4.1900e-003**	**0.2021**		**1,035.9894**	**1,035.9894**	**0.0286**		**1,036.7051**

3.4 Paving/Underground Utilities - 2021

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	lb/day										lb/day					
Off-Road	1.8589	18.8595	22.4436	0.0342		1.0053	1.0053		0.9249	0.9249		3,309.2642	3,309.2642	1.0703		3,336.0213
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.8589**	**18.8595**	**22.4436**	**0.0342**		**1.0053**	**1.0053**		**0.9249**	**0.9249**		**3,309.2642**	**3,309.2642**	**1.0703**		**3,336.0213**

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	lb/day										lb/day					
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
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
Worker	0.0939	0.0531	0.6691	1.8800e-003	0.1889	1.2000e-003	0.1901	0.0501	1.1100e-003	0.0512		187.4617	187.4617	4.8100e-003		187.5820
Total	**0.0939**	**0.0531**	**0.6691**	**1.8800e-003**	**0.1889**	**1.2000e-003**	**0.1901**	**0.0501**	**1.1100e-003**	**0.0512**		**187.4617**	**187.4617**	**4.8100e-003**		**187.5820**

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	lb/day										lb/day					
Off-Road	1.8589	18.8595	22.4436	0.0342		1.0053	1.0053		0.9249	0.9249	0.0000	3,309.2642	3,309.2642	1.0703		3,336.0213
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.8589**	**18.8595**	**22.4436**	**0.0342**		**1.0053**	**1.0053**		**0.9249**	**0.9249**	**0.0000**	**3,309.2642**	**3,309.2642**	**1.0703**		**3,336.0213**

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	lb/day										lb/day					
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
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
Worker	0.0939	0.0531	0.6691	1.8800e-003	0.1889	1.2000e-003	0.1901	0.0501	1.1100e-003	0.0512		187.4617	187.4617	4.8100e-003		187.5820
Total	**0.0939**	**0.0531**	**0.6691**	**1.8800e-003**	**0.1889**	**1.2000e-003**	**0.1901**	**0.0501**	**1.1100e-003**	**0.0512**		**187.4617**	**187.4617**	**4.8100e-003**		**187.5820**

Tracy Village - Building Construction - Neighborhoods 5 and 6

San Joaquin County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	200.00	Dwelling Unit	26.70	360,000.00	634

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	51
Climate Zone	2			**Operational Year**	2019
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Tracy Village - Building Construction - Neighborhoods 5 and 6

Land Use - Construction - Neighborhoods 5 & 6 out of 6

Construction Phase - Neighborhoods 5 and 6

Off-road Equipment - Equipment increased to account for underground utilities

Architectural Coating - SJVAPCD Rule 4601

Vehicle Trips - Construction only

Energy Use -

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Residential_Exterior	150.00	65.00
tblArchitecturalCoating	EF_Residential_Interior	150.00	65.00
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	0
tblConstructionPhase	NumDays	35.00	73.00
tblConstructionPhase	NumDays	440.00	669.00
tblConstructionPhase	NumDays	35.00	130.00
tblConstructionPhase	PhaseEndDate	3/29/2017	2/9/2028
tblConstructionPhase	PhaseEndDate	3/29/2017	2/1/2028
tblConstructionPhase	PhaseEndDate	3/29/2017	7/1/2021
tblConstructionPhase	PhaseStartDate	3/30/2017	11/1/2027
tblConstructionPhase	PhaseStartDate	3/30/2017	7/10/2025
tblConstructionPhase	PhaseStartDate	3/30/2017	1/1/2021
tblLandUse	LotAcreage	64.94	26.70
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblProjectCharacteristics	OperationalYear	2018	2019
tblVehicleTrips	ST_TR	9.91	0.00
tblVehicleTrips	SU_TR	8.62	0.00
tblVehicleTrips	WD_TR	9.52	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

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	lb/day										lb/day					
2021	1.9504	18.9240	23.0356	0.0359	0.1889	1.0065	1.1955	0.0501	0.9260	0.9761	0.0000	3,476.8381	3,476.8381	1.0746	0.0000	3,503.7035
2025	1.6294	14.2194	17.7370	0.0370	0.7337	0.5326	1.2664	0.1979	0.5010	0.6988	0.0000	3,580.8804	3,580.8804	0.6348	0.0000	3,596.7494
2026	1.6164	14.1924	17.6394	0.0368	0.7337	0.5325	1.2662	0.1979	0.5009	0.6987	0.0000	3,560.8657	3,560.8657	0.6336	0.0000	3,576.7064
2027	41.9273	15.3334	19.5713	0.0404	0.8488	0.5844	1.4332	0.2284	0.5528	0.7811	0.0000	3,905.5191	3,905.5191	0.6493	0.0000	3,921.7506
2028	41.9122	15.3109	19.4730	0.0402	0.8488	0.5842	1.4329	0.2284	0.5525	0.7809	0.0000	3,887.4832	3,887.4832	0.6481	0.0000	3,903.6855
Maximum	**41.9273**	**18.9240**	**23.0356**	**0.0404**	**0.8488**	**1.0065**	**1.4332**	**0.2284**	**0.9260**	**0.9761**	**0.0000**	**3,905.5191**	**3,905.5191**	**1.0746**	**0.0000**	**3,921.7506**

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	lb/day										lb/day					
2021	1.9504	18.9240	23.0356	0.0359	0.1889	1.0065	1.1955	0.0501	0.9260	0.9761	0.0000	3,476.8381	3,476.8381	1.0746	0.0000	3,503.7035
2025	1.6294	14.2194	17.7370	0.0370	0.7337	0.5326	1.2664	0.1979	0.5010	0.6988	0.0000	3,580.8804	3,580.8804	0.6348	0.0000	3,596.7494
2026	1.6164	14.1924	17.6394	0.0368	0.7337	0.5325	1.2662	0.1979	0.5009	0.6987	0.0000	3,560.8657	3,560.8657	0.6336	0.0000	3,576.7064
2027	41.9273	15.3334	19.5713	0.0404	0.8488	0.5844	1.4332	0.2284	0.5528	0.7811	0.0000	3,905.5191	3,905.5191	0.6493	0.0000	3,921.7506
2028	41.9122	15.3109	19.4730	0.0402	0.8488	0.5842	1.4329	0.2284	0.5525	0.7809	0.0000	3,887.4832	3,887.4832	0.6481	0.0000	3,903.6855
Maximum	**41.9273**	**18.9240**	**23.0356**	**0.0404**	**0.8488**	**1.0065**	**1.4332**	**0.2284**	**0.9260**	**0.9761**	**0.0000**	**3,905.5191**	**3,905.5191**	**1.0746**	**0.0000**	**3,921.7506**

	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	Architectural Coating	Architectural Coating	11/1/2027	2/9/2028	5	73	
2	Building Construction	Building Construction	7/10/2025	2/1/2028	5	669	2 out of 6 neighborhoods
3	Paving/Underground Utilities	Paving	1/1/2021	7/1/2021	5	130	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 729,000; Residential Outdoor: 243,000; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area:

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving/Underground Utilities	Excavators	1	8.00	158	0.38
Paving/Underground Utilities	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving/Underground Utilities	Pavers	2	8.00	130	0.42
Paving/Underground Utilities	Rollers	2	8.00	80	0.38
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Paving/Underground Utilities	Paving Equipment	2	8.00	132	0.36
Building Construction	Welders	1	8.00	46	0.45

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
Architectural Coating	1	14.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	72.00	21.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving/Underground Utilities	9	23.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Clean Paved Roads

3.2 Architectural Coating - 2027

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	lb/day										lb/day					
Archit. Coating	40.1150					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**40.2858**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

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	lb/day										lb/day					
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
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
Worker	0.0377	0.0213	0.2197	8.1000e-004	0.1150	6.1000e-004	0.1156	0.0305	5.6000e-004	0.0311		81.0159	81.0159	1.4100e-003		81.0510
Total	**0.0377**	**0.0213**	**0.2197**	**8.1000e-004**	**0.1150**	**6.1000e-004**	**0.1156**	**0.0305**	**5.6000e-004**	**0.0311**		**81.0159**	**81.0159**	**1.4100e-003**		**81.0510**

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	lb/day										lb/day					
Archit. Coating	40.1150					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**40.2858**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

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	lb/day										lb/day					
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
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
Worker	0.0377	0.0213	0.2197	8.1000e-004	0.1150	6.1000e-004	0.1156	0.0305	5.6000e-004	0.0311		81.0159	81.0159	1.4100e-003		81.0510
Total	**0.0377**	**0.0213**	**0.2197**	**8.1000e-004**	**0.1150**	**6.1000e-004**	**0.1156**	**0.0305**	**5.6000e-004**	**0.0311**		**81.0159**	**81.0159**	**1.4100e-003**		**81.0510**

3.2 Architectural Coating - 2028

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	lb/day										lb/day					
Archit. Coating	40.1150					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**40.2858**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

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	lb/day										lb/day					
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
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
Worker	0.0354	0.0195	0.2051	7.9000e-004	0.1150	5.7000e-004	0.1156	0.0305	5.2000e-004	0.0310		78.4868	78.4868	1.2800e-003		78.5189
Total	**0.0354**	**0.0195**	**0.2051**	**7.9000e-004**	**0.1150**	**5.7000e-004**	**0.1156**	**0.0305**	**5.2000e-004**	**0.0310**		**78.4868**	**78.4868**	**1.2800e-003**		**78.5189**

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	lb/day										lb/day					
Archit. Coating	40.1150					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**40.2858**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

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	lb/day										lb/day					
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
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
Worker	0.0354	0.0195	0.2051	7.9000e-004	0.1150	5.7000e-004	0.1156	0.0305	5.2000e-004	0.0310		78.4868	78.4868	1.2800e-003		78.5189
Total	**0.0354**	**0.0195**	**0.2051**	**7.9000e-004**	**0.1150**	**5.7000e-004**	**0.1156**	**0.0305**	**5.2000e-004**	**0.0310**		**78.4868**	**78.4868**	**1.2800e-003**		**78.5189**

3.3 Building Construction - 2025

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	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	lb/day										lb/day					
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
Vendor	0.0447	1.6182	0.3522	5.5100e-003	0.1423	1.6700e-003	0.1440	0.0410	1.6000e-003	0.0426		576.6545	576.6545	0.0251		577.2823
Worker	0.2174	0.1315	1.3001	4.4900e-003	0.5915	3.3700e-003	0.5948	0.1569	3.1000e-003	0.1600		447.7515	447.7515	8.7000e-003		447.9691
Total	**0.2620**	**1.7497**	**1.6523**	**0.0100**	**0.7337**	**5.0400e-003**	**0.7388**	**0.1979**	**4.7000e-003**	**0.2026**		**1,024.4060**	**1,024.4060**	**0.0338**		**1,025.2513**

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	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	lb/day										lb/day					
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
Vendor	0.0447	1.6182	0.3522	5.5100e-003	0.1423	1.6700e-003	0.1440	0.0410	1.6000e-003	0.0426		576.6545	576.6545	0.0251		577.2823
Worker	0.2174	0.1315	1.3001	4.4900e-003	0.5915	3.3700e-003	0.5948	0.1569	3.1000e-003	0.1600		447.7515	447.7515	8.7000e-003		447.9691
Total	**0.2620**	**1.7497**	**1.6523**	**0.0100**	**0.7337**	**5.0400e-003**	**0.7388**	**0.1979**	**4.7000e-003**	**0.2026**		**1,024.4060**	**1,024.4060**	**0.0338**		**1,025.2513**

3.3 Building Construction - 2026

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	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	lb/day										lb/day					
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
Vendor	0.0435	1.6029	0.3392	5.4700e-003	0.1423	1.6500e-003	0.1439	0.0410	1.5800e-003	0.0425		573.0801	573.0801	0.0247		573.6983
Worker	0.2055	0.1199	1.2155	4.3200e-003	0.5915	3.2900e-003	0.5948	0.1569	3.0300e-003	0.1599		431.3113	431.3113	7.9500e-003		431.5101
Total	**0.2490**	**1.7227**	**1.5547**	**9.7900e-003**	**0.7337**	**4.9400e-003**	**0.7387**	**0.1979**	**4.6100e-003**	**0.2025**		**1,004.3914**	**1,004.3914**	**0.0327**		**1,005.2084**

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	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	lb/day										lb/day					
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
Vendor	0.0435	1.6029	0.3392	5.4700e-003	0.1423	1.6500e-003	0.1439	0.0410	1.5800e-003	0.0425		573.0801	573.0801	0.0247		573.6983
Worker	0.2055	0.1199	1.2155	4.3200e-003	0.5915	3.2900e-003	0.5948	0.1569	3.0300e-003	0.1599		431.3113	431.3113	7.9500e-003		431.5101
Total	**0.2490**	**1.7227**	**1.5547**	**9.7900e-003**	**0.7337**	**4.9400e-003**	**0.7387**	**0.1979**	**4.6100e-003**	**0.2025**		**1,004.3914**	**1,004.3914**	**0.0327**		**1,005.2084**

3.3 Building Construction - 2027

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	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	lb/day										lb/day					
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
Vendor	0.0426	1.5875	0.3282	5.4400e-003	0.1423	1.6300e-003	0.1439	0.0410	1.5500e-003	0.0425		569.9276	569.9276	0.0243		570.5359
Worker	0.1939	0.1095	1.1297	4.1800e-003	0.5915	3.1300e-003	0.5946	0.1569	2.8800e-003	0.1598		416.6531	416.6531	7.2300e-003		416.8338
Total	**0.2364**	**1.6970**	**1.4579**	**9.6200e-003**	**0.7337**	**4.7600e-003**	**0.7385**	**0.1979**	**4.4300e-003**	**0.2023**		**986.5808**	**986.5808**	**0.0316**		**987.3696**

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	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	lb/day										lb/day					
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
Vendor	0.0426	1.5875	0.3282	5.4400e-003	0.1423	1.6300e-003	0.1439	0.0410	1.5500e-003	0.0425		569.9276	569.9276	0.0243		570.5359
Worker	0.1939	0.1095	1.1297	4.1800e-003	0.5915	3.1300e-003	0.5946	0.1569	2.8800e-003	0.1598		416.6531	416.6531	7.2300e-003		416.8338
Total	**0.2364**	**1.6970**	**1.4579**	**9.6200e-003**	**0.7337**	**4.7600e-003**	**0.7385**	**0.1979**	**4.4300e-003**	**0.2023**		**986.5808**	**986.5808**	**0.0316**		**987.3696**

3.3 Building Construction - 2028

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	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	lb/day										lb/day					
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
Vendor	0.0417	1.5761	0.3196	5.4200e-003	0.1423	1.6100e-003	0.1439	0.0410	1.5400e-003	0.0425		567.4274	567.4274	0.0239		568.0250
Worker	0.1819	0.1002	1.0545	4.0500e-003	0.5915	2.9200e-003	0.5944	0.1569	2.6800e-003	0.1596		403.6466	403.6466	6.6000e-003		403.8116
Total	**0.2236**	**1.6762**	**1.3741**	**9.4700e-003**	**0.7337**	**4.5300e-003**	**0.7383**	**0.1979**	**4.2200e-003**	**0.2021**		**971.0739**	**971.0739**	**0.0305**		**971.8366**

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	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	lb/day										lb/day					
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
Vendor	0.0417	1.5761	0.3196	5.4200e-003	0.1423	1.6100e-003	0.1439	0.0410	1.5400e-003	0.0425		567.4274	567.4274	0.0239		568.0250
Worker	0.1819	0.1002	1.0545	4.0500e-003	0.5915	2.9200e-003	0.5944	0.1569	2.6800e-003	0.1596		403.6466	403.6466	6.6000e-003		403.8116
Total	**0.2236**	**1.6762**	**1.3741**	**9.4700e-003**	**0.7337**	**4.5300e-003**	**0.7383**	**0.1979**	**4.2200e-003**	**0.2021**		**971.0739**	**971.0739**	**0.0305**		**971.8366**

3.4 Paving/Underground Utilities - 2021

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	lb/day										lb/day					
Off-Road	1.8589	18.8595	22.4436	0.0342		1.0053	1.0053		0.9249	0.9249		3,309.2642	3,309.2642	1.0703		3,336.0213
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.8589**	**18.8595**	**22.4436**	**0.0342**		**1.0053**	**1.0053**		**0.9249**	**0.9249**		**3,309.2642**	**3,309.2642**	**1.0703**		**3,336.0213**

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	lb/day										lb/day					
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
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
Worker	0.0915	0.0645	0.5920	1.6800e-003	0.1889	1.2000e-003	0.1901	0.0501	1.1100e-003	0.0512		167.5739	167.5739	4.3400e-003		167.6823
Total	**0.0915**	**0.0645**	**0.5920**	**1.6800e-003**	**0.1889**	**1.2000e-003**	**0.1901**	**0.0501**	**1.1100e-003**	**0.0512**		**167.5739**	**167.5739**	**4.3400e-003**		**167.6823**

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	lb/day										lb/day					
Off-Road	1.8589	18.8595	22.4436	0.0342		1.0053	1.0053		0.9249	0.9249	0.0000	3,309.2642	3,309.2642	1.0703		3,336.0213
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.8589**	**18.8595**	**22.4436**	**0.0342**		**1.0053**	**1.0053**		**0.9249**	**0.9249**	**0.0000**	**3,309.2642**	**3,309.2642**	**1.0703**		**3,336.0213**

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	lb/day										lb/day					
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
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
Worker	0.0915	0.0645	0.5920	1.6800e-003	0.1889	1.2000e-003	0.1901	0.0501	1.1100e-003	0.0512		167.5739	167.5739	4.3400e-003		167.6823
Total	**0.0915**	**0.0645**	**0.5920**	**1.6800e-003**	**0.1889**	**1.2000e-003**	**0.1901**	**0.0501**	**1.1100e-003**	**0.0512**		**167.5739**	**167.5739**	**4.3400e-003**		**167.6823**

Tracy Village - Project Operations

San Joaquin County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	29.50	Acre	29.50	1,285,020.00	0
Other Non-Asphalt Surfaces	18.94	Acre	18.94	825,026.40	0
Parking Lot	45.00	Space	0.41	18,000.00	0
City Park	5.80	Acre	5.80	252,648.00	0
Recreational Swimming Pool	3.80	1000sqft	0.09	3,800.00	0
User Defined Recreational	12.00	User Defined Unit	0.28	12,000.00	0
Single Family Housing	600.00	Dwelling Unit	80.10	1,080,000.00	1903

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	51
Climate Zone	2			**Operational Year**	2019
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	427	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Tracy Village - Project Operations
PG&E Rate

Land Use - Based on project description and site plans

Construction Phase - Operations only

Trips and VMT - Operations only

Vehicle Trips - Project-specific trip generation rates from the Tracy Village Transportation Impact Analysis prepared by Kimley-Horn.
Wkday 10.0; Sat 10.41; Sun 9.05

Woodstoves - Based on SJVAPCD Rule 4901

Energy Use - PG&E Rate

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation - The project site is located 2.8 miles from Downtown Tracy
Located <0.25 mile from nearest bus stop and <1 mile from the nearest train station
Provide traffic calming measures

Area Mitigation - The project will not include wood-burning fireplaces
Rule 4601 Architectural Coatings

Energy Mitigation - Compliance with 2016 Title 24

Water Mitigation - Green Building Code Standards

Waste Mitigation - City of Tracy Diversion Rate

Fleet Mix - SJVAPCD Residential Fleet Mix

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Parking	127,683.00	0.00
tblArchitecturalCoating	EF_Parking	150.00	0.00
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	150	65
tblAreaMitigation	UseLowVOCPaintNonresidentialInteriorValue	150	65
tblAreaMitigation	UseLowVOCPaintResidentialExteriorValue	150	65
tblAreaMitigation	UseLowVOCPaintResidentialInteriorValue	150	65
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	0
tblConstructionPhase	NumDays	220.00	1.00
tblFireplaces	NumberGas	330.00	600.00
tblFireplaces	NumberNoFireplace	270.00	600.00
tblFleetMix	HHD	0.05	0.02
tblFleetMix	LDA	0.54	0.51
tblFleetMix	LDT1	0.04	0.21
tblFleetMix	LDT2	0.18	0.17
tblFleetMix	LHD1	0.02	2.1000e-003
tblFleetMix	LHD2	5.2200e-003	1.0000e-003
tblFleetMix	MCY	5.2730e-003	3.1000e-003
tblFleetMix	MDV	0.13	0.06
tblFleetMix	MH	9.9600e-004	2.3000e-003
tblFleetMix	MHD	0.02	9.5000e-003

tblFleetMix	OBUS	1.1810e-003	0.00
tblFleetMix	SBUS	6.2300e-004	1.0000e-003
tblFleetMix	UBUS	1.6300e-003	3.8000e-003
tblLandUse	BuildingSpaceSquareFeet	0.00	12,000.00
tblLandUse	LandUseSquareFeet	0.00	12,000.00
tblLandUse	LotAcreage	0.00	0.28
tblLandUse	LotAcreage	194.81	80.10
tblProjectCharacteristics	CO2IntensityFactor	641.35	427
tblProjectCharacteristics	OperationalYear	2018	2019
tblVehicleTrips	ST_TR	22.75	0.00
tblVehicleTrips	ST_TR	9.10	0.00
tblVehicleTrips	ST_TR	9.91	10.41
tblVehicleTrips	SU_TR	16.74	0.00
tblVehicleTrips	SU_TR	13.60	0.00
tblVehicleTrips	SU_TR	8.62	9.05
tblVehicleTrips	WD_TR	1.89	0.00
tblVehicleTrips	WD_TR	33.82	0.00
tblVehicleTrips	WD_TR	9.52	10.00
tblWoodstoves	NumberCatalytic	0.00	135.00
tblWoodstoves	NumberNoncatalytic	0.00	135.00

2.0 Emissions Summary

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	8.4073	0.8675	29.6372	0.0844		4.1335	4.1335		4.1335	4.1335	545.7676	479.8692	1,025.6368	2.5676	8.6600e-003	1,092.4077
Energy	0.1035	0.8844	0.3763	5.6400e-003		0.0715	0.0715		0.0715	0.0715	0.0000	2,079.9191	2,079.9191	0.0913	0.0336	2,092.2186
Mobile	2.4572	9.3597	29.7988	0.0765	6.4552	0.0914	6.5466	1.7293	0.0859	1.8152	0.0000	7,000.1299	7,000.1299	0.4009	0.0000	7,010.1512
Waste						0.0000	0.0000		0.0000	0.0000	143.5633	0.0000	143.5633	8.4844	0.0000	355.6721
Water						0.0000	0.0000		0.0000	0.0000	12.4735	62.6902	75.1637	1.2854	0.0311	116.5761
Total	**10.9679**	**11.1116**	**59.8124**	**0.1665**	**6.4552**	**4.2963**	**10.7515**	**1.7293**	**4.2908**	**6.0202**	**701.8044**	**9,622.6084**	**10,324.4129**	**12.8295**	**0.0734**	**10,667.0257**

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	5.0750	0.4596	4.6195	2.8400e-003		0.0573	0.0573		0.0573	0.0573	0.0000	479.8036	479.8036	0.0161	8.6600e-003	482.7882
Energy	0.0770	0.6576	0.2798	4.2000e-003		0.0532	0.0532		0.0532	0.0532	0.0000	1,792.2132	1,792.2132	0.0846	0.0284	1,802.8044
Mobile	2.3829	8.7853	27.5936	0.0695	5.8258	0.0833	5.9092	1.5607	0.0783	1.6390	0.0000	6,360.3583	6,360.3583	0.3722	0.0000	6,369.6640
Waste						0.0000	0.0000		0.0000	0.0000	43.0690	0.0000	43.0690	2.5453	0.0000	106.7016
Water						0.0000	0.0000		0.0000	0.0000	9.9788	50.1522	60.1310	1.0283	0.0249	93.2609
Total	**7.5348**	**9.9024**	**32.4929**	**0.0765**	**5.8258**	**0.1938**	**6.0197**	**1.5607**	**0.1888**	**1.7495**	**53.0478**	**8,682.5272**	**8,735.5750**	**4.0466**	**0.0620**	**8,855.2191**

	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	**31.30**	**10.88**	**45.68**	**54.04**	**9.75**	**95.49**	**44.01**	**9.75**	**95.60**	**70.94**	**92.44**	**9.77**	**15.39**	**68.46**	**15.52**	**16.99**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

	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	2.3829	8.7853	27.5936	0.0695	5.8258	0.0833	5.9092	1.5607	0.0783	1.6390	0.0000	6,360.3583	6,360.3583	0.3722	0.0000	6,369.6640
Unmitigated	2.4572	9.3597	29.7988	0.0765	6.4552	0.0914	6.5466	1.7293	0.0859	1.8152	0.0000	7,000.1299	7,000.1299	0.4009	0.0000	7,010.1512

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Recreational Swimming Pool	0.00	0.00	0.00		
Single Family Housing	6,000.00	6,246.00	5430.00	17,252,773	15,570,628
User Defined Recreational	0.00	0.00	0.00		
Total	6,000.00	6,246.00	5,430.00	17,252,773	15,570,628

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
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Recreational Swimming Pool	9.50	7.30	7.30	33.00	48.00	19.00	52	39	9
Single Family Housing	10.80	7.30	7.50	45.60	19.00	35.40	86	11	3
User Defined Recreational	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Asphalt Surfaces	0.540593	0.038119	0.180116	0.134753	0.022260	0.005220	0.015807	0.053428	0.001181	0.001630	0.005273	0.000623	0.000996
Other Non-Asphalt Surfaces	0.540593	0.038119	0.180116	0.134753	0.022260	0.005220	0.015807	0.053428	0.001181	0.001630	0.005273	0.000623	0.000996
Parking Lot	0.540593	0.038119	0.180116	0.134753	0.022260	0.005220	0.015807	0.053428	0.001181	0.001630	0.005273	0.000623	0.000996
City Park	0.540593	0.038119	0.180116	0.134753	0.022260	0.005220	0.015807	0.053428	0.001181	0.001630	0.005273	0.000623	0.000996
Recreational Swimming Pool	0.540593	0.038119	0.180116	0.134753	0.022260	0.005220	0.015807	0.053428	0.001181	0.001630	0.005273	0.000623	0.000996
User Defined Recreational	0.540593	0.038119	0.180116	0.134753	0.022260	0.005220	0.015807	0.053428	0.001181	0.001630	0.005273	0.000623	0.000996
Single Family Housing	0.511700	0.213500	0.169100	0.060900	0.002100	0.001000	0.009500	0.022000	0.000000	0.003800	0.003100	0.001000	0.002300

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	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	1,030.7022	1,030.7022	0.0700	0.0145	1,036.7682
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,055.7224	1,055.7224	0.0717	0.0148	1,061.9356
NaturalGas Mitigated	0.0770	0.6576	0.2798	4.2000e-003		0.0532	0.0532		0.0532	0.0532	0.0000	761.5109	761.5109	0.0146	0.0140	766.0362
NaturalGas Unmitigated	0.1035	0.8844	0.3763	5.6400e-003		0.0715	0.0715		0.0715	0.0715	0.0000	1,024.1967	1,024.1967	0.0196	0.0188	1,030.2830

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					
City Park	0	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
Other Asphalt Surfaces	0	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
Other Non-Asphalt Surfaces	0	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
Parking Lot	0	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
Recreational Swimming Pool	0	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
Single Family Housing	1.91927e+007	0.1035	0.8844	0.3763	5.6400e-003		0.0715	0.0715		0.0715	0.0715	0.0000	1,024.1967	1,024.1967	0.0196	0.0188	1,030.2830
User Defined Recreational	0	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
Total		**0.1035**	**0.8844**	**0.3763**	**5.6400e-003**		**0.0715**	**0.0715**		**0.0715**	**0.0715**	**0.0000**	**1,024.1967**	**1,024.1967**	**0.0196**	**0.0188**	**1,030.2830**

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					
City Park	0	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
Other Asphalt Surfaces	0	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
Other Non-Asphalt Surfaces	0	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
Parking Lot	0	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
Recreational Swimming Pool	0	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
Single Family Housing	1.42702e+007	0.0770	0.6576	0.2798	4.2000e-003		0.0532	0.0532		0.0532	0.0532	0.0000	761.5109	761.5109	0.0146	0.0140	766.0362
User Defined Recreational	0	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
Total		**0.0770**	**0.6576**	**0.2798**	**4.2000e-003**		**0.0532**	**0.0532**		**0.0532**	**0.0532**	**0.0000**	**761.5109**	**761.5109**	**0.0146**	**0.0140**	**766.0362**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	15840	3.0680	2.1000e-004	4.0000e-005	3.0860
Recreational Swimming Pool	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	5.43491e+006	1,052.6544	0.0715	0.0148	1,058.8495
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**1,055.7224**	**0.0717**	**0.0148**	**1,061.9356**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	15840	3.0680	2.1000e-004	4.0000e-005	3.0860
Recreational Swimming Pool	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	5.30573e+006	1,027.6343	0.0698	0.0144	1,033.6822
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**1,030.7022**	**0.0700**	**0.0145**	**1,036.7682**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use Electric Chainsaw

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

Use only Natural Gas Hearths

	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	5.0750	0.4596	4.6195	2.8400e-003		0.0573	0.0573		0.0573	0.0573	0.0000	479.8036	479.8036	0.0161	8.6600e-003	482.7882
Unmitigated	8.4073	0.8675	29.6372	0.0844		4.1335	4.1335		4.1335	4.1335	545.7676	479.8692	1,025.6368	2.5676	8.6600e-003	1,092.4077

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	1.0664					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.4047					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	2.7990	0.8157	25.1590	0.0841		4.1089	4.1089		4.1089	4.1089	545.7676	472.5899	1,018.3575	2.5604	8.6600e-003	1,084.9497
Landscaping	0.1372	0.0519	4.4782	2.4000e-004		0.0245	0.0245		0.0245	0.0245	0.0000	7.2793	7.2793	7.1500e-003	0.0000	7.4581
Total	**8.4073**	**0.8675**	**29.6372**	**0.0844**		**4.1335**	**4.1335**		**4.1335**	**4.1335**	**545.7676**	**479.8692**	**1,025.6368**	**2.5676**	**8.6600e-003**	**1,092.4077**

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	0.4873					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.4047					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0478	0.4081	0.1737	2.6000e-003		0.0330	0.0330		0.0330	0.0330	0.0000	472.5899	472.5899	9.0600e-003	8.6600e-003	475.3983
Landscaping	0.1352	0.0515	4.4458	2.3000e-004		0.0244	0.0244		0.0244	0.0244	0.0000	7.2138	7.2138	7.0500e-003	0.0000	7.3899
Total	**5.0750**	**0.4596**	**4.6195**	**2.8300e-003**		**0.0573**	**0.0573**		**0.0573**	**0.0573**	**0.0000**	**479.8036**	**479.8036**	**0.0161**	**8.6600e-003**	**482.7882**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	60.1310	1.0283	0.0249	93.2609
Unmitigated	75.1637	1.2854	0.0311	116.5761

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 6.91059	4.6847	3.2000e-004	7.0000e-005	4.7122
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	0.224744 / 0.137746	0.4002	7.3500e-003	1.8000e-004	0.6368
Single Family Housing	39.0924 / 24.6452	70.0788	1.2777	0.0309	111.2272
User Defined Recreational	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**75.1637**	**1.2854**	**0.0311**	**116.5761**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 5.52847	3.7477	2.5000e-004	5.0000e-005	3.7698
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	0.179795 / 0.110197	0.3202	5.8800e-003	1.4000e-004	0.5094
Single Family Housing	31.2739 / 19.7162	56.0631	1.0222	0.0247	88.9817
User Defined Recreational	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**60.1310**	**1.0283**	**0.0249**	**93.2609**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	43.0690	2.5453	0.0000	106.7016
Unmitigated	143.5633	8.4844	0.0000	355.6721

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.5	0.1015	6.0000e-003	0.0000	0.2515
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	21.66	4.3968	0.2598	0.0000	10.8929
Single Family Housing	685.08	139.0651	8.2185	0.0000	344.5278
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**143.5633**	**8.4844**	**0.0000**	**355.6721**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.15	0.0305	1.8000e-003	0.0000	0.0754
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	6.498	1.3190	0.0780	0.0000	3.2679
Single Family Housing	205.524	41.7195	2.4656	0.0000	103.3583
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**43.0690**	**2.5453**	**0.0000**	**106.7016**

9.0 Operational Offroad

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

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

Tracy Village - Project Operations - Maximum Daily Air Pollutant Emissions

San Joaquin County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Recreational	12.00	User Defined Unit	0.28	12,000.00	0
Single Family Housing	600.00	Dwelling Unit	134.84	1,080,000.00	1903

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	51
Climate Zone	2			**Operational Year**	2019
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	427	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Tracy Village - Project Operations - Maximum daily
PG&E Rate

Land Use - Based on project description and site plans
Operations only

Construction Phase - Operations only

Off-road Equipment - Operations only

Trips and VMT - Operations only

Vehicle Trips - Project-specific trip generation rates from the Tracy Village Transportation Impact Analysis prepared by Kimley-Horn.
Wkday 10.0; Sat 10.41; Sun 9.05
Localized impacts from mobile sources - 0.01-mile from the project site
Energy Use - PG&E Rate

Mobile Land Use Mitigation - The project site is located 2.8 miles from Downtown Tracy
Located <0.25 mile from nearest bus stop and <1 mile from the nearest train station
Provide traffic calming measures
Area Mitigation - The project will not include wood-burning fireplaces
Rule 4601 Architectural Coatings
Energy Mitigation - Compliance with 2016 Title 24
Water Mitigation - Green Building Code Standards
Waste Mitigation - City of Tracy Diversion Rate
Fleet Mix - SJVAPCD Residential Fleet Mix

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Parking	150.00	0.00
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	0
tblConstructionPhase	NumDays	220.00	1.00
tblFleetMix	HHD	0.05	0.02
tblFleetMix	LDA	0.54	0.51
tblFleetMix	LDT1	0.04	0.21
tblFleetMix	LDT2	0.18	0.17
tblFleetMix	LHD1	0.02	2.1000e-003
tblFleetMix	LHD2	5.2200e-003	1.0000e-003
tblFleetMix	MCY	5.2730e-003	3.1000e-003
tblFleetMix	MDV	0.13	0.06
tblFleetMix	MH	9.9600e-004	2.3000e-003
tblFleetMix	MHD	0.02	9.5000e-003
tblFleetMix	OBUS	1.1810e-003	0.00
tblFleetMix	SBUS	6.2300e-004	1.0000e-003
tblFleetMix	UBUS	1.6300e-003	3.8000e-003
tblLandUse	BuildingSpaceSquareFeet	0.00	12,000.00
tblLandUse	LandUseSquareFeet	0.00	12,000.00
tblLandUse	LotAcreage	0.00	0.28
tblLandUse	LotAcreage	194.81	134.84
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00

tblOffRoadEquipment	UsageHours	6.00	0.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	427
tblProjectCharacteristics	OperationalYear	2018	2019
tblTripsAndVMT	WorkerTripNumber	44.00	0.00
tblTripsAndVMT	WorkerTripNumber	44.00	0.00
tblTripsAndVMT	WorkerTripNumber	44.00	0.00
tblVehicleTrips	HO_TL	7.50	0.01
tblVehicleTrips	HS_TL	7.30	0.01
tblVehicleTrips	HW_TL	10.80	0.01
tblVehicleTrips	ST_TR	9.91	10.41
tblVehicleTrips	SU_TR	8.62	9.05
tblVehicleTrips	WD_TR	9.52	10.00

2.0 Emissions Summary

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	lb/day										lb/day					
Area	31.1324	6.0503	52.0766	0.0376		0.7152	0.7152		0.7152	0.7152	0.0000	7,077.3693	7,077.3693	0.2214	0.1281	7,121.0843
Energy	0.5671	4.8459	2.0621	0.0309		0.3918	0.3918		0.3918	0.3918		6,186.2118	6,186.2118	0.1186	0.1134	6,222.9733
Mobile	12.8651	20.0760	33.7935	0.0293	0.0572	0.0507	0.1079	0.0153	0.0471	0.0624		2,960.3005	2,960.3005	0.6223		2,975.8586
Total	**44.5646**	**30.9722**	**87.9322**	**0.0978**	**0.0572**	**1.1576**	**1.2148**	**0.0153**	**1.1540**	**1.1693**	**0.0000**	**16,223.8815**	**16,223.8815**	**0.9623**	**0.2415**	**16,319.9163**

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	lb/day										lb/day					
Area	31.1108	6.0467	51.7170	0.0375		0.7131	0.7131		0.7131	0.7131	0.0000	7,076.5664	7,076.5664	0.2202	0.1281	7,120.2499
Energy	0.4216	3.6030	1.5332	0.0230		0.2913	0.2913		0.2913	0.2913		4,599.5732	4,599.5732	0.0882	0.0843	4,626.9062
Mobile	12.8645	20.0714	33.7712	0.0292	0.0516	0.0506	0.1022	0.0138	0.0470	0.0608		2,953.7748	2,953.7748	0.6220		2,969.3258
Total	**44.3969**	**29.7210**	**87.0215**	**0.0897**	**0.0516**	**1.0550**	**1.1066**	**0.0138**	**1.0514**	**1.0652**	**0.0000**	**14,629.9145**	**14,629.9145**	**0.9304**	**0.2125**	**14,716.4819**

	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	**0.38**	**4.04**	**1.04**	**8.20**	**9.75**	**8.87**	**8.91**	**9.74**	**8.90**	**8.91**	**0.00**	**9.82**	**9.82**	**3.32**	**12.04**	**9.83**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

	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	lb/day										lb/day					
Mitigated	12.8645	20.0714	33.7712	0.0292	0.0516	0.0506	0.1022	0.0138	0.0470	0.0608		2,953.7748	2,953.7748	0.6220		2,969.3258
Unmitigated	12.8651	20.0760	33.7935	0.0293	0.0572	0.0507	0.1079	0.0153	0.0471	0.0624		2,960.3005	2,960.3005	0.6223		2,975.8586

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	6,000.00	6,246.00	5430.00	25,735	23,226
User Defined Recreational	0.00	0.00	0.00		
Total	6,000.00	6,246.00	5,430.00	25,735	23,226

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-...	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	0.01	0.01	0.01	45.60	19.00	35.40	86	11	3
User Defined Recreational	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Recreational	0.540593	0.038119	0.180116	0.134753	0.022260	0.005220	0.015807	0.053428	0.001181	0.001630	0.005273	0.000623	0.000996
Single Family Housing	0.511700	0.213500	0.169100	0.060900	0.002100	0.001000	0.009500	0.022000	0.000000	0.003800	0.003100	0.001000	0.002300

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	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	lb/day										lb/day					
NaturalGas Mitigated	0.4216	3.6030	1.5332	0.0230		0.2913	0.2913		0.2913	0.2913		4,599.5732	4,599.5732	0.0882	0.0843	4,626.9062
NaturalGas Unmitigated	0.5671	4.8459	2.0621	0.0309		0.3918	0.3918		0.3918	0.3918		6,186.2118	6,186.2118	0.1186	0.1134	6,222.9733

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	lb/day										lb/day					
Single Family Housing	52582.8	0.5671	4.8459	2.0621	0.0309		0.3918	0.3918		0.3918	0.3918		6,186.2118	6,186.2118	0.1186	0.1134	6,222.9733
User Defined Recreational	0	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
Total		**0.5671**	**4.8459**	**2.0621**	**0.0309**		**0.3918**	**0.3918**		**0.3918**	**0.3918**		**6,186.2118**	**6,186.2118**	**0.1186**	**0.1134**	**6,222.9733**

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	lb/day										lb/day					
Single Family Housing	39.0964	0.4216	3.6030	1.5332	0.0230		0.2913	0.2913		0.2913	0.2913		4,599.5732	4,599.5732	0.0882	0.0843	4,626.9062
User Defined Recreational	0	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
Total		**0.4216**	**3.6030**	**1.5332**	**0.0230**		**0.2913**	**0.2913**		**0.2913**	**0.2913**		**4,599.5732**	**4,599.5732**	**0.0882**	**0.0843**	**4,626.9062**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use Electric Chainsaw

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

Use only Natural Gas Hearths

	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	lb/day										lb/day					
Mitigated	31.1108	6.0467	51.7170	0.0375		0.7131	0.7131		0.7131	0.7131	0.0000	7,076.5664	7,076.5664	0.2202	0.1281	7,120.2499
Unmitigated	31.1324	6.0503	52.0766	0.0376		0.7152	0.7152		0.7152	0.7152	0.0000	7,077.3693	7,077.3693	0.2214	0.1281	7,121.0843

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	lb/day										lb/day					
Architectural Coating	5.6001					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	23.3688					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.6406	5.4741	2.3294	0.0349		0.4426	0.4426		0.4426	0.4426	0.0000	6,988.2353	6,988.2353	0.1339	0.1281	7,029.7629
Landscaping	1.5229	0.5762	49.7472	2.6100e-003		0.2726	0.2726		0.2726	0.2726		89.1340	89.1340	0.0875		91.3214
Total	**31.1324**	**6.0503**	**52.0766**	**0.0376**		**0.7152**	**0.7152**		**0.7152**	**0.7152**	**0.0000**	**7,077.3693**	**7,077.3693**	**0.2214**	**0.1281**	**7,121.0843**

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	lb/day										lb/day					
Architectural Coating	5.6001					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	23.3688					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.6406	5.4741	2.3294	0.0349		0.4426	0.4426		0.4426	0.4426	0.0000	6,988.2353	6,988.2353	0.1339	0.1281	7,029.7629
Landscaping	1.5013	0.5725	49.3876	2.5900e-003		0.2705	0.2705		0.2705	0.2705		88.3311	88.3311	0.0862		90.4870
Total	**31.1108**	**6.0467**	**51.7170**	**0.0375**		**0.7131**	**0.7131**		**0.7131**	**0.7131**	**0.0000**	**7,076.5664**	**7,076.5664**	**0.2202**	**0.1281**	**7,120.2499**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

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

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

Tracy Village - Project Operations - Maximum Daily Air Pollutant Emissions

San Joaquin County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Recreational	12.00	User Defined Unit	0.28	12,000.00	0
Single Family Housing	600.00	Dwelling Unit	134.84	1,080,000.00	1903

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	51
Climate Zone	2			**Operational Year**	2019
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	427	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Tracy Village - Project Operations - Maximum daily
PG&E Rate

Land Use - Based on project description and site plans
Operations only

Construction Phase - Operations only

Off-road Equipment - Operations only

Trips and VMT - Operations only

Vehicle Trips - Project-specific trip generation rates from the Tracy Village Transportation Impact Analysis prepared by Kimley-Horn.
Wkday 10.0; Sat 10.41; Sun 9.05
Localized impacts from mobile sources - 0.01-mile from the project site

Energy Use - PG&E Rate

Mobile Land Use Mitigation - The project site is located 2.8 miles from Downtown Tracy
Located <0.25 mile from nearest bus stop and <1 mile from the nearest train station
Provide traffic calming measures

Area Mitigation - The project will not include wood-burning fireplaces
Rule 4601 Architectural Coatings

Energy Mitigation - Compliance with 2016 Title 24

Water Mitigation - Green Building Code Standards

Waste Mitigation - City of Tracy Diversion Rate

Fleet Mix - SJVAPCD Residential Fleet Mix

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Parking	150.00	0.00
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	0
tblConstructionPhase	NumDays	220.00	1.00
tblFleetMix	HHD	0.05	0.02
tblFleetMix	LDA	0.54	0.51
tblFleetMix	LDT1	0.04	0.21
tblFleetMix	LDT2	0.18	0.17
tblFleetMix	LHD1	0.02	2.1000e-003
tblFleetMix	LHD2	5.2200e-003	1.0000e-003
tblFleetMix	MCY	5.2730e-003	3.1000e-003
tblFleetMix	MDV	0.13	0.06
tblFleetMix	MH	9.9600e-004	2.3000e-003
tblFleetMix	MHD	0.02	9.5000e-003
tblFleetMix	OBUS	1.1810e-003	0.00
tblFleetMix	SBUS	6.2300e-004	1.0000e-003
tblFleetMix	UBUS	1.6300e-003	3.8000e-003
tblLandUse	BuildingSpaceSquareFeet	0.00	12,000.00
tblLandUse	LandUseSquareFeet	0.00	12,000.00
tblLandUse	LotAcreage	0.00	0.28
tblLandUse	LotAcreage	194.81	134.84
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	427
tblProjectCharacteristics	OperationalYear	2018	2019
tblTripsAndVMT	WorkerTripNumber	44.00	0.00

tblTripsAndVMT	WorkerTripNumber	44.00	0.00
tblTripsAndVMT	WorkerTripNumber	44.00	0.00
tblVehicleTrips	HO_TL	7.50	0.01
tblVehicleTrips	HS_TL	7.30	0.01
tblVehicleTrips	HW_TL	10.80	0.01
tblVehicleTrips	ST_TR	9.91	10.41
tblVehicleTrips	SU_TR	8.62	9.05
tblVehicleTrips	WD_TR	9.52	10.00

2.0 Emissions Summary

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	lb/day										lb/day					
Area	31.1324	6.0503	52.0766	0.0376		0.7152	0.7152		0.7152	0.7152	0.0000	7,077.3693	7,077.3693	0.2214	0.1281	7,121.0843
Energy	0.5671	4.8459	2.0621	0.0309		0.3918	0.3918		0.3918	0.3918		6,186.2118	6,186.2118	0.1186	0.1134	6,222.9733
Mobile	9.1863	19.9818	50.1720	0.0271	0.0572	0.0548	0.1121	0.0153	0.0511	0.0663		2,705.0276	2,705.0276	0.7556		2,723.9176
Total	**40.8857**	**30.8780**	**104.3107**	**0.0956**	**0.0572**	**1.1618**	**1.2190**	**0.0153**	**1.1580**	**1.1733**	**0.0000**	**15,968.6086**	**15,968.6086**	**1.0956**	**0.2415**	**16,067.9753**

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	lb/day										lb/day					
Area	31.1108	6.0467	51.7170	0.0375		0.7131	0.7131		0.7131	0.7131	0.0000	7,076.5664	7,076.5664	0.2202	0.1281	7,120.2499
Energy	0.4216	3.6030	1.5332	0.0230		0.2913	0.2913		0.2913	0.2913		4,599.5732	4,599.5732	0.0882	0.0843	4,626.9062
Mobile	9.1856	19.9766	50.1537	0.0271	0.0516	0.0548	0.1064	0.0138	0.0510	0.0648		2,699.1000	2,699.1000	0.7553		2,717.9834
Total	**40.7180**	**29.6263**	**103.4039**	**0.0876**	**0.0516**	**1.0591**	**1.1108**	**0.0138**	**1.0554**	**1.0692**	**0.0000**	**14,375.2396**	**14,375.2396**	**1.0637**	**0.2125**	**14,465.1395**

	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	**0.41**	**4.05**	**0.87**	**8.38**	**9.75**	**8.84**	**8.88**	**9.74**	**8.87**	**8.88**	**0.00**	**9.98**	**9.98**	**2.91**	**12.04**	**9.98**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

	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	lb/day										lb/day					
Mitigated	9.1856	19.9766	50.1537	0.0271	0.0516	0.0548	0.1064	0.0138	0.0510	0.0648		2,699.1000	2,699.1000	0.7553		2,717.9834
Unmitigated	9.1863	19.9818	50.1720	0.0271	0.0572	0.0548	0.1121	0.0153	0.0511	0.0663		2,705.0276	2,705.0276	0.7556		2,723.9176

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	6,000.00	6,246.00	5430.00	25,735	23,226
User Defined Recreational	0.00	0.00	0.00		
Total	6,000.00	6,246.00	5,430.00	25,735	23,226

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
Single Family Housing	0.01	0.01	0.01	45.60	19.00	35.40	86	11	3
User Defined Recreational	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Recreational	0.540593	0.038119	0.180116	0.134753	0.022260	0.005220	0.015807	0.053428	0.001181	0.001630	0.005273	0.000623	0.000996
Single Family Housing	0.511700	0.213500	0.169100	0.060900	0.002100	0.001000	0.009500	0.022000	0.000000	0.003800	0.003100	0.001000	0.002300

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	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	lb/day										lb/day					
NaturalGas Mitigated	0.4216	3.6030	1.5332	0.0230		0.2913	0.2913		0.2913	0.2913		4,599.5732	4,599.5732	0.0882	0.0843	4,626.9062
NaturalGas Unmitigated	0.5671	4.8459	2.0621	0.0309		0.3918	0.3918		0.3918	0.3918		6,186.2118	6,186.2118	0.1186	0.1134	6,222.9733

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	lb/day										lb/day					
Single Family Housing	52582.8	0.5671	4.8459	2.0621	0.0309		0.3918	0.3918		0.3918	0.3918		6,186.2118	6,186.2118	0.1186	0.1134	6,222.9733
User Defined Recreational	0	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
Total		**0.5671**	**4.8459**	**2.0621**	**0.0309**		**0.3918**	**0.3918**		**0.3918**	**0.3918**		**6,186.2118**	**6,186.2118**	**0.1186**	**0.1134**	**6,222.9733**

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	lb/day										lb/day					
Single Family Housing	39.0964	0.4216	3.6030	1.5332	0.0230		0.2913	0.2913		0.2913	0.2913		4,599.5732	4,599.5732	0.0882	0.0843	4,626.9062
User Defined Recreational	0	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
Total		**0.4216**	**3.6030**	**1.5332**	**0.0230**		**0.2913**	**0.2913**		**0.2913**	**0.2913**		**4,599.5732**	**4,599.5732**	**0.0882**	**0.0843**	**4,626.9062**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use Electric Chainsaw

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

Use only Natural Gas Hearths

	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	lb/day										lb/day					
Mitigated	31.1108	6.0467	51.7170	0.0375		0.7131	0.7131		0.7131	0.7131	0.0000	7,076.5664	7,076.5664	0.2202	0.1281	7,120.2499
Unmitigated	31.1324	6.0503	52.0766	0.0376		0.7152	0.7152		0.7152	0.7152	0.0000	7,077.3693	7,077.3693	0.2214	0.1281	7,121.0843

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	lb/day										lb/day					
Architectural Coating	5.6001					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	23.3688					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.6406	5.4741	2.3294	0.0349		0.4426	0.4426		0.4426	0.4426	0.0000	6,988.2353	6,988.2353	0.1339	0.1281	7,029.7629
Landscaping	1.5229	0.5762	49.7472	2.6100e-003		0.2726	0.2726		0.2726	0.2726		89.1340	89.1340	0.0875		91.3214
Total	**31.1324**	**6.0503**	**52.0766**	**0.0376**		**0.7152**	**0.7152**		**0.7152**	**0.7152**	**0.0000**	**7,077.3693**	**7,077.3693**	**0.2214**	**0.1281**	**7,121.0843**

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	lb/day										lb/day					
Architectural Coating	5.6001					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	23.3688					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.6406	5.4741	2.3294	0.0349		0.4426	0.4426		0.4426	0.4426	0.0000	6,988.2353	6,988.2353	0.1339	0.1281	7,029.7629
Landscaping	1.5013	0.5725	49.3876	2.5900e-003		0.2705	0.2705		0.2705	0.2705		88.3311	88.3311	0.0862		90.4870
Total	**31.1108**	**6.0467**	**51.7170**	**0.0375**		**0.7131**	**0.7131**		**0.7131**	**0.7131**	**0.0000**	**7,076.5664**	**7,076.5664**	**0.2202**	**0.1281**	**7,120.2499**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

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

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

Tracy Village - Project Operations (BAU)

San Joaquin County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	29.50	Acre	29.50	1,285,020.00	0
Other Non-Asphalt Surfaces	18.94	Acre	18.94	825,026.40	0
Parking Lot	45.00	Space	0.41	18,000.00	0
City Park	5.80	Acre	5.80	252,648.00	0
Recreational Swimming Pool	3.80	1000sqft	0.09	3,800.00	0
User Defined Recreational	12.00	User Defined Unit	0.28	12,000.00	0
Single Family Housing	600.00	Dwelling Unit	80.10	1,080,000.00	1903

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	51
Climate Zone	2			**Operational Year**	2005
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	733.81	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.007

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Tracy Village - BAU Project Operations
Unadjusted energy intensity

Land Use - Based on project description and site plans

Construction Phase - Operations only

Off-road Equipment - Operations only

Trips and VMT - Operations only

Vehicle Trips - Project-specific trip generation rates from the Tracy Village Transportation Impact Analysis prepared by Kimley-Horn. Wkday 10.0; Sat 10.41; Sun 9.05

Woodstoves - Based on SJVAPCD Rule 4901

Area Mitigation - The project will not include wood-burning fireplaces

Waste Mitigation - City of Tracy Diversion Rate

Fleet Mix - SJVAPCD 2020 Residential Fleet Mix

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	0
tblConstructionPhase	NumDays	220.00	1.00
tblFireplaces	NumberGas	330.00	600.00
tblFireplaces	NumberNoFireplace	270.00	600.00
tblFleetMix	HHD	0.05	0.02
tblFleetMix	LDA	0.47	0.51
tblFleetMix	LDT1	0.07	0.21
tblFleetMix	LDT2	0.16	0.17
tblFleetMix	LHD1	0.04	2.1000e-003
tblFleetMix	LHD2	5.9260e-003	1.0000e-003
tblFleetMix	MCY	5.2120e-003	3.1000e-003
tblFleetMix	MDV	0.18	0.06
tblFleetMix	MH	2.0380e-003	2.3000e-003
tblFleetMix	MHD	0.02	9.6000e-003
tblFleetMix	OBUS	8.7000e-004	0.00
tblFleetMix	SBUS	5.8400e-004	1.0000e-003
tblFleetMix	UBUS	1.9680e-003	3.8000e-003
tblLandUse	BuildingSpaceSquareFeet	0.00	12,000.00
tblLandUse	LandUseSquareFeet	0.00	12,000.00
tblLandUse	LotAcreage	0.00	0.28
tblLandUse	LotAcreage	194.81	80.10
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.033

tblProjectCharacteristics	CO2IntensityFactor	641.35	733.81
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.007
tblProjectCharacteristics	OperationalYear	2018	2005
tblTripsAndVMT	WorkerTripNumber	245.00	0.00
tblTripsAndVMT	WorkerTripNumber	245.00	0.00
tblTripsAndVMT	WorkerTripNumber	245.00	0.00
tblVehicleTrips	ST_TR	22.75	0.00
tblVehicleTrips	ST_TR	9.10	0.00
tblVehicleTrips	ST_TR	9.91	10.41
tblVehicleTrips	SU_TR	16.74	0.00
tblVehicleTrips	SU_TR	13.60	0.00
tblVehicleTrips	SU_TR	8.62	9.05
tblVehicleTrips	WD_TR	1.89	0.00
tblVehicleTrips	WD_TR	33.82	0.00
tblVehicleTrips	WD_TR	9.52	10.00
tblWoodstoves	NumberCatalytic	0.00	135.00
tblWoodstoves	NumberNoncatalytic	0.00	135.00

2.0 Emissions Summary

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											545.7676	479.8692	1,025.6368	2.5721	8.6600e-003	1,092.5206
Energy											0.0000	2,656.0856	2,656.0856	0.0905	0.0352	2,668.8401
Mobile											0.0000	8,060.4351	8,060.4351	1.1723	0.0000	8,089.7430
Waste											143.5633	0.0000	143.5633	8.4844	0.0000	355.6721
Water											12.4735	107.7346	120.2081	1.2860	0.0313	161.6790
Total											**701.8044**	**11,304.1245**	**12,005.9289**	**13.6052**	**0.0752**	**12,368.4547**

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											0.0000	479.8692	479.8692	0.0207	8.6600e-003	482.9692
Energy											0.0000	2,656.0856	2,656.0856	0.0905	0.0352	2,668.8401
Mobile											0.0000	8,060.4351	8,060.4351	1.1723	0.0000	8,089.7430
Waste											43.0690	0.0000	43.0690	2.5453	0.0000	106.7016
Water											12.4735	107.7346	120.2081	1.2860	0.0313	161.6790
Total											**55.5425**	**11,304.1245**	**11,359.6670**	**5.1148**	**0.0752**	**11,509.9329**

	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**	**92.09**	**0.00**	**5.38**	**62.41**	**0.00**	**6.94**

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											0.0000	8,060.4351	8,060.4351	1.1723	0.0000	8,089.7430
Unmitigated											0.0000	8,060.4351	8,060.4351	1.1723	0.0000	8,089.7430

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Recreational Swimming Pool	0.00	0.00	0.00		
Single Family Housing	6,000.00	6,246.00	5430.00	17,252,773	17,252,773
User Defined Recreational	0.00	0.00	0.00		
Total	6,000.00	6,246.00	5,430.00	17,252,773	17,252,773

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
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Recreational Swimming Pool	9.50	7.30	7.30	33.00	48.00	19.00	52	39	9
Single Family Housing	10.80	7.30	7.50	45.60	19.00	35.40	86	11	3
User Defined Recreational	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Asphalt Surfaces	0.469017	0.066969	0.162053	0.179952	0.040904	0.005926	0.016959	0.047547	0.000870	0.001968	0.005212	0.000584	0.002038
Other Non-Asphalt Surfaces	0.469017	0.066969	0.162053	0.179952	0.040904	0.005926	0.016959	0.047547	0.000870	0.001968	0.005212	0.000584	0.002038
Parking Lot	0.469017	0.066969	0.162053	0.179952	0.040904	0.005926	0.016959	0.047547	0.000870	0.001968	0.005212	0.000584	0.002038
City Park	0.469017	0.066969	0.162053	0.179952	0.040904	0.005926	0.016959	0.047547	0.000870	0.001968	0.005212	0.000584	0.002038
Recreational Swimming Pool	0.469017	0.066969	0.162053	0.179952	0.040904	0.005926	0.016959	0.047547	0.000870	0.001968	0.005212	0.000584	0.002038
User Defined Recreational	0.469017	0.066969	0.162053	0.179952	0.040904	0.005926	0.016959	0.047547	0.000870	0.001968	0.005212	0.000584	0.002038
Single Family Housing	0.511200	0.213700	0.169100	0.061000	0.002100	0.001000	0.009600	0.022100	0.000000	0.003800	0.003100	0.001000	0.002300

5.0 Energy Detail

Historical Energy Use: Y

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	1,533.3682	1,533.3682	0.0690	0.0146	1,539.4511
Electricity Unmitigated											0.0000	1,533.3682	1,533.3682	0.0690	0.0146	1,539.4511
NaturalGas Mitigated											0.0000	1,122.7173	1,122.7173	0.0215	0.0206	1,129.3891
NaturalGas Unmitigated											0.0000	1,122.7173	1,122.7173	0.0215	0.0206	1,129.3891

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					
City Park	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	2.10389e+007											0.0000	1,122.7173	1,122.7173	0.0215	0.0206	1,129.3891
User Defined Recreational	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total												**0.0000**	**1,122.7173**	**1,122.7173**	**0.0215**	**0.0206**	**1,129.3891**

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					
City Park	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	2.10389e+007											0.0000	1,122.7173	1,122.7173	0.0215	0.0206	1,129.3891
User Defined Recreational	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total												**0.0000**	**1,122.7173**	**1,122.7173**	**0.0215**	**0.0206**	**1,129.3891**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	15840	5.2724	2.4000e-004	5.0000e-005	5.2933
Recreational Swimming Pool	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	4.59094e+006	1,528.0959	0.0687	0.0146	1,534.1578
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**1,533.3682**	**0.0690**	**0.0146**	**1,539.4511**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	15840	5.2724	2.4000e-004	5.0000e-005	5.2933
Recreational Swimming Pool	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	4.59094e+006	1,528.0959	0.0687	0.0146	1,534.1578
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**1,533.3682**	**0.0690**	**0.0146**	**1,539.4511**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	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											0.0000	479.8692	479.8692	0.0207	8.6600e-003	482.9692
Unmitigated											545.7676	479.8692	1,025.6368	2.5721	8.6600e-003	1,092.5206

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											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth											545.7676	472.5899	1,018.3575	2.5604	8.6600e-003	1,084.9497
Landscaping											0.0000	7.2793	7.2793	0.0117	0.0000	7.5709
Total											**545.7676**	**479.8692**	**1,025.6368**	**2.5721**	**8.6600e-003**	**1,092.5206**

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											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth											0.0000	472.5899	472.5899	9.0600e-003	8.6600e-003	475.3983
Landscaping											0.0000	7.2793	7.2793	0.0117	0.0000	7.5709
Total											**0.0000**	**479.8692**	**479.8692**	**0.0207**	**8.6600e-003**	**482.9692**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	120.2081	1.2860	0.0313	161.6790
Unmitigated	120.2081	1.2860	0.0313	161.6790

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 6.91059	8.0507	3.6000e-004	8.0000e-005	8.0826
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	0.224744 / 0.137746	0.6366	7.3500e-003	1.8000e-004	0.8734
Single Family Housing	39.0924 / 24.6452	111.5209	1.2783	0.0310	152.7230
User Defined Recreational	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**120.2081**	**1.2860**	**0.0313**	**161.6790**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 6.91059	8.0507	3.6000e-004	8.0000e-005	8.0826
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	0.224744 / 0.137746	0.6366	7.3500e-003	1.8000e-004	0.8734
Single Family Housing	39.0924 / 24.6452	111.5209	1.2783	0.0310	152.7230
User Defined Recreational	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**120.2081**	**1.2860**	**0.0313**	**161.6790**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	43.0690	2.5453	0.0000	106.7016
Unmitigated	143.5633	8.4844	0.0000	355.6721

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.5	0.1015	6.0000e-003	0.0000	0.2515
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	21.66	4.3968	0.2598	0.0000	10.8929
Single Family Housing	685.08	139.0651	8.2185	0.0000	344.5278
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**143.5633**	**8.4844**	**0.0000**	**355.6721**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.15	0.0305	1.8000e-003	0.0000	0.0754
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	6.498	1.3190	0.0780	0.0000	3.2679
Single Family Housing	205.524	41.7195	2.4656	0.0000	103.3583
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**43.0690**	**2.5453**	**0.0000**	**106.7016**

9.0 Operational Offroad

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

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

Tracy Village - 2020 Unmitigated Project Operations

San Joaquin County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	29.50	Acre	29.50	1,285,020.00	0
Other Non-Asphalt Surfaces	18.94	Acre	18.94	825,026.40	0
Parking Lot	45.00	Space	0.41	18,000.00	0
City Park	5.80	Acre	5.80	252,648.00	0
Recreational Swimming Pool	3.80	1000sqft	0.09	3,800.00	0
User Defined Recreational	12.00	User Defined Unit	0.28	12,000.00	0
Single Family Housing	600.00	Dwelling Unit	80.10	1,080,000.00	1903

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	51
Climate Zone	2			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	290	**CH4 Intensity (lb/MWhr)**	0.022	**N2O Intensity (lb/MWhr)**	0.005

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Tracy Village - Project Operations
PG&E Rate CO2 Intensity Factor
CH4 Intensity and N2O Intensity Factors based on Renewable Portfolio Standard
Land Use - Based on project description and site plans

Construction Phase - Operations only

Off-road Equipment - Operations only

Trips and VMT - Operations only

Vehicle Trips - Project-specific trip generation rates from the Tracy Village Transportation Impact Analysis prepared by Kimley-Horn.
Wkday 10.0; Sat 10.41; Sun 9.05

Woodstoves - Based on SJVAPCD Rule 4901

Energy Use - PG&E Rate

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation - The project site is located 2.8 miles from Downtown Tracy
Located <0.25 mile from nearest bus stop and <1 mile from the nearest train station

Area Mitigation - The project will not include wood-burning fireplaces
Rule 4601 Architectural Coatings

Energy Mitigation - Compliance with 2016 Title 24; on-site renewable energy (25% of electricity use generated)

Water Mitigation - Green Building Code Standards

Waste Mitigation - CalRecycle 75 Percent Initiative

Fleet Mix - SJVAPCD Residential Fleet Mix

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Parking	150.00	0.00
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	150	65
tblAreaMitigation	UseLowVOCPaintNonresidentialInteriorValue	150	65
tblAreaMitigation	UseLowVOCPaintResidentialExteriorValue	150	65
tblAreaMitigation	UseLowVOCPaintResidentialInteriorValue	150	65
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	0
tblConstructionPhase	NumDays	220.00	1.00
tblFireplaces	NumberGas	330.00	600.00
tblFireplaces	NumberNoFireplace	270.00	600.00
tblFleetMix	HHD	0.05	0.02
tblFleetMix	LDA	0.55	0.51
tblFleetMix	LDT1	0.04	0.21
tblFleetMix	LDT2	0.18	0.17
tblFleetMix	LHD1	0.02	2.1000e-003
tblFleetMix	LHD2	5.0260e-003	1.0000e-003
tblFleetMix	MCY	5.1960e-003	3.1000e-003
tblFleetMix	MDV	0.13	0.06
tblFleetMix	MH	9.3100e-004	2.3000e-003
tblFleetMix	MHD	0.02	9.6000e-003
tblFleetMix	OBUS	1.1840e-003	0.00
tblFleetMix	SBUS	6.1800e-004	1.0000e-003
tblFleetMix	UBUS	1.5550e-003	3.8000e-003
tblLandUse	BuildingSpaceSquareFeet	0.00	12,000.00
tblLandUse	LandUseSquareFeet	0.00	12,000.00
tblLandUse	LotAcreage	0.00	0.28
tblLandUse	LotAcreage	194.81	80.10
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.022

tblProjectCharacteristics	CO2IntensityFactor	641.35	290
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblProjectCharacteristics	OperationalYear	2018	2020
tblTripsAndVMT	WorkerTripNumber	245.00	0.00
tblVehicleTrips	ST_TR	22.75	0.00
tblVehicleTrips	ST_TR	9.10	0.00
tblVehicleTrips	ST_TR	9.91	10.41
tblVehicleTrips	SU_TR	16.74	0.00
tblVehicleTrips	SU_TR	13.60	0.00
tblVehicleTrips	SU_TR	8.62	9.05
tblVehicleTrips	WD_TR	1.89	0.00
tblVehicleTrips	WD_TR	33.82	0.00
tblVehicleTrips	WD_TR	9.52	10.00
tblWoodstoves	NumberCatalytic	0.00	135.00
tblWoodstoves	NumberNoncatalytic	0.00	135.00

2.0 Emissions Summary

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											545.7676	479.8692	1,025.6368	2.5675	8.6600e-003	1,092.4065
Energy											0.0000	1,741.1979	1,741.1979	0.0740	0.0311	1,752.3279
Mobile											0.0000	6,823.8904	6,823.8904	0.3690	0.0000	6,833.1155
Waste											143.5633	0.0000	143.5633	8.4844	0.0000	355.6721
Water											12.4735	42.5765	55.0500	1.2844	0.0310	96.3930
Total											**701.8044**	**9,087.5340**	**9,789.3384**	**12.7793**	**0.0708**	**10,129.9150**

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											0.0000	479.8036	479.8036	0.0161	8.6600e-003	482.7870
Energy											0.0000	1,286.5173	1,286.5173	0.0544	0.0230	1,294.7358
Mobile											0.0000	6,383.0018	6,383.0018	0.3504	0.0000	6,391.7611
Waste											35.8908	0.0000	35.8908	2.1211	0.0000	88.9180
Water											9.9788	34.0612	44.0400	1.0275	0.0248	77.1144
Total											**45.8697**	**8,183.3840**	**8,229.2536**	**3.5694**	**0.0565**	**8,335.3162**

	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**	**93.46**	**9.95**	**15.94**	**72.07**	**20.23**	**17.72**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

	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											0.0000	6,383.0018	6,383.0018	0.3504	0.0000	6,391.7611
Unmitigated											0.0000	6,823.8904	6,823.8904	0.3690	0.0000	6,833.1155

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Recreational Swimming Pool	0.00	0.00	0.00		
Single Family Housing	6,000.00	6,246.00	5430.00	17,252,773	16,062,332
User Defined Recreational	0.00	0.00	0.00		
Total	6,000.00	6,246.00	5,430.00	17,252,773	16,062,332

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
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Recreational Swimming Pool	9.50	7.30	7.30	33.00	48.00	19.00	52	39	9
Single Family Housing	10.80	7.30	7.50	45.60	19.00	35.40	86	11	3
User Defined Recreational	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Asphalt Surfaces	0.546554	0.037008	0.181258	0.129446	0.020679	0.005026	0.016032	0.054515	0.001184	0.001555	0.005196	0.000618	0.000931
Other Non-Asphalt Surfaces	0.546554	0.037008	0.181258	0.129446	0.020679	0.005026	0.016032	0.054515	0.001184	0.001555	0.005196	0.000618	0.000931
Parking Lot	0.546554	0.037008	0.181258	0.129446	0.020679	0.005026	0.016032	0.054515	0.001184	0.001555	0.005196	0.000618	0.000931
City Park	0.546554	0.037008	0.181258	0.129446	0.020679	0.005026	0.016032	0.054515	0.001184	0.001555	0.005196	0.000618	0.000931
Recreational Swimming Pool	0.546554	0.037008	0.181258	0.129446	0.020679	0.005026	0.016032	0.054515	0.001184	0.001555	0.005196	0.000618	0.000931
User Defined Recreational	0.546554	0.037008	0.181258	0.129446	0.020679	0.005026	0.016032	0.054515	0.001184	0.001555	0.005196	0.000618	0.000931
Single Family Housing	0.511200	0.213700	0.169200	0.061000	0.002100	0.001000	0.009600	0.022100	0.000000	0.003800	0.003100	0.001000	0.002300

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Percent of Electricity Use Generated with Renewable 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	525.0064	525.0064	0.0398	9.0500e-003	528.6996
Electricity Unmitigated											0.0000	717.0011	717.0011	0.0544	0.0124	722.0449
NaturalGas Mitigated											0.0000	761.5109	761.5109	0.0146	0.0140	766.0362
NaturalGas Unmitigated											0.0000	1,024.1967	1,024.1967	0.0196	0.0188	1,030.2830

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					
City Park	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	1.91927e+007											0.0000	1,024.1967	1,024.1967	0.0196	0.0188	1,030.2830
User Defined Recreational	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total												**0.0000**	**1,024.1967**	**1,024.1967**	**0.0196**	**0.0188**	**1,030.2830**

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					
City Park	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	1.42702e+007											0.0000	761.5109	761.5109	0.0146	0.0140	766.0362
User Defined Recreational	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total												**0.0000**	**761.5109**	**761.5109**	**0.0146**	**0.0140**	**766.0362**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	15840	2.0836	1.6000e-004	4.0000e-005	2.0983
Recreational Swimming Pool	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	5.43491e+006	714.9175	0.0542	0.0123	719.9466
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**717.0011**	**0.0544**	**0.0124**	**722.0449**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	11880	1.5627	1.2000e-004	3.0000e-005	1.5737
Recreational Swimming Pool	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	3.9793e+006	523.4437	0.0397	9.0200e-003	527.1258
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**525.0064**	**0.0398**	**9.0500e-003**	**528.6996**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use Electric Chainsaw

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

Use only Natural Gas Hearths

	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											0.0000	479.8036	479.8036	0.0161	8.6600e-003	482.7870
Unmitigated											545.7676	479.8692	1,025.6368	2.5675	8.6600e-003	1,092.4065

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											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth											545.7676	472.5899	1,018.3575	2.5604	8.6600e-003	1,084.9497
Landscaping											0.0000	7.2793	7.2793	7.1000e-003	0.0000	7.4569
Total											**545.7676**	**479.8692**	**1,025.6368**	**2.5675**	**8.6600e-003**	**1,092.4065**

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											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth											0.0000	472.5899	472.5899	9.0600e-003	8.6600e-003	475.3983
Landscaping											0.0000	7.2138	7.2138	7.0000e-003	0.0000	7.3888
Total											**0.0000**	**479.8037**	**479.8037**	**0.0161**	**8.6600e-003**	**482.7870**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	44.0400	1.0275	0.0248	77.1144
Unmitigated	55.0500	1.2844	0.0310	96.3930

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 6.91059	3.1816	2.4000e-004	5.0000e-005	3.2040
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	0.224744 / 0.137746	0.2947	7.3400e-003	1.8000e-004	0.5309
Single Family Housing	39.0924 / 24.6452	51.5737	1.2768	0.0308	92.6581
User Defined Recreational	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**55.0500**	**1.2844**	**0.0310**	**96.3930**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 5.52847	2.5453	1.9000e-004	4.0000e-005	2.5632
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	0.179795 / 0.110197	0.2358	5.8700e-003	1.4000e-004	0.4247
Single Family Housing	31.2739 / 19.7162	41.2590	1.0214	0.0246	74.1265
User Defined Recreational	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**44.0400**	**1.0275**	**0.0248**	**77.1144**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	35.8908	2.1211	0.0000	88.9180
Unmitigated	143.5633	8.4844	0.0000	355.6721

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.5	0.1015	6.0000e-003	0.0000	0.2515
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	21.66	4.3968	0.2598	0.0000	10.8929
Single Family Housing	685.08	139.0651	8.2185	0.0000	344.5278
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**143.5633**	**8.4844**	**0.0000**	**355.6721**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.125	0.0254	1.5000e-003	0.0000	0.0629
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	5.415	1.0992	0.0650	0.0000	2.7232
Single Family Housing	171.27	34.7663	2.0546	0.0000	86.1319
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**35.8908**	**2.1211**	**0.0000**	**88.9180**

9.0 Operational Offroad

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

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

Tracy Village - 2020 Mitigated Project Operations

San Joaquin County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	29.50	Acre	29.50	1,285,020.00	0
Other Non-Asphalt Surfaces	18.94	Acre	18.94	825,026.40	0
Parking Lot	45.00	Space	0.41	18,000.00	0
City Park	5.80	Acre	5.80	252,648.00	0
Recreational Swimming Pool	3.80	1000sqft	0.09	3,800.00	0
User Defined Recreational	12.00	User Defined Unit	0.28	12,000.00	0
Single Family Housing	600.00	Dwelling Unit	80.10	1,080,000.00	1903

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	51
Climate Zone	2			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	290	**CH4 Intensity (lb/MWhr)**	0.022	**N2O Intensity (lb/MWhr)**	0.005

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Tracy Village - Project Operations
PG&E Rate CO2 Intensity Factor
CH4 Intensity and N2O Intensity Factors based on Renewable Portfolio Standard

Land Use - Based on project description and site plans

Construction Phase - Operations only

Off-road Equipment - Operations only

Trips and VMT - Operations only

Vehicle Trips - Project-specific trip generation rates from the Tracy Village Transportation Impact Analysis prepared by Kimley-Horn.
Wkday 10.0; Sat 10.41; Sun 9.05

Woodstoves - Based on SJVAPCD Rule 4901

Energy Use - PG&E Rate

Mobile Land Use Mitigation - The project site is located 2.8 miles from Downtown Tracy
Located <0.25 mile from nearest bus stop and <1 mile from the nearest train station
Area Mitigation - The project will not include wood-burning fireplaces
Rule 4601 Architectural Coatings
Energy Mitigation - Compliance with 2016 Title 24; on-site renewable energy (25% of electricity use generated)

Water Mitigation - Green Building Code Standards

Waste Mitigation - CalRecycle 75 Percent Initiative

Fleet Mix - SJVAPCD Residential Fleet Mix

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Parking	150.00	0.00
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	0
tblConstructionPhase	NumDays	220.00	1.00
tblFireplaces	NumberGas	330.00	600.00
tblFireplaces	NumberNoFireplace	270.00	600.00
tblFleetMix	HHD	0.05	0.02
tblFleetMix	LDA	0.55	0.51
tblFleetMix	LDT1	0.04	0.21
tblFleetMix	LDT2	0.18	0.17
tblFleetMix	LHD1	0.02	2.1000e-003
tblFleetMix	LHD2	5.0260e-003	1.0000e-003
tblFleetMix	MCY	5.1960e-003	3.1000e-003
tblFleetMix	MDV	0.13	0.06
tblFleetMix	MH	9.3100e-004	2.3000e-003
tblFleetMix	MHD	0.02	9.6000e-003
tblFleetMix	OBUS	1.1840e-003	0.00
tblFleetMix	SBUS	6.1800e-004	1.0000e-003
tblFleetMix	UBUS	1.5550e-003	3.8000e-003

tblLandUse	BuildingSpaceSquareFeet	0.00	12,000.00
tblLandUse	LandUseSquareFeet	0.00	12,000.00
tblLandUse	LotAcreage	0.00	0.28
tblLandUse	LotAcreage	194.81	80.10
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.022
tblProjectCharacteristics	CO2IntensityFactor	641.35	290
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblProjectCharacteristics	OperationalYear	2018	2020
tblTripsAndVMT	WorkerTripNumber	245.00	0.00
tblVehicleTrips	ST_TR	22.75	0.00
tblVehicleTrips	ST_TR	9.10	0.00
tblVehicleTrips	ST_TR	9.91	10.41
tblVehicleTrips	SU_TR	16.74	0.00
tblVehicleTrips	SU_TR	13.60	0.00
tblVehicleTrips	SU_TR	8.62	9.05
tblVehicleTrips	WD_TR	1.89	0.00
tblVehicleTrips	WD_TR	33.82	0.00
tblVehicleTrips	WD_TR	9.52	10.00
tblWoodstoves	NumberCatalytic	0.00	135.00
tblWoodstoves	NumberNoncatalytic	0.00	135.00

2.0 Emissions Summary

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											545.7676	479.8692	1,025.6368	2.5675	8.6600e-003	1,092.4065
Energy											0.0000	1,741.1979	1,741.1979	0.0740	0.0311	1,752.3279
Mobile											0.0000	6,823.8904	6,823.8904	0.3690	0.0000	6,833.1155
Waste											143.5633	0.0000	143.5633	8.4844	0.0000	355.6721
Water											12.4735	42.5765	55.0500	1.2844	0.0310	96.3930
Total											**701.8044**	**9,087.5340**	**9,789.3384**	**12.7793**	**0.0708**	**10,129.9150**

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											0.0000	479.8036	479.8036	0.0161	8.6600e-003	482.7870
Energy											0.0000	1,286.5173	1,286.5173	0.0544	0.0230	1,294.7358
Mobile											0.0000	6,200.8957	6,200.8957	0.3427	0.0000	6,209.4625
Waste											35.8908	0.0000	35.8908	2.1211	0.0000	88.9180
Water											9.9788	34.0612	44.0400	1.0275	0.0248	77.1144
Total											**45.8697**	**8,001.2778**	**8,047.1475**	**3.5617**	**0.0565**	**8,153.0177**

	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**	**93.46**	**11.95**	**17.80**	**72.13**	**20.23**	**19.52**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

	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											0.0000	6,200.8957	6,200.8957	0.3427	0.0000	6,209.4625
Unmitigated											0.0000	6,823.8904	6,823.8904	0.3690	0.0000	6,833.1155

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Recreational Swimming Pool	0.00	0.00	0.00		
Single Family Housing	6,000.00	6,246.00	5430.00	17,252,773	15,570,628
User Defined Recreational	0.00	0.00	0.00		
Total	6,000.00	6,246.00	5,430.00	17,252,773	15,570,628

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
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Recreational Swimming Pool	9.50	7.30	7.30	33.00	48.00	19.00	52	39	9
Single Family Housing	10.80	7.30	7.50	45.60	19.00	35.40	86	11	3
User Defined Recreational	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Asphalt Surfaces	0.546554	0.037008	0.181258	0.129446	0.020679	0.005026	0.016032	0.054515	0.001184	0.001555	0.005196	0.000618	0.000931
Other Non-Asphalt Surfaces	0.546554	0.037008	0.181258	0.129446	0.020679	0.005026	0.016032	0.054515	0.001184	0.001555	0.005196	0.000618	0.000931
Parking Lot	0.546554	0.037008	0.181258	0.129446	0.020679	0.005026	0.016032	0.054515	0.001184	0.001555	0.005196	0.000618	0.000931
City Park	0.546554	0.037008	0.181258	0.129446	0.020679	0.005026	0.016032	0.054515	0.001184	0.001555	0.005196	0.000618	0.000931
Recreational Swimming Pool	0.546554	0.037008	0.181258	0.129446	0.020679	0.005026	0.016032	0.054515	0.001184	0.001555	0.005196	0.000618	0.000931
User Defined Recreational	0.546554	0.037008	0.181258	0.129446	0.020679	0.005026	0.016032	0.054515	0.001184	0.001555	0.005196	0.000618	0.000931
Single Family Housing	0.511200	0.213700	0.169200	0.061000	0.002100	0.001000	0.009600	0.022100	0.000000	0.003800	0.003100	0.001000	0.002300

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Percent of Electricity Use Generated with Renewable 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	525.0064	525.0064	0.0398	9.0500e-003	528.6996
Electricity Unmitigated											0.0000	717.0011	717.0011	0.0544	0.0124	722.0449
NaturalGas Mitigated											0.0000	761.5109	761.5109	0.0146	0.0140	766.0362
NaturalGas Unmitigated											0.0000	1,024.1967	1,024.1967	0.0196	0.0188	1,030.2830

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					
City Park	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	1.91927e+007											0.0000	1,024.1967	1,024.1967	0.0196	0.0188	1,030.2830
User Defined Recreational	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total												**0.0000**	**1,024.1967**	**1,024.1967**	**0.0196**	**0.0188**	**1,030.2830**

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					
City Park	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	1.42702e+007											0.0000	761.5109	761.5109	0.0146	0.0140	766.0362
User Defined Recreational	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total												**0.0000**	**761.5109**	**761.5109**	**0.0146**	**0.0140**	**766.0362**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	15840	2.0836	1.6000e-004	4.0000e-005	2.0983
Recreational Swimming Pool	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	5.43491e+006	714.9175	0.0542	0.0123	719.9466
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**717.0011**	**0.0544**	**0.0124**	**722.0449**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	11880	1.5627	1.2000e-004	3.0000e-005	1.5737
Recreational Swimming Pool	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	3.9793e+006	523.4437	0.0397	9.0200e-003	527.1258
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**525.0064**	**0.0398**	**9.0500e-003**	**528.6996**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use Electric Chainsaw

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

Use only Natural Gas Hearths

	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											0.0000	479.8036	479.8036	0.0161	8.6600e-003	482.7870
Unmitigated											545.7676	479.8692	1,025.6368	2.5675	8.6600e-003	1,092.4065

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											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth											545.7676	472.5899	1,018.3575	2.5604	8.6600e-003	1,084.9497
Landscaping											0.0000	7.2793	7.2793	7.1000e-003	0.0000	7.4569
Total											**545.7676**	**479.8692**	**1,025.6368**	**2.5675**	**8.6600e-003**	**1,092.4065**

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											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth											0.0000	472.5899	472.5899	9.0600e-003	8.6600e-003	475.3983
Landscaping											0.0000	7.2138	7.2138	7.0000e-003	0.0000	7.3888
Total											**0.0000**	**479.8037**	**479.8037**	**0.0161**	**8.6600e-003**	**482.7870**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	44.0400	1.0275	0.0248	77.1144
Unmitigated	55.0500	1.2844	0.0310	96.3930

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 6.91059	3.1816	2.4000e-004	5.0000e-005	3.2040
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	0.224744 / 0.137746	0.2947	7.3400e-003	1.8000e-004	0.5309
Single Family Housing	39.0924 / 24.6452	51.5737	1.2768	0.0308	92.6581
User Defined Recreational	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**55.0500**	**1.2844**	**0.0310**	**96.3930**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 5.52847	2.5453	1.9000e-004	4.0000e-005	2.5632
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	0.179795 / 0.110197	0.2358	5.8700e-003	1.4000e-004	0.4247
Single Family Housing	31.2739 / 19.7162	41.2590	1.0214	0.0246	74.1265
User Defined Recreational	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**44.0400**	**1.0275**	**0.0248**	**77.1144**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	35.8908	2.1211	0.0000	88.9180
Unmitigated	143.5633	8.4844	0.0000	355.6721

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.5	0.1015	6.0000e-003	0.0000	0.2515
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	21.66	4.3968	0.2598	0.0000	10.8929
Single Family Housing	685.08	139.0651	8.2185	0.0000	344.5278
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**143.5633**	**8.4844**	**0.0000**	**355.6721**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.125	0.0254	1.5000e-003	0.0000	0.0629
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	5.415	1.0992	0.0650	0.0000	2.7232
Single Family Housing	171.27	34.7663	2.0546	0.0000	86.1319
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**35.8908**	**2.1211**	**0.0000**	**88.9180**

9.0 Operational Offroad

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

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

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Appendix C:
Biological Resources

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C.1 - Biological Resources Evaluation

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LIVE OAK ASSOCIATES, INC.

an Ecological Consulting Firm

BIOLOGICAL RESOURCES EVALUATION
WEST VALPICO PROPERTY

SAN JOAQUIN COUNTY, CALIFORNIA

By:

LIVE OAK ASSOCIATES, INC.

Rick Hopkins, Ph.D., Principal, Senior Ecologist
Anna Kopitov, M.E.M., Senior Ecologist
Pamela Peterson, B.S., Senior Plant and Wetland Ecologist
Davinna Ohlson, M.S., Senior Plant and Wildlife Ecologist

For:

Ponderosa Homes
Jeffrey C. Schroeder
Senior Vice President, Land Acquisition & Planning
6130 Stoneridge Mall Rd., Ste. 185
Pleasanton, CA 94588

August 11, 2013 Project No. 1738-01

I. TABLE OF CONTENTS

I. TABLE OF CONTENTS ii

1. INTRODUCTION 1
1.1 METHODS 3
1.2 Literature and Database Review 3
1.3 Field Survey 4

2 PROJECT SETTING AND DESCRIPTION 5
2.1 EXISTING CONDITIONS 5
2.2 CLIMATE 6
2.3 SOILS 6
2.4 LAND USE AND HABITATS 9
2.4.1 Agriculture/Fallow Field 9
2.4.2 Ruderal 10
2.4.3 Residential/Developed 11
2.5 MOVEMENT CORRIDORS 12
2.6 SPECIAL STATUS PLANT AND ANIMAL SPECIES 13

3 IMPACTS AND MITIGATIONS 27
3.1 SIGNIFICANCE CRITERIA 27
3.2 RELEVANT GOALS, POLICIES, AND LAWS 28
3.2.1 Threatened and Endangered Species 28
3.2.2 Migratory Birds 29
3.2.3 Birds of Prey 29
3.2.4 The Bald and Golden Eagle Protection Act 29
3.2.5 Bats 30
3.2.6 Wetlands and Other Jurisdictional Waters 30
3.2.7 Local, Regional, and State Policies/Ordinances 32
3.3 ENVIRONMENTAL IMPACT/MITIGATION 34
3.3.1 Potential Impacts to Special Status Animal Species 34
3.3.2 Potential Impact to Special Status Plant Species 40
3.3.3 Impact to Movement or Nursery Sites of Fish or Wildlife Species 41
3.3.4 3.3.4 Impact to Habitat for Fish and Wildlife Species 41
3.3.5 Potential Impacts to Riparian Habitat and Other Sensitive Natural Communities, Including Federally Protected Wetlands 41
3.3.6 Degradation of Water Quality in Seasonal Creeks, Reservoirs and Downstream Waters 42
3.3.7 Conflict with Local Policies or Ordinances 42
3.3.8 Conflict with an Adopted Habitat Conservation Plan 43

4 LITERATURE CITED 45

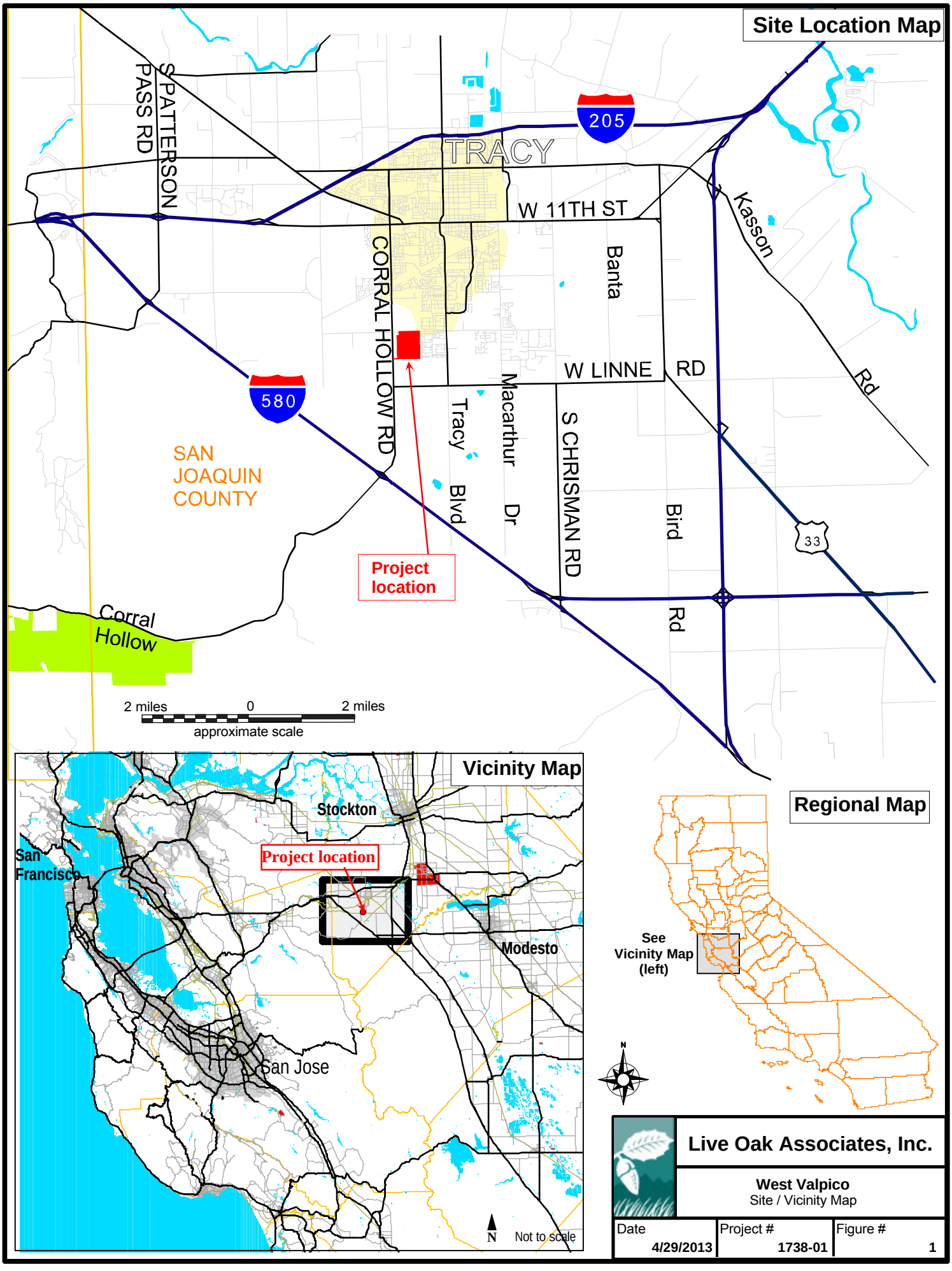
1. INTRODUCTION

This technical report describes the biological resources of the approximately 134-acre West Valpico project site (hereafter referred to as the "study area" or "site") and evaluates possible impacts to these resources resulting from the proposed development. The site is located on West Valpico Street, east of the Corral Hollow Road intersection, in Tracy, San Joaquin County, California (Figure 1) and can be found on the U.S. Geological Survey (USGS) Tracy 7.5" quadrangle in the NW ¼ of Section 5, T3S, R5E of the Mt. Diablo Meridian (APN 244-04-001). The property currently consists of ruderal, developed and agricultural land uses or habitats. The proposed project consists of the development of an active adult community of approximately 581 units with roads and a man-made lake.

In this report, Live Oak Associates, Inc. (LOA) includes discussions of the proposed project, report objectives, the biological resources on the site, and relevant local, state and federal natural resource protection policies, ordinances, and laws. The California Environmental Quality Act (CEQA), the federal Clean Water Act (CWA), the state and federal endangered species acts (FESA and CESA, respectively), the California Fish and Game Code, and the California Water Code are evaluated in context to the proposed project and those natural resources that are identified on the site and in the site's immediate vicinity.

The primary objectives of this report are as follows:

- Describe site characteristics, including all site-specific information related to existing biological resources;
- Evaluate biological resources that could occur on the site based on habitat suitability and proximity of known ranges of a species;
- Summarize state and federal biological resource protection laws applicable to proposed site development;
- Discuss specific biological resource issues that could affect proposed development; and
- Identify avoidance and mitigation measures that could significantly reduce the risk to biological resources and to proposed project development.



Live Oak Associates, Inc.		
West Valpico Site / Vicinity Map		
Date 4/29/2013	Project # 1738-01	Figure # 1

1.1 METHODS

To evaluate the biological resources found or potentially occurring on the site, database and literature reviews were completed. Upon completion of the database and literature reviews, a field visit to evaluate site-specific resources was also completed, as described.

1.2 Literature and Database Review

Prior to the site visit and the preparation of this report, literature and database searches were completed to determine if the site had any documented occurrences of, or the potential to support, special status plant and wildlife species, or sensitive habitats such as wetlands and riparian areas. The following sources of information, including geographic scope, were used for the review:

- California Natural Diversity Data Base (CDFW 2013), nine quadrangle search;
- Inventory of Rare and Endangered Vascular Plants of California (CNPS 2013), nine quadrangle search;
- State and Federally Listed Endangered and Threatened Animals of California (CDFG 2013 and USFWS 2013);
- Relevant planning documents and/or biological studies for other projects in the site's vicinity;
- San Joaquin Multiple Species and Open Space Habitat Conservation Plan (SJMCP); and
- USFWS National Wetlands Inventory.

The geographic scope for the database search (for special status species occurrences) was centered within the Tracy USGS 7.5-minute quadrangle, in which the project site occurs, and expanded to include the eight bordering quadrangles (Union Island, Lathrop, Midway, Cedar Mountain, Clifton Court Forebay, Vernalis, Lone Tree Creek, and Solyo).

1.3 Field Survey

A reconnaissance-level field survey of the study area was conducted on May 20, 2013, by LOA Senior Ecologists Anna Kopitov and Davinna Ohlson, at which time the principal habitats and land uses were characterized, as well as the constituent plants and animals associated with each. Site specific, focused wildlife and floristic surveys were not completed; thus, these are not included in the scope of this biological evaluation. Vascular plant species that were identifiable at the time of the survey were identified using the Jepson Manual Second Edition (Baldwin et. al. 2012).

2 PROJECT SETTING AND DESCRIPTION

The proposed project is located in San Joaquin County, on the western border of the city of Tracy. San Joaquin County is east of the Coastal Range that separates California's Central Valley from the San Francisco Bay Area. The city of Tracy lies approximately 68 miles south of Sacramento and 60 miles east of San Francisco. Interstate 205 (I-205) runs through the northern-most part of the city and connects I-580 to I-5, a major north-south interstate corridor east of Tracy. The West Valpico property is located in an area that is identified in the City of Tracy Draft EIR (2005) as within the City's Sphere of Influence (SOI) zone. The SOI is the area outside of the City limits that the City expects to annex and urbanize in the future.

The proposed project site, located at 11150 West Valpico Road near Corral Hollow Road, is surrounded by dense urban Single Family Residential (SFR) development to the south and east perimeters. Open Space and low density SFR development are located to the north and agricultural lands and low density SFR development are located to the west. The project site is identified as an agricultural preserve in the San Joaquin County GIS District Viewer (2013). The West Valpico proposed project development consists of an active adult community with approximately 581 units situated on approximately 134 acres. Associated infrastructure and elements include roads, and a man-made lake as the central amenity.

2.1 EXISTING CONDITIONS

The approximately 134-acre site is located just outside of the City of Tracy in San Joaquin County, California. The site is bounded by a planned unit development to the south and low density residential to the east, which is within the City limits, as the eastern and southern boundaries of the West Valpico project correspond with the city's limits. The northern and western boundaries are also bounded by residential development on larger lots. Moving further to the north and west, agricultural land uses dominate the landscape, and an irrigation canal runs west to east in this area.

The site elevation is relatively flat with a slight change in elevation from 31 m National Geodetic Vertical Datum (NGVD) in the north to 41 m NGVD in the south. The northeast corner of the project site consists of a compacted gravel drive, a fenced single-family residence and

agricultural buildings (e.g., barns and silos). An irrigation pump and what appears to be a detention basin that is characterized by an earthen berm, are located along the northern boundary (Valpico Road). In the southwestern section, an access path enters the property from Corral Hollow Road. There is a possibility this path functions as a utility right of way, given that power lines parallel this access route and follow the southern property border. The dominant historic land cover was alfalfa hay (Jeff Schroeder, May 2013, pers. comm.); however, during the site visit, the specific cover type was not identifiable, as it had been harvested and removed from the fields early in the season.

2.2 CLIMATE

The climate in Tracy is characterized by wet winters and dry summers, which are indicative of a Mediterranean-type climate. The average annual high temperature is 75 degrees F. and the average low is 47 degrees F. Rainfall totals can vary widely over a short distance with windward mountain areas west of Tracy averaging over 24 inches of rain and shadow areas, such as the city proper, averaging about 10 inches annually. From March to November, winds typically blow from the west.

2.3 SOILS

One soil series, Zacharias, and two soil types, Zacharias clay loam and Zacharias gravelly clay loam, were identified on the project site (Fig. 2; NRCS 2007). The Zacharias series consists of very deep, well-drained soils formed in alluvium from mixed rock sources. Zacharias soils occur on alluvial fans and on low stream terraces, on slopes ranging from 0 to 8 percent, and at elevations ranging from 25 to 400 feet. Per the NRCS, the associated climate is subhumid, with hot dry summers and cool moist winters, and a mean annual precipitation of between 8 and 12 inches. The associated mean January temperature is about 47 degrees F.; and the mean July temperature is 72 degrees F.; with an overall mean annual temperature of about 60 to 62 degrees F.; and a frost-free period of about 260 to 280 days.

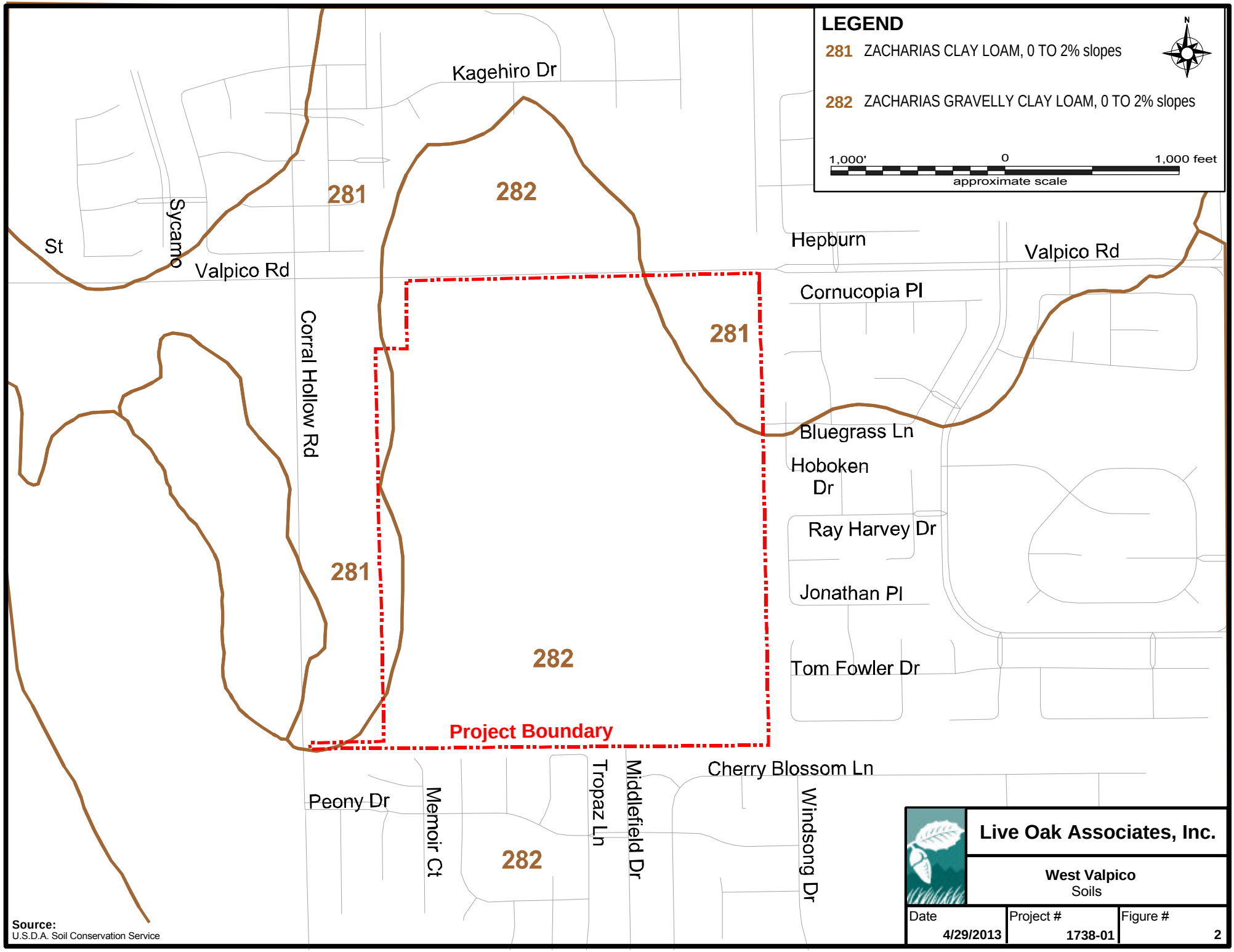
Zacharias soils are characterized as hydric. Hydric soils are soils that are saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper part. Under sufficiently wet conditions, they support the growth and regeneration of hydrophytic

(wetland) vegetation. These soils are well drained, and in areas with high applications of irrigation water, an apparent water table has been observed to develop. In some areas the water table is at a depth of greater than 60 inches; while in other areas the water table is at a depth of 48 to 60 inches. Zacharias soils are also characterized by negligible to medium runoff and by moderately slow permeability.

Zacharias soils have been used mainly for agriculture, including irrigated cropland to grow fruit, nut, and row and field crops, for pastureland, and for livestock grazing. The Zacharias soil series supports annual grasses and forbs.

Table 1 Project site soil series.

Soil Series/Soil	Map Symbol	Parent Material	Surface Permeability	Hydric
ZACHARIAS SERIES Zacharias clay loam	281	Alluvium derived from mixed rock sources. Well drained.	Moderately slow permeability	Yes
ZACHARIAS SERIES Zacharias gravelly clay loam	282	Alluvium derived from mixed rock sources. Well drained.	Moderately slow permeability	Yes


LEGEND
281 ZACHARIAS CLAY LOAM, 0 TO 2% slopes
282 ZACHARIAS GRAVELLY CLAY LOAM, 0 TO 2% slopes
N
1,000' 0 1,000 feet
approximate scale
Kagehiro Dr
281
282
St
Sycamo
Valpico Rd
Hepburn
Valpico Rd
Cornucopia Pl
Corral Hollow Rd
281
Bluegrass Ln
Hoboken Dr
Ray Harvey Dr
281
Jonathan Pl
282
Tom Fowler Dr
Project Boundary
Cherry Blossom Ln
Peony Dr
Memoir Ct
Tropaz Ln
Middlefield Dr
Windsong Dr
282
Source:
U.S.D.A. Soil Conservation Service
Live Oak Associates, Inc.
West Valpico
Soils
Date 4/29/2013
Project # 1738-01
Figure # 2

2.4 LAND USE AND HABITATS

Land uses and habitats identified on the site during the May survey included agriculture/fallow field, residential/developed and ruderal. The term "ruderal" refers to habitats that have been heavily disturbed by human activity and which support non-native vegetation adapted to such disturbance. A list of the vascular plant species observed on the project site and the terrestrial vertebrates using, or potentially using, the site are provided in Appendices A and B, respectively. Photos of the site are provided in Appendix C.

2.4.1 Agriculture/Fallow Field

During the May 2013 field visit, the agricultural fields of the site were fallow (photo 1). The type of crops grown could not be determined during the site visit.

Herbaceous plant species observed in this habitat included two native species, narrow-leaf milkweed (*Asclepias fascicularis*) and doveweed (*Croton setigerus*) but the fields were dominated by non-native herbaceous species including wild oats (*Avena fatua*), puncturevine (*Tribulus terrestris*), lamb's quarters (*Chenopodium album*), and Bermuda grass (*Cynodon dactylon*).

Based on the site conditions, it is unlikely that amphibians would regularly occur on site, but occasional tree frogs could wander onto the site from the nearby irrigation canal that is within approximately 200 feet north of the project site. It is possible that northern pacific tree frogs (*Pseudacris regilla*) may occur on site during the raining season. Reptiles likely use the field regularly. Potential species occurring on the site include, but would not be limited to, the western fence lizard (*Sceloporus occidentalis*), terrestrial garter snake (*Thamnophis elegans*), and gopher snake (*Pituophis melanoleucus*). There were no reptile species observed during the field survey.

Several avian species were observed foraging within or above the fallow fields of the site, including the mourning dove (*Zenaida macroura*), western scrub jay (*Aphelocoma californica*), Brewer's blackbird (*Euphagus cyanocephalus*), red-winged blackbird (*Agelaius phoeniceus*),

Swainson's hawk (*Buteo swainsonii*) and red-tailed hawk (*Buteo jamaicensis*); however, no nests were observed on the site.

The only mammals, or evidence thereof, observed in this habitat were California ground squirrels (*Otospermophilus beecheyii*) and their burrows. Other mammals that may occur on the field include, but are not limited to, a variety of small rodents such as mice (*Peromyscus* spp.). Mice and ground squirrels may attract larger predators such as the coyote (*Canis latrans*) or domestic dog (*Canis familiaris*). A variety of other mammals have the potential to occur in the fields for forage and/or during dispersal movements. These latter species would be generally limited to those that are adapted to the presence of humans, urban land uses and edge habitats, and include the opossum (*Didelphis virginiana*), striped skunk (*Mephitis mephitis*), and raccoon (*Procyon lotor*).

2.4.2 Ruderal

As noted above, the term "ruderal" refers to habitats that have been heavily disturbed by humans and that support vegetation that is adapted to disturbed conditions. Ruderal habitat is present within the residential area in the northeast corner of the site, within the detention basin, on the berms along the northern site border, and on the narrow corridors along the fields and roads, the latter including the path entering the property from Corral Hollow Road. Introduced forbs and grasses dominate these areas.

The following non-native herbaceous species were identified within ruderal areas of the site: ripgut grass (*Bromus diandrus*), foxtail brome (*Bromus madritensis*), wild oats (*Avena* sp.), prickly wild lettuce (*Lactuca serriola*), Italian rye grass (*Festuca perennis*), cheeseweed mallow (*Malva parviflora*), foxtail barley (*Hordeum murinum*), field bindweed (*Convolvolus arvensis*), red-stemmed filaree (*Erodium cicutarium*), fat hen (*Atriplex prostrata*), Russian thistle (*Salsola tragus*), ornamental rose (*Rosa sp.*), wild mustard (*Hirshfeldia incana*), fiddleneck (*Amsinckia* sp.), milk thistle (*Silybum marianum*), bull thistle (*Cirsium vulgare*), grape (*Vitis* sp.), English ivy (*Hedera helix*), black mustard (*Brassica nigra*) and London rocket (*Sisymbrium irio*). Tree and shrub species present within ruderal areas included the Peruvian pepper (*Schinus molle*),

silktree (*Albizia julibrissin*), black walnut (*Juglans sp*.), olive (*Olea europaea*), almond (*Prunus dulcis*), elm (*Ulmus* sp.), and oleander (*Nerium oleander*).

Amphibians are unlikely to occur in this habitat due to the lack of moisture; however, during the rainy season, it is possible that ruderal areas are used by common species such as the Pacific chorus frog, which may be present in neighboring gardens. Reptiles that have already been described as potentially occurring within the agricultural fields of the site would also be expected to occur within ruderal habitats of the site.

Avian species observed foraging within or above the ruderal habitats of the site included the western scrub jay (*Aphelocoma californica*), Brewer's blackbird (*Euphagus cyanocephalus*), red-winged blackbird (*Agelaius phoeniceus*), American goldfinch (*Spinus tristis*), Swainson's hawk (*Buteo swainsonii*) and red-tailed hawk (*Buteo jamaicensis*), although none of these species were observed to be nesting on the site.

The only two mammal species observed in this habitat during the site survey was the California ground squirrel along with their burrows, and feral domestic cats (*Felis catus*). Other mammals that may occur within ruderal habitats of the site include those similar to what has already been described for the agricultural fields of the site.

2.4.3 Residential/Developed

Residential/Developed areas on the site consist of a residence, garages, and farm buildings. Master planned communities are located along the southern and eastern boundaries of the project site. Additional single-family residences are located along the western boundary. These single-family residences, on the western boundary, occur on large lots characterized by ornamental trees, shrubs, ruderal grasses and forbs. One fenced residential unit occurs on site in the northeast corner. The area outside of the fenced residence includes a compacted gravel drive and several agricultural buildings (photo 3, 4). Vegetation on the developed portion of the project site was dominated by ruderal grasses and forbs, and by ornamental trees and shrubs such as cypress, redwood and eucalyptus trees.

In general, wildlife species occurring within the developed areas of the site would be similar to those already described for the agricultural fields and ruderal habitats, above. As noted above, these species potentially include a variety of small rodents, opossum, striped skunk, raccoon, and feral domestic cats, the latter that were observed during the survey within this area and in neighboring yards. Several bat species could use structures and/or trees within the developed areas of the site for roosting. These species have the potential to reside in the buildings, many of which are in a state of disrepair, and abandoned equipment on site. A silo-type building located near the house has the potential to host bat roosting and bird nesting sites (photo 5). Avian guano was observed in this building that indicates nesting and/or roosting activity within the building, although no birds or bats were observed in the building during the survey. It was not possible to view the interior of other buildings or the residence during the site visit; therefore, it is unknown to what extent these structures may be used by bats and birds.

2.5 MOVEMENT CORRIDORS

Wildlife movement corridors function to connect habitats used by native wildlife for purposes including, but not limited to, foraging, shelter, breeding, dispersal and migration. Proposed development that threatens to disrupt these natural movement patterns is required to evaluate the environmental impacts of these disruptions and address effects, if any. Movement corridors in California are typically associated with valleys, rivers and creeks, riparian vegetation, and ridgelines. Maintaining movement corridors to allow access to the different biotic resources are essential to supporting various species.

Evaluating the importance of an area that may function as a “movement corridor” depends on the species that occur in the area and that are dependent upon the natural resources or habitats in the area. In addition, the movement corridors have different characteristics that serve different plant and animal species. For example, corridors characterized by sparse vegetative cover that could potentially restrict movement may be suitable for large mammals but may not be suitable for smaller mammals that depend upon cover for survival. Evaluating regional habitats, species, and historic movement patterns is an important consideration for environmental impact analyses.

Generally speaking, there are two types of corridor users – passage species and corridor dwelling species (Beier and Loe 1994). Passage species use movement corridors for three primary functions:

- Movements within a home range or territory;
- Movements during migration; and
- Movements during dispersal.

Passage species typically do not spend extended periods of time within a corridor. Corridor dwelling species, on the other hand, have limited dispersal needs and may require movement corridors for longer periods of time (from several days to several generations). Movement corridors for these species may need to support most, if not all, life history requirements. These latter species include reptiles, insects, and plants.

While no detailed study of animal movements has been conducted for the study area, evaluating the site, its habitats, and understanding the life history of species potentially occurring on the site and in its vicinity provides sufficient information to infer the types of movements occurring in the region and whether or not proposed development would constitute a significant impact on animal movements.

As noted in Section 2.1, a number of reptiles, birds, and mammals may use the site as part of their home range and dispersal movements. However, the site lacks intrinsic qualities required or desirable to function as a movement corridor as the site is isolated and does not connect important habitats.

2.6 SPECIAL STATUS PLANT AND ANIMAL SPECIES

Special status plants and animals occur in the vicinity of the site (Figure 3). These species and their potential to occur in the study area are listed in Table 2. Species identified in Table 2 were based on the following sources: *California's Wildlife, Volumes I, II, and III* (Zeiner et. al 1988), *California Natural Diversity Data Base* (CDFW 2013), *Endangered and Threatened Wildlife and Plants* (USFWS 2013), *State and Federally Listed Endangered and Threatened Animals of California* (CDFW 2013), and *The California Native Plant Society's Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2013). Figure 3 depicts the locations of

special status species recorded in the California Natural Diversity Data Base (CNDDB) within 3 km (approximately five miles) of the project site. It is important to note that the CNDDB is a volunteer database; therefore, it may not contain all known records and cannot be relied upon solely to determine a species presence or absence.

A number of state and federally listed animals, as well as other special status animal species (i.e., candidate species for listing and California species of special concern), have been documented within 20 miles of the project site. These species include, but are not limited to, the San Joaquin kit fox (*Vulpes macrotis mutica*), the California tiger salamander (*Ambystoma californiense*), and various raptors, including tree nesting raptors such as Swainson's hawk (*Buteo swainsoni*) and ground-nesting burrowing owls (*Athene cunicularia*)). This report evaluates the site's suitability for these and other species.

Species more likely to occur on the project site itself or in the surrounding vicinity are discussed below. Serpentine soils are absent from the site; as such, those species that are uniquely adapted to serpentine conditions are considered absent from the site. Other plant species occur in habitats not present on the site (e.g., chaparral, brackish and freshwater marshes, coastal scrub) or occur at elevations above or below the elevations of the site, and therefore are also considered absent from the site.

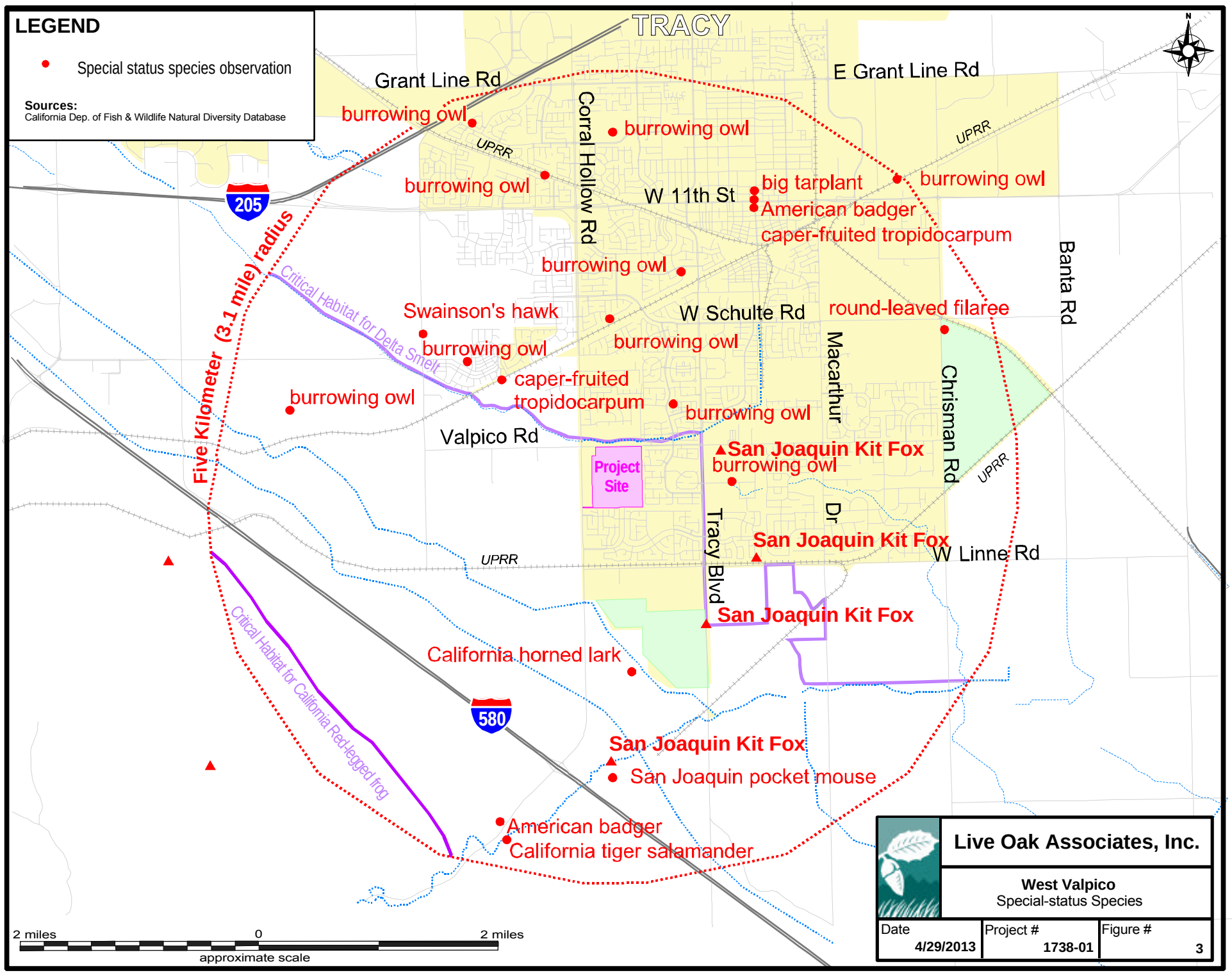

LEGEND
Special status species observation
Sources:
California Dep. of Fish & Wildlife Natural Diversity Database
TRACY
Grant Line Rd
E Grant Line Rd
Corral Hollow Rd
UPRR
205
Five Kilometer (3.1 mile) radius
Critical Habitat for Delta Smelt
W 11th St
W Schulte Rd
Macarthur Dr
Chrisman Rd
Banta Rd
Valpico Rd
Project Site
Tracy Blvd
W Linne Rd
580
Critical Habitat for California Red-legged frog
burrowing owl
big tarplant
American badger
caper-fruited tropidocarpum
Swainson's hawk
round-leaved filaree
San Joaquin Kit Fox
California horned lark
San Joaquin pocket mouse
American badger
California tiger salamander
2 miles
0
2 miles
approximate scale
Live Oak Associates, Inc.
West Valpico
Special-status Species
Date 4/29/2013
Project # 1738-01
Figure # 3

Table 2: Special status species that could occur in the project vicinity.

PLANTS (adapted from CDFW 2013 and CNPS 2013)

Species Listed as Threatened or Endangered under the State and/or Federal Endangered Species Acts

Common and scientific names	Status	General habitat description	*Occurrence in the study area
Large-flowered fiddleneck *Amsinckia grandiflora*	FE, CE, CRPR 1B	Habitat: Cismontane woodland and valley and foothill grasslands. Elevation: 275-550 meters. Blooms: April–May.	**Absent**. The site occurs well below the elevation at which this species is documented.
Delta button-celery *Eryngium racemosum*	CE CRPR 1B	Habitat: Riparian scrub (vernally mesic clay depressions) Elevation:3-30 meters. Blooms: Jun-Oct	**Absent**. Suitable habitat does not occur on the site. The nearest CNDDB record is greater than 10 miles from the project site.

Table 2: Special status species that could occur in the project vicinity. (Cont'd.)

PLANTS (adapted from CDFW 2013 and CNPS 2013)

Other special status plants listed by the CDFW and CNPS

Common and scientific names	Status	General habitat description	*Occurrence in the study area
Sharsmith's onion *Allium sharsmithiae*	CRPR 1B	Habitat: Chaparral, cismontane woodland (serpentinite, rocky) Elevation:400-1200 meters. Blooms: Mar-May.	**Absent.** Suitable habitat is absent from the site and the site occurs well below the elevation at which this species has been documented.
Alkali milk-vetch *Astragalus tener var. tener*	CRPR 1B	Habitat: Playas, valley and foothill grasslands (adobe clay), vernal pools/alkaline. Elevation: 1-60 meters. Blooms: Mar-Jun.	**Absent.** Suitable soils are not present and the nearest CNDDB record is greater than 10 miles from the site.
Heartscale *Atriplex cordulata var. cordulata*	CRPR 1B	Habitat: Chenopod scrub, meadows and seeps, valley and foothill grasslands (sandy/saline or alkaline). Elevation: 0-560 meters. Blooms: April–October.	**Absent.** Suitable habitat is not present. The site has been greatly manipulated for agricultural purposes for decades. There are no CNDDB occurrences within 10 miles.
Brittlescale *Atriplex depressa*	CRPR 1B	Habitat: Chenopod scrub, meadows and seeps, playas, valley and foothill grasslands, vernal pools (alkaline, clay). Elevation: 1-320 meters. Blooms: April–October.	**Absent.** Suitable habitat is not present. The site has been greatly manipulated for agricultural purposes for decades. Nearest CNDDB occurrence is greater than 10 miles from the site.

Table 2: Special status species that could occur in the project vicinity. (Cont'd.)

PLANTS (adapted from CDFW 2013 and CNPS 2013)

Other special status plants listed by the CDFW and CNPS

Common and scientific names	Status	General habitat description	*Occurrence in the study area
San Joaquin spearscale *Atriplex joaquiniana*	CRPR 1B	Habitat: Chenopod scrub, meadows and seeps, playas, and valley and foothill grasslands (alkaline). Elevation: 1-835 meters. Blooms: April–October.	**Absent.** The site has been greatly manipulated for agricultural purposes for decades. Any suitable habitat that may have historically occurred onsite is no longer present. There are no CNDDB occurrences within 10 miles.
Big tarplant *Blepharizonia plumosa*	CRPR 1B	Habitat: Valley and foothill grassland (usually clay). Elevation: 30-505 meters. Blooms: July–October.	**Unlikely.** The site has been greatly manipulated for agricultural purposes for decades. CNDDB occurrences, within 1.6 and 5 miles, are recorded (element codes PDAST1C011 and PDAST1C011).
Round-leaved filaree *California macrophyllaia*	CRPR 1B	Habitat: Cismontane woodlands and valley and foothill grasslands on clay soils. Elevation: 15-1200 meters. Blooms: March–May.	**Unlikely**. The site has been greatly manipulated for agricultural purposes for decades. Any suitable habitat that may have historically occurred on the site is no longer present. No CNDDB records within 10 miles.
Chaparral harebell *Campanula exigua*	CRPR 1B	Habitat: Chaparral (rocky, usually serpentine) Elevation: 275-1250 meters. Blooms: May-June.	**Absent.** Habitat and elevation are not present.
Lemmon's jewel-flower *Caulanthus lemmonii*	CRPR 1B	Habitat: Pinyon and juniper woodland, valley and foothill grassland. Elevation: 80-1220 meters. Blooms: Mary-May.	**Absent.** Habitat is absent from the site and the site occurs well below the elevations at which this species has been documented.
Slough thistle *Cirsium crassicaule*	CRPR 1B	Habitat: Chenopod scrub, marshes and swamps, riparian scrub. Elevation: 3-100 meters. Blooms: May-Aug.	**Absent.** Habitat is not present. The site has been greatly manipulated for agricultural purposes for decades. Any suitable habitat that may have historically occurred onsite is no longer present.
Mt. Hamilton fountain thistle *Cirsium fontinale var. campylon*	CRPR 1B	Habitat: Chaparral, cismontane woodland, valley and foothill grassland (serpentinite seeps) Elevation: 100-890 meters. Blooms: (Feb) Apr-Oct.	**Absent.** Habitat is absent from the site and the site occurs well below the elevations at which this species has been documented.
Santa Clara red ribbons *Clarkia concinna ssp. automixa*	CRPR 4	Habitat: Foothill woodland. Elevation:90-1500 meters. Blooms: Apr-Jul.	**Absent.** Habitat is absent from the site and the site occurs well below the elevations at which this species has been documented.
Hospital Canyon larkspur *Delphinium californicum ssp. Interius*	CRPR 1B	Habitat: Chaparral, cismontane woodland (mesic), coastal scrub. Elevation: 230-1095 meters. Blooms: April-Jun.	**Absent.** Habitat is absent from the site and the site occurs well below the elevations at which this species has been documented.

Table 2: Special status species that could occur in the project vicinity. (Cont'd.)

PLANTS (adapted from CDFW 2013 and CNPS 2013)

Other special status plants listed by the CDFW and CNPS

Common and scientific names	Status	General habitat description	*Occurrence in the study area
Recurved larkspur *Delphinium recurvatum*	CRPR 1B	Habitat: Chenopod scrub, cismontane woodland, valley and foothill grassland on alkaline soils. Elevation: 3-790 meters. Blooms: Mar-Jun.	**Unlikely**. The site has been greatly manipulated for agricultural purposes for decades. Any suitable habitat that may have historically occurred onsite is no longer present. No CDNDDB records within 10 miles.
Tracy's eristrium *Eriastrum tracyi*	CRPR 3	Habitat: Chaparral, cismontane woodland. Elevation: 315-1645 meters. Blooms: May-July.	**Absent.** Habitat is absent from the site and the site occurs well below the elevations at which this species has been documented.
Diamond-petaled California poppy *Eschscholzia rhombipetala*	CRPR 1B	Habitat: Valley and foothill grassland (alkaline, clay soils). Elevation: 0-975 meters. Blooms: March-April.	**Unlikely**. The site has been greatly manipulated for agricultural purposes for decades. Any suitable habitat that may have historically occurred onsite is no longer present. Nearest CNDDB occurrence is greater than 6 miles from the site.
Talus fritillary *Fritillaria falcata*	CRPR 1B	Habitat: Chaparral, cismontane woodland, lower montane coniferous forest (serpenitine, often talus) Elevation: 300-1525 meters. Blooms: Mar-May.	**Absent.** Habitat is absent from the site and the site occurs well below the elevations at which this species has been documented.
Diablo helianthella *Helianthella castanea*	CRPR 1B	Habitat: Broadleaved upland forest, chaparral, cismontane woodland, coastal scrub, riparian woodland, valley and foothill grassland. Elevation: 60-1300 meters. Blooms: March–June.	**Absent.** Habitat is absent from the site and the site occurs well below the elevations at which this species has been documented. The site has been greatly manipulated for agricultural purposes for decades. Any suitable habitat that may have historically occurred onsite is no longer present.
Tehama County western flax *Hesperolinon tehamense*	CRPR 1B	Habitat: Chaparral, cismontane woodland, lower montane coniferous forest (serpentinite) Elevation: 100-1250 meters. Blooms: May-July.	**Absent.** Habitat is absent from the site and the site occurs well below the elevations at which this species has been documented.
Wooly rose-mallow *Hibiscus lasiocarpos var. occidentalis*	CRPR 1B	Habitat: Marshes and swamps (freshwater). Elevation: 0-120 meters. Blooms: Jun-Sep.	**Absent.** Suitable habitat is not present.

Table 2: Special status species that could occur in the project vicinity. (Cont'd.)

PLANTS (adapted from CDFW 2013 and CNPS 2013)

Other special status plants listed by the CDFW and CNPS

Common and scientific names	Status	General habitat description	*Occurrence in the study area
Loma Prieta hoita *Hoita strobilina*	CRPR 1B	Habitat: Chaparral, cismontane woodland, riparian woodland (usually serpentinite, mesic) Elevation: 30-860 meters. Blooms: May-Jul (Aug, Oct uncommon).	**Absent.** Suitable habitat is not present.
Mt. Hamilton Coreopsis *Leptosyne hamiltonii*	CRPR 1B	Habitat: Cismontane woodland (rocky). Elevation: 550-1300 meters. Blooms: Mar-May.	**Absent.** Habitat is absent from the site and the site occurs well below the elevations at which this species has been documented.
Mason's lilaeopsis *Lilaeopsis masonii*	CRPR 1B	Habitat: Marshes and swamps (brackish or freshwater), riparian scrub. Elevation:0-10 meters. Blooms: Apr-Nov.	**Absent.** Suitable habitat is not present.
Delta mudwort *Limosella australis*	CRPR 2	Habitat: Marshes and swamps (freshwater or brackish) riparian scrub (usually mud banks). Elevation: 0-3 meters. Blooms: May-Aug	**Absent.** Suitable habitat is not present.
Showy golden madia *Madia radiata*	CRPR 1B	Habitat: Cismontane woodland and valley and foothill grassland. Elevation: 25-1215 meters. Blooms: March–May.	**Absent**. The site has been greatly manipulated for agricultural purposes for decades. Any suitable habitat that may have historically occurred onsite is no longer present. Nearest CNDDB occurrence is greater than 6 miles from site (element code PDAST650E0).
Hall's bush mallow *Malacothamnus halli*	CRPR 1B	Habitat: Chaparral, coastal scrub. Elevation: 10-760 meters. Blooms: May-Sep (Oct unusual).	**Absent.** Suitable habitat is not present.
Mt. Diablo cottonweed *Micropus amphibolus*	CRPR 3	Habitat: Broadleafed upland forest, chaparral, cismontane woodland, valley and foothill grassland. Elevation: 45-825 meters. Blooms: Mar-May.	**Unlikely.** The site has been greatly manipulated for agricultural purposes for decades. Any suitable habitat that may have historically occurred onsite is no longer present.
Little mouse tail *Myosurus minimus ssp. apus*	CRPR 3	Habitat: Valley and foothill grassland, vernal pools (alkaline soils). Elevation: 20-640 meters. Blooms: Mar-Jun.	**Unlikely**. The site has been greatly manipulated for agricultural purposes for decades. Any suitable habitat that may have historically occurred onsite is no longer present.

Table 2: Special status species that could occur in the project vicinity. (Cont'd.)

PLANTS (adapted from CDFW 2013 and CNPS 2013)

Other special status plants listed by the CDFW and CNPS

Common and scientific names	Status	General habitat description	*Occurrence in the study area
Shining navarretia *Navarretia nigeliformis ssp. radians*	CRPR 1B	Habitat: Cismontane woodland, valley and foothill grassland, vernal pools. Elevation: 76-1000 meters. Blooms: Apr-Jul.	**Absent.** Habitat is absent from the site and the site occurs well below the elevations at which this species has been documented.
Mt. Diablo phacelia *Phacelia phacelioides*	CRPR 1B	Habitat: Chaparral, cismontane woodland (rocky) Elevation: 500-1370 meters. Blooms: Apr-May.	**Absent.** Habitat is absent from the site and the site occurs well below the elevations at which this species has been documented.
Sanford's arrowhead *Sagitaria sanfordii*	CRPR 1B	Habitat: Marshes and swamps (assorted shallow freshwater). Elevation: 0-650 meters. Blooms: May-Oct.	**Absent.** Habitat is not present.
Chaparral ragwort *Senecio aphanactis*	CRPR 2	Habitat: Chaparral, cismontane woodland, coastal scrub (sometimes alkaline). Elevation: 15-800 meters. Blooms: Jan-Apr.	**Absent.** Habitat is not present.
Suisun Marsh aster *Symphyotrichum lentum*	CRPR 1B	Habitat: Marshes and swamps (brackish and freshwater). Elevation: 0-3 meters. Blooms: May-Nov.	**Absent.** Habitat is not present.
Wright's trichocornus *Trichocoronis wrightii var. wrightii*	CRPR 2	Habitat: Meadows and seeps, marshes and swamps, riparian forest, vernal pools (alkaline). Elevation: 5-435 meters. Blooms: May-Sep.	**Absent.** Habitat is not present.
Caper-fruited tropidocarpum *Tropidocarpum capparideum*	CRPR 1B	Habitat: Valley and foothill grassland (alkaline hills) Elevation: 1-455 meters. Blooms: Mar-Apr.	**Unlikely**. The site has been greatly manipulated for agricultural purposes for decades. The nearest CNDDB occurrence, within 1 mile and recorded in 1962, is likely extirpated (1998. CNDDB).

Table 2: Special status species that could occur in the project vicinity.

ANIMALS (adapted from CDFW 2013 and USFWS 2013)

Species Listed as Threatened or Endangered under the State and/or Federal Endangered Species Acts

Common and scientific names	Status	General habitat description	*Occurrence in the study area
Invertebrates			
Valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	FT	Elderberry shrubs (*Sambucus nigra*)	**Absent.** No elderberry shrubs (suitable habitat) were observed it the study area.
Vernal pool fairy shrimp *Branchinecta lynchi*	FT	Vernal pools of California's Central Valley.	**Absent.** No vernal pools were present on the site. The site has been greatly manipulated for agricultural purposes for decades. Any suitable habitat that may have historically occurred on the site is no longer present.
Fishes			
Delta smelt *Hypomesus transpacificus*	FT, CE	Sacramento-San Joaquin Delta.	**Absent.** There are no water sources or connections to the Delta in the study area.
Amphibians			
California red-legged frog *Rana draytonii*	FT, CSC	Rivers, creeks and stock ponds of the Sierra foothills and coast range, preferring pools with overhanging vegetation.	**Absent.** There is no suitable habitat present. The nearest CNDDB occurrence is approximately 4.3 miles southwest of the site.
California tiger salamander *Ambystoma californiense*	FT, CT	Breeds in vernal pools and stock ponds of central California. Adults aestivate in grassland habitats adjacent to the breeding sites.	**Absent.** There is no suitable breeding habitat present on the site or within 1.5 miles of the site. The nearest documented CNDDB occurrence is approximately 3 miles southwest of the site.
Reptiles			
Alameda whipsnake *Masticophis lateralis euryxanthus*	FT, CT	Ranges from the inner coast range in western and central Contra Costa and Alameda counties. Typically occurs in chaparral and scrub habitats with rock outcrops and talus pilings. Also occurs in scrub communities, grasslands, oak, and oak/bay woodlands.	**Absent**. Suitable habitat is not present on the site; however, suitable habitat is present approximately 3.4 miles west, in the foothills, of the project site.

Table 2: Special status species that could occur in the project vicinity.

ANIMALS (adapted from CDFW 2013 and USFWS 2013)

Species Listed as Threatened or Endangered under the State and/or Federal Endangered Species Acts

Birds			
Swainson's hawk *Buteo swainsonii*	CT	Breeds in stands with few trees in juniper-sage flats, riparian areas, and oak savannah; forages in adjacent livestock pasture, grassland or grain fields. Oak woodlands, pastures, and grasslands provide suitable nesting and foraging habitat.	**Present**. A Swainson's hawk was observed foraging and flying over the fallow field. Suitable foraging habitat is present on site (fallow field and prey) and nesting habitat is available in the trees located in the developed areas off the project site.
Western yellow-billed cuckoo *Coccyzus americanus occidentalis*	FC, CE	Nesting habitat is cottonwood/willow riparian forest. Occurs only along the upper Sacramento Valley portion of the Sacramento River, the Feather River in Sutter Co., the south fork of the Kern River in Kern Co., and along the Santa Ana, Amargosa, and lower Colorado rivers.	**Absent**. No suitable habitat is present on the site.
Mammals			
Riparian woodrat *Neotoma fuscipes riparia*	FE	Rivers, creeks and stock ponds of the Sierra foothills and coast range, preferring pools with overhanging vegetation.	**Absent.** Suitable habitat does not occur on, or in the vicinity of, the project site.
Riparian brush rabbit *Sylvilagus bachmani riparius*	FE, CE	Riparian forest.	**Absent.** Riparian forest does not occur on, or in the vicinity of, the project site.
San Joaquin kit fox *Vulpes macrotis mutica*	FE, CT	Frequents annual grasslands or grassy open stages with scattered shrubby vegetation. Needs loose-textured sandy soils for burrowing and suitable prey base. Utilizes enlarged (4 to 10 inches in diameter) ground squirrel burrows as denning habitat. May forage in adjacent agricultural habitats.	**Unlikely.** This is an infill site that is separated from suitable grassland habitat in the region by dense residential development. The nearest CNDDB occurrences (1991) are within 1 mile of the site; however, these sightings were in areas that are now developed.

Table 2: Special status species that could occur in the project vicinity.

ANIMALS (adapted from CDFW 2013 and USFWS 2013)

California Species of Special Concern and Fully Protected Species

Common and scientific names	Status	General habitat description	*Occurrence in the study area
Amphibians			
Foothill yellow-legged frog (*Rana boylii*)	CSC	Frequents partly shaded, shallow, swiftly-flowing streams and riffles with rocky substrate in a variety of habitats.	**Absent.** Suitable habitat does not occur on the project site.
Western spadefoot (*Spea hammondii*)	CSC	Primarily found in lowlands, frequenting washes, floodplains, alluvial fans, playas and alkali flats. Prefers open vegetation, short grassy with sandy or gravelly soils.	**Absent.** Suitable habitat is not present on the site.
Reptiles			
Coast horned lizard (*Phrynosoma blainvillii*)	CSC	Grasslands, scrublands, oak woodlands, etc. of central California. Common in sandy washes with scattered shrubs.	**Absent.** Suitable habitat is not present on the site.
San Joaquin Whipsnake (*Masticophis flagellum ruddocki)*	CSC	Occurs in open, dry, treeless areas, including valley and foothill grassland and chenopod scrub. Takes refuge in rodent burrows, under shaded vegetation, and under surface objects.	**Unlikely.** The site has been greatly manipulated (disked) for agricultural purposes for decades. It is not likely that San Joaquin whipsnake could persist on this site.
Silvery legless lizard (*Anniella pulchra pulchra*)	CSC	Sparsely vegetated areas of beach dunes, chaparral, pine-oak woodlands, desert scrub, sandy washes, and stream terraces with sycamores, cottonwoods, or oaks.	**Absent.** Suitable habitat is not present on, or in the vicinity of, the project site.
Western pond turtle (E*mys marmorata*)	CSC	An aquatic turtle of ponds, marshes, slow-moving rivers, streams and irrigation ditches with aquatic vegetation. Needs basking sites and sandy banks or grassy open fields for egg laying.	**Unlikely.** Suitable habitat is not present on the project site. An irrigation canal located to the north of the project site does not appear to provide suitable habitat for this species. Residential/developed lands and roads provide significant dispersal barriers to the fallow field.
Birds			
Burrowing owl (*Athene cunicularia*)	CSC	Open, dry grasslands, deserts and ruderal areas. Requires suitable burrows. Often associated with California ground squirrels.	**Possible.** Suitable habitat is present on the site in the form of California ground squirrel burrows and ruderal habitat.

Table 2: Special status species that could occur in the project vicinity.

ANIMALS (adapted from CDFW 2013 and USFWS 2013)

California Species of Special Concern and Fully Protected Species

Common and scientific names	Status	General habitat description	*Occurrence in the study area
Golden eagle (*Aquila chrysaetos*)	CP	Typically frequents rolling foothills, mountain areas, woodland areas, sage-juniper flats, and desert habitats.	**Absent.** Suitable foraging and nesting habitat is not present. Species may fly overhead.
Loggerhead shrike *Laneius ludovicianus*	CSC	Open grasslands and agricultural areas throughout central California.	**Possible.** Suitable habitat present. No CNDDB occurrences within 10 miles of the site.
Northern harrier *Circus cyaneus*	CSC	Frequents meadows, grasslands, open rangelands, freshwater emergent wetlands; uncommon in wooded habitats.	**Absent**. Suitable habitat is not present; not expected to occur due to lack of open marsh or grassland.
Tricolored blackbird *Agelaius tricolor*	CSC	Breeds near fresh water, primarily emergent wetlands, with tall thickets. Forages in grassland and cropland habitats.	**Present.** Suitable foraging habitat is present in the form of cropland habitat. This species was observed foraging on the project site.
White-tailed kite *Elanus leucurus*	CP	Open grasslands, meadows, or marshes. Require dense topped trees or shrubs for nesting and perching.	**Unlikely**. Not expected to occur due to lack of suitable trees and shrubs for nesting and extensive open habitat for foraging. Nearest CNDDB occurrences are greater than 8 miles from the site, in the foothills.
Yellow-headed blackbird *Xanthocephalus xanthocephalus*	CSC	Freshwater emergent marsh with dense vegetation and deep water.	**Unlikely**. Not expected to occur on the site due to lack of freshwater marsh.
Mammals			
American badger *Taxidea taxus*	CSC	Found in drier open stages of most shrub, forest and herbaceous habitats with friable soils.	**Absent.** Suitable habitat is not present on the site. Nearest recorded occurrence (1938) is likely extirpated as this area is now the developed City of Tracy.
Pallid bat *Antrozous pallidus*	CSC	Grasslands, chaparral, woodlands, and forests of California; most common in dry rocky open areas that provide roosting opportunities.	**Unlikely.** Low quality foraging habitat is present on the site, but suitable roosting habitat is absent, and there are no documented occurrences within 10 miles of site.
Townsend's big-eared bat *Corynorhinus townsendii*	CSC	Mixed conifer forest and riparian zones. Nesting and roosting requires caves, mines, tunnels or buildings. Roosting may occur in cavities of large trees.	**Unlikely**. Buildings and trees may provide roosting habitat; however, no conifer forest or riparian zones are present on, or in the proximity of, the site. No documented occurrences within 10 miles.

Table 2: Special status species that could occur in the project vicinity.

ANIMALS (adapted from CDFW 2013 and USFWS 2013)

California Species of Special Concern and Fully Protected Species

Common and scientific names	Status	General habitat description	*Occurrence in the study area
Western mastiff bat *Eumops perotis californicus*)	CSC	Forages over many habitats. Requires tall cliffs or buildings for roosting.	**Possible.** Foraging habitat is present and structure on the site provide potential roosting habitat. Nearest occurrence 7 miles west of Tracy.

***Explanation of Occurrence Designations and Status Codes**

Present: Species observed on the sites at time of field surveys or during recent past.
Likely: Species not observed on the site, but it may reasonably be expected to occur there on a regular basis.
Possible: Species not observed on the sites, but it could occur there from time to time.
Unlikely: Species not observed on the sites, and would not be expected to occur there except, perhaps, as a transient.
Absent: Species not observed on the sites, and precluded from occurring there because habitat requirements not met.

STATUS CODES

FE	Federally Endangered
FT	Federally Threatened
FPE	Federally Endangered (Proposed)
FC	Federal Candidate

CE	California Endangered
CT	California Threatened
CR	California Rare
CP	California Protected
CSC	California Species of Special Concern

CRPR	CNPS California Rare Plant Rank
1A	Plants Presumed Extinct in California
1B	Plants Rare, Threatened, or Endangered in California and elsewhere
2	Plants Rare, Threatened, or Endangered in California, but more common elsewhere
3	Plants about which we need more information – a review list
4	Plants of limited distribution – a watch list

2.7 JURISDICTIONAL WATERS

Jurisdictional waters include rivers, creeks, and drainages that have a defined bed and bank and which, at the very least, carry ephemeral flows. Jurisdictional waters also include lakes, ponds, reservoirs, and wetlands. Such waters may be subject to the regulatory authority of the U.S. Army Corps of Engineers (USACE), the California Department of Fish and Game (CDFG), and the California Regional Water Quality Control Board (RWQCB). Aquatic features are typically only considered to be jurisdictional if they connect to other Waters of the U.S. per the U.S Supreme Court decision *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers* (SWANCC Decision) and *Rapanos v. United States* and *Carabell v. Army Corps of Engineers* (referred together as the Rapanos decision). See Section 3.2.4 of this report for additional information.

No drainages, wetlands, or any other topographical or hydrological features with potential to be subject to USACE, RWQCB, or CDFW jurisdiction were observed within the study area. No evidence of streambed and banks as defined by CDFW was observed within the project limits, nor were any defined channels that would be subject to agency jurisdiction. The USFWS National Wetlands Inventory does characterize the a feature occurring in the northern portion of the site as a freshwater emergent wetland; however, this feature was completely dry during the site visit and was dominated by upland ruderal species undifferentiated from the surrounding ruderal areas of the site, indicating that it no longer serves an aquatic function.

3 IMPACTS AND MITIGATIONS

3.1 SIGNIFICANCE CRITERIA

General plans, area plans, and specific projects are subject to the provisions of the California Environmental Quality Act (CEQA). The purpose of CEQA is to assess the impacts of proposed projects on the environment before they are constructed. For example, site development may require the removal of some or all of its existing vegetation. Animals associated with this vegetation could be destroyed or displaced. Animals adapted to humans, roads, buildings, pets, etc. could potentially replace those species formerly occurring on a site. Plants and animals that are state and/or federally listed as threatened or endangered may be destroyed or displaced. Sensitive habitats such as wetlands and riparian woodlands may be altered or destroyed. These impacts may be considered significant or not. According to the *Guide to the California Environmental Quality Act*, "Significant effect on the environment" is interpreted as a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic interest. Specific project impacts to biological resources may be considered "significant" if they would 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 Wildlife or U.S. Fish and Wildlife Service;
- 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 Wildlife or U.S. Fish and Wildlife Service;
- A substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;

- Interfered 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 site;
- Reduced substantially the habitat of a fish or wildlife species, including causing a fish or wildlife population to drop below self-sustaining levels or threaten to eliminate an animal community;
- Conflicted with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance;
- Conflicted with the provisions of an adopted Habitat Conservation Plan, or other approved local, regional, or state habitat conservation plan.

Furthermore, CEQA Guidelines Section 15065 states that a project may trigger the requirement to make a "mandatory findings of significance" if "the project has the potential to subsequently 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 on an endangered, rare or threatened species, or eliminate important examples of the major periods of California history or prehistory."

3.2 RELEVANT GOALS, POLICIES, AND LAWS

3.2.1 Threatened and Endangered Species

State and federal "endangered species" legislation has provided the California Department of Fish and Wildlife (CDFW) and the U.S. Fish and Wildlife Service (USFWS) with a mechanism for conserving and protecting plant and animal species of limited distribution and/or low or declining populations. Species listed as threatened or endangered under provisions of the state and federal endangered species acts, candidate species for such listing, state species of special concern, and some plants listed as endangered by the California Native Plant Society are collectively referred to as "species of special status." Permits may be required from both the

CDFW and USFWS if activities associated with a proposed project will result in the "take" of a listed species. "Take" is defined by the state of California as "to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture or kill" (California Fish and Game Code, Section 86). "Take" is more broadly defined by the federal Endangered Species Act to include "harm" (16 USC, Section 1532(19), 50 CFR, Section 17.3). Furthermore, the CDFG and the USFWS are responding agencies under the California Environmental Quality Act (CEQA). Both agencies review CEQA documents in order to determine the adequacy of their treatment of endangered species issues and to make project-specific recommendations for their conservation.

3.2.2 Migratory Birds

State and federal laws also protect most birds. The Federal Migratory Bird Treaty Act (16 U.S.C., scc. 703, Supp. I, 1989) prohibits killing, possessing, or trading in migratory birds, except in accordance with regulations prescribed by the Secretary of the Interior. This act encompasses whole birds, parts of birds, and bird nests and eggs.

3.2.3 Birds of Prey

Birds of prey are also protected in California under provisions of the State Fish and Game Code, Section 3503.5, which states that it is "unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto." Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered "taking" by the CDFW.

3.2.4 The Bald and Golden Eagle Protection Act

The Bald Eagle Protection Act of 1940 (16 U.S.C. 668, enacted by 54 Stat. 250) protects bald and golden eagles by prohibiting the taking, possession, and commerce of such birds and establishes civil penalties for violation of this Act. Take of bald and golden eagles is defined as follows: "disturb means to agitate or bother a bald or golden eagle to a degree that causes, or is

likely to cause, based on the best scientific information available, (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior'' (72 FR 31132; 50 CFR 22.3).

3.2.5 Bats

Section 2000 and 4150 of the California Fish and Game Code states that it is unlawful to take or possess a number of species, including bats, without a license or permit as required by Section 3007. Additionally, Title 14 of the California Code of Regulations states it is unlawful to harass, herd, or drive a number of species, including bats. To harass is defined as "an intentional act that disrupts an animal's normal behavior patterns, which includes, but is not limited to, breeding, feeding or sheltering".

3.2.6 Wetlands and Other Jurisdictional Waters

Natural drainage channels and adjacent wetlands may be considered "Waters of the United States" (hereafter referred to as "jurisdictional waters") subject to the jurisdiction of the U.S. Army Corps of Engineers (USACE). The extent of jurisdiction has been defined in the Code of Federal Regulations but has also been subject to interpretation of the federal courts. Jurisdictional waters generally include:

- All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
- All interstate waters including interstate wetlands:
- All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce;
- All impoundments of waters otherwise defined as waters of the United States under the definition;

- Tributaries of waters identified in paragraphs (a)(1)-(4) (i.e. the bulleted items above).

As recently determined by the United States Supreme Court in *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers* (the SWANCC decision), channels and wetlands isolated from other jurisdictional waters cannot be considered jurisdictional on the basis of their use, hypothetical or observed, by migratory birds. However, the U.S Supreme Court decisions *Rapanos v. United States* and *Carabell v. U.S. Army Corps of Engineers* impose a "significant nexus" test for federal jurisdiction over wetlands. In June 2007, the USACE and Environmental Protection Agency (EPA) established guidelines for applying the significant nexus standard. This standard includes 1) a case-by-case analysis of the flow characteristics and functions of the tributary or wetland to determine if they significantly affect the chemical, physical, and biological integrity of downstream navigable waters and 2) consideration of hydrologic and ecologic factors (EPA and USACE 2007).

The USACE regulates the filling or grading of such waters under the authority of Section 404 of the Clean Water Act. The extent of jurisdiction within drainage channels is defined by “ordinary high water marks” on opposing channel banks. Wetlands are habitats with soils that are intermittently or permanently saturated, or inundated. The resulting anaerobic conditions select for plant species known as hydrophytes that show a high degree of fidelity to such soils. Wetlands are identified by a prevalence of hydrophytic vegetation, and the presence of hydric soils (soils saturated intermittently or permanently saturated by water) and wetland hydrology according to methodologies outlined in the 1987 Corps of Engineers Wetlands Delineation Manual (USACE 1987).

All activities that involve the discharge of fill into jurisdictional waters are subject to the permit requirements of the USACE (Wetland Training Institute, Inc. 1991). Such permits are typically issued on the condition that the applicant agrees to provide mitigation that will result in no net loss of wetland functions or values. No permit can be issued until the Regional Water Quality Control Board (RWQCB) issues a certification (or waiver of such certification) that the proposed activity will meet state water quality standards. The filling of isolated wetlands, over which the

USACE has disclaimed jurisdiction under the SWANCC decision, is still regulated by the RWQCB. It is unlawful to fill isolated wetlands without filing a Notice of Intent with the RWQCB. The RWQCB is also responsible for enforcing National Pollution Discharge Elimination System (NPDES) permits, including the General Construction Activity Storm Water Permit. All projects requiring federal money must also comply with Executive Order 11990 (Protection of Wetlands).

The California Department of Fish and Wildlife (CDFW) has jurisdiction over the bed and bank of natural drainages according to provisions of Section 1601 and 1602 of the California Fish and Game Code (2003). Activities that would disturb these drainages are regulated by the CDFW via a Streambed Alteration Agreement. Such an agreement typically stipulates that certain measures will be implemented to protect the habitat values of the drainage in question.

3.2.7 Local, Regional, and State Policies/Ordinances

3.2.7.1 San Joaquin County Tree Ordinance

San Joaquin County's natural resources regulations contain provisions to preserve county tree resources (San Joaquin County 2008; Chapter 9-1505). The removal of a native oak, heritage oak tree, or historical tree requires an approved improvement plan application (Chapter 9-1505.3) and replacement of the tree subject to requirements as described in Chapter 9-1505.4. These provisions do not cover horticultural or orchard trees. Historical trees are defined as trees, or groups of trees, given special recognition by the San Joaquin County Planning Commission due to size, age, location, or history. Native oaks are defined as valley oaks with stem diameters 6-32 inches for single-trunk and a minimum combined trunk diameter of 8 inches for multi-trunk trees. Interior live oaks or blue oaks require a minimum stem diameter of 4-32 inches for single-trunk trees and a minimum combined diameter of 6 inches for multi-trunk trees. Heritage oaks are defined as native oaks with a single trunk diameter measuring 32 inches or more with all stem diameters measured from 4.5 feet above the average ground elevation of a tree.

3.2.7.2 San Joaquin County Multiple Species Habitat and Open Space Conservation Plan

The SJMSCP, adopted in 2001, covers all of San Joaquin County. Permit holders under the SJMSCP include the Cities of Tracy, Escalon, Lodi, Manteca, Stockton, Lathrop, Ripon; the San Joaquin COG; and others. The plan allows Permittees to issue Incidental Take Permits or allows project applicants to mitigate for impacts to covered species resulting from take of Open Space conversion. The SJMSCP targets 97 listed and non-listed plant, fish and wildlife species covered by the SJMSCP and it provides a regional approach to mitigating development impact and compensating for conversion of open space to non-open space uses. The plan provides compensation for habitat losses in the form of the collection of fees that are used to preserve habitats. This project converts primarily open land to urban development and includes the proposed expansion of existing urban boundaries. Both actions are covered by the SJMSCP (SJMSCP 2005, accessed on line at http://www.sjgov.org/commdev/cgi-bin/cdyn.exe/handouts-planning_ip_all_jurisdictions?grp=handouts-planning&obj=ip_all_jurisdictions).

Different fees are charged for the following four land cover types with the 2013 habitat fees in parentheses:

- Multi-purpose Open Space lands - $6,364 per acre,
- Agricultural Lands - $12,711 per acre,
- Natural Lands - $12,711, and
- Vernal Pools - $37,087 per acre for upland habitat and $78,311 per acre for wetted habitat.

In-lieu of paying habitat fees, in-lieu land may be offered as compensation; however, per-acre endowment fees will apply. In 2013, the endowment fees were as follows:

- Agricultural Habitat Lands - $4,922.19 per acre
- Natural Lands - $4,922.19 per acre
- Vernal Pool Habitat - $7,079.00 per acre for grasslands and $48,302.87 per acre for wetted habitat.

Participation is voluntary for project applicants except when conditioned by the Permittee. Project applicants who opt out of the SJMSCP shall satisfy applicable local, state and federal laws and regulations through consultations with the Permitting Agencies and local planning agencies.

3.3 ENVIRONMENTAL IMPACT/MITIGATION

As described in *Section 1,* the proposed project would develop a senior master planned community, including infrastructure roads and would include a landscape pond. The potential impacts and mitigations resulting from future development of the property are discussed further below and have been divided into "potentially significant impacts" and "less than significant impacts" to clearly divide the biological issues present onsite.

Potentially Significant Impacts

3.3.1 Potential Impacts to Special Status Animal Species

Impact. Of the 22 special status animal species potentially occurring in the region, only four, have either been observed on site or have the potential to occur rarely to occasionally. These include the Swainson's hawk, burrowing owl, tricolored blackbird and Western mastiff bat.

The remaining species would not occur or would be unlikely to occur on the site due to the absence of suitable habitat. Most of these species are absent from the site due to the project location (i.e., outside of common range for species, location near existing development), agricultural management regime or lack of suitable habitat (i.e., aquatic habitat or serpentine habitat).

The SJMSCP is largely a fee based program whereby development fees are assessed the project based on the specific land cover formulas. These fees are then used to implement the broad conservation strategy that is explicitly designed to accommodate defined impacts to covered species habitats. In addition to the assessed fees, the SJMSCP also defines species-specific Minimization Measures provide designed to avoid and minimize direct "take" of covered species, or in the case of species covered by MBTA, that no take occurs of individuals, active nest, or causes nest abandonment – actions prohibited by provisions of the MBTA.

Swainson's hawks were observed foraging over the agricultural field during the site visit. Although no nests were observed on the site, suitable forage and potential nest trees are located on the site and on parcels adjacent to the property. Burrowing owls were not observed during the

field survey; however, suitable habitat exists that could be used by burrowing owls at some future date. Suitable habitat is characterized by the presence of California ground squirrels and their burrows. Site development could result in direct mortality burrowing owls, which are protected by state and federal law, and more common raptor species that are protected by the California Fish and Game Code. Tricolored blackbirds were also observed foraging on site, but no suitable nesting habitat occurs on site. The western mastiff bat could potentially roost within the buildings on site and may forage over the site.

Measures to Offset Impacts to Potential Habitat of Covered Species

Mitigation for the loss of habitat of the SJMSCP covered species as a result of permitted activities is a fee-based program that funds a broad conservation strategy of habitat acquisition, enhancement/restoration and management-in-perpetuity of Preserves composed of habitat types upon which covered species rely. The required compensation ratio for Agricultural Habitat Lands conversion is 1:1 or one acre of preserve acquired, enhanced and managed in perpetuity for each acre of habitat converted from open space use.

Methods by which compensation can be provided pursuant to the SJMSC include one or a combination of two or more of the following:

A. Pay the appropriate fee as indicated in SJMSCP Section 7.4.1; or

B. Dedicate, as conservation easements or fee title, or in-lieu dedications (as specified in SJMSCP Sections 5.3.2.2 and 5.3.2.3, herein); or

C. Purchase approved mitigation bank credits as specified in SJMSCP Section 5.3.2.4.

D. Propose an alternative mitigation plan, consistent with the goals of the SJMSCP and equivalent in biological value to options A, B or C, above, subject to approval by the JPA and with concurrence of the Permitting Agencies' representatives on the TAC.

The 2013 updated habitat fee for agricultural lands is $12,711 per acre (Appendix D).

Species-specific Minimization Measures to Avoid or Minimize Take of Individuals

The following species-specific minimization measures conform and implement the provisions of the SJCMSCP, MBTA and/or the California Fish and Wildlife Code. The measures are designed to avoid and minimize harm, injury, death, or nest abandonment.

Therefore, these measures are warranted to ensure burrowing owls and Swainson's hawks are not harmed, injured or killed, or that legal activities do not cause nest abandonment of a nearby nest tree or nest burrow.

Swainson's Hawk and Non-listed Tree-nesting Raptors and Migratory Birds. The Swainson's hawk and common raptors and other migratory birds may nest in the trees located on site. Although the loss of foraging habitat for the Swainson's hawk and common raptor and bird species would be accommodated by paying the appropriately assessed fees, the following measures are designed to avoid destruction of an active nest or disturbance of an active nest in one of the nearby trees (should a nesting pair occur in the future) on site or within close proximity on the site.

Burrowing Owls. As discussed above, burrowing owls were not observed during the site visit. However, California ground squirrels and their burrows were observed. These fossorial mammals provide both forage and suitable nest habitat for the owls. If burrowing owls were to breed on the site and site grading occurs during the nesting season (February 1 through August 31), nests and nestlings that may be present would likely be destroyed. Owls that may use burrows on the site for roosting outside of the nesting season (September 1 through January 31) could also be harmed or killed during ground disturbance activities. Any actions related to site development that result in the mortality of burrowing owls would constitute a violation of the federal Migratory Bird Treaty Act and provisions of the California Fish and Game Code.

Mitigation. Project impacts to the Swainson's hawk, migratory birds, common raptors, and burrowing owl would be potentially significant as discussed above. Swainson's hawk and burrowing owls are SJMSCP covered species. Minimization Measures described below would be appropriate for individuals of these species if encountered prior to site grading. The following

mitigation measures are warranted for each construction phase; preconstruction surveys apply per phase:

- **Mitigation Measure SWHA 1:** ***Swainson's hawk Avoidance Measures.*** Prior to ground disturbance, a qualified biologist will conduct pre-construction Swainson's hawk surveys during the appropriate time of year using approved methods. As part of these surveys, the biologist will also identify any known nest using the California Natural Diversity Data Base (CNDDB) (CDFW 2013). If no Swainson's hawk nest are detected on site or nearby the site during pre-construction surveys then no additional measures are required.

- **Mitigation Measure SWHA 2*:*** ***Avoid Swainson's hawk nests***. If active Swainson's hawk nests are found within 0.5 mile of the construction footprint during the nesting season (March 1 to September 15), a qualified biologist will determine what nest avoidance buffers may be necessary so that project related activities do not cause nest abandonment. The recommended nest avoidance buffers will be submitted to Joint Powers Authority (JPA) for the SJMSHP for approval. Adjustments to the buffer(s) will require prior approval by JPA, as coordinated by the qualified biologist. The qualified biologist will monitor construction activities to ensure adherence to the buffer and document any adverse effects to the nest, eggs, nestlings, fledged young, or adults. If behavior of the adults or young indicate disturbance that could result in take, construction activities will be adjusted or halted to ensure take is avoided. The project biologist will submit a memorandum documenting compliance to the appropriate agencies on a weekly basis.

- **Mitigation Measure SWHA 3**: ***Monitor removal of potential nest trees***. Based on results of the focused Swainson's hawk surveys, construction would not result in loss or removal of any known Swainson's hawk nest trees. If a new nest is found in the future in a tree that would be removed during project construction, removal would not occur during the nesting season. The qualified biologist would coordinate with JPA to determine appropriate measures.

  Under the SJMCP, the Project applicant has the option of retaining known or potential Swainson's hawk nest trees (i.e., trees that hawks are known to have nested in within the past three years or trees, such as large oaks, which the hawks prefer for nesting) or removing the nest trees. If the Project Proponent elects to retain a nest tree, and in order to encourage tree retention, the following Incidental Take Minimization Measure as noted in the SJMCP shall be implemented during construction activities:

  If a nest tree becomes occupied during construction activities, then all construction activities shall remain a distance of two times the dripline of the tree, measured from the nest. If the Project Proponent elects to remove a nest tree, then nest trees may be removed between September 1 and February 15, when the nests are unoccupied.

  These Incidental Take Minimization Measures are consistent with the provisions of the Migratory Bird Treaty Act.

Burrowing Owls. Site development could potentially result in the mortality of burrowing owls. Mitigation measures to protect burrowing owls from possible direct mortality and/or nest failure are warranted. Therefore, the project applicant will implement the following measures to ensure that burrowing owl mortality resulting from project construction and project activities is avoided:

- **Mitigation Measure BUOW 1*: Conduct preconstruction surveys.*** A qualified biologist for burrowing owls will conduct a preconstruction survey no later than 30 days prior to the onset of ground-disturbing acitivities. This survey will be conducted in accordance with in the *Staff Report on Burrowing Owl Mitigation* (CDFW 2012). All suitable habitats will be surveyed. If no BUOW are detected during these surveys, then no additional measures are required.

- **Mitigation Measure BUOW 2*: Implement nest avoidance measures***. If pre-construction surveys undertaken during the breeding season (February 1 through August 31) locate active nest burrows within or near construction footprint, a qualified biologist will establish and delineate an appropriate, protective, construction-free buffer zone around the nest until the breeding season is over as determined by the qualified biologist. Buffer areas will be established in accordance with *Staff Report on Burrowing Owl Mitigation* (CDFW 2012).

- **Mitigation Measure BUOW 3*: Relocation during non-breeding season*** – The SJMSCP provides for eviction or passive relocation of burrowing owls during the non-breeding season. A passive relocation plan should be prepared and submitted to the JPA for approval.

Tree-Nesting Raptors and Other Migratory Birds. Trees occurring on and adjacent to the site could be used by tree-nesting raptors and other migratory birds for breeding, and structures on-site could also provide potential nesting habitat for swallows and barn owls, although no such nests were observed during the site survey. State and federal laws protect most nesting migratory birds, regardless of their legal status. Therefore, development activities that adversely affect the nesting success of raptors and other migratory birds (i.e., grading, structure demolition and tree removal) or result in mortality of individual birds constitute a violation of state and federal laws. Therefore, the project applicant will implement the following measures to ensure that burrowing owl mortality resulting from project construction and project activities is avoided:

- **Mitigation Measure BIRD 1**. If tree removal, structure demolition or ground disturbance activities are scheduled to commence during the breeding season (February 1 through August 31), pre-construction nesting bird surveys will be conducted by a qualified

biologist to identify possible nesting activity. A construction-free buffer of suitable dimensions must be established around any active raptor and migratory bird nests (up to 250 feet for raptors, depending on the location and species) for the duration of the project or until it has been determined that the chicks have fledged and are independent of their parents.

- **Mitigation Measure BIRD 2**. As an alternative to Mitigation Measure BIRD 1, the project applicant may choose to remove trees and demolish existing structures that provide potential nesting habitat during the non-breeding season from September 1st through January 31st.

Bats. Site development could potentially result in the mortality of special status and non-special status bats should they breed or roost on the site within buildings or trees during project construction activities that result in their demolition or removal. Bats would be particularly vulnerable to impacts from such activities that occur during the winter torpor (hibernation) period, generally accepted to be mid-October through the end of February, and during the maternity season, generally accepted to be mid-April through the end of August. Should bats use the buildings or trees of the site for winter torpor or breeding, the demolition of structures or removal of trees during those seasonal periods could result in harm or mortality to these individuals and their young and this would be considered a significant impact. Therefore, the project applicant will implement the following measures to ensure that bat mortality resulting from project-related activities is avoided.

- **Mitigation Measure BAT 1:** A bat habitat assessment by a qualified biologist shall be conducted for all mature trees and in all structures that will be removed as a result of the project to determine whether they provide suitable roosting or breeding habitat for bats and, to the extent possible, whether they are currently occupied. If the biologist determines that trees and structures on the site do not provide suitable habitat for bats, then no further mitigations would be required. However, if the biologist determines that bats are present or that trees and/or structures provide potentially suitable habitat for bats, and even if currently not occupied, they could be occupied in the future, the following additional mitigations will be implemented:

- **Mitigation Measure BAT 2:** Should the habitat assessment conclude that any trees proposed for removal provide potential roosting, hibernation and/or maternity habitat for bats, tree removal shall only be conducted during seasonal periods of bat activity, i.e. September through mid-October and March through mid-April, under the supervision of a qualified biologist. Tree removals shall occur via a two-phased removal conducted over two consecutive days. In the afternoon of the first day, a tree cutter using chainsaws only shall remove limbs and branches. Limbs with cavities, crevices, or deep bark fissures shall be avoided, and only branches or limbs without those features shall be removed. On the second day, the entire tree shall be removed.
- **Mitigation Measure BAT 3*:*** Should the habitat assessment survey confirm that structures to be demolished on the site provide potential roosting, hibernation and/or

maternity habitat for bats, even if bats are not currently occupying them, then a pre-construction survey for bats will be conducted within 30 days prior to structure demolition. If no bats are found present, then structures may be demolished. If bats are found present, bats may be safely evicted during two seasonal periods of bat activity. In this area, generally bats can be evicted safely between approximately March 1st (or when evening temperatures are above 45°F and rainfall less than ½" in 24 hours occurs), and April 15th, prior to parturition of pups. The next acceptable period is after pups become self-sufficiently volant, generally accepted to be between September 1st through October 15th (or prior to evening temperatures dropping below 45°F and onset of rainfall greater than ½" in 24 hours).

There are two methods for evicting bats from occupied structures. The first, utilized mainly when the building is in good condition and the work is feasible, is "humane eviction", or "bat exclusion", which relies on the bats' own ability to fly out of the roost. In this method, all potential, but currently unused entry points into the structure are sealed. The active entry points are fitted with one-way exits, which are left in place 7-10 days to allow all bats to emerge normally during nightly feeding flights. The one-way exits are then removed and the remaining openings sealed until demolition if it will occur more than 30 days after demolition. If the interval between successful eviction and demolition will be short (less than 4 weeks), the one-way exits may often be left in place until demolition. This eviction work must be conducted by, or under direct supervision or instruction, of a qualified biologist.

In some cases, the physical condition of the structure is so poor that humane eviction as described above is not possible. If that occurs, the building must be carefully, and selectively dismantled in such a way that the internal environment is altered to a degree sufficient to cause bats to abandon the roost and not return. This must occur under the guidance bat biologist qualified in partial dismantling of structures for bat eviction.

Less than Significant Impacts

3.3.2 Potential Impact to Special Status Plant Species

Impact. No special status plant species occur or would likely occur on the site due to the lack of suitable habitat and as a result of on-going agricultural disturbance. Therefore, site development would not result in significant impacts to special status plants.

Mitigation. None warranted.

3.3.3 Impact to Movement or Nursery Sites of Fish or Wildlife Species

Impact. The site does not appear to constitute a "movement corridor" for native wildlife, although many species potentially move within it and through it. Site development will have little effect on home range and dispersal movements of native wildlife now using habitats where site development may eventually occur. Neo-tropical migratory birds that now pass through the study area would likely continue to use the site or fly over the site after it is developed. A considerable amount of open space lands in the vicinity of the site will continue to be used by native species for home range and dispersal movements. Therefore, this project will result in a less than significant effect on regional wildlife movements.

Mitigation. None warranted.

3.3.4 3.3.4 Impact to Habitat for Fish and Wildlife Species

Impact. Development of the project site would convert a fallow agricultural field and ruderal/developed areas, used by Swainsons' hawk and potentially used by burrowing owls. While the site provides some habitat for other regional wildlife populations, it is not of unique or particularly significant value to other fish and wildlife populations. The project will not result in a fish or wildlife population impacts or threaten to eliminate an animal community. However, converting agricultural lands and open space to residential development is covered by the SJMSHCP.

Mitigation. Mitigation is discussed above for Swainson's hawk and burrowing owl loss of habitat. No other mitigation is recommended at this time.

3.3.5 Potential Impacts to Riparian Habitat and Other Sensitive Natural Communities, Including Federally Protected Wetlands

Impact. There are no sensitive natural communities present on the site. The majority of the site consists of disturbed upland habitat which has been managed for agriculture..

Mitigation. None warranted.

3.3.6 Degradation of Water Quality in Seasonal Creeks, Reservoirs and Downstream Waters

Impact. The proposed project will require grading, excavation, and vegetation removal, thereby resulting in the project site becoming vulnerable to sheet, rill or gully erosion. Eroded soil is generally carried as sediment in surface runoff which could be deposited in natural creek/river beds, canals, and adjacent wetlands. No water features were identified on or near the site; however, sediments potentially can be transported to these features.

To avoid or minimize sedimentation to offsite waters, the applicant will be required to develop an erosion control plan. The applicant must also comply with standard erosion control measures that employ best management practices (BMPs) and develop a Storm Water Pollution Prevention Plan (SWPP) per State Water Quality Control Board Stormwater Permit (if required). If the applicant implements these measures, impacts to downstream waters from erosion and polluted stormwater runoff will be reduced to a less than significant level.

Mitigation. None warranted.

3.3.7 Conflict with Local Policies or Ordinances

Impact. The project is subject to the San Joaquin County's Division 15 Natural Resources Regulations, Chapter 9-1505, Trees. The ordinance applies to development projects requiring discretionary approval that have Native Oak Trees, Heritage Oak Trees, or Historical trees located on the project site. There are a number of trees present on the property; however, no native oak trees, heritage trees or historical trees were identified during the field survey.

If the City of Tracy assumes jurisdiction for this project, the city does not have a tree ordinance. The SJMCP prohibits killing of Swainson's hawks; hence, if a Swainson's hawk nest was discovered during the nesting season, the tree removal would be prohibited until the nest is no longer occupied.

Mitigation. No mitigation is necessary provided appropriate permits are obtained if protected trees are identified and require removal from the site.

3.3.8 Conflict with an Adopted Habitat Conservation Plan

Impact. The San Joaquin County Multi-species Habitat Conservation and Open Space Plan would apply to this project because the project qualifies as a covered activity. The West Valpico site is located within the Central Zone. The property is currently within San Joaquin County jurisdiction; however, if annexation is proposed, the City of Tracy would assume lead agency status.

The proposed project requires review via the following process:

- Submit project application to lead agency.
- Submit Land Development form E or request for coverage form C to San Joaquin Council of Governments (SJCOG).
- Prior to ground disturbance arrange with SJCOG for biologist to conduct preconstruction survey on the property regarding incidental take measures and habitat (SJCOG expense).
- Look over, understand, and sigh applicable Incidental Take Minimization Measures document.
- Pay applicable SJMSCP Fee or choose another participation option in the plan.
- Receive Certificate of Payment releasing building permit to applicant.

Mitigation. As noted in *Section 3.3.1,* the project will be assessed a land cover fee and will implement a series of species-specific minimization measures. Thus, a project that complies with the Plan can be considered to result in less than significant impacts on biological resources under CEQA. However, participation is generally optional; projects may use the SJMSCP to reach compliance with the various statues and regulations that apply to biological resource protections, or it may comply with those requirements independently, without the benefit of the Plan.

If coverage is sought under the SJMSCP, no take is permitted for Swainson's hawk and burrowing owl. Avoidance and minimization measures would be implemented as noted above. Mitigation for loss of open space (agricultural field) is met via habitat fees or endowment fees with in-lieu lands (conservation easements). The fees are required prior to ground-disturbance

and must be paid prior to permit release. The 2013 fee for Agricultural lands is $12,711 per acre. Private individuals receiving Incidental Take coverage pursuant to the SJMSCP may, in-lieu of fee payments, offer suitable land for dedication. The 2013 Endowment fees with in-lieu land is approximately $4,922.19.

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SJCOG, Inc.

555 East Weber Avenue ● Stockton, CA 95202 ● (209) 235-0600 ● FAX (209) 235-0438

San Joaquin County Multi-Species Habitat Conservation & Open Space Plan (SJMSCP)

Ken Vogel
CHAIR

Christopher Mateo
VICE CHAIR

Andrew T. Chesley
PRESIDENT

Member Agencies
CITIES OF
ESCALON,
LATHROP,
LODI,
MANTECA,
RIPON,
STOCKTON,
TRACY,
AND
THE COUNTY OF
SAN JOAQUIN

2013 Updated Habitat Fees*

Habitat Type	Fee Per Acre
Multi-Purpose Open Space	$6,364
Natural	$ 12,711
Agriculture	$ 12,711
Vernal Pool - uplands	$ 37,087
Vernal Pool - wetted	$ 78,311

* Effective January 1, 2013 – December 31, 2013

2013 Endowment Fees with In-lieu Land**

Type of Preserve	*Enhancement Cost/acre*	*Land Management Cost/acre*	TOTAL PER ACRE ENDOWMENT
Agricultural Habitat Lands	*$3,136.27*	*$1,785.92*	**$4,922.19**
Natural Lands	*$3,136.27*	*$1,785.92*	**$4,922.19**
Vernal Pool Habitat			
Vernal Pool Grasslands	*$590.61*	*$6,488.39*	**$7,079.00**
Vernal Pool Wetted	*$41,814.48*	*$6,488.39*	**$48,302.87**

** Effective January 1, 2013 – December 31, 2013 in lieu of fees to be used as the endowment for the dedicated land preserves (Category B + C)

VELB Mitigation

A special fee category shall apply when removal of elderberries occurs. The fee shall be paid to SJCOG, Inc. or a VELB mitigation bank approved by the Permitting Agencies. The current fee, as established in the VELB Conservation Fund Account managed by the Center for Natural Lands Management, and approved by the USFWS, is $1,800 per VELB Unit (one unit= one stem over 1" in diameter at ground level which is removed). Fees shall be established by the JPA during preconstruction surveys (i.e., counts of stems to be removed with and without exit holes shall be completed during preconstruction surveys) and shall be paid to the JPA prior to ground disturbance or stem removal, whichever comes first.

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C.2 - Biological Resources Evaluation Peer Review

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Memo

Date: May 27, 2015

To: Mr. Bill Dean, Assistant Director
Development Services, City of Tracy

From: Elizabeth Johnson, Project Manager

Subject: Tracy Lakes Project - Biological Resources Evaluation Peer Review

FirstCarbon Solutions (FCS) has completed a peer review of the Biological Resource Evaluation (BRE), dated August 11, 2013, prepared by Live Oak Associates, Inc. (LOA) for the proposed Tracy Lakes Project, herein referred to as "project" or "project site." (Note: the project is referred to as the West Valpico site in the BRE completed by LOA.) The purpose of this peer review is to determine if potential onsite biological resources were appropriately identified in the BRE, and if the BRE's proposed mitigation measures appropriately reduce potential impacts for incorporation into the Tracy Lakes Project Environmental Impact Report (EIR). Below is a summary of the BRE and FCS's determinations regarding its adequacy.

Methods

Prior to conducting a field survey for the purpose of peer-reviewing the BRE, FCS biologists reviewed the information provided in the August 2013 BRE; the project site plans and the project description provided by the City; aerial photos and topographic maps; the United States Fish and Wildlife Service's (USFWS's) Information, Planning, and Conservation System (USFWS 2015a) list of special-status species that are known to occur in the vicinity of the project site; the California Department of Fish and Wildlife's (CDFW's) California Natural Diversity Database (CNDDB) for the Tracy 7.5-minute USGS quadrangles (CDFW 2015); California Native Plant Society's (CNPS's) Inventory of Rare and Endangered Plants (CNPS 2015) for the Tracy 7.5-minute USGS quadrangle and surrounding quadrangles; and the USFWS's Critical Habitat Data Portal (USFWS 2015b).

Field Reconnaissance

On April 22, 2015, FCS biologist Cory Phillips conducted a reconnaissance-level field survey to obtain an overview of the existing habitat conditions within the project site and the site's potential to support special-status wildlife and plant species, critical habitat, wildlife movement, and wetlands and other potentially jurisdictional features to provide a basis for peer review of the BRE.

Project Setting and Description Setting

The BRE describes the project site as approximately 134-acres located on ruderal, developed, and agricultural land uses or habitats, surrounded by dense, urban, single-family residential development to the south and east perimeters; open space and low-density, single-family residential development to the north; and agricultural lands and low-density, single-family residential development to the west. FCS found LOA's description of the proposed project's settings and location to be accurate and fair.

Climate

LOA describes the City of Tracy's climate as being characterized by wet winters and dry summers, which are indicative of a Mediterranean-type climate. FCS agrees with this general description. However, the report discusses average annual high and low temperatures and rainfall. These values will be updated to reflect more recent data in the biological resources section of the EIR.

Soils

The BRE explains that one soils series, Zacharias, and two soil types, Zacharias clay loam and Zacharias gravelly clay loam, were identified on the project site. By using the Natural Resource Conservation Service's (NRCS's) Web Soil Survey, FCS was able to confirm that the descriptions and locations of the soil series and soil types were fair and accurate. The biological resources section of the EIR will either incorporate or rely on the BRE's soil data and descriptions.

Land Use and Habitats

FCS biologist Cory Phillips reviewed the general habitat descriptions provided in the BRE and compared them with habitat conditions and species observed in the field on April 22, 2015. FCS has determined that the biological community descriptions provided in the BRE are adequate to describe the habitats that occur on the project site. The BRE classifies the three biological communities found on the project site as: agriculture, residential/developed, and ruderal. In Section 3.3.5 of the BRE, LOA states that "[there] are no sensitive natural communities present within the project site." FCS agrees with the classification and general descriptions of the three habitat types (herein referred to as biological communities) found onsite, and that there are no biological communities found onsite that would be considered sensitive under California Environmental Quality Act (CEQA). The biological resources section of the EIR will reflect this conclusion.

Movement Corridors

Section 2.5 of the BRE addresses wildlife movement corridors and generally describes them as habitats that function to connect habitats used by native wildlife for purposes that include but not limited to foraging, shelter, breeding, dispersal, and migration. The BRE explains that the proposed project would not significantly interfere with the movement of native wildlife on a local or regional level because "the site lacks intrinsic qualities required or desirable to function as a movement corridor as the site is isolated and does not connect important habitats." After reviewing project site plans and the project description, and completing a site reconnaissance and literature review, FCS found LOA's determination

regarding wildlife movement corridors to be fair and accurate. The proposed project would be developed adjacent to existing barriers—such as Corral Hollow Road and single-family homes—and would not create any additional barriers that would significantly interfere with the movement of native wildlife.

Critical Habitat

When the USFWS lists a species as threatened or endangered under Federal Endangered Species Act (FESA), areas of habitat considered essential to its conservation and survival may be designated as critical habitat. These areas may require special consideration and/or protection because of their ecological importance. Potential critical habitat designations within the general vicinity of the project site were checked using the USFWS Critical Habitat Portal (USFWS 2015b). The BRE lacked a discussion regarding critical habitat, and if the proposed project would impact any areas designated as critical habitat by the USFWS. A review of the USFWS's critical habitat designations for Threatened & Endangered Species across the United States indicated that the project site is not located within an area designated as critical habitat by USFWS. According to the query, however, the project site is 2.7 miles northeast of an area designated as critical habitat for California red-legged frog (*Rana draytonii*) (USFWS 2015b). Although the proposed project is not located within, and is not expected to impact, an area designated as critical habitat, the proximity of the nearest designated critical habitat to the project will be reflected in the biological resources section of the EIR.

Special-Status Species

Special-status plant and animal species are addressed in Section 2.6 of the BRE. Both special-status plant animal species that are known to occur in the vicinity of the of project site are provided in Table 2 of the BRE, as well as their potential to occur on the project site. The BRE uses the following designations in addressing each species' potential to occur onsite:

- **Present:** Species observed on the site at time of field survey or during recent past.
- **Likely:** Species not observed on the site, but it may reasonably be expected to occur there on a regular basis.
- **Possible:** Species not observed on the site, but it could occur there from time to time.
- **Unlikely:** Species not observed on the site, and would not be expected to occur there except, perhaps, as a transient.
- **Absent:** Species not observed on the site, and precluded from occurring there because habitat requirements not met.

For all intents and purposes, any species that the BRE designates as "Possible" to occur onsite, or "Likely" to occur onsite, or "Present" on the project site, will be evaluated for impacts in the biological resources section of the EIR. Furthermore, FCS will include any additional special-status species that have potential to occur onsite that were not addressed by LOA in the BRE.

Special-Status Plant Species

The BRE concludes that all special-status plant species are absent from the project site, and that none of the special-status plant species have a "possible" or "likely" potential to occur onsite. FCS agrees that, based on the surveys conducted for the BRE and the survey conducted by FCS in April 2015, special-status plant species are absent from the project site, and that none of the special-status plant species listed in Table 2 of the BRE have a moderate to high potential to occur on the project site. As such, FCS agrees with the conclusion that special-status plant species will not be affected by the proposed project.

Special-Status Animal Species

The BRE explains that the following wildlife species listed as threatened or endangered under the California Endangered Species Act (CESA) and/or the FESA have been documented in the vicinity, but are unlikely to occur on the project site: valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), vernal pool fairy shrimp (*Branchinecta lynchi*), delta smelt (*Hypomesus transpacificus*), California red-legged frog (*Rana draytonii*), San Joaquin kit fox (*Vulpes macrotis mutica*), California tiger salamander (*Ambystoma californiense*), Alameda whipsnake (*Masticophis lateralis euryxanthus*), western yellow-billed cuckoo (*Coccyzus americanus occidentalis*), riparian woodrat (*Neotoma fuscipes riparia*), and riparian brush rabbit (*Sylvilagus bachmani riparius*). FCS agrees with these determinations. These special-status wildlife species are not expected to occur on the project site because of a lack of suitable habitat, lack of documented occurrences of the species within the project site and its vicinity, and/or because the project site is now isolated from those occurrences by major barriers (e.g., residential development). FCS agrees with the BRE's determination that one wildlife species listed as threatened has a high potential to occur within the project site, and four California Species of Special Concern have a moderate to high potential to occur within the project site. However, FCS has conducted a more recent database search using the USFWS's Information, Planning, and Conservation System, which revealed that the following special-status wildlife species are known to occur within the vicinity of the project site, but were not addressed in Section 2.6 of the BRE:

- Vernal pool tadpole shrimp (*Lepidurus packardi*); and
- Steelhead (*Oncorhynchus (=salmo) mykiss*).

Vernal pool tadpole shrimp is listed as endangered and steelhead is listed as threatened under FESA; therefore, regardless of their potential to occur within the project site, both species will be addressed in the biological resources section of the EIR.

Jurisdictional Waters

FCS reviewed the discussion of jurisdictional features provided in the BRE and compared it with the USFWS National Wetlands Inventory (USFWS 2015c) results from the literature review, as well as observations made in the field on April 22, 2015. The BRE states:

> No drainages, wetlands, or any other topographical or hydrological features with potential to be subject to USACE, RWQCB, or CDFW jurisdiction were observed within the project site. No evidence of streambed and banks as defined by CDFW was observed

> within the project limits, nor were any defined channels that would be subject to agency jurisdiction. The USFWS National Wetlands Inventory does characterize the a feature occurring in the northern portion of the site as a freshwater emergent wetland; however, this feature was completely dry during the site visit and was dominated by upland ruderal species undifferentiated from the surrounding ruderal areas of the site, indicating that it no longer serves an aquatic function.

FCS has determined that this description provided in the BRE is adequate to describe the jurisdictional features, or lack thereof, occurring on the site. During the April 22, 2015 site visit, FCS as able to confirm that the feature on the northern portion of the site was in fact completely dry, dominated by upland ruderal species, and undifferentiated from the surrounding ruderal areas of the site. The biological resources section of the EIR will reflect this conclusion.

Relevant Goals, Policies, and Laws

Section 3.2 of the BRE presents an overview of the laws and regulations that protect native wildlife, fish, and plants. This section covers:

- Threatened and Endangered Species,
- The Federal Migratory Bird Treaty Act,
- Section 3503.5 of the Fish and Game Code (FGC),
- The Bald Eagle Protection Act,
- Sections 2000 and 4150 of the FGC,
- Wetlands and Other Jurisdictional Waters,
- San Joaquin County Tree Ordinance, and
- San Joaquin County Multiple Species Habitat and Open Space Conservation Plan (SJMSCP).

FCS agrees with the regulatory framework provided in this section, and will include some portions of it in the biological resources section of the EIR. However, the BRE was not as thorough in addressing relevant policies that one would find in a typical biological resources section of an EIR. As such, FCS will include a more thorough discussion of regulations and policies that would be applicable to the proposed project, including but not limited to:

- The CESA;
- A more thorough discussion of the Federal Migratory Bird Treaty Act; and
- A more thorough discussion of FGC §§ 3503, 3503.5, 3511, and 3513.

Environmental Impacts and Mitigation

Section 3.3 of the BRE addresses the potential impacts and mitigations resulting from proposed project. This section divides the proposed project's impacts into "potentially significant impacts" and "less than significant impacts" to clearly divide the biological resources present onsite. Although these impacts

were discussed in a similar format previously, FCS will address the biological resource section's impacts in a manner that is similar to and consistent with the other sections of the EIR.

Potentially Significant Impacts

Potential Impacts to Special Status Animal Species

Section 3.3.1 of the BRE concludes that "Of the 22 special status animal species potentially occurring in the region, only four have either been observed onsite or have the potential to occur rarely to occasionally. These include the Swainson's hawk (*Buteo swainsoni*), burrowing owl (*Athene cunicularia*), tricolored blackbird (*Agelaius tricolor*) and western mastiff bat (*Eumops perotis californicus*)." In addition to these four species, Table of 2 in Section 2.6 of the BRE clearly states that loggerhead shrike (*Lanius ludovicianus*) are "Possible" to occur onsite. As previously discussed, LOA designates "Possible" as "Species not observed on the sites, but it could occur there from time to time." As such, FCS will update the special-status species impact discussion to include loggerhead shrike.

FCS agrees with the remainder of this impact discussion, and will incorporate it into the biological resources section of the EIR.

Measures to Offset Impacts to Potential Habitat of Covered Species

The BRE explains that "mitigation for the loss of habitat of the SJMSCP covered species as a result of permitted activities is a fee-based program that funds a broad conservation strategy of habitat acquisition, enhancement/restoration and management-in-perpetuity of Preserves composed of habitat types upon which covered species rely." Further, the BRE lists a number of methods by which compensation can be provided pursuant to the SJMSCP. FCS found this section to be accurate and will incorporate it into the biological resources section of the EIR.

Species-specific Discussions and Minimization Measures

Burrowing Owl

The BRE states that no burrowing owls were observed during the site survey in August 2013, and FCS also found that burrowing owl was absent from the proposed project site during the April 2015 site survey. However, the BRE explains that if burrowing owls were to breed on the site and site grading occurs during the nesting season (February 1 through August 31), nests and nestlings that may be present would likely be destroyed. The BRE states that actions related to site development that result in the mortality of burrowing owls would constitute a violation of the federal Migratory Bird Treaty Act and provisions of the California Fish and Game Code. FCS agrees with these statements. To avoid impacts to burrowing owl, the BRE recommends the following mitigation measures:

> *Mitigation Measure BUOW 1: Conduct preconstruction surveys.*
>
> A qualified biologist for burrowing owls will conduct a preconstruction survey no later than 30 days prior to the onset of ground-disturbing activities. This survey will be conducted in accordance with in the *Staff Report on Burrowing Owl Mitigation* (CDFW 2012). All suitable

habitats will be surveyed. If no BUOW are detected during these surveys, then no additional measures are required.

Mitigation Measure BUOW 2: Implement nest avoidance measures.

The SJMSCP provides for eviction or passive relocation of burrowing owls during the nonbreeding season. A passive relocation plan should be prepared and submitted to the JPA for approval.

Mitigation Measure BUOW 3: Relocation during non-breeding season.

If preconstruction surveys undertaken during the breeding season (February 1 through August 31) locate active nest burrows within or near construction footprint, a qualified biologist will establish and delineate an appropriate, protective, construction-free buffer zone around the nest until the breeding season is over as determined by the qualified biologist. Buffer areas will be established in accordance with *Staff Report on Burrowing Owl Mitigation* (CDFW 2012).

FCS concurs with these recommendations and they will be included in the EIR.

Swainson's Hawk

The BRE explains that the Swainson's hawk and common raptors and other migratory birds may nest in the trees located onsite. FCS agrees with this statement. The BRE provides the following mitigation measures, which are warranted for each phase of construction:

Mitigation Measure SWHA 1: Swainson's hawk Avoidance Measures.

Prior to ground disturbance, a qualified biologist will conduct pre-construction Swainson's hawk surveys during the appropriate time of year using approved methods. As part of these surveys, the biologist will also identify any known nest using the CDFW's CNDDB. If no Swainson's hawk nest are detected on site or nearby the site during pre-construction surveys then no additional measures are required.

Mitigation Measure SWHA 2: Avoid Swainson's hawk nests.

If active Swainson's hawk nests are found within 0.5 mile of the construction footprint during the nesting season (March 1 to September 15), a qualified biologist will determine what nest avoidance buffers may be necessary so that project related activities do not cause nest abandonment. The recommended nest avoidance buffers will be submitted to Joint Powers Authority (JPA) for the SJMSCP for approval. Adjustments to the buffer(s) will require prior approval by JPA, as coordinated by the qualified biologist. The qualified biologist will monitor construction activities to ensure adherence to the buffer and document any adverse effects to the nest, eggs, nestlings, fledged young, or adults. If behavior of the adults or young indicate disturbance that could result in take, construction activities will be adjusted or halted to ensure take is avoided. The project biologist will submit a memorandum documenting compliance to the appropriate agencies on a weekly basis.

Mitigation Measure SWHA 3: Monitor removal of potential nest trees.

Based on results of the focused Swainson's hawk surveys, construction would not result in loss or removal of any known Swainson's hawk nest trees. If a new nest is found in the future in a tree that would be removed during project construction, removal would not occur during the nesting season. The qualified biologist would coordinate with JPA to determine appropriate measures.

Under the SJMSCP, the Project applicant has the option of retaining known or potential Swainson's hawk nest trees (i.e., trees that hawks are known to have nested in within the past three years or trees, such as large oaks, which the hawks prefer for nesting) or removing the nest trees. If the Project Proponent elects to retain a nest tree, and in order to encourage tree retention, the following Incidental Take Minimization Measure as noted in the SJMSCP shall be implemented during construction activities:

- If a nest tree becomes occupied during construction activities, then all construction activities shall remain a distance of two times the dripline of the tree, measured from the nest. If the Project Proponent elects to remove a nest tree, then nest trees may be removed between September 1 and February 15, when the nests are unoccupied.
- These Incidental Take Minimization Measures are consistent with the provisions of the Migratory Bird Treaty Act.

FCS concurs with these recommendations and they will be included in the EIR.

Tree-Nesting Raptors and Other Migratory Birds

The BRE concludes that trees occurring on and adjacent to the project site could be used by tree-nesting raptors and other migratory birds for breeding, and structures onsite could also provide potential nesting habitat for swallows and barn owls, although no such nests were observed during the site survey. FCS agrees with this statement, and also found that no such nests were observed within the project site during the April 2015 site survey. The BRE recommends the following measures to ensure that the mortality of tree-nesting raptors and other migratory birds resulting from the proposed project's construction and other project activities is avoided:

Mitigation Measure BIRD 1.

If tree removal, structure demolition or ground disturbance activities are scheduled to commence during the breeding season (February 1 through August 31), pre-construction nesting bird surveys will be conducted by a qualified biologist to identify possible nesting activity. A construction-free buffer of suitable dimensions must be established around any active raptor and migratory bird nests (up to 250 feet for raptors, depending on the location and species) for the duration of the project or until it has been determined that the chicks have fledged and are independent of their parents.

> *Mitigation Measure BIRD 2.*
>
> As an alternative to Mitigation Measure BIRD 1, the project applicant may choose to remove trees and demolish existing structures that provide potential nesting habitat during the non-breeding season from September 1st through January 31st.

FCS generally concurs with these recommendations and they will be included in the EIR with minor updates to the language in Mitigation Measure BIRD 1. Updates will include a 100-foot buffer area around project boundaries for the initial pre-construction nesting bird survey, and they will specify that pre-construction surveys shall be completed no more than 30 days prior to ground disturbance, structure demolition, or tree removal. Along with the aforementioned updates, these recommendations will be included in the biological resources section of the EIR.

FCS noticed that the last sentence of the paragraph with the heading Tree-Nesting Raptors and Other Migratory Birds, on page 38, states, "to ensure that *burrowing owl* mortality resulting from project construction and project activities is avoided [emphasis added]." To avoid any confusion, FCS assumed that this was a typographical error, because the measures following this statement addressed nesting raptors and migratory birds, as the paragraph's heading suggested. Lastly, FCS will update the mitigation language to address impacts ground-nesting raptors, such as the northern harrier (*Circus cyaneus*), which is known to occur in the project vicinity.

Bats

The BRE explains construction of the proposed project could potentially result in the mortality of special-status and non-special-status bats should they breed or roost on the site within buildings or trees during project construction activities that result in their demolition or removal. Additionally, the BRE explains that if bats use the project site's buildings or trees for winter torpor or breeding, the demolition of structures or removal of trees during those seasonal periods could result in harm or mortality to these individuals and their young, and that this would be considered a significant impact. FCS agrees with these statements. The BRE provides the following measures to ensure that bat mortality resulting from project-related activities is avoided:

> *Mitigation Measure BAT 1.*
>
> A bat habitat assessment by a qualified biologist shall be conducted for all mature trees and in all structures that will be removed as a result of the project to determine whether they provide suitable roosting or breeding habitat for bats and, to the extent possible, whether they are currently occupied. If the biologist determines that trees and structures on the site do not provide suitable habitat for bats, then no further mitigations would be required. However, if the biologist determines that bats are present or that trees and/or structures provide potentially suitable habitat for bats, and even if currently not occupied, they could be occupied in the future, the following additional mitigations will be implemented.

Mitigation Measure BAT 2.

Should the habitat assessment conclude that any trees proposed for removal provide potential roosting, hibernation and/or maternity habitat for bats, tree removal shall only be conducted during seasonal periods of bat activity, i.e., September through mid-October and March through mid-April, under the supervision of a qualified biologist. Tree removals shall occur via a two-phased removal conducted over two consecutive days. In the afternoon of the first day, a tree cutter using chainsaws only shall remove limbs and branches. Limbs with cavities, crevices, or deep bark fissures shall be avoided, and only branches or limbs without those features shall be removed. On the second day, the entire tree shall be removed.

Mitigation Measure BAT 3.

Should the habitat assessment survey confirm that structures to be demolished on the site provide potential roosting, hibernation and/or maternity habitat for bats, even if bats are not currently occupying them, then a preconstruction survey for bats will be conducted within 30 days prior to structure demolition. If no bats are found present, then structures may be demolished. If bats are found present, bats may be safely evicted during two seasonal periods of bat activity. In this area, generally bats can be evicted safely between approximately March 1st (or when evening temperatures are above 45°F and rainfall less than ½" in 24 hours occurs), and April 15th, prior to parturition of pups. The next acceptable period is after pups become self-sufficiently volant, generally accepted to be between September 1st through October 15th (or prior to evening temperatures dropping below 45°F and onset of rainfall greater than ½" in 24 hours).

There are two methods for evicting bats from occupied structures. The first, utilized mainly when the building is in good condition and the work is feasible, is "humane eviction," or "bat exclusion," which relies on the bats' own ability to fly out of the roost. In this method, all potential, but currently unused entry points into the structure are sealed. The active entry points are fitted with one-way exits, which are left in place 7-10 days to allow all bats to emerge normally during nightly feeding flights. The one-way exits are then removed and the remaining openings sealed until demolition if it will occur more than 30 days after demolition. If the interval between successful eviction and demolition will be short (less than 4 weeks), the one-way exits may often be left in place until demolition. This eviction work must be conducted by, or under direct supervision or instruction, of a qualified biologist.

In some cases, the physical condition of the structure is so poor that humane eviction as described above is not possible. If that occurs, the building must be carefully, and selectively dismantled in such a way that the internal environment is altered to a degree sufficient to cause bats to abandon the roost and not return. This must occur under the guidance bat biologist qualified in partial dismantling of structures for bat eviction.

FCS concurs with these recommendations and they will be included in the EIR.

Less than Significant Impacts

Potential Impacts to Special Status Plant Species

Section 3.3.2 of the BRE concludes that "No special status plant species occur or would likely occur on the site due to the lack of suitable habitat and as a result of on-going agricultural disturbance. Therefore, site development would not result in significant impacts to special status plants." As such, the BRE states that no mitigation is warranted for special-status plant species. FCS agrees with LOA's conclusion, and this will be reflected in the biological resources section of the EIR.

Impacts to Movement or Nursery Sites of Fish or Wildlife Species

Section 3.3.2 of the BRE explains that the project site does not constitute a "movement corridor" for native wildlife, but it does not preclude the possibility that various wildlife species could pass through it. The BRE explains that development of the proposed project "will have little effect on home range and dispersal movements of native wildlife now using habitats where site development may eventually occur." FCS agrees with LOA's conclusion that the proposed project would result in a less than significant impact to regional wildlife movement. This will be reflected in the biological resources section of the EIR.

Impacts to Habitat for Fish and Wildlife Species

Section 3.3.4 of the BRE explains that development of the proposed project "will not result in a fish or wildlife population impacts or threaten to eliminate an animal community. However, converting agricultural lands and open space to residential development is covered by the SJMSCP." LOA explains that the mitigation measures provided in Measures to Offset Impacts to Potential Habitat of Covered Species (discussed above) is sufficient to compensate for impacts to fish and wildlife habitat, and that no other mitigation is warranted. FCS agrees with these findings, and this will be reflected in the biological resources section of the EIR.

Potential Impacts to Riparian Habitat and Other Sensitive Natural Communities, Including Federally Protected Wetlands

The BRE states that are no sensitive natural communities present within the project site, and that the majority of the project site consists of disturbed upland habitat that has been managed for agriculture. FCS found these statements to be fair and accurate and agrees that no mitigation is warranted. This will be reflected in the biological resources section of the EIR.

Degradation of Water Quality in Seasonal Creeks, Reservoirs and Downstream Waters

The BRE stats that "no water features were identified on or near the site; however, sediments potentially can be transported to these features. To avoid or minimize sedimentation to offsite waters, the applicant will be required to develop an erosion control plan. The applicant must also comply with standard erosion control measures that employ best management practices (BMPs) and develop a Storm Water Pollution Prevention Plan (SWPP) per State Water Quality Control Board Stormwater Permit (if required)." LOA concludes that impacts would be less than significant with the implementation of these

measures. FCS agrees with LOA's conclusion, and this will be reflected in the biological resources section of the EIR.

Conflict with Local Policies or Ordinances

Section 3.3.7 of the BRE explains that development of the proposed project will not conflict with San Joaquin County's or the City of Tracy's tree ordinance. LOA explains that SJMSHCP prohibits the killing of Swainson's hawk, but incorporation of Mitigation Measure SWHA 3 (discussed above) would ensure that the removal of any tree containing a Swainson's hawk nest would be prohibited until the nest is no longer occupied. FCS agree that the proposed project would not conflict with local policies or ordinances, and that impacts would be less than significant with incorporation of Mitigation Measure SWHA 3. The biological resources section of the EIR will reflect this conclusion.

Conflict with an Adopted Habitat Conservation Plan

Section 3.3.8 of the BRE explains that the SJMSCP applies to the proposed project because the project qualifies as a covered activity. LOA explains that the proposed project requires review using the following process:

- Submit project application to lead agency.
- Submit Land Development form E or request for coverage form C to San Joaquin Council of Governments (SJCOG).
- Prior to ground disturbance arrange with SJCOG for biologist to conduct preconstruction survey on the property regarding incidental take measures and habitat (SJCOG expense).
- Look over, understand, and sigh applicable Incidental Take Minimization Measures document.
- Pay applicable SJMSCP Fee or choose another participation option in the plan.
- Receive Certificate of Payment releasing building permit to applicant.

The BRE states:

> The project will be assessed a land cover fee and will implement a series of species-specific minimization measures. Thus, a project that complies with the Plan can be considered to result in less than significant impacts on biological resources under CEQA. However, participation is generally optional; projects may use the SJMSCP to reach compliance with the various statutes and regulations that apply to biological resource protections, or it may comply with those requirements independently, without the benefit of the Plan.
>
> If coverage is sought under the SJMSCP, no take is permitted for Swainson's hawk and burrowing owl. Avoidance and minimization measures would be implemented as noted above. Mitigation for loss of open space (agricultural field) is met via habitat fees or endowment fees with in-lieu lands (conservation easements). The fees are required

prior to ground-disturbance and must be paid prior to permit release. The 2013 fee for Agricultural lands is $12,711 per acre. Private individuals receiving Incidental Take coverage pursuant to the SJMSCP may, in-lieu of fee payments, offer suitable land for dedication. The 2013 Endowment fees with in-lieu land is approximately $4,922.19.

FCS has determined that this adequately describes the two methods by which compensation can be provided pursuant to the SJMSCP. The biological resources section of the EIR will reflect this conclusion.

Summary of Peer Review

Through this peer-review, FCS has determined that the Biological Resources Evaluation for the Tracy Lakes project site, prepared by LOA, is well written and appropriately addresses the majority of relevant biological and aquatic resources that occur, or have potential to occur, within the proposed project site. However, FCS found that BRE lacked a discussion of the proposed project's potential impacts to USFWS-designated critical habitat; and even though the project is not located within, and is not expected to impact, an area designated as critical habitat, USFWS-designated critical habitat will be discussed in the biological resources section of the EIR. After a site reconnaissance, FCS determined that the BRE adequately described the jurisdictional features occurring within the proposed project site. FCS agrees with the impacts and recommended mitigation measures provided in the BRE, but found that the BRE failed to address two federally listed wildlife species that are known to occur in the proposed project's vicinity: vernal pool tadpole shrimp (*Lepidurus packardi*) and steelhead (*Oncorhynchus (=salmo) mykiss*). Additionally, FCS found that LOA omitted loggerhead shrike in the biological impacts discussion. FCS will rectify this in the biological resources section of the EIR.

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C.3 - Biological Resources Assessment of Additional Annexation Properties

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FIRSTCARBON SOLUTIONS™

Memo

Date: March 30, 2017

To: Mr. Bill Dean, Assistant Director
Development Services, City of Tracy

From: Elizabeth Johnson, Project Manager

Subject: Tracy Village Project—Biological Resources Assessment of Additional Annexation Properties

FirstCarbon Solutions (FCS) Associate biologist Ashley Laor has completed a Biological Resource Assessment (BRA) for the proposed project site and includes the annexation of additional 42 lots located in unincorporated San Joaquin County, adjacent to the Tracy city limits at the City of Tracy's request. The purpose of this biological resources assessment is to describe on-site vegetation communities, identify potentially jurisdictional waters of the U.S., and to assess the potential for occurrence of special-status plant and wildlife species within the project site and annexation area and includes appropriate mitigation measures if appropriate to reduce or avoid impacts.

A Biological Resource Evaluation (BRE), dated August 11, 2013, prepared by Live Oak Associates, Inc. (LOA) for the proposed Tracy Village Project and a peer review completed by FCS, dated May 27, 2015 have already been completed for the for the proposed Tracy Village Project. Results from LOA BRE, FCS peer review, and this BRA assessment will be incorporated into the Tracy Village Project Environmental Impact Report (EIR). The Tracy Village Specific Plan includes both the Development Project and the Residential Annexation in the Specific Plan Project Area (Project Area).

SITE LOCATION AND PROJECT DESCRIPTION

The Tracy Village Development Project (Assessor's Parcel Number 244-04-001) is currently undeveloped and located on 134 acres in unincorporated San Joaquin County, adjacent to the Tracy city limits (Exhibit 1). The Project site is designated as "Resource Conservation (OS/RC)" by the County of San Joaquin General Plan and zoned "Agriculture-Urban Reserve (AU)" by the San Joaquin County Zoning Ordinance.

The Tracy Village Development Project is proposed as an active adult, gated and age-restricted community consisting of up to 600 single-family detached residential lots that would support single-family dwelling units ranging from 1,450 square feet to 3,000 square feet

Residential Annexation Area

The Residential Annexation Area is located in San Joaquin County but within the City of Tracy Sphere of Influence. All 42 properties are designated Low Density Residential (R/L) by both the San Joaquin and City of Tracy General Plans, as well as the San Joaquin County zoning code . As shown in Exhibit 2, the Residential Annexation Area is located along Corral Hollow and Valpico Roads. The 42 lots that make up the Residential Annexation Area include three vacant lots and 39 single-family detached residences on lot sizes ranging from approximately 0.35 acre to 2.2 acres, and all parcels have direct driveway access connections to either Corral Hollow Road or Valpico Road.

The Tracy Village Development Project site is located on the south side of West Valpico Road, just east of Corral Hollow Road.

The majority of the 42 lots are developed with detached single-family residences, and are served by private wells and septic systems. The intent is to annex the 42 properties to provide a rational boundary for the City following annexation of the Tracy Village Development Project. The Residential Annexation Area would be pre-zoned as Residential Estate, which would most closely match the existing zoning and land use designation and reflect existing land uses and lot sizes. No development is proposed for the Residential Annexation Area, and connection to city water and sewer systems would be voluntary, unless new residential development (building permits) is proposed by a property owner.

REGULATORY FRAMEWORK

Sensitive species are native species that have been accorded special legal or management protection because of concern for their continued existence. There are several categories of protection at both federal and state levels, depending on the magnitude of threat to continued existence and existing knowledge of population levels.

Federal Endangered Species Act

The United States Fish and Wildlife Service (USFWS) administers the Federal Endangered Species Act (ESA). The ESA provides a process for listing species as either threatened or endangered, and methods of protecting listed species. The ESA defines as “endangered” any plant or animal species that is in danger of extinction throughout all or a significant portion of its known geographic range. A “threatened” species is a species that is likely to become endangered. A “proposed” species is one that has been officially proposed by the USFWS for addition to the federal threatened and endangered species list.

According to Section 9 of the ESA, “take” of threatened or endangered species is prohibited. The term “take” means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in such conduct. Take can include disturbance to habitats used by a threatened or endangered species during any portion of its life history. The presence of any federally threatened or endangered species in a project area generally imposes severe constraints on development, particularly if

development would result in “take” of the species or its habitat. Under the regulations of the ESA, the USFWS may authorize “take” when it is incidental to, but not the purpose of, an otherwise lawful act.

California Endangered Species Act

The California Department of Fish and Wildlife (CDFW) administers the California Endangered Species Act (CESA). The State of California considers an “endangered” species one whose prospects of survival and reproduction are in immediate jeopardy. A “threatened” species is one present in such small numbers throughout its range that it is likely to become an endangered species in the near future in the absence of special protection or management. A “rare” species is one present in such small numbers throughout its portion of its known geographic range that it may become endangered if its present environment worsens. The rare species designation applies to California native plants. State threatened and endangered species are fully protected against take, as defined above. The term “species of special concern” is an informal designation used by CDFW for some declining wildlife species that are not state candidates for listing. This designation does not provide legal protection, but signifies that these species are recognized as sensitive by CDFW.

California Native Plant Society

The California Native Plant Society (CNPS) is a California resource conservation organization that has developed and inventory of California’s sensitive plant species. This inventory summarizes information on the distribution, rarity, and endangerment of California’s vascular plants. The inventory is divided into four lists based on the rarity of the species. In addition, the CNPS provides an inventory of plant communities that are considered sensitive by the state and federal resource agencies, academic institutions, and various conservation groups. Determination of the level of sensitivity is based on the number and size of remaining occurrences as well as recognized threats.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) protects all common wild birds found in the United States (U.S.) except exotic species identified in the Federal Register. Resident game birds are managed separately by each state. The MBTA makes it unlawful for anyone to kill, capture, collect, possess, buy, sell, trade, ship, import, or export any migratory bird including feathers, parts, nests, or eggs.

California Fish and Game Code—Section 3503 and Section 3511

The CDFW administers the California Fish and Game Code (CFG Code). There are particular sections of the CFG Code that are applicable to natural resource management. For example, Section 3503 of the CFG Code states it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird that is protected under the MBTA. CFG Code Section 3503.5 further protects all birds in the orders Falconiformes and Strigiformes, birds of prey such as hawks and owls, and their eggs and nests from any form of take. CFG Code Section 3511 lists fully protected bird species where the CDFW is unable to authorize the issuance of permits or licenses to take these species.

Impacts to natural drainage features and wetland areas are regulated by the United States Army Corp of Engineers (USACE), Regional Water Quality Control Board (RWQCB), and CDFW based upon the policies and regulations discussed below.

Federal Clean Water Act—Sections 10 and 404

The USACE administers Sections 10 and 404 of the federal Clean Water Act (CWA). This section regulates the discharge of dredge and fill material into Waters of the U.S. USACE has established a series of nationwide permits that authorize certain activities in Waters of the U.S., if a proposed activity can demonstrate compliance with standard conditions. Normally, USACE requires an individual permit for an activity that will fill an area equal to or in excess of 0.5 acre of jurisdictional Waters of the U.S. Projects that result in impacts to less than 0.5 acre can normally be conducted pursuant to one of the nationwide permits, if consistent with the standard permit conditions. USACE also has discretionary authority to require an Environmental Impact Statement for projects that result in impacts to an area between 0.1 and 0.5 acre. Use of any nationwide permit is contingent on the activities having no impacts to endangered species.

Waters of the United States

Waters of the U.S., as defined in the Code of Federal Regulations (CFR) Section 328.3, include all waters or tributaries to waters such as lakes, rivers, intermittent and perennial streams, mudflats, sand-flats, natural ponds, wetlands, wet meadows, and other aquatic habitats. Frequently, Waters of the U.S., with at least intermittently flowing water or tidal influences, are demarcated by an ordinary high water mark (OHWM). The OHWM is defined in CFR Section 328.3(e) as the line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas. In this region, the OHWM is typically indicated by the presence of an incised streambed with defined bank shelving.

In June 2001, the USACE South Pacific Division has issued Guidelines for Jurisdictional Delineations for Waters of the United States in the Arid Southwest. The purpose of this document was to provide background information concerning physical characteristics of dryland drainage systems. These guidelines were reviewed and used to identify jurisdictional drainage features within the project site.

Wetlands

According to the USACE Wetlands Delineation Manual, Technical Report, three criteria must be satisfied to classify an area as a jurisdictional wetland:

1. A predominance of plant life that is adapted to life in wet conditions (hydrophytic vegetation)

2. Soils that saturate, flood, or pond long enough during the growing season to develop anaerobic conditions in the upper part (hydric soils)
3. Permanent or periodic inundation or soils saturation, at least seasonally (wetland hydrology)

Wetland vegetation is characterized by vegetation in which more than 50 percent of the composition of dominant plant species are obligate wetland, facultative wetland, and/or facultative species that occur in wetlands. As a result of the 2001 Solid Waste Agency of North Cook County (SWANCC) case, a wetland must show connectivity to a stream course in order for such a feature to be considered jurisdictional. Although wetland criteria was used to identify if areas were considered wetlands, the exact limits of jurisdiction were not measured based on the standard wetland delineation protocol as described in the 1987 USACE manual.

Clean Water Act—Section 401

As stated in Section 401 of the CWA, "any applicant for a Federal permit for activities that involve a discharge to Waters of the State, shall provide the federal permitting agency a certification from the State in which the discharge is proposed that states that the discharge will comply with the applicable provisions under the Federal Clean Water Act." Therefore, before the USACE will issue a Section 404 permit, applicants must apply for and receive a Section 401 water quality certification from the RWQCB.

Porter-Cologne Water Quality Act

The RWQCB regulates actions that would involve "discharging waste, or proposing to discharge waste, within any region that could affect the water of the state" (water code Section 13260(a)), pursuant to provisions of the Porter-Cologne Water Quality Act. "Waters of the State" are defined as "any surface water or groundwater, including saline waters, within the boundaries of the state" (water code Section 13050 (e)).

California Department of Fish and Game Regulations

California Fish and Game Code—Section 1600 to Section 1603

The CFG Code mandates that "it is unlawful for any person to substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake designated by the department, or use any material from the streambeds, without first notifying the department of such activity." CDFW jurisdiction includes ephemeral, intermittent, and perennial watercourses, including dry washes, characterized by the presence of hydrophytic vegetation, the location of definable bed and banks, and the presence of existing fish or wildlife resources.

Furthermore, CDFW jurisdiction is often extended to habitats adjacent to watercourses, such as oak woodlands in canyon bottoms or willow woodlands that function as part of the riparian system. Historic court cases have further extended CDFW jurisdiction to include watercourses that seemingly disappear, but re-emerge elsewhere. Under the CDFW definition, a watercourse need not exhibit evidence of an

OHWM to be claimed as jurisdiction. However, CDFW does not regulate isolated wetlands; that is, those that are not associated with a river, stream, or lake.

California Department of Fish and Game Regulated Activities

The CDFW regulates activities that involve diversions, obstruction, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake that supports fish or wildlife resources.

Local Regional Policies/Ordinances

San Joaquin County Multi-Species Habitat Conservation and Open Space Plan

The San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSHCP), which encompasses all of San Joaquin County, provides a strategy for balancing habitat and open space conservation with the needs of economic development. The City of Tracy is a signatory to the SJMSHCP. The SJMSHCP objectives include 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 (FESA) or CESA; providing and maintaining multiple-use open spaces that 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.

The SJMSHCP, in accordance with FESA Section 10(a)(1)(B) and CESA Section 2081(b) Incidental Take Permits, provides compensation for the conversion of open space to non-open space uses that affects the plant, fish and wildlife species covered by the plan.

The mitigation ratios and compensation fees are determined on the basis of the type of lands that are being converted. The plan has established four land cover types: (1) Agricultural Habitat Lands, (2) Natural Lands (non-wetlands), (3) Natural Lands (vernal pools), and (4) Natural Lands (non-vernal pool wetlands).

San Joaquin County, Division 15—Natural Resources Regulations, (Chapter 9-1505—Trees)

The removal of a native oak, heritage oak tree, or historical tree requires an approved improvement plan application (Chapter 9—1505.3) and replacement of the tree subject to requirements as described in Chapter 9-1505.4. These provisions do not cover horticultural or orchard trees. Historical trees are defined as trees, or groups of trees, given special recognition by the San Joaquin County Planning Commission due to size, age, location, or history. Native oaks are defined as valley oaks with stem diameters 6-32 inches for single-trunk and a minimum combined trunk diameter of 8 inches for multi-trunk trees. Interior live oaks or blue oaks require a minimum stem diameter of 4 to 32 inches for single trunk trees and a minimum combined diameter of 6 inches for multi-trunk trees. Heritage oaks are defined as native oaks with a single trunk diameter measuring 32 inches or more with all stem diameters measured from 4.5 feet above the average ground elevation of a tree.

METHODOLOGY

Literature Review

Existing information, including maps, aerial photographs, documents, and correspondence relative to the project site and adjacent properties were reviewed and analyzed. Data reviewed for the project site includes but is not limited to:

- Existing documentation and studies of the biological resources within the immediate vicinity of the site;
- The Federal Register listing package for each federally listed endangered or threatened species potentially occurring on-site;
- Literature pertaining to the habitat requirements of special-status species potentially occurring on the site, including California Wildlife Habitat Relationships (CWHR);
- The California Department of Fish and Wildlife (CDFW) Annual Report on the status of California's listed threatened and endangered plants and animals;
- California Natural Diversity Data Base (CNDDB) and California Native Plant Society Electronic Inventory (CNPSEI) information regarding special-status species potentially occurring on-site and;
- United States Geological Service (USGS) topographic maps and current aerial photos, which will be reviewed for evidence of USACE or CDFW jurisdictional areas pursuant to Section 404 of the Clean Water Act and Section 1602 of the California Fish and Game Code.
- SJMSHCP

Reconnaissance-level Field Survey

FCS Associate Biologist Ashley Laor conducted the reconnaissance-level field survey on November 21, 2016. The reconnaissance-level survey was conducted on foot during daylight hours. The area surveyed included the proposed Tracy village project site and Residential Annexation Area located along Corral Hollow and Valpico Roads.

The purpose of the survey was not to extensively search for every species occurring within the project site, but to ascertain general site conditions and identify potentially suitable habitat areas for various special-status plant and wildlife species. Special-status or unusual biological resources identified during the literature review were ground-truthed during the reconnaissance-level survey for mapping accuracy. Special attention was paid to sensitive habitats and areas potentially supporting special-status floral and faunal species.

Plant Species

Common plant species observed during the reconnaissance-level survey were identified by visual characteristics and morphology in the field and recorded in a field notebook. Uncommon and less familiar plants were identified off-site with the use of taxonomical guides, such as Clarke et al. (2007), Hitchcock (1971), McAuley (1996), and Munz (1974). Taxonomic nomenclature used in this study follows Baldwin et al. (2012). Common plant names, when not available from Baldwin et al. (2012), were taken from other regionally specific references.

Wildlife Species

Wildlife species detected during the reconnaissance-level survey by sight, calls, tracks, scat, or other signs were recorded in a field notebook. Notations were made regarding suitable habitat for those special-status species determined to potentially occur within the project site (CDFW 2016). Appropriate field guides were used to assist with species identification during surveys, such as Peterson (2010), Reid (2006), and Stebbins (2003).

Wildlife Movement Corridors

Wildlife movement corridors link areas of suitable wildlife habitat that are otherwise separated by rugged terrain, changes in vegetation, or human disturbance. Urbanization and the resulting fragmentation of open space areas create isolated “islands” of wildlife habitat, forming separated populations. Corridors act as an effective link between populations.

The project site was evaluated for evidence of a wildlife movement corridor during the reconnaissance-level survey. However, the scope of the biological resources study did not include a formal wildlife movement corridor study utilizing track plates, camera stations, scent stations, or snares. Therefore, the focus of this study was to determine if the change of current land use of the project site may have significant impacts on the regional movement of wildlife. These conclusions are made based on the information compiled during the literature review, including aerial photographs, USGS topographic maps and resource maps for the vicinity, the field survey conducted, and professional knowledge of desired topography and resource requirements for wildlife potentially utilizing the project site and vicinity.

EXISTING CONDITIONS

The Project site is located east of the Mount Diablo Meridian, adjacent to the Tracy city limits, in the unincorporated area of San Joaquin County. The area is surrounded by the Carnegie Hills to the east, residential uses to the north and east, and the Tracy Municipal airport to the south. Substantial portions of the valley floor are developed with residential, agricultural, and industrial facilities.

The project site is relatively flat and is comprised largely of cultivated fields, with annual grassland. There are trees scattered around various portions of the northern and eastern limits of the project site. No

sensitive natural communities are present within the project site, and the majority of the project site consists of disturbed upland habitat that has been managed for agriculture.

A small portion of the agricultural land, located in the northern section of the project site, is separated from the larger agricultural area by an old dirt service road and berm, forming a detention basin. An irrigation pump was found here. The northwest corner of the site is developed with another residence and associated outbuildings, surrounded by trees.

The project site contains 126.4 acres of Farmland of Local Importance, 0.3 acre of Rural Residential Land, and 5.8 acres of Urban and Built-Up Land. Non-Important Farmland designations represent the balance of the acreage.

The annexation area consists of low-density, single-family houses on irregular lots forming the western boundary of the site. They are semi-rural in character, varied in design and age, with remnants of agricultural uses such as small cultivated or open fields, outdoor equipment storage, and outbuildings intermixed with the houses.

Soils

The project site consists mainly of Zacharias series and two soil types Zacharias clay loam and Zacharias gravelly clay loam with a small portion in the southeastern corner of the annexation area consisting of the Stomar series with one soil type Stomar clay loam (Exhibit 3).

The **Zacharias Series** comprises very deep and well drained soils that formed in alluvium from mixed rock sources. These soils are on alluvial fans and low stream terraces. Slope ranges from 0 to 8 percent. The mean annual precipitation is about 10 inches and the mean annual temperature is about 60 degrees Fahrenheit. Used for pastureland, livestock grazing, field crops, irrigated cropland, nut, row crops and fruit (USDA 2017).

The **Stomar Series** comprises very deep well drained soils that formed in alluvium from sedimentary rocks. They are found on dissected alluvial fans and terraces. Slopes range from 0 to 2 percent. The annual precipitation is about 9 inches and the annual temperature is about 62°F. These soils are used for irrigated cropland including field crops, row crops, and orchards. It is also used for dryland cropland. Some areas are used for urban land with smaller areas used for livestock grazing (USDA 2017).

Biological Communities

Biological communities found within the annexation area consist of urban/developed, and ruderal. FCS has determined that the biological community descriptions provided in the BRE are adequate to describe the habitats that occur on the project site. The BRE classifies the three biological communities found on the project site as agriculture, residential/developed, and ruderal. There are no biological communities found on-site that would be considered sensitive under California Environmental Quality Act (CEQA). The following is a description of these communities and characteristic flora and fauna.

Urban/Developed Land

Urban habitat is distinguished by the presence of both native and exotic species maintained in a relatively static composition within a downtown, residential, or suburbia setting. Species richness in these areas depends greatly upon community design (i.e., open space considerations) and proximity to the natural environment.

The California Wildlife Habitat Relationships (CWHR) classifies urban habitat into five different vegetation types: tree grove, street strip, shade tree/lawn, lawn, and shrub cover. Tree groves refer to conditions typically found in city parks, green belts, and cemeteries. These areas vary in tree height, spacing, crown shape, and understory conditions; however, they have a continuous canopy. Street strip vegetation, located roadside, varies with species type, but typically includes a ground cover of grass. Shade trees and lawns refer to characteristic residential landscape, which is reminiscent of natural savannas. Lawns are composed of a variety of grasses, maintained at a uniform height with continuous ground cover through irrigation and fertilization. Shrub cover refers to areas commonly landscaped and maintained with hedges, as typically found in commercial districts. All five types of urban habitat are generally found in combination creating considerable edge effect, which can be more valuable to wildlife than any one individual unit.

Vegetation in these areas consists primarily of introduced ornamental trees and shrubs with manicured lawns. Invasive weeds are also found in disturbed areas. Urban developed land is found throughout the residential annexation area. Vegetation in the annexation area was dominated by ruderal grasses and forbs, and by ornamental trees and shrubs such as cypress, redwood and eucalyptus trees.

Urban/developed lands are generally not of high value for wildlife. Birds and mammals that occur in these areas typically include introduced species adapted to human habitation, including rock dove (*Columba livia*), starling (*Sturnus vulgaris*), house sparrow (*Passer domesticus*), house mouse (*Mus musculus*) and Norway rat (*Rattus norvegicus*). Some native species persist in developed areas, including western toad (*Bufo boreas*), western fence lizard (*Sceloporus occidentalis*), Brewer's blackbird (*Euphagus cyanocephalus*), house finch (*Carpodacus mexicanus*), western scrub jay (*Aphelocoma californica*), and American crow (*Corvus brachyrhynchos*).

Wildlife species observed on the project site during the survey included the American crow, house sparrow, mourning dove (*Zenaida macroura*), and western fence lizard.

Ruderal (Disturbed)

Ruderal (roadside) communities occur in areas of disturbances such as along roadsides, trails, parking lots, etc. These communities are subjected to ongoing or past disturbances (e.g., vehicle activities, mountain bikes, mowing). Several areas surrounding the residential annexation area can be classified as ruderal, including the outer edges of the Tracy village development site. Ruderal habitat in these disturbed areas supports a diverse weedy flora. Vascular plant species associated with these areas typically include Johnson grass, Canadian horseweed (*Conyza canadensis*), milk thistle (*Silybum*

marianum), yellow star thistle (*Centaurea solstitialis*), and field bindweed (*Convolvulus arvensis*). Fallow fields support field bindweed, turkey mullein (*Eremocarpus setigerus*), wild lettuce (*Lactuca serriola*), prickly sow thistle (*Sonchus arvensis*), and common mallow (*Malva neglecta*). Mediterranean hoary-mustard (*Hirschfeldia incana*) and curly dock (*Rumex crispus*) are also typical of this area. Species observed in the ruderal/disturbed areas included wild oats (*Avena* sp.), Italian rye grass (*Festuca perennis*), black mustard (*Brassica nigra*), black walnut (*Juglans sp*.), and olive (*Olea europaea*).

A distinguishing characteristic of urban habitats is the mixture of native and exotic plant species. Exotic plant species may provide valuable habitat elements such as cover for nesting and roosting, as well as food sources such as nuts or berries. Native and introduced animal species that are tolerant of human activities often thrive in urban habitats.

Agricultural Land

Agricultural lands generally occur in areas that once supported productive and diverse biological communities. The conversion of native vegetation to agricultural lands has greatly reduced the wildlife species diversity and habitat value. However, some common and agricultural "pest" species forage in these habitats, and cultivated vegetation can provide benefits such as cover, shade, and moisture for these and other species during hot summer months. Species observed included wild oats (*Avena fatua*), and Bermuda grass (*Cynodon dactylon*).

Typical wildlife species found in agricultural lands include red-tailed hawk (*Buteo jamaicensis*), barn owl (*Tyto alba*), American crow, Brewer's blackbird, house finch, California ground squirrel (*Spermophilus beecheyi*), and western harvest mouse (*Reithrodontomys megalotis*). Wildlife species observed in the agricultural land included California ground squirrels and red-tailed hawk.

Wildlife

The vegetation community and land cover type discussed above provide habitat for a number of local common wildlife species as discussed above. Other common mammals that might be expected to occur in these habitats include black-tailed jackrabbit (*Lepus californicus*), striped skunk (*Mephitis mephitis*), raccoon (*Procyon lotor*), opossum (*Didelphis virginiana*), and mice (*Peromyscus* spp.). Several bat species could also use structures and/or trees within the developed areas of the site for roosting. Reptiles such as the gopher snake (*Pituophis catenifer catenifer*), and terrestrial garter snake (*Thamnophis elegans*), may also be present.

Trees

The project site contains trees and shrubs such as cypress, redwood and eucalyptus trees. Other trees observed on the project site included silktree (*Albizia julibrissin*), black walnut (*Juglans sp*.), olive (*Olea europaea*), almond (*Prunus dulcis*), elm (*Ulmus* sp.), and Peruvian pepper (*Schinus molle*).

SENSITIVE BIOLOGICAL RESOURCES

The following section discusses potential for special-status biological resources to occur within the project site. Exhibit 4 depicts the sensitive biological resources previously documented within the project vicinity.

Special-status Plant Communities

Special-status plant communities are considered sensitive biological resources based on federal, state, or local laws regulating their development, limited distributions, and habitat requirements of special-status plant or wildlife species that occur within them. No special-status plant community has been documented on the project site.

Special-status Plant Species

The Special-Status Plant Species table (Attachment B: Table 1) identifies 37 special-status plant species and CNPS sensitive species that have been recorded to occur within the region and Tracy topographic quadrangle (USGS 1986), as recorded by the CNDDB, IPAC and CNPSEI (CDFW 2017;USFWS 2017 and CNPS 2017). The table also includes the species' status, required habitat, and potential to occur within the project site. All special-status plant species that have been determined unlikely to occur on-site, primarily based on the absence of suitable habitat and no recorded occurrence within three miles of the project site, have also been included in the table, in order to justify their exclusion from further discussion.

All special-status plant species have been determined unlikely to occur on the project site and annexation area, primarily based on the absence of suitable habitat, including but not limited to serpentine soils, chenopod scrub, vernal pools, montane coniferous forest, and intertidal mudflats to support individuals and/or populations. No special-status species were found during the surveys conducted for the BRE and the survey's conducted by FCS in April 2015, and November 21, 2016.

Because of the highly disturbed nature of the project site and annexation area and lack of suitable habitat, as described in Table 1, no special-status plant species have the potential to occur within the project site; therefore, no special-status plant species would be impacted by the proposed project.

Special-status Wildlife Species

The Special-Status Wildlife Species (Attachment B: Table 2) identifies 53 federal and state listed threatened and/or endangered wildlife species, and California Species of Special Concern that have been recorded in the CNDDB (CDFW 2017) and IPAC (USFWS 2017) as occurring within the region and Tracy, California topographic quadrangle (USGS 1986). The table also includes the species' status, required habitat, and potential to occur within the project site and annexation area. All special-status wildlife species that have been determined unlikely to occur on the project site and annexation area, primarily

based on the absence of suitable habitat and no recorded occurrences in the vicinity of the project site, have also been included in the table to justify their exclusion from further discussion.

A total of four special-status species were determined to have potential to occur on the project site. The following species has potential to occur in a foraging capacity only, tricolored blackbird (*Agelaius tricolor*). The remaining three special-status species include burrowing owl (*Athene cunicularia*), Swainson's hawk (*Buteo swainsoni*), and loggerhead shrike (*Lanius ludovicianus*). These species were determined to have the potential to occur on the project site in a foraging and nesting capacity. The project site and surrounding areas contain suitable habitat for several bat species, including three special-status bat species: the pallid bat (*Antrozous pallidus*), Townsend's big-eared bat (*Corynorhinus townsendii*) and the western mastiff bat (*Eumops perotis californicus*); all three are California species of special concern.

Threatened or Endangered Species

Swainson's hawk is listed as threatened in California. Preferred nesting habitat for this species consists of large mature trees near extensive areas of open grasslands or fields, which serve as foraging habitat. Nesting trees are often in riparian corridors. Swainson's hawks arrive to the Central Valley from South America in March to breed and raise young. Swainson's hawks forage in open grasslands, agricultural fields, and pastures. Alfalfa, row crops, grain fields, and irrigated pastures are the Swainson's hawk preferred foraging habitats, where they take advantage of the opportunities that harvesting and irrigating practices provide for the easy capture of small rodents. They do not forage in vineyards, orchards, or flooded rice fields.

There is potential for Swainson's hawk to occur foraging within the project site, and was observed foraging on the project site during LOAs field survey on April 22, 2015. Potential nesting trees surrounding the project site are also present; however, no nests were observed during the surveys.

California Species of Special Concern

California species of special concern do not have legal protection under ESA or CESA, but they are recognized as sensitive by CDFW and therefore require an independent assessment under the CEQA process to determine if project-related impacts are significant.

The **western burrowing owl** is a federal species of concern and a California species of special concern. Burrowing owls are year-round residents in the open, dry grasslands of the Central Valley. During fall and winter, local residents may move from nesting areas, and migrants may move in. Burrowing owls nest and take shelter in burrows in the ground, typically burrows excavated by other species such as ground squirrels. They forage in grasslands and agricultural fields. There is potential for this species to occur on the project site and immediate vicinity foraging and nesting. No burrowing owls or evidence of presence was observed during the field surveys completed by LOA and FCS. However, multiple ground squirrel burrows were observed within the project site. Burrowing owl potential is based on the marginal

foraging and nesting habitat within the agricultural habitat on the project site and abundance of occurrences of this species within the project vicinity.

The **loggerhead shrike** (*Lanius ludovicianus*) is a California species of concern and California species of special concern that inhabits open areas with clear visibility for hunting, perches for scanning, and fairly dense shrubs and brush for nesting. They inhabit shrub lands or open woodlands with a fair amount of grass cover and areas of bare ground. The agricultural habitat on the project site provides marginal foraging habitat and the surrounding trees and shrubs provide marginal nesting habitat for this species. Although there are no recorded occurrences of this species on or near the project site, potential of occurrence is based on the marginal habitat present.

The **tricolored blackbird** (*Agelaius tricolor*) is a federal species of conservation concern, a California species of special concern and Candidate Endangered. This species is endemic to California and southern Oregon and is a year-round resident of California. The tricolored blackbird nests colonially in stands of cattails, tules, blackberries, or other dense herbaceous vegetation in marshes and wetlands. Foraging typically occurs on fields and farmland. Tricolored blackbirds were observed foraging on the project site during LOA's field survey, and have potential to be found on site in a foraging capacity. The agricultural habitat on the project site provides foraging habitat for this species. However, no nesting habitat is present.

Bat Species

Bats of various species can utilize the large trees in this area as well as the several abandoned structures and debris piles located on the project site's developed areas and immediate vicinity for roosting. Several bat species, including three special-status bat species—the pallid bat (*Antrozous pallidus*), Townsend's big-eared bat (*Corynorhinus townsendii*), and the western mastiff bat (*Eumops perotis californicus*)—which are California species of special concern have potential to be found on the project site.

Migratory Birds

Suitable habitat for raptors and other birds protected by the MBTA occurs within and adjacent to the project areas. Most native, breeding birds are protected under Section 3503 of the FGC, and raptors specifically are protected under Section 3503.5 of the FGC. Additionally, both Section 3513 of the FGC and the federal MBTA prohibit the killing, possession, or trading of migratory birds. Section 3800 of the FGC prohibits the taking of nongame birds and state Fully Protected species.

Wildlife Movement Corridors

The project site including the area to be annexed was evaluated for evidence of a wildlife movement corridor during the reconnaissance-level survey, and do not appear to be a significant corridor for wildlife movement. The project site is situated within a relatively developed landscape, residential developments, agricultural lands and major roads are in the immediate surroundings, which are significant barriers to wildlife movement.

IMPACT ANALYSIS AND RECOMMENDATIONS

The following discussion addresses potential impacts to special-status biological resources resulting from the proposed project and recommends mitigation measures where appropriate to minimize those impacts to a level of "less than significant" under CEQA.

No development is proposed for the Residential Annexation Area as a result adverse impacts are not expected to occur to any species potentially inhabiting this area. In addition, trees located in the annexation area would be included in pre-construction surveys as required for most raptor species. Impacts on special-status wildlife species discussed below will pertain to the Tracy Village project site only as no new development will occur in the annexation area.

Special-Status Plant Species

Because of the highly disturbed nature of the project site and lack of suitable habitat, as described in Table 1, no special-status plant species have the potential to occur within the project site; therefore, no special-status plant species would be adversely affected by the proposed project.

Special-status Wildlife Species

As discussed in the sensitive biological resources section above four special-status bird species have potential to be found on the project site both in a foraging and nesting capacity, and three special-status bat species have potential to be found roosting or inhabiting structures or trees on the project site.

Several ornamental shrubs and trees adjacent (respectively) to the project site or in the vicinity could also provide nesting habitat for other birds and raptors protected by the Migratory Bird Treaty Act (MBTA).

LOA's BRE concludes that only four special-status species have either been observed on-site or have the potential to occur on site. These include the Swainson's hawk (*Buteo swainsoni*), burrowing owl (*Athene cunicularia*), tricolored blackbird (*Agelaius tricolor*) and western mastiff bat (*Eumops perotis californicus*). In addition to these four species, Table 2 in Section 2.6 of the BRE clearly states that loggerhead shrike (*Lanius ludovicianus*) is "Possible" to occur on-site. FCS agrees that loggerhead shrike have potential to be found on or near the project site. As such, FCS has determined impacts to loggerhead shrike would be minimized through mitigation measures provided below for tree nesting raptors and other migratory birds. All special-status wildlife species determined to potentially occur on the project site are covered under the take and compensatory mitigation provisions of the SJMSCP. The project applicant will participate in the SJMSCP and comply with all provisions and required Incidental Take Minimization Measures. Measures include but are not limited to pre-construction surveys and relocation measures for covered species. The measures are designed to avoid and minimize harm, injury, death, or nest abandonment. Therefore, these measures would ensure that burrowing owls and Swainson's hawks are not harmed, injured, or killed, and that legal activities would not cause nest

abandonment of a nearby nest tree or nest burrow. As a result, no other mitigation measures for SJMSCP covered species would be necessary.

The species-specific minimization measures discussed below conform and implement the provisions of the MBTA and/or the California Fish and Wildlife Code. The measures are designed to avoid and minimize harm, injury, death, or nest abandonment to protected wildlife species.

Tree-Nesting Raptors and Other Migratory Birds

Potential impacts could occur to resident and migratory species during project construction, which would render the project temporarily unsuitable for birds because of the noise, vibrations, and increased activity levels associated with various construction activities. These activities could potentially subject birds to risk of death or injury, and they are likely to avoid using the area until such construction activities have dissipated or ceased. Relocation, in turn, could cause hunger or stress among individual birds by displacing them into adjacent territories belonging to other individuals.

Construction activities that occur during the nesting season (generally March 1 to August 31) would disturb nesting sites for birds protected by the MBTA and FGC.

The following mitigation measures were recommended by the BRE, with minor updates to the language in Mitigation Measure Bird 1 stated from the peer review, to ensure that the mortality of tree-nesting raptors and other migratory birds including the loggerhead shrike, resulting from the proposed project's construction and other project activities is avoided.

Mitigation Measure BIRD 1.

- If tree or vegetation removal, structure demolition or ground disturbance activities are scheduled to commence during the breeding season (February 1 through August 31), pre-construction nesting bird surveys will be conducted by a qualified biologist to identify possible nesting activity.
- Pre-construction surveys shall be completed no more than 30 days prior to ground disturbance, structure demolition, or tree removal within the project site and will include a 100-ft buffer area of the project site to be surveyed.

A construction-free buffer of suitable dimensions must be established around any active raptor and migratory bird nests (up to 250 feet for raptors, depending on the location and species) for the duration of the project or until it has been determined that the chicks have fledged and are independent of their parents.

Mitigation Measure BIRD 2.

- As an alternative to Mitigation Measure BIRD 1, the project applicant may choose to remove trees and demolish existing structures that provide potential nesting habitat during the non-breeding season from September 1st through January 31st.

Bats

Project construction could potentially result in the mortality of special-status and non-special-status bats if they were breeding or roosting within the project site's structures or trees if they were to be removed. Additionally if bats use the project site's buildings or trees for winter torpor or breeding, the demolition of structures or removal of trees during those seasonal periods could result in harm or mortality to these individuals and their young, and would be considered a significant impact. The BRE provided the following measures below to ensure that bat mortality resulting from project-related activities is avoided. FCS concurred with these recommendations.

Mitigation Measure BAT 1.

- A bat habitat assessment by a qualified biologist shall be conducted for all mature trees and in all structures that will be removed as a result of the project to determine whether they provide suitable roosting or breeding habitat for bats and, to the extent possible, whether they are currently occupied. If the biologist determines that trees and structures on the site do not provide suitable habitat for bats, then no further mitigations would be required. However, if the biologist determines that bats are present or that trees and/or structures provide potentially suitable habitat for bats, and even if currently not occupied, they could be occupied in the future, the following additional mitigations will be implemented.

Mitigation Measure BAT 2.

- Should the habitat assessment conclude that any trees proposed for removal provide potential roosting, hibernation and/or maternity habitat for bats, tree removal shall only be conducted during seasonal periods of bat activity, i.e., September through mid-October and March through mid-April, under the supervision of a qualified biologist. Tree removals shall occur via a two-phased removal conducted over two consecutive days. In the afternoon of the first day, a tree cutter using chainsaws only shall remove limbs and branches. Limbs with cavities, crevices, or deep bark fissures shall be avoided, and only branches or limbs without those features shall be removed. On the second day, the entire tree shall be removed.

Mitigation Measure BAT 3.

- Should the habitat assessment survey confirm that structures to be demolished on the site provide potential roosting, hibernation and/or maternity habitat for bats, even if bats are not currently occupying them, then a preconstruction survey for bats will be conducted within 30 days prior to structure demolition. If no bats are found present, then structures may be demolished. If bats are found present, bats may be safely evicted during two seasonal periods of bat activity. In this area, generally bats can be evicted safely between approximately March 1st (or when evening temperatures are above 45°F and rainfall less than ½" in 24 hours occurs), and April 15th, prior to

parturition of pups. The next acceptable period is after pups become self-sufficiently volant, generally accepted to be between September 1st through October 15th (or prior to evening temperatures dropping below 45°F and onset of rainfall greater than ½" in 24 hours).

- There are two methods for evicting bats from occupied structures. The first, utilized mainly when the building is in good condition and the work is feasible, is "humane eviction," or "bat exclusion," which relies on the bats' own ability to fly out of the roost. In this method, all potential, but currently unused entry points into the structure are sealed. The active entry points are fitted with one-way exits, which are left in place 7-10 days to allow all bats to emerge normally during nightly feeding flights. The one-way exits are then removed and the remaining openings sealed until demolition if it will occur more than 30 days after demolition. If the interval between successful eviction and demolition will be short (less than 4 weeks), the one-way exits may often be left in place until demolition. This eviction work must be conducted by, or under direct supervision or instruction, of a qualified biologist.
- In some cases, the physical condition of the structure is so poor that humane eviction as described above is not possible. If that occurs, the building must be carefully, and selectively dismantled in such a way that the internal environment is altered to a degree sufficient to cause bats to abandon the roost and not return. This must occur under the guidance bat biologist qualified in partial dismantling of structures for bat eviction.

Measures to Offset Impacts to Potential Habitat of Covered Species

FCS peer review of LOAs BRE found this section to be accurate and concise. The BRE explains that "mitigation for the loss of habitat of the SJMSHCP covered species as a result of permitted activities is a fee-based program that funds a broad conservation strategy of habitat acquisition, enhancement/ restoration and management-in-perpetuity of Preserves composed of habitat types upon which covered species rely." The required compensation ratio for Agricultural Habitat Lands conversion is 1:1 or one acre of preserve acquired, enhanced and managed in perpetuity for each acre of habitat converted from open space use. The 2017 fee for Agricultural lands is $ $17,808 per acre.

Methods by which compensation can be provided pursuant to the SJMSHCP include one or a combination of two or more of the following:

A. Pay the appropriate fee as indicated in SJMSHCP Section 7.4.1; or

B. Dedicate, as conservation easements or fee title, or in-lieu dedications (as specified in SJMSHCP Sections 5.3.2.2 and 5.3.2.3, herein); or

C. Purchase approved mitigation bank credits as specified in SJMSHCP Section 5.3.2.4.

D. Propose an alternative mitigation plan, consistent with the goals of the SJMSHCP and equivalent in biological value to options A, B or C, above, subject to approval by the JPA and with concurrence of the Permitting Agencies' representatives on the TAC.

Jurisdictional Waters and Wetlands

An assessment of potentially jurisdictional features was conducted as part of the literature review and reconnaissance-level survey dated November 21, 2017 for the project site. In addition, FCS reviewed the discussion of jurisdictional features provided in the BRE and compared it with the results from the literature review, as well as observations made in the field on April 22, 2015. FCS confirms that the feature on the northern portion of the site was in fact completely dry, dominated by upland ruderal species, and undifferentiated from the surrounding ruderal areas of the site. No aquatic features with potential to be subject to USACE, RWQCB, or CDFW jurisdiction were observed within the project site.

Critical Habitat

When the USFWS lists a species as threatened or endangered under FESA, areas of habitat considered essential to its conservation and survival may be designated as critical habitat. These areas may require special consideration and/or protection because of their ecological importance. Potential critical habitat designations within the general vicinity of the project site were checked and reviewed using the USFWS Critical Habitat Portal in (USFWS 2015b) and the USFWS Information For planning and Conservation (USFWS IPAC 2017. The review indicated that the project site's northern boundary of the residential annexation area borders the critical habitat for the Delta smelt (*Hypomesus transpacificus*); however, no development is proposed to the annexation area, as a result no impacts are expected to occur to critical habitat. In addition the project site is 2.7 miles northeast of an area designated as critical habitat for California red-legged frog (*Rana draytonii*) (USFWS 2015b).

Conflict with Local Policies or Ordinances

Development of the proposed project will not conflict with San Joaquin County's or the City of Tracy's tree ordinances. There are several trees present on the project site and annexation area; however, no native oak trees, heritage trees or historical trees were identified during the field survey.

As discussed above, the SJMSHCP prohibits the killing of Swainson's hawk, but the project's participation on the SJMSHCP would ensure that the removal of any tree containing a Swainson's hawk nest would be prohibited until the nest is no longer occupied. Impacts would be less than significant by participating and implementing the provisions and mitigation requirements of the SJMSHCP.

San Joaquin County Multi-Species Habitat Conservation and Open Space Plan

The project qualifies as a covered activity under the SJMSHCP and would require review using the following process described below by the completed BRE. The FCS peer review concurred with the following process:

- Submit project application to lead agency.
- Submit Land Development form E or request for coverage form C to San Joaquin Council of Governments (SJCOG).

- Prior to ground disturbance, arrange with SJCOG for biologist to conduct preconstruction survey on the property regarding incidental take measures and habitat (SJCOG expense).
- Look over, understand, and cite applicable Incidental Take Minimization Measures document.
- Pay the applicable SJMSHCP fee or choose another participation option in the plan.
- Receive Certificate of Payment releasing building permit to applicant.

FCS has determined that the BRE adequately describes the two methods by which compensation can be provided pursuant to the SJMSHCP. The two methods are provided below with minor updates reflecting fees for 2017.

The project will be assessed a land cover fee and will implement a series of species-specific minimization measures. Thus, a project that complies with the Plan can be considered to result in less than significant impacts on biological resources under CEQA. However, participation is generally optional; projects may use the SJMSHCP to reach compliance with the various statutes and regulations that apply to biological resource protections, or it may comply with those requirements independently, without the benefit of the Plan.

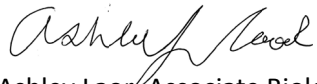
If coverage is sought under the SJMSHCP, no take is permitted for Swainson's hawk and burrowing owl. Avoidance and minimization measures would be implemented as noted above. Mitigation for loss of open space (agricultural field) is met via habitat fees or endowment fees with in-lieu lands (conservation easements). The fees are required prior to ground-disturbance and must be paid prior to permit release. The 2017 fee for Agricultural lands is $17,808 per acre. Private individuals receiving Incidental Take coverage pursuant to the SJMSHCP may, in-lieu of fee payments, offer suitable land for dedication. The 2017 Endowment fees with in-lieu land is approximately $4,196.86.

CERTIFICATION

I hereby certify that the statements furnished above and in the attached exhibits present data and information required for this biological evaluation, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.

FCS appreciates the opportunity to assist you on this project. If we can be of any further assistance, or if you have any questions concerning this letter report, please contact me at 646.320.2121

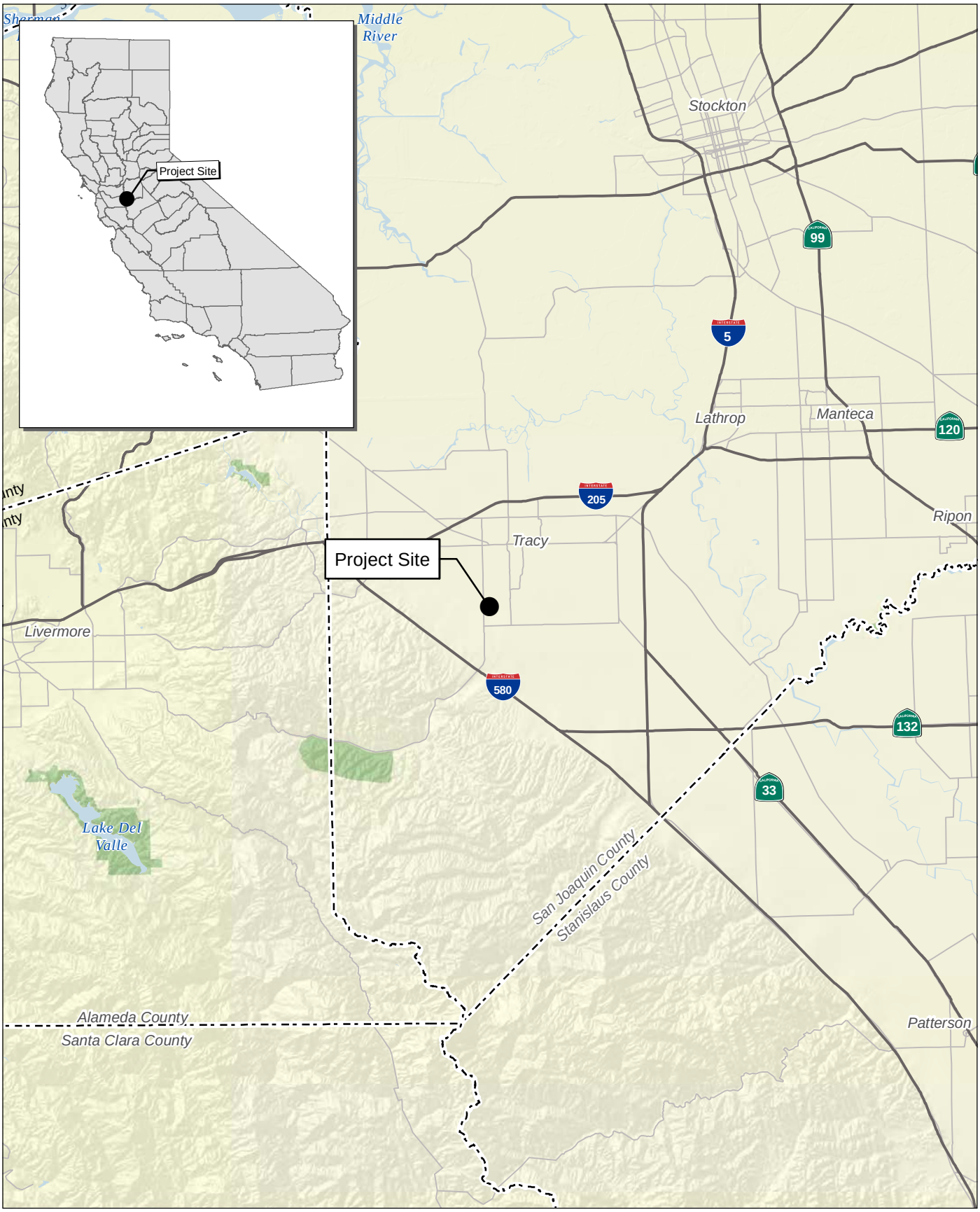
Sincerely,



Ashley Laor, Associate Biologist
FirstCarbon Solutions
1350 Treat Boulevard, Suite 380
Walnut Creek, CA 94597

Enc: Attachment A: Exhibits 1–4
Attachment B: Sensitive Species Tables

Attachment A:
Exhibits 1–4

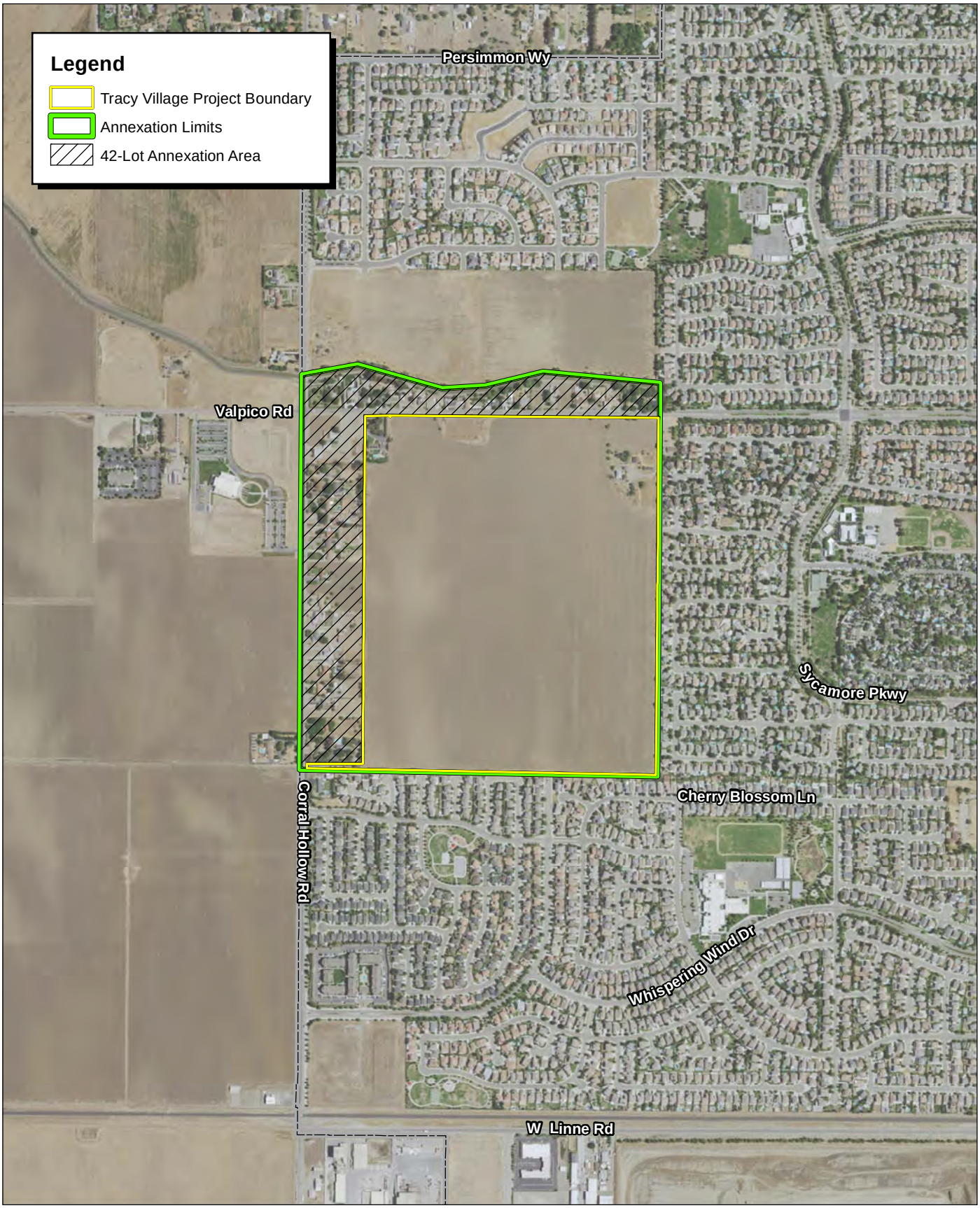


Source: Census 2000 Data, The CaSIL, FCS GIS 2016.

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Exhibit 1
Regional Location Map

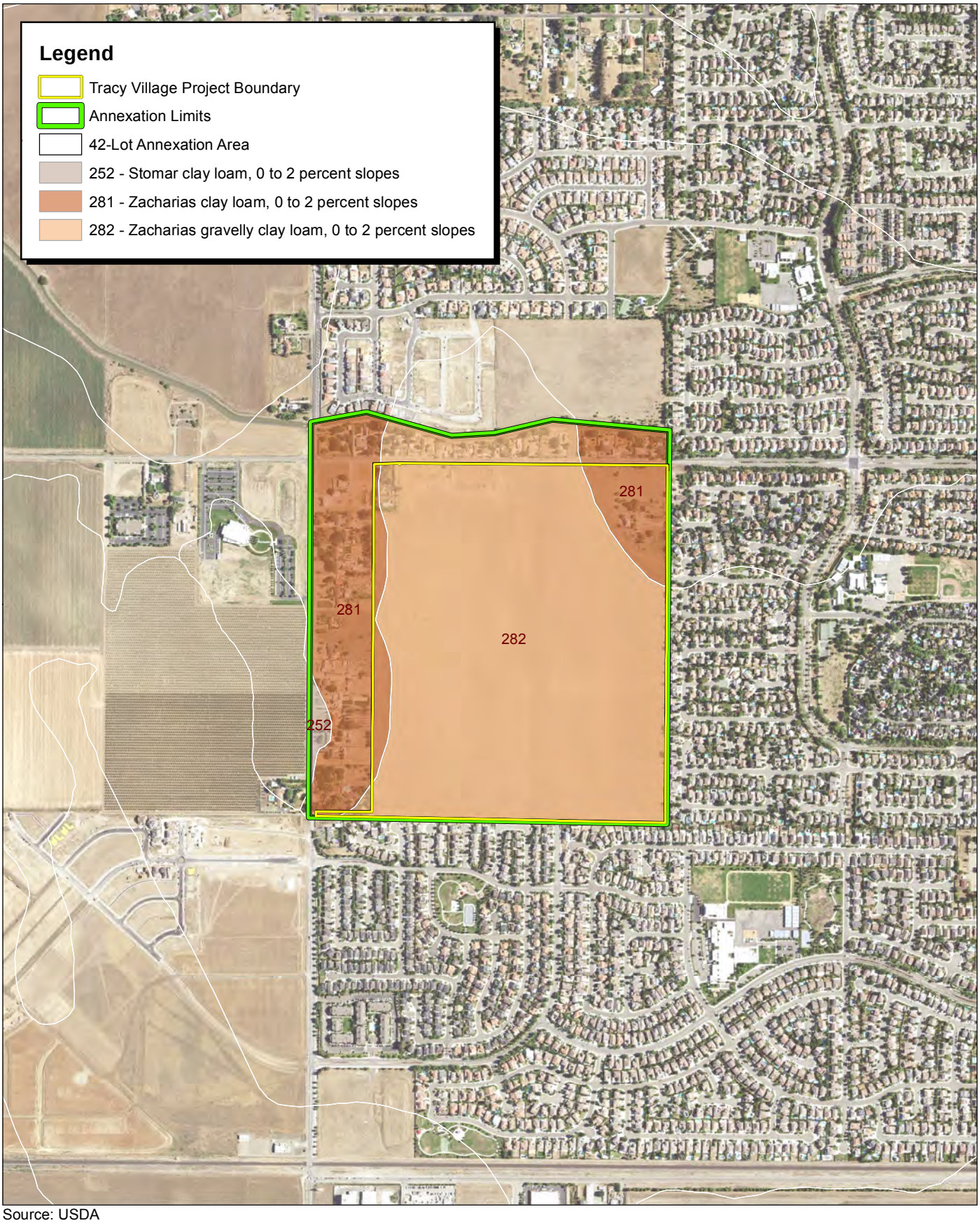


Source: ESRI Imagery, 2015

FIRSTCARBON SOLUTIONS™

1,000 500 0 1,000 Feet

Exhibit 2
Local Vicinity Map
Aerial Base



Source: USDA

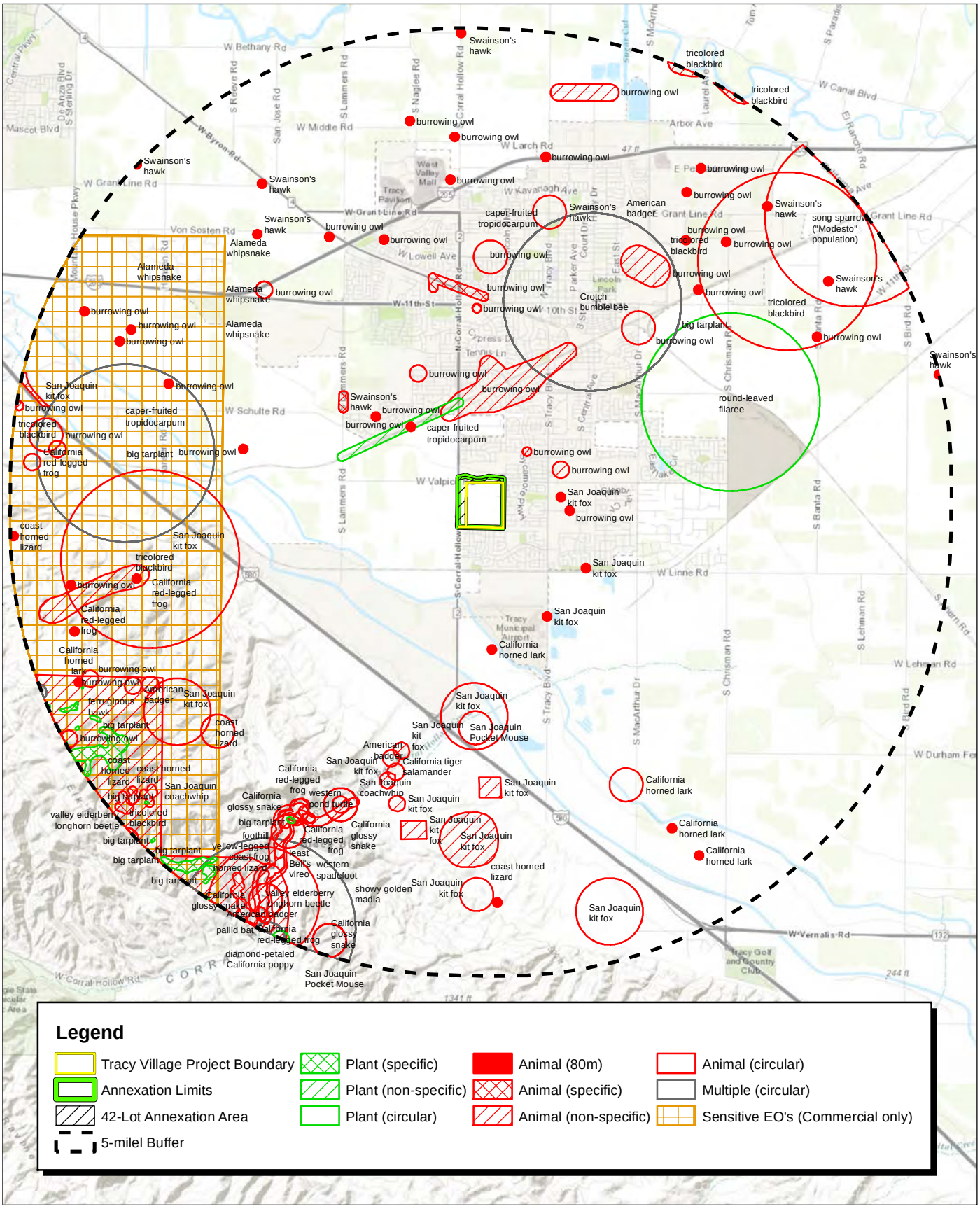
FIRSTCARBON SOLUTIONS™

1,000 500 0 1,000 Feet

Exhibit 3
USDA Soils Map

17260008 • 03/2017 | 3_soils.mxd

CITY OF TRACY • TRACY VILLAGE PROJECT
BIOLOGICAL RESOURCES ASSESSMENT



Source: ESRI Imagery, 2015

FIRSTCARBON SOLUTIONS™

1.5 0.75 0 1.5 Miles

Exhibit 4
CNDDB - Recorded Occurrences 5-mile Radius

Attachment B:
Sensitive Species Tables

Table 1: Special-status Plant Species Potentially Occurring within the Project Site

Scientific Name Common Name	Status			Habitat Description[4]	Potential to Occur and Rationale	Included in Impact Analysis
	USFWS[1]	CDFW[2]	CNPS[3]			
Allium sharsmithiae Sharsmith's onion	—	—	1B.1	Chaparral, cismontane woodland Bloom period: March-May 400-1200 m.	**No Potential:** no suitable habitat is present and the site occurs well below the elevation at which this species has been documented.	
Amsinckia grandiflora Large—-flowered fiddleneck	FE	SE	1B.1	Cismontane woodland, valley and foothill grassland. Bloom period: 275-550 m.	**No Potential**: The site occurs well below the Elevation at which this species is documented.	No
Astragalus tener var. *tener* tener Alkali milk-vetch	—	—	1B.1	Alkali playa, valley and foothill grassland, vernal pools. Bloom period 0-168 m	**No Potential:** no suitable l habitat is present.	No
Atriplex cordulata var. cordulata Heartscale	—	—	1B.2	Chenopod scrub, valley and foothill grassland, meadows and seeps Bloom period: 1–305m.	**No Potential:** no suitable habitat is present. No recorded occurrences are within 1 mile of the Project.	No
Atriplex depressa Brittlescale	—	—	1B.1	Chenopod scrub, meadows and seeps, playas, valley and foothill grasslands, vernal pools. Bloom periods: April-October 1-320 m.	**No Potential:** no suitable habitat is present. The Site has been greatly manipulated for agricultural purposes for decades**.**	No
Atriplex joaquiniana San Joaquin spearscale	—	—	1B.1	Chenopod scrub, meadows and seeps, playas, and valley and foothill grasslands. Bloom periods: April-October 1-835 m.	**No Potential:** no suitable habitat is present. The Site has been greatly manipulated for agricultural purposes for decades**.**	No
Blepharizonia Plumose Big tarplant	FE	—	1B.1	Dry hills & plains in annual grassland. Clay to clay-loam soils; usually on slopes Bloom period: 200–650m.	**No Potential:** no suitable habitat is present within the Project.	No

Table 1 (cont.): Special-status Plant Species Potentially Occurring within the Project Site

Scientific Name Common Name	Status			Habitat Description[4]	Potential to Occur and Rationale	Included in Impact Analysis
	USFWS[1]	CDFW[2]	CNPS[3]			
California Macrophyllaia Round--leaved filaree	—	—	1B.2	Cismontane woodland, valley and foothill grassland. Bloom period: March–October 15-1200 m	**No Potential**: no suitable habitat is present. The Site has been greatly manipulated for agricultural purposes for decades.	No
Campanula exigua Chaparral harebell	—	—	1B.1	Chaparral (rocky, usually serpentinite) Bloom period: May-June 275-1250 m.	**No Potential**: no suitable habitat is present and the site occurs well below the elevation at which this species has been documented.	No
Caulanthus lemmonii Lemmon's jewel-flower	—	—	1B.1	Pinyon and juniper woodland, valley and foothill grassland Bloom period: March-May 80-1220 m.	**No Potential**: no suitable habitat is present and the site occurs well below the elevation at which this species has been documented.	No
Cirsium crassicaule Slough thistle	—	—	1B.1	Chenopod scrub, marshes and swamps, riparian scrub. Bloom period: May-August 3-100 m.	**No Potential:** no suitable l habitat is present.	No
Cirsium fontinale var. campylon Mt. Hamilton fountain thistle	—	—	1B.1	Chaparral, cismontane woodland, valley and foothill grassland Bloom period: April-Oct 100-890m.	**No Potential**: no suitable habitat is present and the site occurs well below the elevation at which this species has been documented.	No
Clarkia concinna ssp. Automixa Santa Clara red ribbon	—	—	4	Foothill woodland Bloom period: April-July 90-1500 m.	**No Potential**: no suitable habitat is present and the site occurs well below the elevation at which this species has been documented	No
Delphinium californicum ssp. Interius Hospital Canyon larkspur	—	—	1B.1	Chaparral, cismontane woodland, coastal scrub. Bloom period: April-June 230-1095 m.	**No Potential**: no suitable habitat is present and the site occurs well below the elevation at which this species has been documented	No

Table 1 (cont.): Special-status Plant Species Potentially Occurring within the Project Site

Scientific Name Common Name	Status			Habitat Description[4]	Potential to Occur and Rationale	Included in Impact Analysis
	USFWS[1]	CDFW[2]	CNPS[3]			
Delphinium recurvatum Recurved larkspur	—	—	1B.1	Chenopod scrub, cismontane woodland, valley and foothill grassland on alkaline soils. Bloom period: March-June 3-790 m.	**No Potential**: no suitable habitat is present. The Site has been greatly manipulated for agricultural purposes for decades	No
Eriastrum tracyi Tracy's eristrium	—	—	3	Chaparral, cismontane woodland Bloom period: May-July 315-1645 m.	**No Potential**: no suitable habitat is present and the site occurs well below the elevation at which this species has been documented.	No
Eryngium racemosum Delta button-celery	—	SE	1B.1	Riparian scrub Bloom period: June-October 3-30 m.	**No Potential:** no suitable l habitat is present.	No
Eschscholzia rhombipetala Diamond-petaled California poppy	—	—	1B.1	Valley and foothill grassland. Bloom period: March-April 30-625 m.	**No Potential**: no suitable habitat is present. The Site has been greatly manipulated for agricultural purposes for decades	No
Fritillaria falcate Talus fritillary	—	—	1B.1	Chaparral, cismontane woodland, lower montane coniferous forest Bloom period: March-May 300-1525 m.	**No Potential**: no suitable habitat is present and the site occurs well below the elevation at which this species has been documented.	No
Helianthella castanea Diablo helianthella	—	—	1B.1	Broadleaved upland forest, chaparral, cismontane woodland, coastal scrub, riparian woodland, valley and foothill grassland. Bloom period: March-June 60-1300 m.	**No Potential**: no suitable habitat is present and the site occurs well below the elevation at which this species has been documented.	No

Table 1 (cont.): Special-status Plant Species Potentially Occurring within the Project Site

Scientific Name Common Name	Status			Habitat Description[4]	Potential to Occur and Rationale	Included in Impact Analysis
	USFWS[1]	CDFW[2]	CNPS[3]			
Hesperolinon tehamense Tehama County western flax	—	—	1B.1	Chaparral, cismontane woodland, lower montane coniferous forest Bloom period: May-Julyya 100-1250 m.	**No Potential**: no suitable habitat is present and the site occurs well below the elevation at which this species has been documented.	No
Hibiscus lasiocarpos var. occidentalis Wooly rose-mallow	—	—	1B.1	Marshes and freshwater swamps Bloom period: June-September 0-120 m.	**No Potential:** no suitable l habitat is present.	No
Hoita strobilina Loma Prieta hoita	—	—	1B.1	Chaparral, cismontane woodland, riparian woodland Bloom period: May-July 30-860 m.	**No Potential:** no suitable l habitat is present.	No
Leptosyne hamiltonii Mt. Hamilton Coreopsis	—	—	1B.1	Cismontane woodland Bloom period: March-May 550-1300 m.	**No Potential**: no suitable habitat is present and the site occurs well below the elevation at which this species has been documented	No
Lilaeopsis masonii Mason's lilaeopsis	—	—	1B.1	Marshes and swamps, riparian scrub Bloom period: April-November 0-10 m.	**No Potential:** no suitable l habitat is present.	No
Limosella australis Delta mudwort	—	—	2B.2	Marshes and swamps, riparian scrub Bloom period: May-August 0-3 m.	**No Potential:** no suitable l habitat is present.	No
Madia radiata Showy golden madia	—	—	1B.1	Valley and foothill grassland, cismontane woodland. Mostly on adobe clay in grassland or among shrubs. Bloom period: March-May 75-1220 m.	**No Potential:** no suitable habitat is present. The Site has been greatly manipulated for agricultural purposes for decades and the site occurs well below the elevation at which this species has been documented	No

Table 1 (cont.): Special-status Plant Species Potentially Occurring within the Project Site

Scientific Name Common Name	Status			Habitat Description[4]	Potential to Occur and Rationale	Included in Impact Analysis
	USFWS[1]	CDFW[2]	CNPS[3]			
Malacothamnus halli Hall's bush mallow	—	—	1B.1	Chaparral, coastal scrub Bloom period: May-September 10-760 m.	**No Potential:** no suitable l habitat is present.	No
Micropus amphiboles Mt. Diablo cottonweed	—	—	3	Broadleafed upland forest, chaparral, cismontane woodland, valley and foothill grassland. Bloom period: March-May 45-825 m.	**No Potential:** no suitable habitat is present. The Site has been greatly manipulated for agricultural purposes for decades and the site occurs well below the elevation at which this species has been documented	No
Myosurus minimus ssp. Apus Little mouse tail	—	—	3	Valley and foothill grassland, vernal pools Bloom period: March-June 20-640 m.	**No Potential**: no suitable habitat is present. The Site has been greatly manipulated for agricultural purposes for decades.	No
Navarretia nigeliformis ssp. radians Shining navarretia	—	—	1B.1	Cismontane woodland, valley and foothill grassland, vernal pools. Bloom period: April-July 76-1000 m.	**No Potential:** no suitable habitat is present. The Site has been greatly manipulated for agricultural purposes for decades and the site occurs well below the elevation at which this species has been documented.	No
Phacelia phacelioides Mt. Diablo phacelia	—	—	1B.1	Chaparral, cismontane woodland Bloom period: April-May 500-1370 m.	**No Potential**: no suitable habitat is present and the site occurs well below the elevation at which this species has been documented.	No
Sagitaria sanfordii Sanford's arrowhead	—	—	1B.1	Marshes and swamps Bloom period: May-October 0-650 m.	**No Potential:** no suitable l habitat is present.	No
Senecio aphanactis Chaparral ragwort	—	—	2	Chaparral, cismontane woodland, coastal scrub Bloom period: January-April 15-800 m.	**No Potential:** no suitable l habitat is present.	No

Table 1 (cont.): Special-status Plant Species Potentially Occurring within the Project Site

Scientific Name Common Name	Status			Habitat Description[4]	Potential to Occur and Rationale	Included in Impact Analysis
	USFWS[1]	CDFW[2]	CNPS[3]			
Symphyotrichum lentum Suisun Marsh aster	—	—	1B.1	Marshes and brackish and freshwater swamps Bloom period: May-November 0-3 m.	**No Potential:** no suitable l habitat is present.	No
Trichocoronis wrightii var. wrightii Wright's trichocornus	—	—	2	Meadows and seeps, marshes and swamps, riparian forest, and vernal pools Bloom period: May-September 5-435 m.	**No Potential:** no suitable l habitat is present.	No
Tropidocarpum capparideum Caper-fruited tropidocarpum	—	—	1B.1	Valley and foothill grassland Bloom period: March-April 1-455 m.	**No Potential**: no suitable habitat is present. The Site has been greatly manipulated for agricultural purposes for decades.	No

Code Designations

[1] Federal Status: 2017 USFWS Listing	[2] State Status: 2017 CDFW Listing	[3] CNPS: 2017 CNPS Listing
FE = Listed as endangered under the Endangered Species Act **FT** = Listed as threatened under the Endangered Species Act **FC** = Candidate for listing (threatened or endangered) under Endangered Species Act **FD** = Delisted in accordance with the Endangered Species Act — = Not federally listed	**SE** = Listed as endangered under the California Endangered Species Act **ST** = Listed as threatened under the California Endangered Species Act **SSC** = Species of Special Concern as identified by CDFW **CFP** = Listed as fully protected under FGC **CR** = Species identified as rare by CDFW — = Not state listed	**1A** = Plants species that presumed extinct in California. **1B** = Plant species that are rare, threatened, or endangered in California and elsewhere. **List 2** = Plant species that are rare, threatened, or endangered in California, but more common elsewhere. **List 3=** Plants which we need more information-a review list **Blooming period:** Months in parentheses are uncommon.

[4] **Habitat description:** Habitat description adapted from CNDDB (CDFW 2017) and CNPS online inventory (CNPS 2017).

Table 2: Special-status Wildlife Species Potentially Occurring within the Project

Scientific Name Common Name	Status		Habitat Description[3]	Potential to Occur and Rationale	Included in Impact Analysis
	USFWS[1]	CDFW[2]			
Invertebrates					
Branchinecta lynchi Vernal pool fairy shrimp	FE	—	Vernal pools of California's Central Valley	**No Potential**: no Vernal pools were present on the site. The Site has been greatly manipulated for agricultural purposes for decades.	No
Callophrys mossii bayensis San Bruno elfin butterfly	FE	—	Rocky outcrops and cliffs in coastal scrub	**No Potential:** no suitable l habitat is present.	No
Desmocerus californicus dimorphus Valley elderberry longhorn beetle	FT	—	Elderberry shrubs	**No Potential** no elderberry shrubs the required habitat for this species is present.	No
Lepidurus packardi Vernal Pool tadpole shrimp	FE	—	Vernal pools, clay flats, roadside ditches, and road ruts	**No Potential**: no Vernal pools were present on the site. The Site has been greatly manipulated for agricultural purposes for decades.	No
Fish					
Hypomesus transpacificus Delta smelt	FT	SE	Sacramento-San Joaquin Delta	**No Potential:** no suitable l habitat is present	No
Oncorhynchus mykiss Steelhead	FE	ST	Cold headwaters, creeks, small to large rivers, cool lakes, estuaries, and oceans comprise the habitats collectively	**No Potential:** no suitable l habitat is present	No
Amphibians					
Ambystoma californiense California tiger salamander	FT	ST	Breeds in vernal pools and stock ponds of central California. Adults aestivate in grassland habitats adjacent to the breeding sites.	**No Potential**: no Vernal pools were present on the site. The Site has been greatly manipulated for agricultural purposes for decades.	No

Table 2 (cont.): Special-status Wildlife Species Potentially Occurring within the Project

Scientific Name Common Name	Status		Habitat Description[3]	Potential to Occur and Rationale	Included in Impact Analysis
	USFWS[1]	CDFW[2]			
Rana boylii Foothill yellow-legged frog	—	SSC	Partly-shaded, shallow streams & riffles with a rocky substrate in a variety of habitats. Aquatic, Chaparral, Cismontane woodland, Coastal scrub, Klamath/North coast flowing waters, Lower montane coniferous forest, Meadow & seep Riparian forest, Riparian woodland, Sacramento/San Joaquin flowing waters	**No Potential:** no suitablel habitat is present. The Site has been greatly manipulated for agricultural purposes for decades.	No
Rana draytonii California red-legged frog	—	SSC	Lowlands & foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Aquatic, Artificial flowing waters Artificial standing waters, Freshwater marsh, Marsh & swamp, Riparian forest, Riparian scrub, Riparian woodland, Wetland	**No Potential:** no suitable habitat is present The Site has been greatly manipulated for agricultural purposes for decades.	No
Spea hammondii Western spadefoot	—	SSC	Occurs primarily in grassland habitats, but can be found in valley-foothill hardwood woodlands. Vernal pools are essential for breeding and egg-laying.	**No Potential:** no suitable habitat is present. The Site has been greatly manipulated for agricultural purposes for decades.	No
Reptiles					
Anniella pulchra pulchra Silvery legless lizard	—	SSC	Sparsely vegetated areas of beach dunes, chaparral, pine-oak woodlands, desert scrub, sandy washes, and stream terraces with sycamores, cottonwoods, or oaks	**No Potential:** no suitable habitat is present.	No
Arizona elegans occidentalis California glossy snake	—	SSC	Patchily distributed from the eastern portion of San Francisco Bay, southern San Joaquin Valley, and the Coast, Transverse, and Peninsular Ranges, south to Baja California. Generalist reported from a range of scrub and grassland habitats, often with loose or sandy soils.	**No Potential:** no suitable habitat is present The Site has been greatly manipulated for agricultural purposes for decades.	No

Table 2 (cont.): Special-status Wildlife Species Potentially Occurring within the Project

Scientific Name Common Name	Status		Habitat Description[3]	Potential to Occur and Rationale	Included in Impact Analysis
	USFWS[1]	CDFW[2]			
Emys marmorata Western pond turtle	—	SSC	This species is a thoroughly aquatic turtle found in ponds, marshes, rivers, streams, and irrigation ditches, usually with aquatic vegetation below 6000 feet elevation. Requires basking sites and suitable upland habitat (sandy banks or grassy open fields) up to 0.5 km from water for egg-laying.	**No Potential:** no suitable habitat is present.	No
Masticophis flagellum ruddocki San Joaquin Whipsnake	—	SSC	Occurs in open, dry, treeless areas, including valley and foothill grassland and chenopod scrub. Takes refuge in rodent burrows, under shaded vegetation, and under surface objects	**No Potential:** no suitable habitat is present The Site has been greatly manipulated for agricultural purposes for decades.	No
Masticophis lateralis euryxanthus Alameda whipsnake	FT	ST	Ranges from the inner coast range in western and central Contra Costa County and Alameda counties. Typically occurs in chaparral and scrub habitats with rock outcrops and talus pilings. Also occurs in scrub communities, grasslands, oak, and oak/bay woodlands.	**No Potential:** no suitable habitat is present The Site has been greatly manipulated for agricultural purposes for decades.	No
Phrynosoma blainvillii Coast horned lizard	—	SSC	Grasslands, scrublands, oak woodlands, etc. of central California. Common in sandy washes with scattered shrubs.	**No Potential:** no suitable habitat is present. The Site has been greatly manipulated for agricultural purposes for decades.	No
Thamnophis gigas Giant garter snake	FT	ST	Found primarily in marshes, sloughs, drainage canals, and irrigation ditches, especially around rice fields, and occasionally in slow-moving creeks. Prefers locations with vegetation close to the water for basking.	**No Potential:** no suitable habitat is present.	No

Table 2 (cont.): Special-status Wildlife Species Potentially Occurring within the Project

Scientific Name Common Name	Status USFWS[1]	Status CDFW[2]	Habitat Description[3]	Potential to Occur and Rationale	Included in Impact Analysis
Birds					
Agelaius tricolor Tricolored blackbird	— MBTA	SSC	Highly colonial species, most numerous in Central Valley and its vicinity. Requires open water, protected nesting substrate, and foraging area with insect prey in the vicinity of the colony.	**Potential to Occur:** Suitable foraging habitat is present. This species was observed foraging on the project site during LOA's field survey.	Yes
Aquila chrysaetos Golden eagle	— MBTA	FP FGC	Found in rolling foothills, mountain areas, sage-juniper flats, and desert. Prefers cliff-walled canyons to provide nesting habitat as well as large trees in open areas.	**No Potential:** No suitable foraging or nesting habitat is present. Species may fly over project site.	No
Asio flammeus Short-eared owl	— MBTA	SSC	Habitats may include salt- and freshwater marshes, irrigated alfalfa or grain fields, and un-grazed grasslands and old pastures. Tule marsh or tall grasslands with cover 30–50 cm in height can support nesting pairs	**No Potential**: no suitable habitat is present.	No
Athene cunicularia Burrowing owl	— MBTA	SSC FGC	Found in open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. A subterranean nester, dependent upon burrowing mammals, most notably the California ground squirrel.	**Potential to Occur: although not found,** marginal habitat is present on the site in the form of California ground squirrel burrows and ruderal habitat.	Yes
Baeolophus inornatus Oak titmouse	— MBTA	SSC	Warm, open, dry oak or oak-pine woodlands. Many will use scrub oaks or other brush as long as woodlands are nearby. Nests are built in tree cavities and are made of grass, moss, hair, and feathers.	**No Potential**: no suitable habitat is present.	Yes

Table 2 (cont.): Special-status Wildlife Species Potentially Occurring within the Project

Scientific Name Common Name	Status		Habitat Description[3]	Potential to Occur and Rationale	Included in Impact Analysis
	USFWS[1]	CDFW[2]			
Buteo swainsoni Swainson's hawk	— MBTA	ST FGC	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural or ranch lands with groves or lines of trees. Requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain fields supporting rodent populations.	**Potential to Occur:** Suitable foraging habitat is present (fallow fields and suitable prey base) and nesting habitat is available in the trees located in the developed areas of the project site. This species was observed foraging and flying over the project site.	Yes
Carduelis lawrencei Lawrence's goldfinch	MBTA	—	Arid and open woodlands near 3 features: chaparral or other brushy areas; tall annual weed fields; and a water source such as a stream, small lake, or farm pond.	**No Potential**: no suitable habitats are present.	No
Charadrius montanus Mountain plover	MBTA	—	Open, flat, dry tablelands with low, sparse vegetation. Nests are simple scrapes in the ground, which males begin forming soon after their arrival in breeding areas. After eggs are laid, lichen grass roots, leaves and dried chips of cow manure are added until eggs are about half buried.	**No Potential:** no suitable habitat is present The Site has been greatly manipulated for agricultural purposes for decades.	No
Circus cyaneus Northern harrier	MBTA	SSC	Frequents meadows, grasslands, open rangelands, freshwater emergent wetlands; uncommon in wooded habitats.	**No Potential:** no suitable habitat is present The Site has been greatly manipulated for agricultural purposes for decades and lacks wetlands.	No
Coccyzus americanus occidentalis Western yellow-billed cuckoo	MBTA FC	SE	Nesting habitat is cottonwood/willow riparian forest. Occurs only along the upper Sacramento Valley portion of the Sacramento River, the Feather River in Sutter Co., the south fork of the Kern River in Kern Co., and along the Santa Ana, Amargosa, and lower Colorado rivers.	**No Potential:** no suitable habitats are present.	No

Table 2 (cont.): Special-status Wildlife Species Potentially Occurring within the Project

Scientific Name Common Name	Status		Habitat Description[3]	Potential to Occur and Rationale	Included in Impact Analysis
	USFWS[1]	CDFW[2]			
Elanus leucurus White-tailed kite	— MBTA	FP FGC	Found in rolling foothills and valley margins with scattered oaks and river bottomlands or marshes next to deciduous woodland. Requires open grasslands, meadows, or marshes for foraging close to the isolated, dense-topped trees for nesting and perching.	**No Potential:** no suitable habitats are present. No recorded occurrences are within 5 miles.	No
Eremophila alpestris actia California horned lark	— MBTA	—	Occurs in coastal regions, primarily from Sonoma County to San Diego County, as well as the main part of the San Joaquin Valley and eastward to the foothills. Found in short-grass prairie, "bald" hills, mountain meadows, open coastal plains, fallow grain fields, and alkali flats.	**Potential to Occur:** marginal habitat is present on the site in the form of ruderal habitat and the fallow field (agricultural habitat on site.)	Yes
Falco peregrinus Peregrine falcon	— MBTA	FP	Coastal sage scrub communities that are associated with coastal dunes, perennial grasslands, annual grasslands, croplands, pastures, coast Douglas-fir hardwood forests, coastal oak woodlands, montane hardwood woodlands, closed-cone pine-cypress woodlands, chamise-red shank chaparral, and mixed-chaparral communities.. East of San Francisco Bay, peregrine falcons occupy cliffs and rocky areas in coastal sage scrub habitat on southwest-facing slopes.	**No Potential:** no suitable habitats are present. No recorded occurrences are within 5 miles.	No
Haliaeetus leucocephalus Bald eagle	FD MBTA	SE FP FGC	Occurs along ocean shoreline, lake margins, and rivers for nesting and wintering. Most nests are within one mile of water. Nest in large, old-growth or dominant live tree with open branches, especially ponderosa pine. Roosts communally in winter.	**No Potential:** no suitable habitats are present. No recorded occurrences are within 5 miles.	

Table 2 (cont.): Special-status Wildlife Species Potentially Occurring within the Project

Scientific Name Common Name	Status		Habitat Description[3]	Potential to Occur and Rationale	Included in Impact Analysis
	USFWS[1]	CDFW[2]			
Ixobrychus exilis Least bittern	MBTA	—	Fresh marshes, reedy ponds. Mostly freshwater marsh but also brackish marsh, in areas with tall, dense vegetation standing in water. May be over fairly deep water, because it mostly climbs in reeds rather than wading. Sometimes in salt marsh or in mangroves.	**No Potential:** no suitable habitats are present. No recorded occurrences are within 5 miles.	No
Lanius ludovicianus Loggerhead shrike	— MBTA	—	Shrublands or open woodlands with a fair amount of grass cover and areas of bare ground. They require tall shrubs or trees (also use fences or power lines) for hunting perches, territorial advertisement, and pair maintenance; open areas of short grasses, forbs, or bare ground for hunting; and large shrubs or trees for nest placement.	**Potential to Occur:** Suitable foraging habitat is present (fallow field and prey) and nesting habitat is available in the trees located in the developed areas of the project site	Yes
Laterallus jamaicensis coturniculus California black rail	— MBTA	ST FP	Inhabits freshwater marshes, wet meadows, and shallow margins of saltwater marshes bordering larger bays. Requires water depth of about 1 inch that does not fluctuate during the year, and dense vegetation for nesting.	**No Potential:** no suitable habitats are present. No recorded occurrences are within 5 miles.	No
Limnodromus griseus Short-billed dowitcher	— MBTA	—	Breeds in muskegs of taiga to timberline, and barely onto subarctic tundra. Winters on coastal mud flats and brackish lagoons. In migration prefers saltwater tidal flats, beaches, and salt marshes. Nests are a simple bowl in thick vegetation, usually on top of a clump of sedge, lined with dried grass, leaves, twigs, and ptarmigan feathers.	**No Potential:** no suitable habitats are present. No recorded occurrences are within 5 miles.	No
Limosa fedoa Marbled godwit	— MBTA	—	Breeds in marshes and flooded plains, in migration and winter also on mudflats and beaches	**No Potential:** no suitable habitats are present. No recorded occurrences are within 5 miles.	No

Table 2 (cont.): Special-status Wildlife Species Potentially Occurring within the Project

Scientific Name Common Name	Status		Habitat Description[3]	Potential to Occur and Rationale	Included in Impact Analysis
	USFWS[1]	CDFW[2]			
Melanerpes lewis Lewis's woodpecker	— MBTA	—	Ponderosa pine forest, open riparian woodland dominated by cottonwood, and logged or burned pine forest. Their breeding distribution is widely associated with ponderosa pine distribution in western North America. Lewis's Woodpeckers commonly reuse existing nest holes or natural cavities in trees, as they do not use newly excavated ones.	**No Potential:** no suitable habitats are present. No recorded occurrences are within 5 miles.	No
Melospiza melodia Song sparrow	— MBTA	SSC	Marsh edges, overgrown fields, backyards, desert washes, and forest edges. Song Sparrows commonly visit bird feeders and build nests in residential areas.	**No Potential:** no suitable habitats are present.	No
Numenius americanus Long-billed curlew	— MBTA	—	Short-grass or mixed prairie habitat with flat to rolling topography while breeding; tidal estuaries, wet pasture habitats and sandy beaches while wintering; wide range of habitats used during migration. Nests are a shallow depression in the ground, with scraping initiated by male. Nest lining material is variable, but may include small pebbles, bark, grass, small stems and twigs, seeds and cheatgrass leaves as well as droppings from livestock, rabbits and Canada geese	**No Potential:** no suitable habitats are present. No recorded occurrences are within 5 miles.	No
Passerella iliaca Fox sparrow	— MBTA	—	Wooded areas, undergrowth, brush. Breeds in brushy areas including woodland edges and clearings, streamside thickets, scrubby second growth, stunted coastal forest. Winters in similar habitats, also in brushy fields, chaparral, well-vegetated suburbs and parks.	**No Potential:** no suitable habitats are present. No recorded occurrences are within 5 miles.	No

Table 2 (cont.): Special-status Wildlife Species Potentially Occurring within the Project

Scientific Name Common Name	Status		Habitat Description[3]	Potential to Occur and Rationale	Included in Impact Analysis
	USFWS[1]	CDFW[2]			
Pica nuttalli Yellow-billed magpie	— MBTA	—	Open oak & riparian woodland, Oak savanna, open areas with large trees, and along streams. This species also forages in grassland, pasture, fields, and orchards.	**No Potential:** no oak savanna, or open oak woodlands present.	No
Picoides nuttallii Nuttall's woodpecker	— MBTA	—	Endemic to oak and mixed woodlands near water sources and has been known to inhabit conifer trees as well. The preferred habitat is the area that is arid to mesic (having a moderate supply of moisture) and those spaces containing scrub oaks and streamside foliage	**No Potential:** no suitable habitats are present. No recorded occurrences are within 5 miles.	No
Tringa flavipes Lesser yellowlegs	— MBTA	—	Forages along shallow lacustrine, wet meadow, and estuarine mudflat habitats. It especially prefers flooded fields, drainage ditches, shallow wetlands, and other calm, freshwater habitats. In general, far less numerous than the greater yellowlegs, which it closely resembles in appearance and habits.	**No Potential:** no suitable habitats are present. No recorded occurrences are within 5 miles.	No
Vireo bellii pusillus Least Bell's vireo	FE	SE	A summer resident of Southern California in low riparian habitat in the vicinity of water or in dry river bottoms. Nests placed along margins of bushes or in twigs projecting into pathways, usually willows, coyote bush, mule fat, or mesquite. Occurs below 2,000 feet.	**No Potential:** no suitable habitats are present.	No
Xanthocephalus xanthocephalus Yellowed-headed blackbird	—	CSC	Freshwater emergent marsh with dense vegetation and deep water	**No Potential:** no suitable habitats are present. No recorded occurrences are within 5 miles.	No

Table 2 (cont.): Special-status Wildlife Species Potentially Occurring within the Project

Scientific Name Common Name	Status		Habitat Description[3]	Potential to Occur and Rationale	Included in Impact Analysis
	USFWS[1]	CDFW[2]			
Mammals					
Antrozous pallidus Pallid bat	—	SSC	Found in deserts, grasslands, shrublands, woodlands, and forests. Most common in open, dry habitats with rocky areas for roosting. Roosts must protect bats from high temperatures. Species is very sensitive to disturbance of roosting sites. Day roosts are in caves, crevices, mines, and occasionally in hollow trees and buildings.	**Potential to Occur**: marginal habitat is present, buildings and trees may provide roosting habitat.	Yes
Corynorhinus townsendii Townsend's big-eared bat	—	SSC	Mixed conifer forest and riparian zones. Nesting and roosting requires caves, mines, tunnels or buildings. Roosting may occur in cavities of large trees.	**Potential to Occur**: marginal habitat is present, buildings and trees may provide roosting habitat. However, no conifer forest or riparian zones are present on, or in the proximity of the project site.	Yes
Eumops perotis californicus Western mastiff bat	—	SSC	Found in many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, chaparral. Roosts in crevices in cliff faces, high buildings, trees, and tunnels.	**Potential to Occur**: marginal habitat is present, buildings and trees may provide roosting habitat.	Yes
Neotoma fuscipes riparia Riparian woodrat	FE	—	Rivers, creeks and stock ponds of the Sierra foothills and coast range, preferring pools with overhanging vegetation.	**No Potential:** no suitable habitats are present.	No
Perognathus inornatus San Joaquin pocket mouse	—	—	Grassland, oak savanna and arid scrubland in the southern Sacramento Valley, Salinas Valley, San Joaquin Valley and adjacent foothills, south to the Mojave Desert.	**No Potential:** no suitable habitats are present.	No
Sylvilagus bachmani riparius Riparian brush rabbit	FE	SE	Riparian oak forests with a dense understory of wild roses, grapes, and blackberries.	**No Potential:** no suitable habitats are present.	No

Table 2 (cont.): Special-status Wildlife Species Potentially Occurring within the Project

Scientific Name Common Name	Status		Habitat Description[3]	Potential to Occur and Rationale	Included in Impact Analysis
	USFWS[1]	CDFW[2]			
Taxidea taxus American badger	—	SSC	Found in drier open stages of most shrub, forest, and herbaceous habitats with friable soils. Requires sufficient food sources (rodents), friable soils, and open, uncultivated ground. Digs large burrows.	**No Potential:** no suitable habitats are present.	No
Vulpes macrotis mutica San Joaquin kit fox	FE	ST	Arid and semi-arid regions encompassing desert scrub, chaparral, halophytic, and grassland communities. Areas with sparse ground cover are preferred. It is found in elevations ranging from 400–1,900 m	**No Potential:** The project site is separated from suitable grassland habitat in the region by dense residential development. The nearest recorded occurrences (1991) are within 1 mile of the site; however, these sightings were in areas that are now developed.	No

Code Designations

[1] Federal Status: 2017 USFWS Listing

- **ESU** = Evolutionary Significant Unit is a distinctive population.
- **FE** = Listed as endangered under the FESA.
- **FT** = Listed as threatened under the FESA.
- **FC** = Candidate for listing (threatened or endangered) under FESA.
- **FD** = Delisted in accordance with the FESA.
- **FPD** = Federally Proposed to be Delisted.
- **MBTA** = protected by the Migratory Bird Treaty Act
- **—** = Not federally listed

[2] State Status: 2017 CDFW Listing

- **SE** = Listed as endangered under the CESA.
- **ST** = Listed as threatened under the CESA.
- **SSC** = Species of Special Concern as identified by the CDFW.
- **FP** = Listed as fully protected under FGC.
- **CFG** = FGC =protected by FGC 3503.5
- **CR** = Rare in California.
- **—** = Not state listed

[3] **Habitat description**: Habitat description adapted from CNDDB (CDFW 2017a).

Appendix D:
Cultural Resources Assessment

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Phase I Cultural Resources Assessment
Tracy Village Development and Residential Annexation Area
City of Tracy, San Joaquin County, California

USGS Tracy (1994) 7.5 minute Quadrangle Maps
Section 5, Township 3 South, Range 5 East

Prepared for:

City of Tracy
333 Civic Center Drive
Tracy, CA 95376
209.831.6000

Contact: Victoria Lombardo, Planner

Prepared by:

FirstCarbon Solutions
1350 Treat Boulevard, Suite 380
Walnut Creek, CA 94597
925.357.2562

Fieldwork Conducted By: Dana D. DePietro
Fieldwork Conducted On: May 12, 2015
Report Date: June 5, 2015
Updated Report: April 1, 2017

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Table of Contents

Management Summary **1**

Section 1: Introduction **5**
1.1 - Project Location 5
1.2 - Project Description 5
1.3 - Assessment Team 5

Section 2: Cultural Setting **11**
2.1 - Prehistoric Background 11
2.1.1 - Windmiller Pattern or Early Horizon (3000 to 1000 B.C.) 12
2.1.2 - Berkeley Pattern or Middle Horizon (1000 B.C. to A.D. 500) 12
2.1.3 - Augustine Pattern or Late Horizon (A.D. 500 to Historic Period) 12
2.2 - Native American Background 13
2.3 - Historic Background 14
2.3.1 - Spanish Period 14
2.3.2 - Mexican Period 15
2.3.3 - American Expansion 15
2.3.4 - The City of Tracy 16

Section 3: Results **17**
3.1 - Records Search 17
3.1.1 - Central California Information Center Records Search 17
3.1.2 - Native American Heritage Commission Record Search 18
3.2 - Pedestrian Surveys 18
3.3 - Historic Resources Evaluation 19
3.3.1 - The California Register Criteria for Evaluation 19
3.3.2 - California Register Eligibility 20
3.3.3 - Historic Integrity 24
3.3.4 - Historic Resource Conclusions 24

Section 4: Summary and Recommendations **27**
4.1 - Summary 27
4.2 - Recommendations 27
4.2.1 - Cultural Resources Recommendations 27
4.3 - Inadvertent Discovery Procedures 28
4.3.1 - Accidental Discovery of Human Remains 28
4.3.2 - Accidental Discovery of Cultural Resources 28

Section 5: References **31**

Appendix A: Project Area Photographs

Appendix B: Native American Heritage Commission Sacred Lands File Search Request and Results

Appendix C: Personnel Qualifications

Appendix D: Regulatory Framework

Appendix E: Department of Parks and Recreation (DPR) Forms

List of Tables

Table 1: Studies Conducted within 0.50 Mile of the Project Area 17
Table 2: Historic Resources within 0.50 Mile of the Project Area 17

List of Exhibits

Exhibit 1: Regional Location Map 3
Exhibit 2: Local Vicinity Map, Topographic Base 7
Exhibit 3: Local Vicinity Map, Aerial Base 9

MANAGEMENT SUMMARY

At the request of the City of Tracy, First Carbon Solutions (FCS) conducted a Phase I Cultural Resources Assessment for the proposed Tracy Village Development located on 136 acres in unincorporated San Joaquin County, adjacent to the Tracy city limits. The City also seeks annexation of 42 residential lots to the north and west, fronting Corral Hollow and Valpico Roads (Exhibit 1). The proposed development project consists of a 600-unit active adult residential development featuring three man-made lakes totaling approximately 10.5 acres and a community recreation center with pool, spa, bocce courts, open space, and a community building.

The purpose of this assessment is to identify the presence or absence of potentially significant cultural resources within the project area and residential annexation area, and, if impacted by the proposed development, propose recommendations for mitigation. Completion of this investigation fulfills the requirements associated with the California Environmental Quality Act (CEQA). This report follows the California Office of Historic Preservation (OHP) procedures for cultural resource surveys and the OHP's Archaeological Resource Management Report (ARMR) format for archaeological reports.

On April 13, 2015, staff at CCIC conducted a record search that included the project area and a 0.50-mile radius beyond the project boundaries. On March 25, 2017, these results were reviewed by FCS staff and were determined to be up to date as of the time of writing. The results of the records search indicated that two known cultural resources have been recorded within the 0.50-mile search radius surrounding the development and annexation area, neither of which is located within the proposed development area. In addition, five area-specific survey reports are on file with the CCIC for the project site and its 0.50-mile search radius.

On April 22, 2015, FCS sent a letter to the Native American Heritage Commission (NAHC) in an effort to determine whether any sacred sites are listed on its Sacred Lands File for the project area. Following the addition of the proposed annexation area, FCS sent a supplementary request to the NAHC on February 25, 2017. A response was received on March 8, 2017 indicating that the Sacred Lands File failed to identify any Native American cultural resources in the immediate project area. The NAHC included a list of six tribal representatives available for consultation. To ensure that all Native American knowledge and potential prehistoric concerns about the project are addressed, a letter containing project information and requesting any additional information was sent to the six tribal representatives on March 20, 2017. No responses have been received to date.

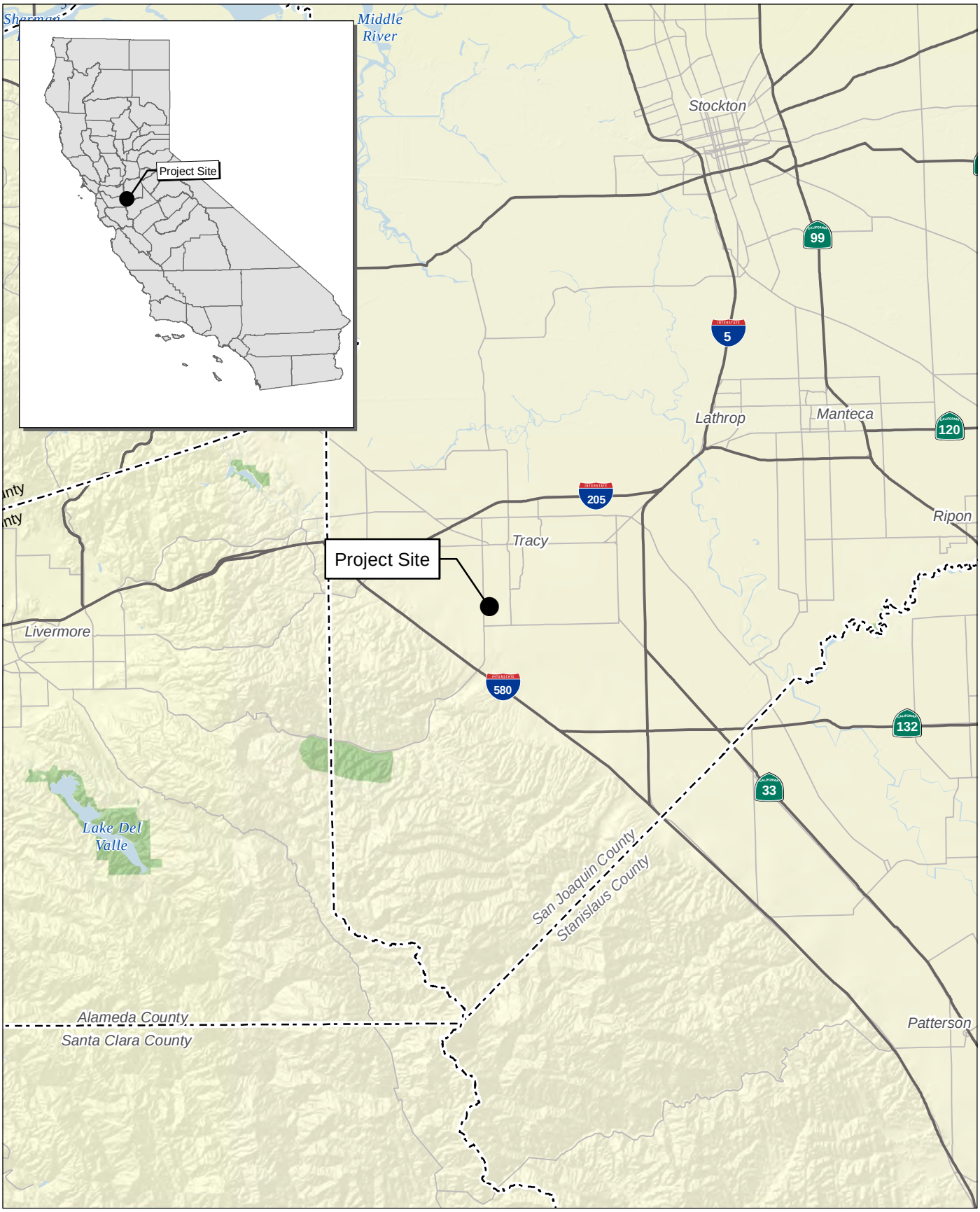
FCS Senior Archaeologist Dana DePietro, PhD, RPA, surveyed the proposed development area on May 12, 2015, and surveyed the proposed residential annexation area on March 14, 2017. The proposed development area consists entirely of plowed open agricultural land with the exception of a farm complex located at 11150 W. Valpico Road, and a residential building located at 11847 W. Valpico Road. No prehistoric resources were discovered during the survey; however, both the farm complex and the residential building were found to be over 50 years old and required evaluation as potential historic resources. The farm complex buildings and residence were evaluated by FCS

Architectural Historians Trish Fernandez and Sonia Miller for listing on the National Register of Historic Places (NR), the California Register of Historic Resources (CR), and local listings.

Results of the evaluation indicate that the residence at 11846 W. Valpico Road currently does not appear to meet any of the criteria for historic and/or architectural significance required for listing on the CR. The Linne Farm complex, located at 11150 W. Valpico Road, was found to display the level of significance necessary for listing on the CR under Criterion 2, association with individuals whose activities are demonstrably important within a local, state, or national historic context or persons. The site, however has subsequently been demolished and no longer exhibits the level of historic integrity required for listing on the CR. As such, both properties should not be considered historical resources under CEQA. Department of Parks and Recreation (DPR) forms have been prepared for both the Linne Farm complex and the residence at 11846 W. Valpico Road.

The cultural resources study conducted for the Tracy Village development area identified no archaeological or built-environment resources that meet the definition of historical resource as defined by CEQA. As a result, none of the buildings in the development area require further consideration. FCS identified an additional 13 buildings over 50 years in age within the proposed City of Tracy annexation area. FCS recommends that these buildings be evaluated for their eligibility for inclusion on the CR or local listing of historic resources prior to future projects that may subject these potential historic resources to adverse impacts.

Based on the results of the records searches, archival research, building assessments, outreach, and pedestrian survey, FCS considers the potential for the proposed Tracy Village development and residential annexation area to have an adverse effect on historic or prehistoric cultural resources to be low. Archaeological monitoring is not recommended at this time.



Source: Census 2000 Data, The CaSIL, FCS GIS 2016.

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Exhibit 1
Regional Location Map

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SECTION 1: INTRODUCTION

1.1 - Project Location

The proposed Tracy Village Specific Plan (TVSP) site is located on 136 acres in unincorporated San Joaquin County, adjacent to the Tracy city limits (Exhibit 1). The project boundaries are located on the U.S. Geological Survey (USGS) Tracy 7.5-mintue quadrangle Section 5, Township 3 South, Range 5 East of the Mt. Diablo Meridian (Exhibit 2). The project site is located on the south side of West Valpico Road, just east of Corral Hollow Road. The proposed Residential Annexation Area is located along Corral Hollow and Valpico Roads. Corral Hollow Road is the main north-south collector on the west side of the City of Tracy, and Valpico Road is an important east-west collector in the southern portion of the City of Tracy (Exhibit 3).

1.2 - Project Description

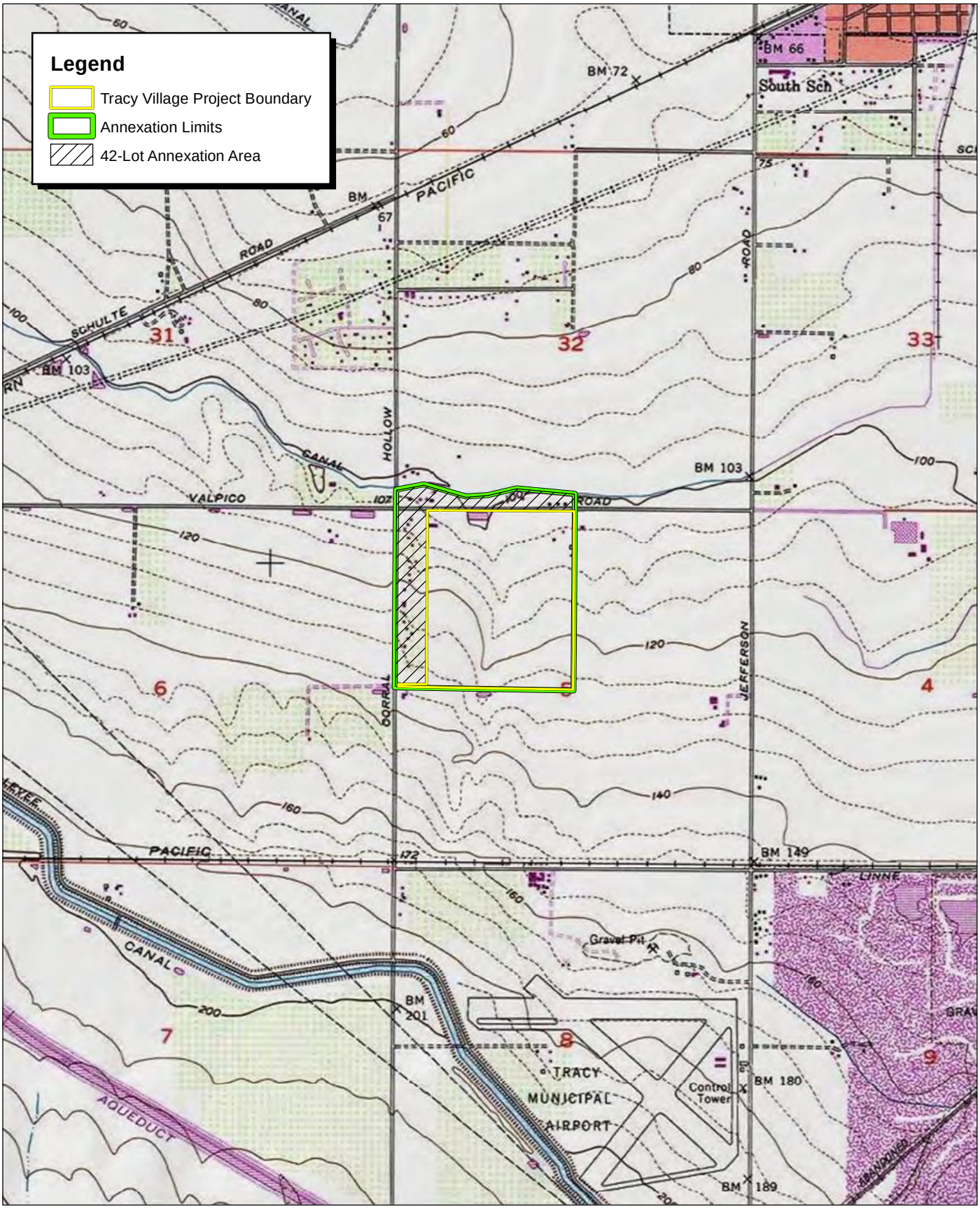
The Tracy Village Development Project (TDVP) consists of a 600-unit active adult residential development on 136 acres currently located in San Joaquin County and within the City of Tracy sphere of influence. The single-family dwelling units are proposed to range from 1,450 square feet to 3,000 square feet. The project would feature three man-made lakes totaling approximately 10.5 acres and a community recreation center with pool, spa, bocce courts, open space, and a community building. The project also includes a 3.2-acre park, a 0.5-acre secondary recreation area (containing a pool, spa and open space), and a dog park.

In addition to the annexation of the 136-acre Tracy Village Development Project site as part of the Tracy Village Specific Plan, the City also seeks annexation of 42 residential lots to the north and west, fronting Corral Hollow and Valpico Roads (Residential Annexation Area). The 42 lots that make up the Residential Annexation Area include three vacant lots and 39 single-family detached residences on lot sizes ranging from approximately 0.35 acre to 2.2 acres. All residences are currently served by private wells and septic systems, and all parcels have direct driveway access connections to either Corral Hollow Road or Valpico Road.

1.3 - Assessment Team

FCS Professional Archaeologist Dr. Dana DePietro conducted the pedestrian survey and co-authored this report. FCS Architectural Historians Trish Fernandez and Sonia Miller evaluated the buildings associated with the farm complex and the buildings in the Residential Annexation area for listing on the NR, CR, and local listings and co-authored this report. Professional qualifications for Dr. DePietro, Ms. Fernandez, and Ms. Miller can be found in Appendix C.

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Source: USGS Tracy (1981) 7.5' Quadrangle

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2,000 1,000 0 2,000 Feet

Exhibit 2
Local Vicinity Map
Topographic Base

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Source: ESRI Imagery, 2015

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1,000 500 0 1,000 Feet

Exhibit 3
Local Vicinity Map
Aerial Base

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SECTION 2: CULTURAL SETTING

Following is a brief overview of the prehistory, ethnography, and historic background, providing a context in which to understand the background and relevance of sites found in the general project area. This section is not intended to be a comprehensive review of the current resources available; rather, it serves as a general overview.

Further details can be found in ethnographic studies, mission records, and major published sources, including Beardsley (1948), Bennyhoff (1950), Fredrickson (1973 and 1974), Kroeber (1925), Chartkoff and Chartkoff (1984), and Moratto (1984).

2.1 - Prehistoric Background

The Northern San Joaquin Valley remains one of the least known ethnographic areas of California. Although little record of their culture has survived, research indicates Native Americans occupied portions of northern San Joaquin County for over 10,000 years.

Early archaeological investigations in central California were conducted at sites located in the Sacramento-San Joaquin Delta region. The first published account documents investigations in the Lodi and Stockton area (Schenck and Dawson 1929). The initial archaeological reports typically contained descriptive narratives, with more systematic approaches sponsored by Sacramento Junior College in the 1930s. At the same time, University of California at Berkeley excavated several sites in the lower Sacramento Valley and Delta region, which resulted in recognizing archaeological site patterns based on variations of inter-site assemblages. Research during the 1930s identified temporal periods in central California prehistory and provided an initial chronological sequence (Lillard and Purves 1936; Lillard, et al. 1939). In 1939, Lillard noted that each cultural period led directly to the next and that influences spread from the Delta region to other regions in central California (Lillard, et al. 1939). In the late 1940s and early 1950s, Beardsley documented similarities in artifacts among sites in the San Francisco Bay region and the Delta and refined his findings into a cultural model that ultimately became known as the Central California Taxonomic System (CCTS). This system proposed a uniform, linear sequence of cultural succession (Beardsley 1948 and 1954). The CCTS system was challenged by Gerow, whose work looked at radiocarbon dating to show that Early and Middle Horizon sites were not subsequent developments but, at least partially, contemporaneous (1954; 1974; Gerow with Force 1968).

To address some of the flaws in the CCTS system, Fredrickson (1973) introduced a revision that incorporated a system of spatial and cultural integrative units. Fredrickson separated cultural, temporal, and spatial units from each other and assigned them to six chronological periods: Paleo-Indian (10000 to 6000 B.C.); Lower, Middle and Upper Archaic (6000 B.C. to A.D. 500), and Emergent (Upper and Lower, A.D. 500 to 1800). The suggested temporal ranges are similar to earlier horizons, which are broad cultural units that can be arranged in a temporal sequence (Moratto 1984). In addition, Fredrickson defined several patterns—a general way of life shared within a specific geographical region. These patterns include:

- Windmiller Pattern or Early Horizon (3000 to 1000 B.C.)
- Berkeley Pattern or Middle Horizon (1000 B.C. to A.D. 500)
- Augustine Pattern or Late Horizon (A.D. 500 to historic period)

Brief descriptions of these temporal ranges and their unique characteristics follow.

2.1.1 - Windmiller Pattern or Early Horizon (3000 to 1000 B.C.)

Characterized by the Windmiller Pattern, the Early Horizon was centered in the Cosumnes district of the Delta and emphasized hunting rather than gathering, as evidenced by the abundance of projectile points in relation to plant processing tools. Additionally, atlatl, dart, and spear technologies typically included stemmed projectile points of slate and chert but minimal obsidian. The large variety of projectile point types and faunal remains suggests exploitation of numerous types of terrestrial and aquatic species (Bennyhoff 1950; Ragir 1972). Burials occurred in cemeteries and intra-village graves. These burials typically were ventrally extended, although some dorsal extensions are known with a westerly orientation and a high number of grave goods. Trade networks focused on acquisition of ornamental and ceremonial objects in finished form rather than on raw material. The presence of artifacts made of exotic materials such as quartz, obsidian, and shell indicates an extensive trade network that may represent the arrival of Utian populations into central California. Also indicative of this period are rectangular *Haliotis* and *Olivella* shell beads, and charmstones that usually were perforated.

2.1.2 - Berkeley Pattern or Middle Horizon (1000 B.C. to A.D. 500)

The Middle Horizon is characterized by the Berkeley Pattern, which displays considerable changes from the Early Horizon. This period exhibited a strong milling technology represented by minimally shaped cobble mortars and pestles, although metates and manos were still used. Dart and atlatl technologies during this period were characterized by non-stemmed projectile points made primarily of obsidian. Fredrickson (1973) suggests that the Berkeley Pattern marked the eastward expansion of Miwok groups from the San Francisco Bay Area. Compared with the Early Horizon, there is a higher proportion of grinding implements at this time, implying an emphasis on plant resources rather than on hunting. Typical burials occurred within the village with flexed positions, variable cardinal orientation, and some cremations. As noted by Lillard, the practice of spreading ground ochre over the burial was common at this time (Lillard, et al. 1939). Grave goods during this period are generally sparse and typically include only utilitarian items and a few ornamental objects. However, objects such as charmstones, quartz crystals, and bone whistles occasionally were present, which suggest the religious or ceremonial significance of the individual (Hughes 1994). During this period, larger populations are suggested by the number and depth of sites compared with the Windmiller Pattern. According to Fredrickson (1973), the Berkeley Pattern reflects gradual expansion or assimilation of different populations rather than sudden population replacement and a gradual shift in economic emphasis.

2.1.3 - Augustine Pattern or Late Horizon (A.D. 500 to Historic Period)

The Late Horizon is characterized by the Augustine Pattern, which represents a shift in the general subsistence pattern. Changes include the introduction of bow and arrow technology; and most

importantly, acorns became the predominant food resource. Trade systems expanded to include raw resources as well as finished products. There are more baked clay artifacts and extensive use of Haliotis ornaments of many elaborate shapes and forms. Burial patterns retained the use of flexed burials with variable orientation, but there was a reduction in the use of ochre and widespread evidence of cremation (Moratto 1984). Judging from the number and types of grave goods associated with the two types of burials, cremation seems to have been reserved for individuals of higher status, whereas other individuals were buried in flexed positions. Johnson (1976) suggests that the Augustine Pattern represents expansion of the Wintuan population from the north, which resulted in combining new traits with those established during the Berkeley Pattern.

Central California research has expanded from an emphasis on defining chronological and cultural units to a more comprehensive look at settlement and subsistence systems. This shift is illustrated by the early use of burials to identify mortuary assemblages and more recent research using osteological data to determine the health of prehistoric populations (Dickel et al. 1984). Although debate continues over a single model or sequence for central California, the general framework consisting of three temporal/cultural units is generally accepted, although the identification of regional and local variation is a major goal of current archaeological research.

2.2 - Native American Background

Prior to European-American contact, the Tracy area was inhabited by the Northern Valley Yokuts, whose range extended from the Calaveras River to the southern extent of the San Joaquin River. The Northern Valley Yokuts were one of three major subgroups that occupied much of the San Joaquin Valley: the Northern Valley, the Foothill, and the Southern Valley Yokuts. Each of these ethnolinguistic groups was composed of autonomous, culturally and linguistically related tribes or tribelets. Ethnographic evidence suggests the project area was part of the Northern Valley Yokuts territory.

The Northern Valley Yokuts, who lived along the San Joaquin River and its tributaries and within the vicinity of the project area, are one of the least known of the California Indian groups. This is due to the almost complete destruction of their tribal life in the early 19th century. What can be gleaned from the diaries and reports of Spanish soldiers and priests is that fish, waterfowl, and acorns were important food resources for the Northern Valley Yokuts. The local rivers and their tule marshes contained salmon, sturgeon, perch, suckers, and pike, which were caught using nets, weighted with stone sinkers and bone harpoons. Waterfowl, such as geese, ducks, and other aquatic birds, were abundant in the marshes and probably played a major role in the Northern Valley Yokuts subsistence base (Wallace 1978). Dogs were domesticated and may have been raised for food, a taboo to some tribes but not the Yokuts (Wallace 1978; Kroeber 1925). Wild plant resources, especially acorns, were of prime importance and in a good year, a valley oak could produce 300 to 500 pounds of acorns, which were then ground into meal and cooked into porridge. Tule reed roots were likewise gathered and ground into meal that was traditionally served as porridge (Wallace 1978).

Stone mortars and pestles, milling stones, hammers, choppers, and projectile points were manufactured from local rock sources. Notably, although obsidian was imported into the area, it was used infrequently for tools or weapons. Bone tools, particularly awls, were used in basket manufacture (Wallace 1978). Most villages were built near rivers on elevated land to avoid flooding

during heavy rains or spring runoff from the Sierras. Archaeological excavations in Merced and Fresno counties indicate that houses were single-family dwellings, probably made with an oval framework of lightweight poles covered by mats of tule reeds. Hard-packed earthen floors 25 to 40 feet in diameter were constructed several feet below ground level. Communities typically contained a sweathouse and sometimes a large ceremonial structure. The size of the Yokuts communities is uncertain, but estimates indicate that the principal settlements contained 200–250 inhabitants (Wallace 1978).

Several northern Yokut tribelets lived near what is now Tracy: including the Chulamni to the north, and the Hoyima to the southeast. The Chulamni tribelet built their villages near Tracy, along the banks of the Old River and San Joaquin River, and along creeks in the Diablo Range. The largest Chulamni village site near Tracy was named "Pescadero" by the Spanish during one of their first expeditions in 1810 and 1811.

Contact with Europeans was particularly devastating for the Northern Valley Yokuts. This group was adversely impacted by missionization in the early 1800s, European diseases, and the influx of miners and settlers as a result of the 1849 Gold Rush (Wallace 1978). Kroeber observed that their habitat in the open river valley left them especially vulnerable, compared to mountain dwellers, to "the full brunt of civilization" (Kroeber 1925).

Contact with the Spanish commenced early in the 19th century and normally consisted of sporadic visits by small exploration parties. However, between 1805 and the 1820s, Franciscan priests from the coastal missions began recruiting converts from further inland, and a large portion of the Yokuts population was taken to various missions in San Jose, Santa Clara, Soledad, San Juan Bautista, and San Antonio. Many neophytes deserted and returned to their homes, but were sought and brought back by Spanish soldiers. A decade after the Mexican government claimed independence from Spain in 1822, the missions were converted into parish churches, and many Native Americans were released and returned to their former territory, though not necessarily to the specific location from which they came.

After the American conquest of California in 1846, the remaining Northern Valley Yokuts were driven off their land by miners heading south, farmers pursuing the locally rich soil, and the construction of various railroads. By the time scholars were interested in gathering information on California native groups, there were few people left to provide descriptions of native life before European contact (Wallace 1978).

2.3 - Historic Background

The history of the southern San Joaquin Valley can be divided into several periods of influence; pertinent historic periods are briefly summarized below.

2.3.1 - Spanish Period

In 1772, Captain Pedro Fages, a Spanish soldier, entered the San Joaquin Valley area searching for military deserters. His diary was one among many that documented the environmental landscape and the cultural setting of the San Joaquin Valley. Fages entered the area from the south, and as he

emerged from the lower portion of Tejon Pass, he saw the beautiful lakes, rivers, and plains and named the most prominent lake Buena Vista (beautiful view). In 1776, Padre Francisco Garces, traveled through the San Joaquin Valley in hopes of discovering a more direct route to Monterey.

The most drastic and permanent change to the local Northern Valley Yokuts way of life was the establishment of the Spanish Mission system. By the early 1800s, the mission fathers began a process of cultural change that brought the majority of the local Native Americans into the missions. At the expense of traditional skills, the Native Americans were taught the pastoral and horticultural skills of the Hispanic tradition. Spanish missionaries traveled into the San Joaquin Valley to recapture escaped neophytes and recruit inland Native Americans for the coastal missions. In 1834, the Mission system was officially secularized, and the majority of the mission Native American population dispersed to local ranches, villages, or nearby pueblos. Following the collapse of the mission system, many of the local Native Americans returned to the San Joaquin Valley, bringing with them language and agricultural practices learned from the Spanish. During the second half of the 19th century, the size of all Yokuts populations dwindled dramatically due to the spread of European settlements and the diseases the Europeans brought with them (Kroeber 1925; Wallace 1978).

2.3.2 - Mexican Period

With the declaration of Mexican independence in 1821, Spanish control of Alta California ended, although little change actually occurred. Political change did not take place until mission secularization in 1834, when Native Americans were released from missionary control and the mission lands were granted to private individuals. Shoup and Milliken (1999) state that mission secularization removed the social protection and support on which Native Americans had come to rely. It exposed them to further exploitation by outside interests, often forcing them into a marginal existence as laborers for large ranchos. Following mission secularization, the Mexican population grew as the Native American population continued to decline. Euro-American settlers began to arrive in California during this period and often married into Mexican families, becoming Mexican citizens, which made them eligible to receive land grants. In 1846, on the eve of the U.S.-Mexican War (1846 to 1848), the estimated population of California was 8,000 non-natives and 10,000 Native Americans. However, these estimates have been debated. Cook (1976) suggests the Native American population was 100,000 in 1850; the U.S. Census of 1880 reports the Native American population as 20,385.

2.3.3 - American Expansion

In 1826, Jedediah Smith was among the first trappers to explore the San Joaquin Valley, but other fur-trapping expeditions soon followed. In 1848, as a result of the Treaty of Guadalupe Hidalgo, California became a United States territory. Also in 1848, John Marshall found gold at Sutter's Mill, which marked the start of the Gold Rush. The influx of miners and entrepreneurs increased the population of California, not including Native Californians, from 14,000 to 224,000 in just four years. This, in turn, stimulated commercial growth in the San Joaquin Valley as eager entrepreneurs set up business to support the miners and mining operations. When the Gold Rush was over, many of the miners settled in the San Joaquin Valley and established farms, ranches, and lumber mills.

2.3.4 - The City of Tracy

Permanent settlement within what is now the city limits of Tracy began with the construction of the Central Pacific Railroad through the Altamont Pass in 1869. Southern Pacific laid a second rail line to the north in 1878, connecting San Joaquin County with Martinez. In 1887, a third line was extended south from the junction of these two railways, connecting the San Francisco Bay Area with Los Angeles. This strategic location led to early prosperity in the area as a commercial and service center. The "Town of Tracy" was incorporated in 1910, and was named after Lathrop J. Tracy, an Ohio railroad man and grain merchant.

Since then, Tracy has continued to grow, particularly over the past 50 years. The establishment of the Tracy Defense Depot during World War II created thousands of jobs and brought new residents to the area. Following the war, the City continued to be a hub for major agricultural industries as well as large shipping and distribution facilities thanks to its proximity to several major interstates and relatively inexpensive land. Indeed, Tracy is bordered by Interstate 205, Interstate 5, and Interstate 580 giving rise to Tracy's business-oriented motto "Think Inside the Triangle."

Today, Tracy is the second most populated city in San Joaquin County, with a population of over 83,000. High home values in the San Francisco Bay Area continue to draw new residents who attracted by the City's affordable housing, historic agricultural setting and many public amenities.

SECTION 3: RESULTS

3.1 - Records Search

3.1.1 - Central California Information Center Records Search

On April 13, 2015, staff at the Central California Information Center (CCIC) in Turlock, California conducted a record search that included the project area and a 0.50-mile radius beyond the project boundaries. To identify any historic properties or resources, the current inventories of the NR, the CR, the California Historical Landmarks (CHL) list, the California Points of Historical Interest (CPHI) list, and the California State Historic Resources Inventory (HRI) for San Joaquin County were reviewed to determine the existence of previously documented local historical resources. On March 25, 2017, these results were reviewed by FCS staff and were determined to be up to date as of the time of writing.

The results of the records search indicated that two known cultural resources (see Table 3.5-1) have been recorded within the 0.50-mile search radius surrounding the development and annexation area, neither of which is located within the proposed development area. In addition, five area-specific survey reports (see Table 3.5-2) are on file with the CCIC for the project site and its 0.50-mile search radius. Of the five reports, only one assessed the location but was limited to Valpico Road running along the site's northern boundary. This survey was extremely limited and the vast majority of the project site has not been surveyed for cultural resources. The records search did not reveal any historic structures within a 0.5-mile radius of the project site for the San Joaquin County HRI, NR, CR, CHL, and/or CHPI inventories that may be eligible for or listed in the National Register.

Table 1: Studies Conducted within 0.50 Mile of the Project Area

Report Number	Additional Details
SJ-01562	Napton; 1992—did not address project site
SJ-02190	Foster and Foster; 1993—did not address project site
SJ-02759	Hatoff et al. ; 1995—did not address project site
SJ-02930	Jensen; 1996—did not address project site
SJ-06625	**ASI Archaeology and Cultural Resource Management; 1998—Addressed the northern edge of the project site along Valpico road.**

Table 2: Historic Resources within 0.50 Mile of the Project Area

Site Number	Distance from the Project	Resource Description
P-39-000001	25 feet south	Isolated chert core
P-39-000104	200 feet north	Point segment, Upper Main Canal

3.1.2 - Native American Heritage Commission Record Search

On April 22, 2015, FCS sent a letter to the NAHC in an effort to determine whether any sacred sites are listed on its Sacred Lands File for the TVDP site. A second request was sent on July 29, 2015. A response was received on August 4, 2015 indicating that the Sacred Lands File failed to identify the presence of Native American cultural resources in the immediate TVDP area. The NAHC provided a list that contained contact information for a single tribal representative who may be available for consultation. To ensure that all Native American knowledge and potential prehistoric concerns about the project are addressed, a letter containing project information and requesting any additional information was sent to the tribal representative on August 4, 2015. No response has been received to date.

FCS sent a supplementary request to the NAHC on February 25, 2017 in order to determine whether any sacred sites are listed on its Sacred Lands File for the Residential Annexation Area. A response was received on March 8, 2017 indicating that the Sacred Lands File failed to identify any Native American cultural resources in the immediate project area. The NAHC included a list of six tribal representatives available for consultation. To ensure that all Native American knowledge and potential prehistoric concerns about the project are addressed, a letter containing project information and requesting any additional information was sent to the six tribal representatives on March 20, 2017. No responses have been received to date. Correspondence related to the NAHC letters and tribal representatives may be found in Appendix B.

3.2 - Pedestrian Surveys

On May 12, 2015, FCS senior archaeologist Dana DePietro, PhD, RPA completed a pedestrian survey of the TVDP project site. The site consists of 136 acres bordered by West Valpico Road in the north, and by suburban developments along its eastern, southern and western boundaries. At the time of the survey, a farm complex, dating to approximately 1916 and some 3.3 acres in area, lay in the far northeast corner of the project site at 11150 W. Valpico Road (Appendix A: Photograph 1). This complex consisted of approximately nine buildings including a main residence, workshop, twin garages, three barns, an animal enclosure and a unique double pumping house. As these buildings had not been surveyed and did not appear on any federal, state or county register of historic places, each of the buildings and associated features were photographed and documented in detail (Appendix A: Photographs 2–18). Further details and the results of this architectural survey may be found in the attached DPR forms.

After completing a careful analysis of the farm complex in the northeast corner of the project site, the survey turned south, following the sites eastern border and using standard 15-meter transects to insure adequate coverage (Appendix A: Photograph 19). The site appeared recently plowed, and soil visibility was good, ranging from 80 to 90 percent across the entire site. Soils consisted of medium brown loam interspersed with a great many stones, some river worn, ranging from 10 to 25 centimeters in diameter (Appendix A: Photograph 20). The stones appeared to be primarily composed of schist and Franciscan chert, and decreased in concentration as our north-south transects moved westward across the site (Appendix A: Photograph 21). The frequency and smoothness may indicate an ancient waterway once ran close to the eastern edge of the project site.

No prehistoric or historic material culture was observed at any point during the survey outside of the aforementioned farm complex aside from a large earthwork water reservoir on the northern edge of the site (Appendix A: Photographs 22 and 23). Historic aerial photos indicate this feature is contemporary with the construction and use of the farming complex, but in and of itself, the feature does not qualify as a significant cultural resource under CEQA. The survey terminated in the far southwest corner of the project site with no additional developments or observations (Appendix A: Photographs 24–26).

Dr. DePietro returned to the site on March 14, 2017 to conduct a programmatic-level pedestrian survey of the Residential Annexation Area for additional cultural resources. Survey conditions were documented using digital photographs and field notes. While many of the individual properties comprising the annexation area were inaccessible, Dr. DePietro examined all surrounding areas of the exposed ground surface for prehistoric artifacts (e.g., fire-affected rock, milling tools, flaked stone tools, tool-making debris, ceramics), soil discoloration and depressions that might indicate the presence of a cultural midden, faunal and human osteological remains, and features indicative of the former presence of structures or buildings (e.g., postholes, standing exterior walls, foundations) or historic debris (e.g., glass, metal, ceramics). No additional prehistoric cultural resources or raw materials commonly used in the manufacture of tools were found within the project site.

In addition to the previously mentioned farm complex, 11 residential buildings located at 11241, 11299, 11423, 11461, 11505, 11818, 11851, 11847, 11899, 11929, and 11941 W. Valpico Road and three residential buildings located at 27310, 27350, and 27510 Coral Hollow Road were found to have been built prior to 1967 and are thus over 50 years old. Of the buildings, only the Linne Farm complex at 11150 W. Valpico Road and one residential building at W. 11847 Valpico Road are slated for demolition by the proposed project. As such, the two properties require evaluation as potential historic properties eligible for inclusion in the California Register of Historical Resources.

3.3 - Historic Resources Evaluation

3.3.1 - The California Register Criteria for Evaluation

The California Register of Historical Resources (CR) is the official list of properties, structures, districts, and objects significant at the local, state, or national level. CR properties must have significance under one of the four following criteria and must retain enough of their historic character or appearance to be recognizable as historical resources and convey the reasons for their significance (e.g., retain integrity). The CR utilizes the same seven aspects of integrity as the National Register. Properties that are eligible for the National Register are automatically eligible for the CR. Properties that do not meet the threshold for the National Register may meet the CR criteria.

1. Associated with events that have made a significant contribution to broad patterns of local or regional history, or cultural heritage of California or the United States;
2. Associated with the lives of persons important to the local, California or national history
3. Embodies the distinctive characteristics of a design-type, period, region, or method of construction, or represents the work of a master, or possesses high artistic value; or

4. Yields important information about prehistory or history of the local area, California, or the nation.

CR criteria are similar to NR criteria and are tied to CEQA, so any resource that meets the above criteria, and retains a sufficient level of historic integrity, is considered a historical resource under CEQA.

Integrity

A resource may be considered individually eligible for listing in the NR/CR if it meets one or more of the above listed criteria for significance and it possesses historic integrity. Historic properties must retain sufficient historic integrity to convey their significance. The NR/CR recognizes seven aspects or qualities that define historic integrity:

- **Location.** The place where the historic property was constructed or the place where the historic event occurred.
- D**esign.** The combination of elements that create the form, plan, space, structure, and style of a property.
- **Se**tt**ing.** The physical environment of a historic property.
- **Materials.** The physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property.
- **Workmanship.** The physical evidence of the crafts of a particular culture or people during any given period in history or prehistory.
- **Feeling.** A property's expression of the aesthetic or historic sense of a particular period of time.
- **Association.** The direct link between an important historic event or person and a historic property.

To retain historic integrity, a resource should possess several of the above-mentioned aspects. The retention of specific aspects of integrity is essential for a resource to convey its significance. Comparisons with similar properties should also be considered when evaluating integrity as it may be important in deciding what physical features are essential to reflect the significance of a historic context.

3.3.2 - California Register Eligibility

This section uses the historic information discussed above to evaluate the buildings that form the farm complex at 11150 W. Valpico Road, and the residential building at 11846 Valpico Road for historic significance. The CR uses generally the same guidelines as the NR; as such, selected language from those guidelines will be quoted below to help clarify the evaluation discussion.

To be potentially eligible for individual listing on the CR, a structure must usually be more than 50 years old, must have historic significance, and must retain its physical integrity. The Linne Farm was

constructed in 1907 and the residence at 11846 W. Valpico Road was built prior to 1967. Both properties therefore meet the age requirement.

Criterion 1 (event)

Criterion 1 "recognizes properties associated with single events, such as the founding of a town, or with a pattern of events, repeated activities, or historic trends, such as the gradual rise of a port city's prominence in trade and commerce." When considering a property for significance under this criterion, the associated event or trends "must clearly be important within the associated context: settlement, in the case of the town, or development of a maritime economy, in the case of the port city. Moreover, the property must have an important association with the event or historic trends"

The Farm Complex at 11150 W. Valpico Road

The property at 11150 W. Valpico Road was purchased in 1905 and the residence and associated buildings were constructed in 1907. Though the Linne Farm was built during a time of local expansion leading up to the incorporation of the City of Tracy, research does not show that the farm itself is exceptionally significant for its individual role in that process. As such, the farm does not appear to exhibit a level of significance that would warrant listing at the state level under this criterion.

The Residence at 11846 W. Valpico Road

The residence at 11846 W. Valpico Road is one of the first houses to have been built in this agricultural, residential area of Valpico in the late 1950s and early 1960s. The planning record shows that most of the residential structures at the crossroad of Valpico Road with Corral Road were built between 1963 and 1969. The subject property is part of the process of urbanization of this rural area but does not meet Criterion 1, as it is an example of many similar residential buildings built during this time in the Tracy and San Joaquin area.

Criterion 2 (person)

This criterion applies to properties associated with individuals whose specific contributions to history can be identified and documented. The NPS defines significant persons as "individuals whose activities are demonstrably important within a local, state, or national historic context. The criterion is generally restricted to those properties that illustrate (rather than commemorate) a person's important achievements. The persons associated with the property must be individually significant within a historic context." The NPS also specifies that these properties "are usually those associated with a person's productive life, reflecting the time period when he or she achieved significance."

The Farm Complex at 11150 W. Valpico Road

The property at 11150 W. Valpico Road was once part of a successful farm operated by Henry A. and Arthur H. Linne, prominent Tracy and San Joaquin County farmers and citizens. It was also where Arthur H. Linne made his home. The brothers initially grew grain and expanded to include fruit-bearing trees and alfalfa in 1923. Both brothers were involved in civic activities including the establishment of the first irrigation district in the region, the West Side Irrigation District, which began operation in 1918 and is still in operation today. The brothers were also among the original founders of the West Side Bank, the building for which is located at 47 West 6th Street, Tracy (NR Listing No.

78000765). In 1936, Arthur H. Linne appears to have transferred the operation of the farm to his son, Arthur H. Linne, Jr. After the senior Arthur died in 1961, the family dispersed the farm property and the remainder of its holdings located in Township 3 South, Range 5 East, Section 5. Both Arthur and Henry Linne made significant civic contributions to the development of Tracy and the farming community because of their success as grain farmers on this property. The Linne Farm therefore appears eligible for listing on the CR as a significant resource under this criterion.

The Residence at 11846 W. Valpico Road

The residence at 11846 W. Valpico Road is associated with Arthur Frydendahl, who inhabited it with his wife, Wilma Linne, until his death in 1997. Mrs. Frydendahl (Arthur's wife) was a historic preservation officer, and the published records of 1971 and 1972 show that the couple was involved with the local Historical Society (e.g., the San Joaquin Historian, published quarterly by the San Joaquin County Historical Society). These individuals appear in the published accounts of San Joaquin County history; however, they do not appear to have achieved a level of historic importance that merits eligibility for listing on the CR as a significant resource under this criterion.

Criterion 3 (design/construction)

Under this criterion, properties may be eligible if they "embody the distinctive characteristics of a type, period, or method of construction . . . represent the work of a master . . . possess high artistic values, or . . . represent a significant and distinguishable entity whose components may lack individual distinction."

The Farm Complex at 11150 W. Valpico Road

The buildings and structures at 11150 W. Valpico Road have been subject to minor and reversible alterations within the property's period of significance, which spans the time-period the property was owned and operated by the Linne family (1905–1965). The farm and its surrounding acreage retain integrity of location, design, setting, materials, workmanship, feeling and association of their historic context. The buildings themselves, however, are not distinctive examples of a type, period or method of construction, nor do they possess high artistic values or represent the work of a master. For these reasons, the Linne Farm does not appear eligible for listing on the CR as a significant resource under this criterion.

The Residence at 11846 W. Valpico Road

The residence at 11846 W. Valpico Road portrays many characteristics of the California ranch house, a type popular in the postwar period from the 1940s to the end of the 1960s. It is a style evolved from a combination of "Prairie" and "Craftsman" style architecture. The Craftsman style contributed to the typology of the ranch house with simple exterior ornamentation and low-pitched gable roofs, while the Prairie style exhibited wide overhangs, an asymmetrical orientation of the floor plan, and horizontality of the façade that favored an overall lowness to the ground of the building (Gelernter 1999). The typology of the ranch house centers on the overall convenience and realism of the open floor plan, materials, and window arrangement. This new style became popular during the post-war housing crisis because it offered an economical alternative to traditional construction for the simpler and more versatile floor plan, use of prefabricated wall units, standardized wood framed windows, and sliding glass doors (Lindenfeld Hall 2007). Like the prairie house (also known as Usonian House),

the ranch house could be easily mass-produced because it could be assembled with relative ease and featured minimal exterior decorations. The ranch house traditionally features a long horizontal façade further elongated by the addition of a garage or carport, typically oriented with its long side facing the street (Bastian, et al., 1989). Ranch houses were also built on large lots and reflected the beginning of the suburban expansion following the increasing use of the automobile in the postwar period.

The house at 11846 W. Valpico Road was built by local contractor Franklyn E. Cole, known to have progressed from cabinetmaking to custom home building. As such, it could be significant as being representative of the regional variation of the Californian Ranch House, evolved from the combination of the Prairie house and the Craftsman style. The building exemplifies typical elements of the style such as an open floor plan, building horizontality, attached garage, low-pitched roof, multiple roof planes, wider eaves, shedding of exterior details, and frontal orientation with respect to the street. It has also, however, been renovated with major modifications made to the original design of the garage, as well as undergone a complete replacement of the original roof with composite roofing, and the replacement of the original windows with units of similar design in metal and vinyl. As such, the building does not appear eligible for listing on the CR under Criteria 3.

Criterion 4 (Information Potential)

Under this criterion, properties may be eligible if they "yield important information about prehistory or history of the local area, California, or the nation."

The Farm Complex at 11150 W. Valpico Road

Information Potential is most often used to evaluate archaeological sites or buildings that employ unusual building techniques. A search of the current inventories of the NR, the CR, the CHL list, the CPHI list, and the HRI for San Joaquin County did not reveal the existence of previously documented local historical resources. Similarly, records search requests submitted to the NAHC and CCIC failed to reveal the presence of historic or prehistoric resources within the project boundaries. A pedestrian survey of the project area conducted May 12, 2015 also did not reveal previously undocumented historic or prehistoric cultural resources, with the exception of the previously mentioned Linne Farm complex. It therefore appears that the project area is unlikely to yield additional important information about prehistory or history of the local area, California, or the nation. For this reason, the Linne Farm does not appear eligible for listing on the CR as a significant resource under this criterion.

The Residence at 11846 W. Valpico Road

Information Potential is most often used to evaluate archaeological sites or buildings that employ unusual building techniques. Similar to the Linne Farm complex, there is no evidence that the property in question exhibits any unusual construction features, or has the ability to contribute significant information to the overall history of San Joaquin County, or the nation. For these reasons, the Linne Farm does not appear eligible for listing on the CR as a significant resource under this criterion.

3.3.3 - Historic Integrity

Evaluation of potential historic resources is a two-part process. A property must meet one or more of the criteria for significance, and possesses historic integrity. The residence at 11846 W. Valpico Road currently does not appear to meet any of the criteria for historic and/or architectural significance required for listing on the CR. No analysis of integrity is required when the property fails to meet all four criteria.

The Linne Farm complex, located at 11150 W. Valpico Road, was found to display the level of significance necessary for listing on the CR under Criterion 2, association with individuals whose activities are demonstrably important within a local, state, or national historic context or persons. Therefore, a thorough evaluation of the building's historic integrity was conducted by FCS architectural historian Trish Fernandez on April 6, 2015. The initial evaluation concluded that the farm complex and its surrounding acreage retained all seven criteria for historic integrity: integrity of location, design, setting, materials, workmanship, feeling, and association. Additional information may be found in the attached DPR and BSO forms that document the farm complex in detail.

In addition to exhibiting a level of significance warranted for listing on the NR or the CR, local criteria often present a broader range of options to allow for recognition of notable properties at the local level. Within its General Plan, the City of Tracy has established a set of goals and policies for the identification and preservation of cultural and historic resources (see Appendix C, Regulatory Framework).

The Linne Farm complex was evaluated under three City of Tracy General Plan policies:

- **CC-3.1, P1:** The City shall encourage the preservation, enhancement and conservation of historic and older neighborhoods, such as Lincoln Park, through its direct actions.
- **CC-3.1, P2:** Identified cultural and historic landmarks and buildings shall be preserved.
- **CC-3.1. P3:** New development, redevelopment, alterations and remodeling projects should be sensitive to surrounding historic context.

While the initial assessment of the Linne Farm was found to meet the criteria for CR eligibility and historic integrity, a subsequent visit to the site on March 14, 2017 revealed that all buildings and structures associated with the site had been demolished during the intervening period. The site therefore no longer exhibits any attributes relating to the criterion for historic integrity.

3.3.4 - Historic Resource Conclusions

The residence at 11846 W. Valpico Road currently does not appear to meet any of the criteria for historic and/or architectural significance required for listing on the CR. As such, it should not be considered a historical resource under CEQA. Moreover, it does not appear to possess sufficient artistic merit or historical association to meet a local standard or historical importance. The residence does not contribute to the general character of the neighborhood through a unified historical period or architectural theme and thus cannot be considered a contributing structure to a potential historic district. No analysis of integrity is required where the property fails to meet all four criteria.

The Linne Farm complex, located at 11150 W. Valpico Road, was found to display the level of significance necessary for listing on the CR under Criterion 2, association with individuals whose activities are demonstrably important within a local, state, or national historic context or persons. An initial evaluation of the buildings conducted in May of 2015 concluded that the farm complex and its surrounding acreage retained all seven criteria for historic integrity: integrity of location, design, setting, materials, workmanship, feeling and association. A subsequent visit to the site on March 14, 2017, however, revealed that all buildings and structures associated with the site had been demolished by the project proponent at some point during the intervening period. The site therefore no longer exhibits a level of historic integrity required for listing on the CR. As such, it should not be considered a historical resource under CEQA.

DPR forms prepared for both the Linne Farm complex and the residence at 11846 W. Valpico Road are provided in Appendix D.

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SECTION 4: SUMMARY AND RECOMMENDATIONS

4.1 - Summary

In accordance with CEQA regulations, FCS assessed the effects of development for the proposed Tracy Village Development Project site, and the proposed City of Tracy Residential Annexation Area. Results from the NWIC indicate that two known cultural resources are on file with the NWIC for the 0.5-mile search radius, neither of which is located within the project site. In addition, five area-specific survey reports are on file with the NWIC for the search radius. Only one of the previous surveys assessed a portion of the project location, suggesting the Project Area has largely not been surveyed for cultural resources.

The results of the two field surveys conducted by FCS on May 12, 2015 and March 14, 2017 were negative for prehistoric resources. The results of the NAHC Sacred Lands file search failed to identify any Tribal Cultural Resources that may be adversely affected by the proposed project or annexation, nor were any identified through consequent outreach to tribal representatives.

Twelve properties located within the City of Tracy Residential Annexation Area at 11150, 11241, 11299, 11423, 11461, 11505, 11818, 11851, 11847, 11899, 11929, and 11941 W. Valpico Road and three properties located at 27310, 27350, and 27510 Coral Hollow Road were found to have been built prior to 1967 and are thus over 50 years old. Of the properties, only the Linne Farm complex at 11150 W. Valpico Road and one residential building at W. 11847 Valpico Road are within the proposed Tracy Village development and are slated for demolition. Both therefore required an assessment of their historic significance and eligibility for listing on the CR, and were evaluated by FCS architectural historians Trish Fernandez and Sonia Miller, who conducted additional archival research to assess each property's significance under the CR's four eligibility criteria. Neither of the properties were found to be eligible for the CR, and all evaluations were recorded on DPR Primary forms.

4.2 - Recommendations

4.2.1 - Cultural Resources Recommendations

The cultural resources study conducted for the Tracy Village Development Project Area identified no built-environment resources that meet the definition of historical resource as defined by CEQA. As a result, none of the buildings in the Project Area require further consideration. FCS identified an additional 13 buildings over 50 years in age within the proposed City of Tracy Residential Annexation Area. It is the recommendation of FCS that these buildings be evaluated for their eligibility for inclusion on the CR or local listing of historic resources prior to future projects that may subject these potential historic resources to adverse impacts.

Based on the results of the records searches, archival research, building assessments, outreach and pedestrian survey, FCS considers the potential for the proposed development and annexation area to have an adverse effect on historic or prehistoric cultural resources to be low. Archaeological

monitoring is not recommended at this time, and procedures for inadvertent discoveries of human remains and cultural resources are provided below.

4.3 - Inadvertent Discovery Procedures

4.3.1 - Accidental Discovery of Human Remains

There is always the possibility that ground-disturbing activities during construction may uncover previously unknown buried human remains. Should this occur, Section 7050.5 of the California Health and Safety Code applies, and the following procedures shall be followed.

In the event of an accidental discovery or recognition of any human remains, Public Resource Code (PRC) Section 5097.98 must be followed. In this instance, once project-related earthmoving begins and if there is accidental discovery or recognition of any human remains, the following steps shall be taken:

1. There shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until the County Coroner is contacted to determine if the remains are Native American and if an investigation of the cause of death is required. If the coroner determines the remains to be Native American, the coroner shall contact the NAHC within 24 hours, and the NAHC shall identify the person or persons it believes to be the "most likely descendant" of the deceased Native American. The most likely descendant may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in PRC Section 5097.98, or
2. Where the following conditions occur, the landowner or his/her authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity either in accordance with the recommendations of the most likely descendent or on the project area in a location not subject to further subsurface disturbance:
   - The NAHC is unable to identify a most likely descendent or the most likely descendent failed to make a recommendation within 48 hours after being notified by the commission;
   - The descendent identified fails to make a recommendation; or
   - The landowner or his authorized representative rejects the recommendation of the descendent, and the mediation by the NAHC fails to provide measures acceptable to the landowner.

4.3.2 - Accidental Discovery of Cultural Resources

It is always possible that ground-disturbing activities during construction may uncover previously unknown, buried cultural resources. In the event that buried cultural resources are discovered during construction, operations shall stop in the immediate vicinity of the find and a qualified archaeologist shall be consulted to determine whether the resource requires further study. The qualified archeologist and shall make recommendations to the Lead Agency on the measures that shall be implemented to protect the discovered resources, including but not limited to excavation of

the finds and evaluation of the finds in accordance with Section15064.5 of the CEQA Guidelines. Potentially significant cultural resources consist of, but are not limited to, stone, bone, fossils, wood, or shell artifacts or features, including hearths, structural remains, or historic dumpsites. Any previously undiscovered resources found during construction within the project area should be recorded on appropriate DPR forms and evaluated for significance in terms of CEQA criteria

If the resources are determined to be unique historic resources as defined under Section 15064.5 of the CEQA Guidelines, mitigation measures shall be identified by the monitor and recommended to the Lead Agency. Appropriate mitigation measures for significant resources could include avoidance or capping, incorporation of the site in green space, parks, or open space, or data recovery excavations of the finds.

No further grading shall occur in the area of the discovery until the Lead Agency approves the measures to protect these resources. Any archaeological artifacts recovered as a result of mitigation shall be donated to a qualified scientific institution approved by the Lead Agency where they would be afforded long-term preservation to allow future scientific study.

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Appendix A:
Project Area Photographs

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Photograph 1: Overview of farm complex; facing south



Photograph 2: Typical soil composition and visibility (DELETE)



Photograph 3: Remains of concrete pipe, facing north



Photograph 4: View of historic speed limit sign; facing northwest



Photograph 5: View of residence; facing east



Photograph 6: View or residence; facing north



Photograph 7: Detail of residence and construction; facing northwest



Photograph 8: View of northern garage; facing east



Photograph 9: View of residence; facing south



Photograph 10: View of shed; facing southwest



Photograph 11: View of big barn; facing northeast



Photograph 12: View of small barn, facing northwest



Photograph 13: View residence and north and south garages; facing west



Photograph 14: View of double pump house; facing south



Photograph 15: View of animal pens and coops, facing south



Photograph 16: View of medium barn; facing north



Photograph 17: overview panorama showing relationship between buildings



Photograph 18: View of double pump house; facing east



Photograph 19: View of farm complex; facing north



Photograph 20: View of candidate from northeast corner; facing south



Photograph 21: Typical soil composition and visibility in the candidate area



Photograph 22: View of candidate from southern boundary; facing north



Photograph 23: View of earthwork water reservoir; facing northwest



Photograph 24: View of earthwork water reservoir; facing northeast



Photograph 25: View of candidate from southwest corner; facing northeast



Photograph 26: View of candidate from southwest corner; facing east



Photograph 27: View of candidate from southwest corner; facing north

Appendix B:
Native American Heritage Commission
Sacred Lands File Search Request and Results

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Sacred Lands File & Native American Contacts List Request

NATIVE AMERICAN HERITAGE COMMISSION
915 Capitol Mall, RM 364
Sacramento, CA 95814
(916) 653-4082
(916) 657-5390 – Fax
nahc@pacbell.net

Information Below is Required for a Sacred Lands File Search

Date: April 22, 2015

Project: Tracy Lakes Development Project, Project PN 1726.0008

County: San Joaquin County

USGS Quadrangle Name: Tracy

T/S/R: T.2S, R.5E, Sections 31 and 32, and T.3S, R.5E, Sections 5 and 6

Company/Firm/Agency: FirstCarbon Solutions/Michael Brandman Associates

Contact Person: Carrie D. Wills M.A., RPA or Cher L. Peterson, B.A.

Street Address: 1350 Treat Blvd. Ste. 380, Walnut Creek, CA 94597

Cell 925.788.9097 Preferred number as I'm in the field so often!

Office Phone: 925.357.2562

Fax: 925.357.2572 Please note this is our new FAX number

Email: cwills@fcs-intl.com or cpeterson@fcs-intl.com Please note this is our new email addresses

The project is a development project comprising an approximately 134 acre parcel, which is currently agricultural land.

STATE OF CALIFORNIA Edmund G. Brown, Jr., Governor

NATIVE AMERICAN HERITAGE COMMISSION
915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-6251
Fax (916) 657-5390

August 4, 2015

Carrie Wills
First Carbon Solutions/Micha Brandman Assoc

VIA ~~FAX~~: ~~925-357-2572~~ CARRieW@Helixepi.com
Number of Pages: 2

Re: Tracy Lakes Development project, San Joaquin County

Dear Ms. Wills:

A search of the Native American Heritage Commission (NAHC) *Sacred Lands File* was completed for the area of potential project effect (APE) referenced above. Please note that the absence of specific site information in the *Sacred Lands File* does not indicate the absence of Native American traditional cultural places or cultural landscapes in any APE. While in this case, a search of the NAHC *Sacred Lands File* did not indicate the presence of any sites within the APE you provided, a Native American tribe or individual may be the only source for the presence of traditional cultural places. For that reason, enclosed is a list of Native American individuals/organizations who may have knowledge of traditional cultural places in your project area. This list should provide a starting place in locating any areas of potential adverse impact.

The NAHC makes no recommendation or preference of any single individual, or group over another. All of those on the list should be contacted, if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe or group. If a response has not been received within two weeks of notification, the NAHC requests that you follow-up with a telephone call to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from any of these individuals or groups, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact me at my email address: dpt_nahc@pacbell.net.

Sincerely,

Debbie Pilas-Treadway
Environmental Specialist III

Native American Contacts
San Joaquin County
August 4, 2015

Katherine Erolinda Perez
P.O. Box 717
Linden , CA 95236
canutes@verizon.net
(209) 887-3415

Ohlone/Costanoan
Northern Valley Yokuts
Bay Miwok

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed Tracy Lakes Development project, San Joaquin County.

Sacred Lands File & Native American Contacts List R

NATIVE AMERICAN HERITAGE COMMISSI(
915 Capitol Mall, RM 364
Sacramento, CA 95814
(916) 653-4082
(916) 657-5390 – Fax
nahc@pacbell.net

NV4

Information Below is Required for a Sacred Lands File S

Date: April 22, 2015

Project: Tracy Lakes Development Project, Project F 1726.0008

County: San Joaquin County

USGS Quadrangle Name: Tracy

T/S/R: T.2S, R.5E, Sections 31 and 32, and T.3S, R.5 5 and 6

Company/Firm/Agency: FirstCarbon Solutions/Micha Brandman Associates

Contact Person: Carrie D. Wills M.A., RPA or Cher L. B.A.

Street Address: 1350 Treat Blvd. Ste. 380, Walnut C 94597

Cell 925.788.9097 Preferred number as I'm in the often!

Office Phone: 925.357.2562

Fax: 925.357.2572 Please note this is our new FAX

North America I Europe I Australia I Asia
www.FirstCarbonSolutions.com

August 5, 2015

Katherine Erolinda Perez
P.O. Box 717
Linden, CA 95236

Subject: Proposed Tracy Lakes Project, City of Tracy, San Joaquin County

Dear Ms. Perez:

At the request of the city of Tracy, a Phase I Cultural Resources Assessment is being conducted at the proposed project area located within San Joaquin County, California (map enclosed). The proposed project consists of the development of 134 acres of land in unincorporated San Joaquin County that would support 600 residential lots as well as 14 acres of man-made lakes and community facilities.

The project area was surveyed on May 12, 2015. During the course of the survey, no prehistoric sites were found. Additionally, a records search at the Northwest Information Center indicated that a single prehistoric site lay within .5 miles of the project area, but it will remain unaffected by the proposed development.

Consultation

The NAHC response letter indicated that there may be additional information to be gained from individual tribal members and/or tribal organizations. FCS is sending this letter to give you the opportunity to provide any additional knowledge you may have about the project area and to provide you with an opportunity for consultation about the proposed project. Because public involvement is a key ingredient in successful consultation, we are soliciting your input as part of California Environmental Quality Act (CEQA) process.

Please feel free to contact me at 925.357.2562 or via email at ddepietro@fcs-intl.com if you have any questions or would like to discuss the project in more detail.

Sincerely,

Dana DePietro

Dana Douglas DePietro, Ph.D.
Senior Scientist, Archaeology
FirstCarbon Solutions
1350 Treat Boulevard, Ste. 380
Walnut Creek, CA 94597

Local Government Tribal Consultation List Request

Native American Heritage Commission
1550 Harbor Blvd, Suite 100
West Sacramento, CA 95691
916-373-3710
916-373-5471 – Fax
nahc@nahc.ca.gov

Type of List Requested

☑ **CEQA Tribal Consultation List (AB 52)** – ***Per Public Resources Code § 21080.3.1, subs. (b), (d), (e) and 21080.3.2***

☐ **General Plan (SB 18)** - ***Per Government Code § 65352.3.***

Local Action Type:

___ General Plan ___ General Plan Element ___ General Plan Amendment

___ Specific Plan ___ Specific Plan Amendment ___ Pre-planning Outreach Activity

Required Information

Project Title: Tracy Village Project

Local Government/Lead Agency: City of Tracy

Contact Person: Victoria Lombardo

Street Address: 333 Civic Center Drive

City: Tracy **Zip:** 95376

Phone: 209-831-6000 **Fax:**

Email: Victoria.Lombardo@cityoftracy.org

Specific Area Subject to Proposed Action

County: San Joaquin **City/Community:** Tracy

Project Description:

The Tracy Village Development Project consists of a 600-unit active adult residential development on 134 acres, currently located in San Joaquin County and within the City of Tracy sphere of influence. In addition to the annexation of the 134-acre Tracy Village Development Project site, the City also seeks annexation of 42 residential lots to the north and west, fronting Corral Hollow and Valpico Roads (Residential Annexation Area). The Tracy Village Specific Plan includes both the Development Project and the Residential Annexation in the Specific Plan Project Area (Project Area). Tracy Village Development Project – up to 600 active adult residential homes on 134 acres. Residential Annexation Area – the additional 42 lots being considered for annexation by the City of Tracy to rationalize the city limits. Project Area – refers to both the Tracy Village Development Project and the Residential Annexation Area

Additional Request

☑ **Sacred Lands File Search** - ***Required Information:***

USGS Quadrangle Name(s): Mt. Diablo Meridian

Township: 3 south **Range:** 5 East **Section(s):** 5



Source: ESRI Imagery, 2015

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Exhibit 2-2
Local Vicinity Map
Aerial Base

NATIVE AMERICAN HERITAGE COMMISSION
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
(916) 373-3710
(916) 373-5471 FAX

March 8, 2017

Victoria Lombardo
City of Tracy

Sent by Email: victoria.lombardo@cityoftracy.org
Number of Pages: 3

RE: Tracy Village Project, Tracy, San Joaquin County

Dear Ms. Lombardo:

Attached is a consultation list of tribes with traditional lands or cultural places located within the boundaries of the above referenced counties. Please note that the intent above reference codes is to avoid and or mitigate impacts to tribal cultural resources, as defined, for California Environmental Quality Act (CEQA) projects.

As of July 1, 2015, Public Resources Code Sections 21080.3.1 and 21080.3.2 require public agencies to consult with California Native American tribes identified by the Native American Heritage Commission (NAHC) for the purpose mitigating impacts to tribal cultural resources:

> Within 14 days of determining that an application for a project is complete or a decision by a public agency to undertake a project, the lead agency shall provide formal notification to the designated contact of, or a tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, which shall be accomplished by means of at least one written notification that includes a brief description of the proposed project and its location, the lead agency contact information, and a notification that the California Native American tribe has 30 days to request consultation pursuant to this section. (Public Resources Code Section 21080.3.1(d))

The law does not preclude agencies from initiating consultation with the tribes that are culturally and traditionally affiliated with their jurisdictions. The NAHC believes that in fact that this is the best practice to ensure that tribes are consulted commensurate with the intent of the law.

In accordance with Public Resources Code Section 21080.3.1(d), formal notification must include a brief description of the proposed project and its location, the lead agency contact information, and a notification that the California Native American tribe has 30 days to request consultation. The NAHC believes that agencies should also include with their notification letters information regarding any cultural resources assessment that has been completed on the APE, such as:

1. The results of any record search that may have been conducted at an Information Center of the California Historical Resources Information System (CHRIS), including, but not limited to:

   - A listing of any and all known cultural resources have already been recorded on or adjacent to the APE;
   - Copies of any and all cultural resource records and study reports that may have been provided by the Information Center as part of the records search response;
   - If the probability is low, moderate, or high that cultural resources are located in the APE.
   - Whether the records search indicates a low, moderate or high probability that unrecorded cultural resources are located in the potential APE; and
   - If a survey is recommended by the Information Center to determine whether previously unrecorded cultural resources are present.

2. The results of any archaeological inventory survey that was conducted, including:

   - Any report that may contain site forms, site significance, and suggested mitigation measurers.

     All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for pubic disclosure in accordance with Government Code Section 6254.10.

3. The results of any Sacred Lands File (SFL) check conducted through Native American Heritage Commission. A search of the SFL was completed for the USGS quadrangle information provided with negative results.

4. Any ethnographic studies conducted for any area including all or part of the potential APE; and

5. Any geotechnical reports regarding all or part of the potential APE.

Lead agencies should be aware that records maintained by the NAHC and CHRIS is not exhaustive, and a negative response to these searches does not preclude the existence of a cultural place. **A tribe may be the only source of information regarding the existence of a tribal cultural resource.**

This information will aid tribes in determining whether to request formal consultation. In the case that they do, having the information beforehand well help to facilitate the consultation process.

If you receive notification of change of addresses and phone numbers from tribes, please notify me. With your assistance we are able to assure that our consultation list contains current information.

If you have any questions, please contact me at my email address: Sharaya.souza@nahc.ca.gov

Sincerely,

Sharaya Souza
Staff Services Analyst

Native American Heritage Commission
Tribal Consultation List
San Joaquin County
March 8, 2017

Buena Vista Rancheria of Me-Wuk Indians
Rhonda Morningstar Pope, Chairperson
1418 20th Street, Suite 200 — Me-Wuk / Miwok
Sacramento , CA 95811
rhonda@buenavistatribe.com
(916) 491-0011 Office

Wilton Rancheria
Raymond Hitchcock, Chairperson
9728 Kent Street — Miwok
Elk Grove , CA 95624
rhitchcock@wiltonrancheria-nsn.gov
(916) 683-6000 Office

California Valley Miwok Tribe
4620 Shippee Lane — Miwok
Stockton 95212
, CA
CalaverasMiwukPreservation
(209) 931-4567 Office
(209) 931-4333 Fax

Ione Band of Miwok Indians
Crystal Martinez, Chairperson
P.O. Box 699 — Miwok
Plymouth , CA 95669
Crystal@ionemiwok.org
(209) 245-5800 Office

North Valley Yokuts Tribe
Katherine Erolinda Perez, Chairperson
P.O. Box 717 — Ohlone/Costanoan
Linden , CA 95236 — Northern Valley Yokuts
canutes@verizon.net — Bay Miwok
(209) 887-3415

Southern Sierra Miwuk Nation
Lois Martin, Chairperson
P.O. Box 186 — Miwok
Mariposa , CA 95338 — Pauite
Northern Valley Yokut
(209) 742-6867 Office

This list is current only as of the date of this document and is based on the information available to the Commission on the date it was produced.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is applicable only for consultation with Native American tribes under Public Resources Code Sections 21080.1, 21080.3.1, and 21080.3.2 for the proposed Tracy Village Project, San Joaquin County.

Buena Vista Racheria de Me-Wuk Indians

March 20, 2017

Chairperson Rhonda Morningstar Pope

1418 20th Street Suite 200 Sacramento, CA 95811

Subject: Proposed Development of The Tracy Village Project in Tracy, CA

Dear Rhonda Morningstar Pope,

At the request of the City of Tracy, FirstCarbon Solutions (FCS) is conducting a cultural resources assessment the Tracy Village Project located in unincorporated San Joaquin County. The boundaries are located on the U.S. Geological Survey (USGS) Tracy 7.5-minute quadrangle in the Northwest ¼ of Section 5, Township 3 South, Range 5 East of the Mt. Diablo Meridian (APN 244-04-001).

The Tracy Village Development Project consists of a 600-unit active adult residential development on 134 acres, currently located in San Joaquin County and within the City of Tracy sphere of influence. In addition to the annexation of the 134-acre Tracy Village Development Project site, the City also seeks annexation of 42 residential lots to the north and west, fronting Corral Hollow and Valpico Roads (Residential Annexation Area). The Tracy Village Specific Plan includes both the Development Project and the Residential Annexation in the Specific Plan Project Area (Project Area).

To determine the presence or absence of cultural and historical resources within the proposed project area and a ½ mile radius, FCS will conduct a record search at the Northwest Information Center (NWIC) at Sonoma State University. To identify any historic properties or resources, the current inventories of the National Register of Historic Places (NR), the California Register of Historic Resources (CR), the California Historical Landmarks list (CHL), the California Points of Historical Interest (CPHI) list, and the California State Historic Resources Inventory (HRI) for Sonoma County will be reviewed to determine the existence of previously documented local historical resources. An intensive pedestrian survey will also be conducted at the project locations.

If you have any additional information regarding potential historic or cultural resources in proximity or relation to the proposed project area, we would greatly appreciate your input. Please feel free to contact me at 925.357.2562 or via email at ddepietro@fcs-intl.com and thank you for your valuable assistance.

Sincerely,



Dana Douglas DePietro, Ph.D.
Senior Scientist, Archaeology
FirstCarbon Solutions
1350 Treat Boulevard, Ste. 380
Walnut Creek, CA 94597

Enc: Project location map for the proposed development of Tracy Village Project in Tracy, CA.



Source: ESRI Imagery, 2015

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Exhibit 2-2
Local Vicinity Map
Aerial Base

FirstCarbon® SOLUTIONS

California Valley Miwok Tribe
4620 Shippee Lane Stockton, CA 95212

March 20, 2017

Subject: Proposed Development of The Tracy Village Project in Tracy, CA

Dear Staff,

At the request of the City of Tracy, FirstCarbon Solutions (FCS) is conducting a cultural resources assessment the Tracy Village Project located in unincorporated San Joaquin County. The boundaries are located on the U.S. Geological Survey (USGS) Tracy 7.5-minute quadrangle in the Northwest ¼ of Section 5, Township 3 South, Range 5 East of the Mt. Diablo Meridian (APN 244-04-001).

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Sincerely,



Dana Douglas DePietro, Ph.D.
Senior Scientist, Archaeology
FirstCarbon Solutions
1350 Treat Boulevard, Ste. 380
Walnut Creek, CA 94597

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Source: ESRI Imagery, 2015

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Exhibit 2-2
Local Vicinity Map
Aerial Base

FirstCarbon® SOLUTIONS

Ione Band of Miwok Indians

March 20, 2017

Chairperson Crystal Martinez

P.O. Box 699 Plymouth, CA 95669

Subject: Proposed Development of The Tracy Village Project in Tracy, CA

Dear Crystal Martinez,

At the request of the City of Tracy, FirstCarbon Solutions (FCS) is conducting a cultural resources assessment the Tracy Village Project located in unincorporated San Joaquin County. The boundaries are located on the U.S. Geological Survey (USGS) Tracy 7.5-minute quadrangle in the Northwest ¼ of Section 5, Township 3 South, Range 5 East of the Mt. Diablo Meridian (APN 244-04-001).

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If you have any additional information regarding potential historic or cultural resources in proximity or relation to the proposed project area, we would greatly appreciate your input. Please feel free to contact me at 925.357.2562 or via email at ddepietro@fcs-intl.com and thank you for your valuable assistance.

Sincerely,



Dana Douglas DePietro, Ph.D.
Senior Scientist, Archaeology
FirstCarbon Solutions
1350 Treat Boulevard, Ste. 380
Walnut Creek, CA 94597

Enc: Project location map for the proposed development of Tracy Village Project in Tracy, CA.



Source: ESRI Imagery, 2015

FIRSTCARBON SOLUTIONS™

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Exhibit 2-2
Local Vicinity Map
Aerial Base

North America I Europe I Australia I Asia
www.FirstCarbonSolutions.com

FirstCarbon® SOLUTIONS

North Valley Yokuts Tribe
Chairperson Katherine Erolinda Perez
P.O. Box 717 Linden, CA 95236

March 20, 2017

Subject: Proposed Development of The Tracy Village Project in Tracy, CA

Dear Katherine Erolinda Perez,

At the request of the City of Tracy, FirstCarbon Solutions (FCS) is conducting a cultural resources assessment the Tracy Village Project located in unincorporated San Joaquin County. The boundaries are located on the U.S. Geological Survey (USGS) Tracy 7.5-minute quadrangle in the Northwest ¼ of Section 5, Township 3 South, Range 5 East of the Mt. Diablo Meridian (APN 244-04-001).

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Sincerely,



Dana Douglas DePietro, Ph.D.
Senior Scientist, Archaeology
FirstCarbon Solutions
1350 Treat Boulevard, Ste. 380
Walnut Creek, CA 94597

Enc: Project location map for the proposed development of Tracy Village Project in Tracy, CA.



Source: ESRI Imagery, 2015

FIRSTCARBON SOLUTIONS™

1,000 500 0 1,000 Feet

Exhibit 2-2
Local Vicinity Map
Aerial Base

FirstCarbon® SOLUTIONS

Southern Sierra Miwuk Nation
Chairperson Lois Martin
P.O. Box 186 Mariposa, CA 95338

March 20, 2017

Subject: Proposed Development of The Tracy Village Project in Tracy, CA

Dear Lois Martin,

At the request of the City of Tracy, FirstCarbon Solutions (FCS) is conducting a cultural resources assessment the Tracy Village Project located in unincorporated San Joaquin County. The boundaries are located on the U.S. Geological Survey (USGS) Tracy 7.5-minute quadrangle in the Northwest ¼ of Section 5, Township 3 South, Range 5 East of the Mt. Diablo Meridian (APN 244-04-001).

The Tracy Village Development Project consists of a 600-unit active adult residential development on 134 acres, currently located in San Joaquin County and within the City of Tracy sphere of influence. In addition to the annexation of the 134-acre Tracy Village Development Project site, the City also seeks annexation of 42 residential lots to the north and west, fronting Corral Hollow and Valpico Roads (Residential Annexation Area). The Tracy Village Specific Plan includes both the Development Project and the Residential Annexation in the Specific Plan Project Area (Project Area).

To determine the presence or absence of cultural and historical resources within the proposed project area and a ½ mile radius, FCS will conduct a record search at the Northwest Information Center (NWIC) at Sonoma State University. To identify any historic properties or resources, the current inventories of the National Register of Historic Places (NR), the California Register of Historic Resources (CR), the California Historical Landmarks list (CHL), the California Points of Historical Interest (CPHI) list, and the California State Historic Resources Inventory (HRI) for Sonoma County will be reviewed to determine the existence of previously documented local historical resources. An intensive pedestrian survey will also be conducted at the project locations.

If you have any additional information regarding potential historic or cultural resources in proximity or relation to the proposed project area, we would greatly appreciate your input. Please feel free to contact me at 925.357.2562 or via email at ddepietro@fcs-intl.com and thank you for your valuable assistance.

Sincerely,



Dana Douglas DePietro, Ph.D.
Senior Scientist, Archaeology
FirstCarbon Solutions
1350 Treat Boulevard, Ste. 380
Walnut Creek, CA 94597

Enc: Project location map for the proposed development of Tracy Village Project in Tracy, CA.



Source: ESRI Imagery, 2015

FIRSTCARBON SOLUTIONS™

1,000 500 0 1,000 Feet

Exhibit 2-2
Local Vicinity Map
Aerial Base

North America I Europe I Australia I Asia
www.FirstCarbonSolutions.com

Wilton Rancheria

March 20, 2017

Chairperson Raymond Hitchcock

9728 Kent Street Elk Grove, CA 95624

Subject: Proposed Development of The Tracy Village Project in Tracy, CA

Dear Raymond Hitchcock,

At the request of the City of Tracy, FirstCarbon Solutions (FCS) is conducting a cultural resources assessment the Tracy Village Project located in unincorporated San Joaquin County. The boundaries are located on the U.S. Geological Survey (USGS) Tracy 7.5-minute quadrangle in the Northwest ¼ of Section 5, Township 3 South, Range 5 East of the Mt. Diablo Meridian (APN 244-04-001).

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Walnut Creek, CA 94597

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Source: ESRI Imagery, 2015

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Exhibit 2-2
Local Vicinity Map
Aerial Base

Appendix C:
Personnel Qualifications

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DANA DOUGLAS DE PIETRO, PH.D. – Cultural Resources Lead

OVERVIEW

- More than 15 Years Experience in Archaeology and Cultural Resource Management

Education

- Ph.D., Near Eastern Art and Archaeology, University of California at Berkeley, 2012
- M.A., Near Eastern Art and Archaeology, University of California at Berkeley, 2005
- B.A., Archaeology and History (double major), University of California at San Diego, 2002

Fellowships and Awards

- Albright Institute Educational and Cultural Affairs Fellowship (2015)
- Katherine Davis Foundation Projects for Peace Prize (2012)
- International House Gateway Fellowship (2011-2012)
- The George Franklin Dales Foundation Fellowship for Archaeological Research (2011)
- CAORC Multi-Country Dissertation Research Fellowship (2010)

Dana DePietro, Ph.D is a Registered Professional Archaeologist who meets the Secretary of Interior's standards for historic preservation programs in archaeology. Dr. DePietro has over 15 years of experience in all aspects of cultural resource management, including prehistoric and historic archaeology, paleontology, materials conservation, history of art and architecture, and community engagement. He has experience in compliance with the National Environmental Policy Act (NEPA), the California Environment Quality Act (CEQA), the National Historic Preseration Act (NHPA), and the Archaeological Resources Protection Act (ARAP). Dr. DePietro has completed cultural resource projects that have involved agency, client, Native American, and subcontractor coordination; treatment plans and research design development; archival research; field reconnaissance; site testing; data recovery excavation; construction monitoring; site recordation; site protection/preservation, mapping/cartography; spatial analysis/ GIS; laboratory analysis; materials conservation; artifact curation and exhibition; and report production. He has completed projects in California within the jurisdiction of the Bureau of Land Management (BLM) and other federal agencies requiring compliance with section 106 of the NHPA. He has also completed projects throughout California under CEQA for state and local governments and municipalities, including the California Department of Transportation (Caltrans) and has worked with clients to insure deliverables meet and exceed the standards set by the State Historic Preservation Office (SHPO).

RELATED EXPERIENCE AND CLIENT SUMMARY

FirstCarbonSolutions

As the Lead Archaeologist/Cultural Resource Specialist for FCS, Dr. DePietro conducts evaluations and performs field documentation of historic and prehistoric cultural resources; prepares environmental impact reports (EIRs), cultural resources assessments (CRAs), DPR forms and Section 106 reports; conducts mapping, GIS analysis, and state and county record searches; leads archaeological surveys and

field monitoring efforts; and coordinates with state, federal and tribal officials and institutions for a variety of FCS projects, including the following:

- Atherton Baptist Homes Master Plan/Phase II, City of Alhambra, Los Angeles County
- Biological and Cultural Resources Assistance 140-Acre Project Site Woodcrest, Riverside County, CA
- Blanchard Road Industrial EIR Project, City of San Jose, Santa Clara County, CA
- Bonadelle Tract 6120 AQ/GHG and Bio Tech Studies, City of Clovis, Fresno County, CA
- CEQA Analysis for Mayhew Way Project, City of Walnut Creek, Contra Costa County
- 2268 El Camino Real, Mountain View - II CEQA Compliance Checklist Project, City of Mountain View, Santa Clara County
- CEQA Documentation for New Science Building, City of Fairfield, Solano County
- CEQA Services for Clover Spring Open Space Preserve Project, City of Cloverdale, Sonoma County
- Chico Walmart Expansion Project, City of Chico, CA
- Cultural Resources Services for Froom Ranch/El Villagio Specific Plan, City of San Luis Obispo, CA
- Cultural Resource & Historic Evaluation for Sacramento Dome Theatre, City of Sacramento, CA
- Cultural Resources Services for Haven Berryessa Block 7 & 8 San Jose Flea Market, San Jose, CA
- Caltrans NEPA/CEQA Documentation and Permitting for the Dogtown Road Bridges Replacement Projects (San Domingo Creek, French Gulch, and Indian Creek), Calaveras County, CA
- Due Diligence for Meadowlark Project in Pleasanton, CA
- Due Diligence Services for the Montalcino Property, Napa County, CA
- Due Diligence Site Review for Parcel APN 68-241-30 located at 260 Bartlett Way Santa Cruz, CA
- Due Diligence Level IA Entitlements for the Boscell Road Osgood Project, City of Fremont, CA
- Trellis Residential Project EIR, City of Walnut Creek, CA
- El Dorado Materials Recovery Facility Remodeling Project, El Dorado County, CA
- Farmstand IS/MND, City of Healdsburg, CA
- La Paloma Winery Demo Project IS/MND, City of Clovis, CA
- Kaiser Dublin Medical Center EIR, City of Dublin, California
- Merced Gateway Master Plan Project EIR, City of Merced, CA
- Phase 1 Cultural Resource Assessment for 44 acres TTM No. 19992, Rancho Cucamonga, CA
- Bonadelle Tract 6120 Cultural Resources Study, City of Clovis, CA
- Professional Services to Support the Development of a Preferred Development Plan and Associated Regulatory Strategies for the Solano 360 Project, Solano County, CA
- Tassajara Parks EIR, Contra Costa County, California

Other Relevant Experience

The Society for Humanitarian Archaeological Research and Exploration

Dr. DePietro is the Founder and Executive Director of The Society for Humanitarian Archaeological Research and Exploration. He manages the projects, staff, and the daily operation of this not-for-profit organization. Dr. DePietro likewise establishes relationships with partner universities and institutions, writes grant proposals, supervises fundraising projects, and maintains accounts, financial records, and the organization's online presence.

University of California at Berkeley

DOUGLAS DE PIETRO, PH.D. – Cultural Resources Lead (North)

Dr. DePietro was a lecturer at the University of California, Berkeley from August 2003 to January 2015. During his tenure, he prepared University-level source and lectures in the history of the modern and ancient Middle East, performed student advising and evaluation, and university administrative duties. Dr. DePietro provided resources and opportunities that empower people to critically engage with other cultures as well as with their own communities.

Penn State University - Tel Akko Total Archaeology Project

Dr. DePietro was the Director of Community Engagement from 2013 to 2014 at the Penn State University for the Tel Akko Total Archaeology Project. He developed and executed a community engagement program, supervised staff and community participants, taught excavation and conservation techniques to groups of young people in Akko, and performed outreach, dialogue, and program developments in partnership[with community leaders.

Harvard University – Leon Levy Expedition to Ashkelon, Israel

Dr. De Pietro was the excavation supervisor during the summers of 2007-2013 for the Harvard University – Leon Levy Expedition to Ashkelon, Israel. He supervised the excavation and stratagraphic interpretation and instructed students in excavation techniques, data collection, photography, analysis, and publication.

Early Iron Age Cemetery Excavation – Dhamar, Yemen

Dr. De Pietro was the Area Supervisor during the summer of 2004 for the Early Iron Age Cemetery Excavation in Dhamar, Yemen. He supervised the excavation and stratagraphic interpretation, taught excavation techniques, strategy and implementation, field conservation, surveying techniques, dtat collection and analysis, and site management.

Journal of Associated Graduates in Near Eastern Studies (JAGNES)

Dr. DePietro was the Associate Editor from August 2003 to May 2012 for the Journal of Associated Graduates in Near Eastern Studiers (JAGNES). He solicited and proofread submissions, fundraising, and advertisements.

"Travel Today: Egypt" Magazine

Dr. De Pietro was an Archaeological Correspondent from December 2002 to February 2005. He wrote magazine articles, conducted relevant interviews and research, and procured photos and images to compliment articles.

Trish Fernandez
4836 Skyway Drive, Fair Oaks, CA 95628
530.409.8612

Curriculum Vitae

Profile

Ms. Fernandez is an environmental consultant specializing in cultural resources management. She meets the *Secretary of Interior's Professional Qualification Standards* for archaeologist, historian, and architectural historian.

Education

California State University, Sacramento, California
Master of Arts in Anthropology, emphasis in History and Archaeology
Thesis: *Mexican Miners in the California Gold Rush: A Historical and Archaeological Study*
Graduated Magna Cum Laude, GPA 3.84, 2001

California State University, Sacramento, California
Bachelor of Arts in Anthropology, emphasis in Ethnic Studies
Golden Key National Honor Society
Lambda Alpha Anthropological Honor Society
American Association of University Women Scholarship Recipient
Graduated Magna Cum Laude, GPA 3.77, 1995

Field Schools

Virginia City, Nevada, UNR, 2000. Historical archaeology: Comstock era seamstress' residence
Coloma, California, CSUS, 1997. Historical archaeology: Gold Rush era doctor's residence
Virginiatown, California, CSUS, 1995. Historical archaeology: Gold Rush era Chinese town

Registrations/Certifications/Qualifications

Archaeologist. Register of Professional Archaeologists. No. 12198
Historian. California Council for the Promotion of History. No. 583
Archaeologist, Historian, Architectural Historian. Secretary of Interior's Professional Qualifications Standards
Historical Archaeologist Principal Investigator, Caltrans Professional Qualifications Standards

Current Professional Memberships

Association of Environmental Professionals
Register of Professional Archaeologists
Society for Historical Archaeology
Society for California Archaeology

Continuing Professional Education

CEQA Mid-Year Case Law Review, AEP, 2015
Taking CEQA Forward, AEP, 2015
Caltrans Section 106 PA Workshop, Caltrans District 4, 2015
CEQA & Historic Preservation: A 360 Degree View, CPF, 2015
Federal Contracting Basics, SBA, 2015
Exploring the Government Marketplace, SBA, 2015
Business Development Skills, ICF, 2011
NEPA Overview and Refresher, UC Davis Extension, 2010
National Register Multiple Property Listings, California OHP, 2008
Section 106 Agreement Documents, National Preservation Institute, 2007
California Senate Bill 18, Governor's Office of Planning and Research, 2007
Principles of Tribal Consultation, SRI Foundation, 2006
GIS for Archaeologists, SHA, 2006
Facilitating Effective Public Meetings, UC Davis Extension, 2006
Public Works and Environmental Compliance, Lorman Education, 2006
Consulting with the California SHPO, California OHP, 2005
Integration of Environmental Permits, UC Davis Extension 2005
CEQA Streamlining Toolbox, EDAW, 2005
Successful CEQA Compliance, UC Davis Extension, 2005
Lithics Workshop, Rob Jackson, 2005
Section 106 Review for Experienced Practitioners, National Preservation Institute, 2005
Making CEQA Work, California Preservation Foundation, 2004
Conflict Resolution, UC Davis Extension, 2004
Coaching Staff, UC Davis Extension, 2004
Historical Building Surveys for Local Governments, California Preservation Foundation, 2003
NEPA and Historic Properties, UNR Extended Studies, 2002
Historic Bottle Identification, SHA, 2002
Introduction to Section 106 Review, ACHP, 2000
GIS for Resource Managers and Professionals, UC Davis Extension, 1998
Project Management Workshop, Braley Consulting, 1998
NEPA Overview, UC Davis Extension, 1997
Intro to CEQA, UC Davis Extension, 1996
Consulting with Native Americans about TCPs, ACRA, 1996

Awards

Thomas F. King Award for Excellence in Cultural Resources Management, 2008

Appointments

Society for California Archaeology Professional Standards & Ethics Committee, Chair 2015-present
California State Archaeological Resources Committee, Chair/Vice-Chair, 2006 to present
Old Sacramento Historical Foundation Board, 2008-2010
California State Historical Resources Commission, 2005-2009
El Dorado County Cultural Resources Commission, 1997-2000
Foothill Indian Education Alliance, 1996-1997

Work History

InContext: Cultural Resources Solutions – Fair Oaks, CA 2012-Present
President and Principal Investigator. Responsibilities include administration, business development, financial reporting, and performing all aspects of technical work related to inventories, evaluations, and mitigation measures.

Statistical Research, Inc. – Woodland, CA, 2012
Historical Resources Specialist. Assist regional marketing directors in WA, CA, AZ, NM, and TX with business development throughout the company and throughout the western United States.

ICF International — WA, OR, CA, 2008–2011
Cultural Resources Manager. Directed complex, controversial projects; restructured CA team by hiring, terminating, and moving staff to more suitable positions. Established job descriptions and expectations for cultural staff. Took over troubled projects throughout the company to bring them into budgetary, contractual, and regulatory compliance and mend client relations. Managed Sacramento team; created mentoring and peer review structure for quality control and staff development; developed workload management and projection system in Microsoft Excel; increased morale and productivity. Created standardized regulatory language templates, marketing materials, and presentations; developed and presented educational symposia for environmental and engineering conferences. Initiated client development in WA and OR; prepared or participated in numerous winning proposals. Trained and mentored staff throughout company informally and through formal training programs focused on compliance, writing, and project management.

Trish Fernandez Cultural Resources — Placerville, CA, 2005–2008
Sole Proprietor. Owned and operated private cultural resources consulting company on a part-time basis for three consecutive years. Responsibilities included business development, financial reporting, and performing all aspects of technical work related to inventories, evaluations, and mitigation measures. Created a niche for providing peer review of other consultants' work products and addressing controversial projects.

El Dorado Irrigation District — Placerville, CA, 2004–2008
Environmental Review Specialist. Responsible for all aspects of cultural resources review under CEQA, including research, survey, consultation, and determinations of significance and significant impacts. Responsible for developing and implementing proactive agency program for complying with all state and federal laws related to cultural resources. Responsible for management of cultural resources as part of the FERC Project 184 relicensing process.

Pacific Legacy, Inc. — Cameron Park, CA, 2002–2004
Historical and Local Government Program Director. Responsible for development and quality of historic-period resources and local government compliance program. Directly supervised archaeologists and historians in three different offices. Developed and implemented supervisory and mentoring structure to promote quality, productivity, and personal growth. Directed and conducted all phases of research, excavation, evaluation, and mitigation. Responsible for business development and assisting with management and operations of the Central Sierra office.

Jones & Stokes, Inc. — Sacramento, CA, 1995–2002
Senior Cultural Resources Specialist. Conducted and managed cultural resources studies, including architectural and archaeological inventories, oral histories, and archaeological

SONIA MELANI MILLER

942 West Cliff Drive, Santa Cruz California 95060 Telephone: Cell 831 332 2714*
E-mail sonia.melani.kasa@gmail.com

Environmental and cultural heritage consultant specializing in archaeological investigation and inventories, sustainable urbanism, historic preservation and adaptive re-use of historic structures. Experienced in the management of restoration projects, including field data collection, data management and modeling, planning and design, implementation and supervision of field activities, progress monitoring and reports, CEQA regulation and historic evaluation (DPR523 primary record). OSHA certified and LEED ND accredited. Currently seeking a position to grow in the field of historic preservation, sustainable neighborhoods planning, and in the planning and management of sustainable/historic infrastructures.

SUMMARY OF QUALIFICATIONS

- Archival processing and documentation of historic material (including architectural and photographic material)
- Implementation of programs for the conservation of energy and natural resources
- Production of promotional and educational material including leaflets, brochures, illustration boards
- Management of large pools of data, including the organization of inventories, data processing and storage
- Formulation of survey for the collection of quantitative and qualitative data for academic researches and planning studies
- Categorization of quantitative data in charts, graphs, maps (ArcGIS), and reports
- Interpretation of qualitative data, data coding, and processing
- Construction of BIM virtual models using AutoCAD, Revit Architecture and ArchiCad
- NEASI Certification (Home Energy Audit-HERS) National Energy and Sustainability Institute
- Interpretative, historical, and cultural research for the preparation of DPR523 Primary Record (Description and Statement of Significance) for the documentation and preservation of historical and cultural resources
- Ability to conduct complex literary research in multiple languages (Italian, Spanish, French, and English)
- Categorization of credits for LEED ND projects related to:
    - Historic preservation and reuse and to habitat restoration (Smart Location and Linkage (SLL)

- Restoration of habitat, wetland, and water bodies, Green Infrastructures and Buildings

- GIB-Existing Building Reuse and Historic Resources Preservation and Adaptive Use.

- LEED AP Neighborhood Development (ND) credentialed

PROFESSIONAL HISTORY

June 2015 to Present: SPACES-Saving and Preserving Arts and Cultural Environments
Project Assistant
SPACES is a nonprofit public benefit organization created with an international focus on the study, documentation, and preservation of art environments and self-taught artistic activity. Currently assisting with archival processing of photographic material on folk art sites. Includes planning archival material preservation, establishing directives (and making forms) for the collection, organization and processing of archival data. Providing assistance in the preparation of site documentation for enlisting in the local (State) and National Register of Historic Places. Includes cultural and historic research, site survey for the identification of defining features, and other services needed for the preparation of the DPR523 primary record form.

1999 to present: JM Construction
Sustainable Planning Consultant
Responsible to research and implement cost-saving strategies to reduce the environmental impact of construction projects. Position centering on the development of sustainability policies and the preparation of permit documents for residential construction, erosion control (drainage), interior architecture and landscaping projects. It also involves the fulfillment of some administrative functions and project scheduling (Microsoft Project).

2011 to 2013: City of San Jose
Municipal Green Buildings Program Graduate Intern
Participated in the implementation of the City's *Energy Star Portfolio Manager* for 116 Municipal Facilities, in cooperation with the Energy Officer; and to the development of the LEED EB&OM *Volume Certification Protocol*. Helped managing data related to Municipal Green Buildings and took part in the production of LEED's promotional and educational material for certified buildings.

2002 to 2007: Habitat Restoration International
Project Coordinator
Supported the Biologist in the management of habitat restoration and erosion control projects for federal and state agencies. These included projects for the US Army Corps of Engineers, Santa Clara Water and SMUD. The duties invested in this position included assisting in the preparation of environmental proposals (EIR), the supervision of vegetation installation and vegetation monitoring, the preparation of environmental proposals, reports and other project related documents such as: project timelines and schedules; planning and design of landscaping and erosion control construction plans and as built plans.

OTHER PROFESSIONAL EXPERIENCE

Aux Trois Pommes Language School
Language Teacher (Italian)

Taught language classes to adult at different level of proficiency. The position included the creation of programs and syllabus for specific courses, assistance to advanced-graduate exam preparation, and translation support for Graduate archival research.

SJSU Special Collection Archives
Student Assistant Archivist
Assisted library patrons in the reading room of SJSU Special Collections & Archives with their research needs, web OPAC and reading room policies and procedures. Processed backlog collections and wrote finding aids for collections.

The Harrison Studio
Researcher and Studio Assistant
Conducted environmental and social research for the 2004 "Villaggio d'arte" Environmental Art' project in Southern Italy and assisted in other projects of environmental art.

SELECTED PROJECTS

Architectural Collection (Archival)
Processed for SJSU Special Collections & Archives
This project was processed for SJSU Special Collection & Archives. The collection of architectural drawings comprises architectural plans and renderings documenting the construction of several buildings on the San Jose State College campus, including: San Jose College Central Library Building, Wahlquist Library, and the California State Library Faculty Office Building.

"Il Villaggio dell'Arte," annuale d'arte contemporanea partecipata, PIT Parco regionale del Matese, POR
An initiative promoted by PaeSEsaggio workgroup to stimulate new processes and development and to re-activate sustainable micro-economies through the involvement of the local communities in an area of southern Italy suffering from abandonment. The project followed the principles of the European Convention of Landscape (Paesaggio) of 2000 and of the Conference of State Regions of 2001, promoting the diffusion of information and inducement of participatory processes.

The Climate Clock Initiative
Assisted the Huey-Dewey-Louie finalist team in documenting their residency in occasion of "The Climate Clock Initiative" in San Jose, California- promoting the use of public art and measurement technologies to gather and display climate data.

Guadalupe River Flood Control and Habitat Mitigation Project, Phase I and II
Four "design and built" projects implemented as part a mitigation strategy of a federal flood control project in downtown San Jose, California. The projects comprised the preparation and implementation of a riparian habitat restoration plan that involved the selection, installation and maintenance of over 13,000 native riparian and wetland plants. And it included the development and implementation of a biological monitoring program to evaluate habitat establishment and wildlife use of the project area.

EPA Energy Star Portfolio Manager
Set up a portfolio of 116 municipal facilities for energy benchmarking. Entered and verified facility information (Address, Space Type, Square footage and meter SAID). Facilities were subsequently benchmarked to receive automated data from the energy provider (PG&E).

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Appendix D:
Regulatory Framework

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REGULATORY FRAMEWORK

Government agencies, including federal, state, and local agencies, have developed laws and regulations designed to protect significant cultural resources that may be affected by projects regulated, funded, or undertaken by the agency. Federal and state laws that govern the preservation of historic and archaeological resources of national, state, regional, and local significance include the National Environmental Policy Act (NEPA), Section 106 of the National Historic Preservation Act (NHPA), and the California Environmental Quality Act (CEQA). In addition, laws specific to work conducted on federal lands includes the Archaeological Resources Protection Act (ARPA), the American Antiquities Act, and the Native American Graves Protection and Repatriation Act (NAGPRA).

Additionally, cities and counties have developed goals and policies within their General Plans that address preservation and protection of historic and archaeological resources existing within the city or county.

The following City of San Jose, federal and CEQA criteria were used to evaluate the significance of potential impacts on cultural resources for the proposed project. An impact would be considered significant if it would affect a resource eligible for listing in the NR or the CR, or if it is identified as a unique archaeological resource.

City-Level Evaluation Processes

City of Tracy General Plan

The Tracy General Plan includes contains the following goals, policies and actions related to the protection of cultural resources that are applicable to the proposed project.

Goal CC-3—Preserve and enhance historic resources

- **P2.** Identified cultural and historic landmarks and buildings shall be preserved
- **P3.** New development, redevelopment, alterations, and remodeling projects should be sensitive to surrounding historic context.
- **P4.** As part of the development review process, there shall be a standard condition of approval that if any resources are found during construction, all operations within the project area shall halt until an assessment can be made by appropriate professionals regarding the presence of archaeological and paleontological resources and the potential for adverse impacts on these resources.
- **P5.** Any archaeological or paleontological resources on private property shall be either preserved on their sites or adequately documented and conserved as a condition of removal. If any resources are found unexpectedly during development, then construction must cease immediately until accurate study and conservation measures are implemented.
- **P6.** If Native American artifacts are discovered on a site, the City shall consult representatives of the Native American community to ensure the respectful treatment of Native American sacred places.

City of Tracy Resolutions

The City of Tracy Resolution 3232, which was signed in 1978, designated fifty structures and sites to be historical landmarks in Tracy. The resolution followed a survey of architecturally and historically significant resources in the City. Resolution 2001-076 added two more buildings to the above-referenced list of designated properties. The Tracy Historic Landmarks designation encourages public recognition and protection of resources of architectural, cultural, or historical significance for local planning purposes. However, the City has not adopted a historic preservation ordinance or other protective or restrictive regulation. Accordingly, a local Landmarks designation does not equate with permanent protection for a structure from demolition or alteration.

City of Tracy Municipal Code

Title 9 of the Tracy Municipal Ordinance addresses building regulations. Chapter 9.48 adopts the California Historical Building Code. The purpose of the chapter is to "provide regulations for the preservation, restoration, rehabilitation, relocation, or reconstruction of buildings or structures designated as qualified historical buildings or properties; provide alternative solutions for the preservation of qualified historical buildings or properties, to provide access for persons with disabilities, to provide a cost-effective approach to preservation, and to provide for the reasonable safety of occupants or users."

Federal-Level Evaluations

Federal agencies are required to consider the effects of their actions on historic properties and afford the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment on such undertakings under NEPA § 106. Federal agencies are responsible for initiating NEPA § 106 review and completing the steps in the process that are outlined in the regulations. They must determine if NHPA § 106 applies to a given project and, if so, initiate review in consultation with the State Historic Preservation Officer (SHPO) and/or Tribal Historic Preservation Officer (THPO). Federal agencies are also responsible for involving the public and other interested parties. Furthermore, NHPA S106 requires that any federal or federally assisted undertaking, or any undertaking requiring federal licensing or permitting, consider the effect of the action on historic properties listed in or eligible for the NR. Under the Code of Federal Regulations (CFR), 36 CFR Part 800.8, federal agencies are specifically encouraged to coordinate compliance with NEPA § 106 and the NEPA process. The implementing regulations "Protection of Historic Properties" are found in 36 CFR Part 800. Resource eligibility for listing on the NR is detailed in 36 CFR Part 63 and the criteria for resource evaluation are found in 36 CFR Part 60.4 [a-d].

The NHPA established the NR as the official federal list for cultural resources that are considered important for their historical significance at the local, state, or national level. To be determined eligible for listing in the NR, properties must meet specific criteria for historic significance and possess certain levels of integrity of form, location, and setting. The criteria for listing on the NR are significance in American history, architecture, archaeology, engineering, and culture as present in districts, sites, buildings, structures and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association. In addition, a resource must meet one or all of these eligibility criteria:

a.) Is associated with events that have made a significant contribution to the broad patterns of our history.

b.) Is associated with the lives of persons significant in our past.

c.) Embodies the distinctive characteristics of a type, period, or method of construction; represent the work of a master; possess high artistic values, represent a significant and distinguishable entity whose components may lack individual distinction.

d.) That have yielded, or may be likely to yield, information important in prehistory or history.

Criterion D is usually reserved for archaeological resources. Eligible properties must meet at least one of the criteria and exhibit integrity, measured by the degree to which the resource retains its historical properties and conveys its historical character.

Criteria Considerations

Ordinarily cemeteries, birthplaces, graves of historical figures, properties owned by religious institutions or used for religious purposes, buildings that have been moved from their original locations, reconstructed historic buildings, properties primarily commemorative in nature, and properties that have achieved significance within the past 50 years shall not be considered eligible for the NR. However, such properties will qualify if they are integral parts of districts that do meet the criteria or if they fall within the following categories:

a.) A religious property deriving primary significance from architectural or artistic distinction or historical importance.

b.) A building or structure removed from its original location but which is primarily significant for architectural value, or which is the surviving structure most importantly associated with a historic person or event.

c.)A birthplace or grave of a historical figure of outstanding importance if there is no appropriate site or building associated with his or her productive life.

d.) A cemetery that derives its primary importance from graves of persons of transcendent importance, from age, from distinctive design features, or from association with historic events.

e.) A reconstructed building when accurately executed in a suitable environment and presented in a dignified manner as part of a restoration master plan, and when no other building or structure with the same association has survived.

f.) A property primarily commemorative in intent if design, age, tradition, or symbolic value has invested it with its own exceptional significance.

g.) A property achieving significance within the past 50 years if it is of exceptional importance.

Thresholds of Significance

In consultation with the SHPO/THPO and other entities that attach religious and cultural significance to identified historic properties, the Agency shall apply the criteria of adverse effect to historic properties within the Area of Potential Effect (APE). The Agency official shall consider the views of consulting parties and the public when considering adverse effects.

Federal Criteria of Adverse Effects

Under federal regulations, 36 CFR Part 800.5, an adverse effect is found when an undertaking alters, directly or indirectly, any of the characteristics of a historic property that qualifies the property for inclusion in the NR in a manner that diminishes the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Consideration will be given to all qualifying characteristics of a historic property, including those that may have been identified subsequent to the original evaluation of the property's eligibility for listing in the NR. Adverse effects may include reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance, or be cumulative.

According to 36 CFR Part 800.5, adverse effects on historic properties include, but are not limited to, those listed below:

- Physical destruction of or damage to all or part of the property.
- Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation, and provision of handicapped access, that is not consistent with the U.S. Secretary of the Interior's Standards for the Treatment of Historic Properties per 36 CFR Part 68 and applicable guidelines.
- Removal of the property from its historic location.
- Change of the character of the property's use or of physical features within the property's setting that contribute to its historic significance.
- Introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic features.
- Neglect of a property that causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to an Indian tribe or Native Hawaiian organization.
- Transfer, lease, or sale of property out of federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long term preservation of the property's historic significance.

If Adverse Effects Are Found

If adverse effects are found, the agency official shall continue consultation as stipulated at 36 CFR Part 800.6. The agency official shall consult with the SHPO/THPO and other consulting parties to develop alternatives to the undertaking that could avoid, minimize, or mitigate adverse effects to

historic resources. According to 36 CFR Part 800.14(d), if adverse effects cannot be avoided then standard treatments established by the ACHP may be used as a basis for Memorandum of Agreement (MOA).

According to 36 CFR Part 800.11(e), the filing of an approved MOA, and appropriate documentation, concludes the § 106 process. The MOA must be signed by all consulting parties and approved by the ACHP prior to construction activities. If no adverse effects are found and the SHPO/THPO or the ACHP do not object within 30 days of receipt, the agencies' responsibilities under § 106 will be satisfied upon completion of report and documentation as stipulated in 36 CFR Part 800.11. The information must be made available for public review upon request, excluding information covered by confidentiality provisions.

State-Level Evaluation Processes

An archaeological site may be considered an historical resource if it is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military or cultural annals of California per PRC § 5020.1(j) or if it meets the criteria for listing on the CR per California Code of Regulations (CCR) at Title 14 CCR § 4850.

The most recent amendments to the CEQA guidelines direct lead agencies to first evaluate an archeological site to determine if it meets the criteria for listing in the CR. If an archeological site is an historical resource, in that it is listed or eligible for listing in the CR, potential adverse impacts to it must be considered as stated in PRC §§ 21084.1 and 21083.2(l). If an archeological site is considered not to be an historical resource, but meets the definition of a "unique archeological resource" as defined in PRC § 21083.2, then it would be treated in accordance with the provisions of that section.

With reference to PRC § 21083.2, each site found within a project area will be evaluated to determine if it is a unique archaeological resource. A unique archaeological resource is described as an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets one or more of the following criteria:

1. Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
2. Has a special and particular quality such as being the oldest of its type or the best available example of its type.
3. Is directly associated with a scientifically recognized important prehistoric or historic event or person.

As used in this report, "non-unique archaeological resource" means an archaeological artifact, object, or site that does not meet the criteria for eligibility for listing on the CR, as noted in subdivision (g) of PRC § 21083.2. A non-unique archaeological resource requires no further consideration, other than simple recording of its components and features. Isolated artifacts are typically considered non-unique archaeological resources. Historic structures that have had their

superstructures demolished or removed can be considered historic archaeological sites and are evaluated following the processes used for prehistoric sites. Finally, OHP recognizes an age threshold of 45 years. Cultural resources built less than 45 years ago may qualify for consideration, but only under the most extraordinary circumstances.

Title 14, CCR, Chapter 3 § 15064.5 is associated with determining the significance of impacts to archeological and historical resources. Here, the term historical resource includes the following:

1. A resource listed in, or determined eligible by the State Historical Resources Commission, for listing in the CR (PRC § 5024.1; Title 14 CCR, § 4850 et seq.).
2. A resource included in a local register of historical resources, as defined in PRC § 5020.1(k) or identified as significant in an historical resource survey meeting the PRC § 5024.1(g) requirements, shall be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant.
3. Any object, building, structure, site, area, place, record, or manuscript, which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered a historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource shall be considered by the lead agency to be historically significant if the resource meets the criteria for listing on the California Register of Historical Resources (PRC § 5024.1; Title 14 CCR § 4852) including the following:
   A. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
   B. Is associated with the lives of persons important in our past.
   C. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
   D. Has yielded, or may be likely to yield, information important in prehistory or history.

Typically, archaeological sites exhibiting significant features qualify for the CR under Criterion D because such features have information important to the prehistory of California. A lead agency may determine that a resource may be a historical resource as defined in PRC §§ 5020.1(j) or 5024.1 even if it is:

- Not listed in or determined to be eligible for listing in the CR.
- Not included in a local register of historical resources pursuant to PRC § 5020.1(k).
- Identified in an historical resources survey per PRC § 5024.1(g).

Thresholds of Significance

If a project will have a significant impact on a cultural resource, several steps must be taken to determine if the cultural resource is a "unique archaeological resource" under CEQA. If analysis and/or testing determine that the resource is a unique archaeological resource and therefore subject to mitigation prior to development, a threshold of significance should be developed. The threshold of significance is a point where the qualities of significance are defined and the resource is determined to be unique under CEQA. A significant impact is regarded as the physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of the resource will be reduced to a point that it no longer meets the significance criteria. Should analysis indicate that project development will destroy the unique elements of a resource; the resource must be mitigated for under CEQA regulations. The preferred form of mitigation is to preserve the resource in-place, in an undisturbed state. However, as that is not always possible or feasible, appropriate mitigation measures may include, but are not limited to:

1. Planning construction to avoid the resource.
2. Deeding conservation easements.
3. Capping the site prior to construction.

If a resource is determined to be a "non-unique archaeological resource," no further consideration of the resource by the lead agency is necessary.

Tribal Consultation

The following serves as an overview of the procedures and timeframes for the Tribal Consultation process, for the complete Tribal Consultation Guidelines, please refer to the State of California Office of Planning and Research web site.

Prior to the amendment or adoption of general or specific plans, local governments must notify the appropriate tribes of the opportunity to conduct consultation for the purpose of preserving or mitigating impacts to cultural places located on land within the local government's jurisdiction that is affected by the plan adoption or amendment. The tribal contacts for this list maintained by the NAHC and is distinct from the Most Likely Descendent (MLD) list. It is suggested that local governments send written notice by certified mail with return receipt requested. The tribes have 90 days from the date they receive notification to request consultation. In addition, prior to adoption or amendment of a general or specific plan, local government must refer the proposed action to tribes on the NAHC list that have traditional lands located within the city or county's jurisdiction. Notice must be sent regardless of prior consultation. The referral must allow a 45-day comment period.

In brief, notices from government to the tribes should include:

- A clear statement of purpose.
- A description of the proposed general or specific plan, the reason for the proposal, and the specific geographic areas affected.

- Detailed maps to accompany the description.
- Deadline date for the tribes to respond.
- Government representative(s) contact information.
- Contact information for project proponent/applicant, if applicable.

The basic schedule for this process is:

- 30 days: time NAHC has to provide tribal contact information to the local government; this is recommended not mandatory.
- 90 days: time tribe has to respond indication whether or not they want to consult. Note: tribes can agree to a shorter timeframe. In addition, consultation does not begin until/unless requested by the tribe within 90 days of receiving notice of the opportunity to consult. The consultation period, if requested, is open-ended. The tribes and local governments can discuss issues for as long as necessary, or productive, and need not result in agreement.
- 45 days: time local government has to refer proposed action, such as adoption or amendment to a general plan or specific plan, to agencies, including the tribes. Referral required even if there has been prior consultation. This opens the 45-day comment period.
- 10 days: time local government has to provide tribes of notice of public hearing.

Appendix E:
Department of Parks and Recreation (DPR) Forms

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State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code | Reviewer | Date

 *Resource Name or #: Linne Farm

P1. Other Identifier:
***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted** ***a. County:** San Joaquin
and
***b. USGS 7.5' Quad:** Tracy **Date:** 1954 (PR 1981) **T** 3 S ; **R** 5 E **of Sec** 5 **;** M.D. **B.M.**
c. Address: 11150 W. Valpico Road City: Tracy Zip: 95377
d. UTM: Zone: 10 ; 637078 mE/ 4174705 mN (G.P.S.)
e. Other Locational Data: APN 244-040-001. Bounded on north by W. Valpico Road. Elevation: 110 ft amsl

***P3a. Description:**
This resource is a 133.60-acre agricultural property that includes a residence, two garages, a workshop, three barns, a pumphouse, and various pens and coops. The residence and main barn was on site by 1916 (USGS 1916) and the other buildings and structures were added over the decades, all before 1942 (USGS 1942). The buildings and structures encompass an approximately 2-acre area in the northeast quadrant of the parcel. They are summarized below and described in detail on the BSO Continuation Sheets.

ID No.	Type	Function
1	Building	Residence
2	Building	Garage
3	Building	Garage
4	Building	Workshop
5	Building	Barn
6	Building	Barn
7	Building	Barn
8	Structure	Tank house
9	Structures	Chicken house, pig pen

***P3b. Resource Attributes:** HP2. Residence; HP33. Farm/Ranch
***P4. Resources Present:** ☒Building ☒Structure ☐Object ☐Site ☐District ☐Element of District ☐Other (Isolates, etc.)



P5b. Description of Photo: Photo #1. Overview from Valpico Road. Buildings Left to Right: 7, 6, 1. View South
***P6. Date Constructed/Age and Sources:** ☒Historic
1916 (Tracy USGS 1:31,680)
***P7. Owner and Address:**
Ponderosa Homes, Inc.
6130 Stoneridge Mall Rd, #185
Pleasanton, CA 94588

***P8. Recorded by:**
Carrie D. Wills
First Carbon Solutions
1350 Treat Blvd., Ste. 380
Walnut Creek, CA 94597

***P9. Date Recorded:** 04/ 06/ 2015
***P10. Survey Type:** Intensive
***P11. Report Citation:** DePietro, D. 2015. Phase I Cultural Resources Assessment, Tracy Lakes Project, San Joaquin County, California. Prepared for the City of Tracy by FirstCarbon Solutions, Walnut Creek, California.

***Attachments:** ☒Location Map ☒Continuation Sheet ☒Building, Structure, and Object Record

State of California X The Resources Agency Primary #
DEPARTMENT OF PARKS AND RECREATION HRI#

BUILDING, STRUCTURE, AND OBJECT RECORD

B1. Historic Name: Linne Farm and Residence
B2. Common Name:
B3. Original Use: Farm and Residence B4. Present Use: Vacant
***B5. Architectural Style:** Prairie
***B6. Construction History:**
Residence and barns constructed 1907 by Adolph H. Linne. All structures appear to date from the same time period and no later than 1942. The garages and workshop may have originally had only wood siding but were covered in stucco well before 1965. Remained in family until 1965.

***B7. Moved?** ☒**No** ☐**Yes** ☐**Unknown** **Date:** **Original Location:**
***B8. Related Features:**
See complete list and description of buildings and structures on the following Continuation Sheets.

B9a. Architect: unknown b. Builder: unknown
***B10. Significance: Theme** Farming **Area** San Joaquin County

Period of Significance 1905-1965 **Property Type** Residence Farm **Applicable Criteria** B/2

The property at 11150 W. Valpico Road was once part of a successful farm operated by Henry A. and Arthur H. Linne, prominent Tracy and San Joaquin County farmers and citizens. It was also where Arthur H. Linne made his home. The property was purchased in 1905 and the residence and associated buildings were constructed in 1907. The brothers initially grew grain and expanded to include fruit-bearing trees and alfalfa in 1923. Both brothers were involved in civic activities including the establishment of the first irrigation district in the region, the West Side Irrigation District, which began operation in 1918 and is still in operation today. The brothers were also among the original founders of the West Side Bank, the building for which is located at 47 West 6th Street, Tracy (NRHP Listing No.78000765). In 1936, Arthur H. Linne appears to have transferred the operation of the farm to his son, Arthur H. Linne, Jr. After the senior Arthur died in 1961, the family dispersed the farm property and the remainder of its holdings located in Township 3 South, Range 5 East, Section 5.

The buildings and structures have been subject to minor and reversible alterations within the property's period of significance, which spans the time period the property was owned and operated by the Linne family (1905-1965). The farm and its surrounding acreage retain integrity of location, design, setting, materials, workmanship, feeling and association. The property meets the eligibility requirements of the NRHP and the CRHR because it is significant under criterion B/2 for its association with the Arthur and Henry Linne, who made significant contributions to the development of Tracy and the farming community because of their success as grain farmers on this property.

B11. Additional Resource Attributes:
HP2. Residence; HP33. Farm/Ranch

***B12. References:**
Tinkham, G. 1923. History of San Joaquin County, California

B13. Remarks:

***B14. Evaluator:** T. Fernandez
Date of Evaluation: July 24, 2015

(Sketch Map with north arrow required.)

See Sketch Map
Page 7 of 8

(This space reserved for official comments.)

B8. Related Features

Feature 1. Primary Residence

The primary residence faces east flanked by matching sentry-like garages (Features 2 and 3) on its north and south. A mid-century cinder-block wall connects the garages and creates a fence barrier to the front entry to the house that is accessed through a wooden gate set midway along the fence.

The residence is rectangular in plan and sits atop a concrete footing. The structure measures approximately 60 ft N/ S x 40 ft E/ W. A porch extends along the north, east and south facades of the house. The roof is low-pitched and hipped, covered with rolled composition. The exterior facades are covered with horizontal wood lap siding. The windows of the residence are wood-sashed, and range from single two-light double-hung windows, to large twelve-light fixed windows. The basement is accessed by concrete steps. Additions to the residence include the enclosure of the porch, some portions with screen and other portions with complete wood-framed walls.

Features 2/ 3. North and South Garages

The north and south garages are square in plan, and measure approximately 20x20 ft The roofs are low-pitched and hipped and covered in composition shingles. The exterior facades are covered with stucco. Two sliding wooden doors provide main access along the east façades.



Photo 13. Residence and garages, east facades; L-R: Buildings 3, 1, 2, View West.

B8. Related Features

Feature 4. Workshop

The workshop is rectangular in plan, sits atop a concrete slab, and measures approximately 14 ft N/ S by 21 ft E/ W. The roof is a medium-pitched, single gable covered with composition shingles. The exterior is covered in stucco. The structure is accessible on both the northern and eastern façades by doors, each with a single pane fixed window. Fenestration includes one four-light window above the east façade door.



Photo 10. Workshop, East and North Facades, View Southwest

Feature 5. Small Barn

This wood structure is rectangular in plan and sits on individual piers. It measures approximately 10 ft N/ S by 22 ft E/ W. The roof is a medium-pitched single gable covered in dilapidated composition shingles. The walls are constructed of vertically placed wood boards. One wood door provides access along the structure's east façade.



Photo 12. Small Barn, West and South Facades, View Northwest

***Recorded by:** Carrie Wills ***Date:** 04/ 06/ 2015 ☒ Continuation

B8. Related Features

Feature 6. Big Barn

This structure is a wooden transverse barn square in plan set atop a pier foundation. The structure measures approximately 50x50 ft with a single gable roof covered in deteriorated wood shingles. The walls are constructed of vertically placed wood boards. It is accessed by both a hinged door and a set of double-hung barn doors on the southern façade.



Photo 11: Big Barn, West and South facades, View Northeast

Feature 7. Medium Barn

This structure is rectangular in plan and sits atop a concrete pier foundation. It measures approximately 20 ft N/ S by 30 ft E/ W, which includes a shed-roofed extension along its west side. The roof is a single gable covered in dilapidated wood shingles. The exterior walls are board and batten. The structure is accessible along the southern façade by a single door set midway along its façade and two large hinged doors to the shed-roofed addition. The original foundation appears to have been stone, replaced subsequently by boards and concrete piers.



Photo 16: Medium Barn, South façade, View North

B8. Related Features

8. Tank House

The tank house is rectangular in plan, and measures at 12 ft N/ S and 32 ft E/ W. The structure has twin tented roofs on the east and west ends, each topped with a wooden decorative spire. The structure is constructed of horizontal wood siding, and has one large wood-sashed window on the western façade, and two wood-sashed vents on the upper level of the northern façade. The lower level of the west side of the structure holds a double-pump apparatus and is enclosed by wood fencing. The structure is accessible by a lower level doorway on the northern façade. Additionally, there is an upper level doorway on the western façade that once attached to a stairway that has since been removed.



Photo 14: Tank House, North façade, View South

9. Coops and Miscellaneous

There are multiple dilapidated clapboard coops on dirt foundations. One structure shows evidence of having been refit with an aluminum gabled roof.



Photo 15: Coops and Pens, View South

State of California ♁ Natural Resources Agency
DEPARTMENT OF PARKS AND RECREATION

SKETCH MAP

Primary #
HRI#
Trinomial

Drawn by: T. Fernandez ***Date of map:** 07/27/15



Linne Farm

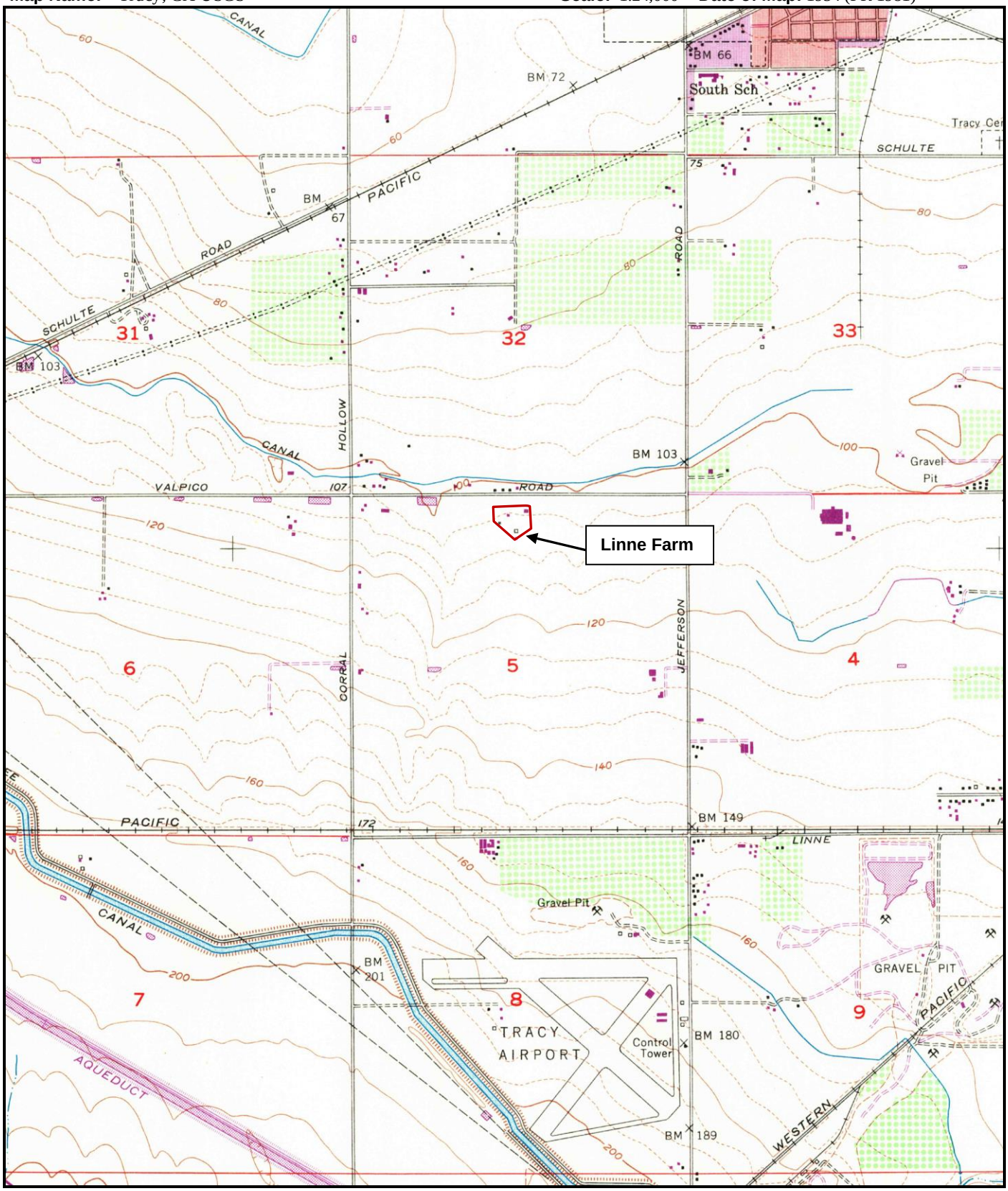
State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary #
HRI#
Trinomial

Page 8 **of** 8 ***Resource Name or #:** Linne Farm

***Map Name:** Tracy, CA USGS ***Scale:** 1:24,000 ***Date of Map:** 1954 (PR 1981)



DPR 523J (1/95)

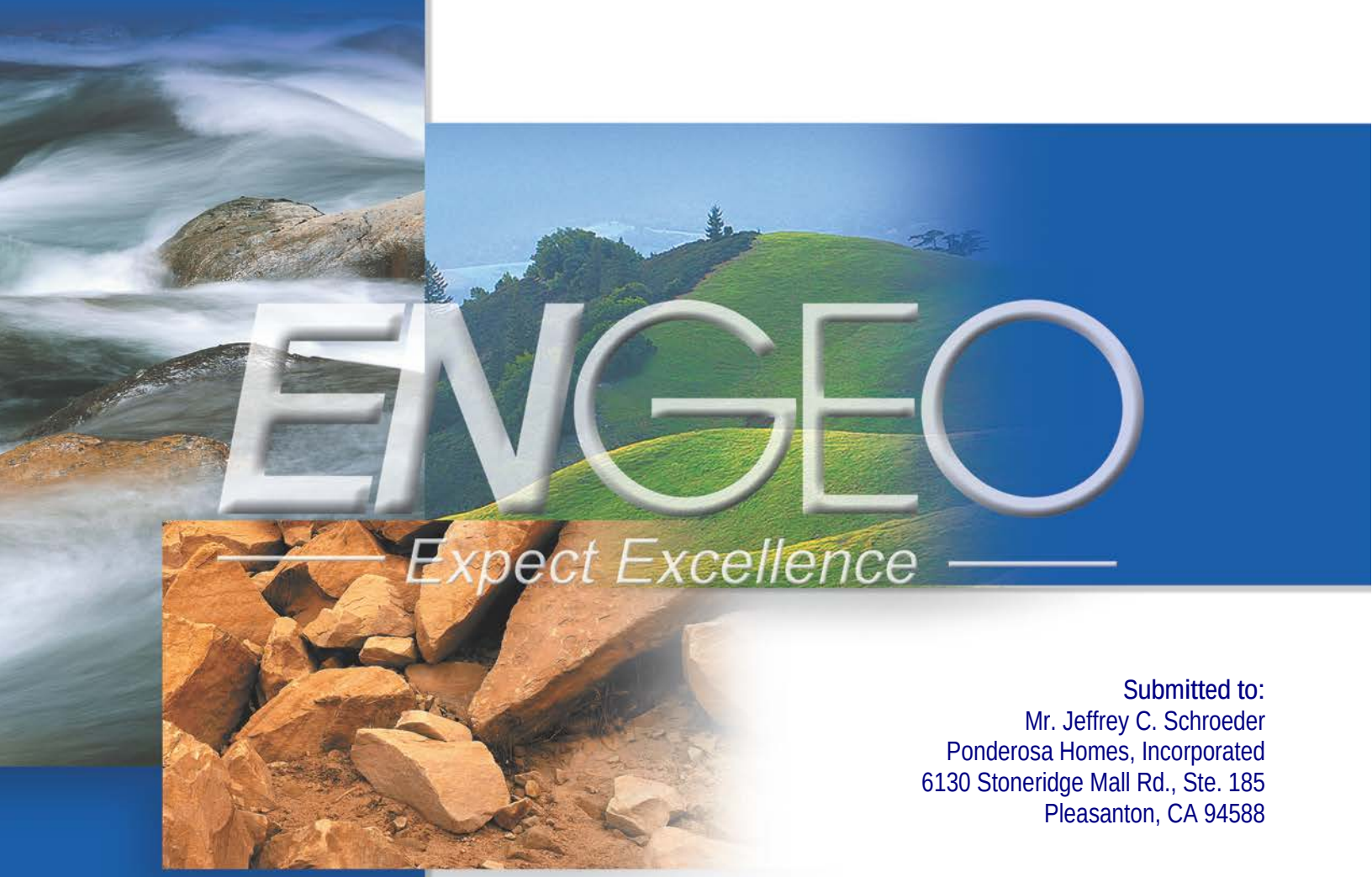
*Required information

Appendix E:
Geotechnical Report

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PRELIMINARY GEOTECHNICAL REPORT

HOMEWOOD
TRACY, CALIFORNIA



Submitted to:
Mr. Jeffrey C. Schroeder
Ponderosa Homes, Incorporated
6130 Stoneridge Mall Rd., Ste. 185
Pleasanton, CA 94588

Prepared by:
ENGEO Incorporated

April 24, 2013

Project No:
10091.000.000

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Project No.
10091.000.000

April 24, 2013

Mr. Jeffrey C. Schroeder
Ponderosa Homes, Incorporated
6130 Stoneridge Mall Rd., Ste. 185
Pleasanton, CA 94588

Subject: Homewood
11150 West Valpico Road
Tracy, California

PRELIMINARY GEOTECHNICAL REPORT

Dear Mr. Schroeder:

ENGEO prepared this geotechnical report for Ponderosa Homes, Incorporated as outlined in our agreement dated March 5, 2013. We characterized the subsurface conditions at the site to provide the enclosed preliminary geotechnical recommendations.

As you and the project team move forward with the project, we are ready to assist you with design-level geotechnical reports for various improvements onsite. Please let us know when conceptual development plans are nearing completion and we will be glad to discuss these future services with you.

If you have any questions or comments regarding this report, please call and we will be glad to discuss them with you.

Sincerely,

ENGEO Incorporated





Matthew E. Swanson, PE
Project Engineer

Steve Harris, GE
Associate

mes/sh/reviewed by:mmg/cjn

TABLE OF CONTENTS

Letter of Transmittal

1.0 INTRODUCTION 1

1.1 PUPOSE AND SCOPE 1
1.2 PROJECT LOCATION AND DESCRIPTION 1

2.0 FINDINGS 2

2.1 FIELD EXPLORATION 2
2.1.1 Borings 2
2.1.2 Percolation Testing 2
2.2 GEOLOGY 4
2.3 SEISMICITY 4
2.4 SURFACE CONDITIONS 5
2.5 SUBSURFACE CONDITIONS 6
2.6 GROUNDWATER CONDITIONS 6
2.7 LABORATORY TESTING 6

3.0 PRELIMINARY CONCLUSIONS 6

3.1 EXPANSIVE SOIL 7
3.2 EXISTING FILL 7
3.3 SEISMIC HAZARDS 7
3.3.1 Ground Rupture 8
3.3.2 Ground Shaking 8
3.3.3 Liquefaction 8
3.3.4 Ground Lurching 8
3.3.5 Flooding 9
3.4 SEISMIC DESIGN PARAMETERS 9

4.0 DESIGN GEOTECHNICAL REPORT 9

5.0 PRELIMINARY EARTHWORK RECOMMENDATIONS 10

5.1 EXISTING FILL REMOVAL 10
5.2 EXPANSIVE SOIL MITIGATION – CONVENTIONAL FOUNDATIONS 10
5.3 GENERAL SITE CLEARING 10
5.4 OVER-OPTIMUM SOIL MOISTURE CONDITIONS 11
5.5 ACCEPTABLE FILL 11
5.6 FILL COMPACTION 11
5.6.1 Grading in Structural Areas 11
5.6.2 Lime Treated Soils 12
5.6.3 Aggregate Base Rock 12
5.6.4 Underground Utility Trench Backfill 12
5.6.4.1 General 12

5.6.4.2 Structural Areas 13
5.6.5 Landscape Fill 13
5.7 SLOPE GRADIENT 13
5.8 SITE DRAINAGE 13
5.8.1 Surface Drainage 13
5.8.2 Subsurface Drainage 14
5.9 LANDSCAPING CONSIDERATION 14

6.0 PRELIMINARY FOUNDATION RECOMMENDATIONS 14

6.1 POST-TENSIONED MAT FOUNDATIONS 15
6.2 CONVENTIONAL FOOTINGS WITH SLAB-ON-GRADE 15
6.2.1 Footing Dimensions and Allowable Bearing Capacity 15
6.2.2 Waterstop 15
6.2.3 Reinforcement 16
6.2.4 Foundation Lateral Resistance 16
6.2.5 Settlement 16
6.3 UTILITY TRENCH PLUGS BENEATH FOUNDATIONS 16
6.4 SLAB MOISTURE VAPOR REDUCTION 16

7.0 SLABS-ON-GRADE 17

7.1 INTERIOR CONCRETE FLOOR SLABS 17
7.1.1 Non-Expansive Fill 17
7.1.2 Subgrade Modulus for Structural Slab Design 17
7.2 EXTERIOR FLATWORK 18
7.3 TRENCH BACKFILL 18

8.0 RETAINING WALLS 18

8.1 LATERAL SOIL PRESSURES 18
8.2 RETAINING WALL DRAINAGE 18
8.3 BACKFILL 19
8.4 FOUNDATIONS 19

9.0 FLEXIBLE PAVEMENTS 19

9.1 SUBGRADE AND AGGREGATE BASE COMPACTION 20
9.2 CUT-OFF CURBS 20

10.0 LIMITATIONS AND UNIFORMITY OF CONDITIONS 21

FIGURES
Figure 1 - Vicinity Map
Figure 2 - Site Plan
Figure 3 – Generalized Percolation Test Hole

APPENDIX A – Exploration Logs
APPENDIX B - Laboratory Test Data

1.0 INTRODUCTION

1.1 PURPOSE AND SCOPE

ENGEO prepared this preliminary geotechnical report for the preliminary design of the Homewood project in Tracy, California. As outlined in our agreement dated March 5, 2013, Ponderosa Homes, Inc. authorized ENGEO to conduct a Preliminary Geotechnical Report, which included the following:

- Subsurface Field Exploration
- Percolation Testing
- Soil Laboratory Testing
- Data Analysis
- Report Preparation

For our use, we received the following:

1. Conceptual Site Plan by William Hezmalhalch Architects Inc., dated June 20, 2012.

2. DRAFT Record Boundary Exhibit by Carlson, Barbee & Gibson, Inc. dated March 6, 2012.

3. DRAFT Record Boundary Exhibit [with aerial photography] by Carlson, Barbee & Gibson, Inc. dated March 6, 2012.

This report was prepared for the exclusive use of our client and their consultants for preliminary design of this project. In the event that any changes are made in the character, design or layout of the development, we must be contacted to review the conclusions and recommendations contained in this report to determine whether modifications are necessary. This document may not be reproduced in whole or in part by any means whatsoever, nor may it be quoted or excerpted without our express written consent.

1.2 PROJECT LOCATION AND DESCRIPTION

Figure 1 displays a Site Vicinity Map. The approximately 134-acre site is located south of Valpico Road in Tracy, California. Valpico Road also provides access to the site on the north side of the property.

Figure 2 shows a general site plan for the rectangular shaped site. Valpico Road borders the site to the north. Residential tract home developments bound the site to the east and south; larger residential properties fronting on Corral Hollow Road are located along the west border of the site.

Based on our discussions with you and the provided site plan and exhibits, we understand the proposed development will be a gated residential development that will include single- and

multi-family residential construction, parks, shared recreational facilities, man-made lakes, paved streets, underground utilities, and other associated improvements.

2.0 FINDINGS

2.1 FIELD EXPLORATION

Our field exploration included drilling five borings at various locations on the site. We performed our field exploration on March 13, 2013. We also performed in situ percolation testing of the near surface soils. The location and elevations of our explorations are approximate and were estimated relative to current site features and those shown on the site plan and exhibits provided; they should be considered accurate only to the degree implied by the method used.

2.1.1 Borings

We observed drilling of five borings at the locations shown on the Site Plan, Figure 2. An ENGEO representative supervised the drilling and logged the subsurface conditions at each location. We retained a truck-mounted Soil Test Ranger drill rig and crew to advance the borings using 4-inch-diameter solid flight auger drilling methods. The borings were advanced to depths ranging from 14 to 31½ feet below existing grade.

An ENGEO representative logged the borings in the field and collected soil samples using a 3-inch O.D. California-type split-spoon sampler fitted with 6-inch-long brass liners, and a 2-inch O.D. Standard Penetration Test (SPT) split-spoon sampler. The samplers were advanced utilizing a 140-pound hammer with a 30-inch drop that employed a rope and cat head system. The penetration of the samplers into the native materials was field-recorded as the number of blows needed to drive the sampler 18 inches in 6-inch increments. Unless otherwise indicated, the blows per foot recorded on the boring log represent the accumulated number of blows required to drive the last 1 foot of penetration; the blow counts have not been converted using any correction factors. When sampler driving was difficult and did not extend the full 18 inches, penetration was recorded only as inches penetrated for 50 hammer blows.

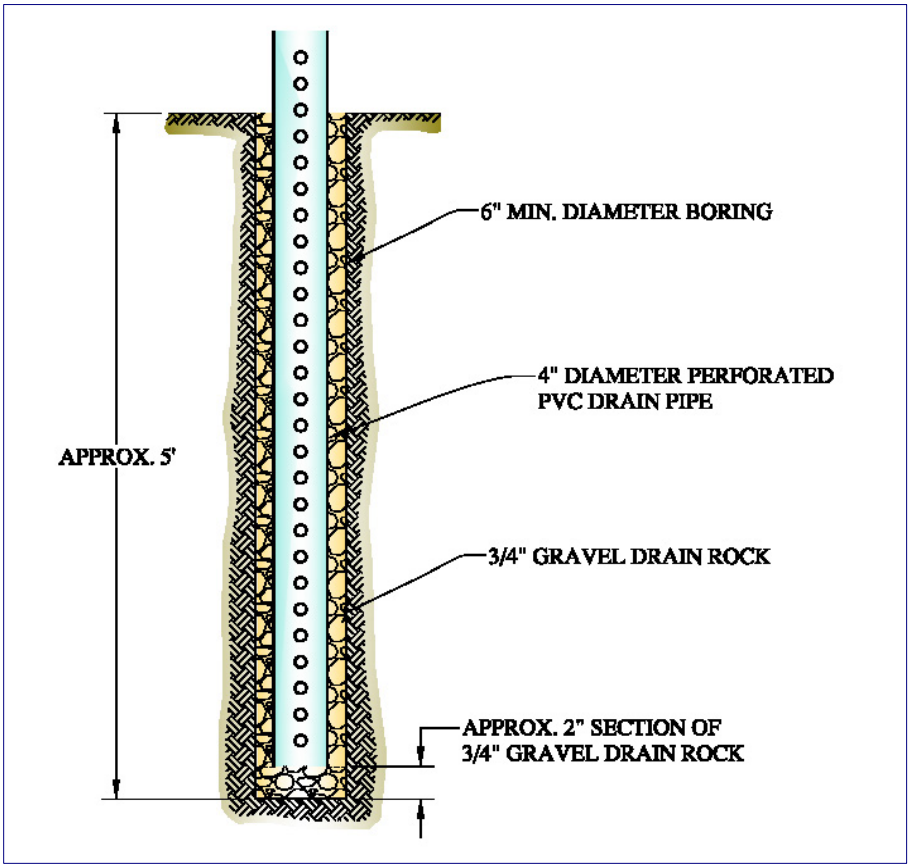
The logs depict subsurface conditions within the borings at the time the exploration was conducted. Subsurface conditions at other locations may differ from conditions noted at these locations. The passage of time may result in altered subsurface conditions. When reading the boring logs it is also important to understand that stratification lines represent the approximate boundaries between soil types and the transitions may be gradual.

2.1.2 Percolation Testing

We installed three percolation test holes at the locations shown on the Site Plan, Figure 2, to a depth of approximately 5 feet below the existing ground surface. The test holes were drilled with a 6-inch diameter auger advanced by the truck mounted drill rig that was utilized for the five borings discussed in the previous section of this report.

As shown in the figure below, the percolation test holes were constructed by placing 2 inches of ¾-inch gravel in the bottom of the holes, placing a perforated 4-inch-diameter PVC drain pipe extending the entire length of the test hole, and backfilling the annulus with ¾-inch gravel to the surface. Refer to Figure 3 – Generalized Percolation Test Hole.

FIGURE 3
Generalized Percolation Test Hole



In performing the percolation tests, we presoaked the holes one day prior to testing. Testing was carried out the following day by placing approximately 12 inches of water in each percolation test hole and recording an initial water column height. We recorded the drop in water level over various time intervals (depending on the percolation rate at each location) for each test until a relatively stable percolation rate was observed. At the end of each interval, additional water was added as needed to maintain a water level approximately 12 inches above the gravel bottom. At the completion of the percolation testing, we removed the PVC drain pipes and backfilled the test holes with native soil.

The uncorrected stabilized percolation rates and recommended preliminary percolation rates are presented in the following table:

TABLE 2.1.2-1
Percolation Test Results

Test Location	Measured Stabilized Percolation Rate (min/in)	Recommended Percolation Rate (gal/sq ft/day)
1-P1	2.3	370
1-P2	17.9	50
1-P3	2.7	300

Percolation rates presented are based generally on the change in water level elevations recorded in the stand pipes. We applied no conversion factors to arrive at the percolation rates. The design engineer should consider appropriate conversion factors or factors of safety for the design of the basin.

2.2 GEOLOGY

The Homewood project is located on the western margin of the Great Valley geologic province of California, adjacent to the Coast Range Province. The Great Valley is an elongate structural trough that has been filled with a sequence of sedimentary deposits from Jurassic to recent geologic age. Older sediments are mostly marine in origin with younger sediments of continental origin. Most of the continental sediments were derived from erosion of the Sierra Nevada Mountains to the east and, to a lesser extent, from the Coast Ranges to the west. The overall thickness of sediments tends to be greater along the western margin of the valley.

The geology of the site was mapped by Sowers, Noller, and Lettis (1993) as Holocene to Pleistocene-age alluvial fan and terrace deposits. These sediments are described as unconsolidated silts, clays, and gravels derived from the Coast Ranges to the southwest. The Pleistocene deposits are similar to the Holocene, but with less fine-grained soils. As is expected on an alluvial fan, sediments become more fine grained with increasing distance downslope.

2.3 SEISMICITY

The site does lie within a seismically active region. The site is not located within a currently designated Alquist-Priolo Earthquake Fault Zone and no known surface expression of active faults is believed to exist within the site. Fault rupture through the site, therefore, is not anticipated.

The regional area contains numerous active earthquake faults. An active fault is defined by the State Mining and Geology Board as one that has had surface displacement within Holocene time (about the last 11,000 years) (Hart, 1997). According to a search using the software program EQFAULT Version 3.00b (Blake, 2000), some significant active faults within a 100 km radius at the site are tabulated here:

TABLE 2.3-1
Active Faults in the Region

Fault Name	Distance (miles)	Direction from Site	Maximum Moment Magnitude
Great Valley - 7	0.8	Southwest	6.7
Great Valley - 6	3.5	West	6.7
Southern Greenville	10.2	Southwest	6.9
Central Greenville	11.3	West	6.7

The nearest active fault is the Great Valley segment 7, which is mapped approximately 0.8 mile southwest of the site. This fault is considered capable of a moment magnitude earthquake of 6.7.

2.4 SURFACE CONDITIONS

At the time of our reconnaissance, the site was an agricultural field that gently slopes to the north. Based on the elevations available in Google Earth, the elevations of the ground surface along the south site boundary range from approximately 128 to 134 feet; the ground surfaces along the north boundary, W. Valpico Road, range from 102 to 106 feet. There is a residential dwelling in the vicinity of the north east corner of the property. A basin (approximately 272 feet long by 172 feet long, by approximately 6 feet deep) is located along the north boundary of the property, adjacent to W. Valpico Road. Based on our field observations, the existing basin in the north of the property has been constructed by placing earthen berms above grade. The basin was dry at the time of our field work.

FIGURE 4
Photograph Looking West from the Residential Dwelling



2.5 SUBSURFACE CONDITIONS

In general, our borings encountered variable layers of silty sand, sandy clay and clayey sand. One plasticity index test on the shallow clay in Boring 1-B1 showed high expansion potential. Gravel was also encountered in our explorations at depth; this is typical for the soils in the region.

Consult the Site Plan and exploration logs for specific subsurface conditions at each location. We include our exploration logs in Appendix A. The logs contain the soil type, color, consistency, and visual classification in general accordance with the Unified Soil Classification System. The logs graphically depict the subsurface conditions encountered at the time of the exploration. Generalizations of the soils encountered are provided below.

2.6 GROUNDWATER CONDITIONS

We did not observe static or perched groundwater in any of our subsurface explorations. Fluctuations in the level of groundwater may occur due to variations in rainfall, irrigation practice, and other factors not evident at the time measurements were made.

2.7 LABORATORY TESTING

Select samples recovered during drilling activities were tested to determine their engineering properties:

TABLE 2.7-1
Laboratory Testing Methods

Soil Characteristic	Testing Method	Location of Results
Natural Unit Weight and Moisture Content	ASTM D-2216	Appendix A
Plastic Limit and Liquid Limit	ASTM D-4318	Appendix B
Grain Size Distribution and Percent Passing No. 200 Sieve	ASTM D-422 ASTM D-1140	Appendix B

3.0 PRELIMINARY CONCLUSIONS

Based on our research and site observations, we did not find any significant geotechnical constraints that would preclude development. The primary geotechnical concern that could affect development is expansive soil. We summarize our conclusions below.

3.1 EXPANSIVE SOIL

We observed potentially expansive lean clay near the surface of the site in some of our borings. Our preliminary laboratory testing indicates that these soils exhibit high shrink/swell potential with variations in moisture content.

Expansive soils change in volume with changes in moisture. They can shrink or swell and cause heaving and cracking of slabs-on-grade, pavements, and structures founded on shallow foundations. Building damage due to volume changes associated with expansive soils can be reduced by: (1) using a rigid mat foundation that is designed to resist the settlement and heave of expansive soil, (2) deepening the foundations to below the zone of moisture fluctuation, i.e. by using deep footings or drilled piers, and/or (3) using footings at normal shallow depths but bottomed on a layer of select fill having a low expansion potential.

Post-tensioned mat foundations are the preferred preliminary foundation system for the residential structures. Preliminary recommendations for this foundation type are presented in a subsequent section of his report.

Successful performance of structures on expansive soils requires special attention during construction. It is imperative that exposed soils be kept moist prior to placement of concrete for foundation construction. It is extremely difficult to remoisturize clayey soils without excavation, moisture conditioning, and recompaction.

We have also provided specific preliminary grading recommendations for compaction of clay soil at the site. The purpose of these recommendations is to reduce the swell potential of the clay by compacting the soil at a high moisture content and controlling the amount of compaction. Expansive soil mitigation recommendations are presented in Section 4.1 of this report.

3.2 EXISTING FILL

Based on our field observations, the existing basin in the north of the property has been constructed by placing earthen berms above grade. Without proper documentation of this fill, we recommend complete removal and, if complete or partial reconstruction is proposed, recompaction of the existing fill in accordance with the subsequent sections in this preliminary report.

3.3 SEISMIC HAZARDS

Potential seismic hazards resulting from a nearby moderate to major earthquake can generally be classified as primary and secondary. The primary effect is ground rupture, also called surface faulting. The common secondary seismic hazards include ground shaking, and ground lurching. The following sections present a discussion of these hazards as they apply to the site. Based on topographic and lithologic data available and collected to date, the risk of regional subsidence or uplift, soil liquefaction, lateral spreading, landslides, tsunamis, flooding or seiches is considered low to negligible at the site.

3.3.1 Ground Rupture

Since there are no known active faults crossing the site, and it is not located within an Earthquake Fault Special Study Zone, it is our opinion that ground rupture is unlikely at the subject property.

3.3.2 Ground Shaking

An earthquake of moderate to high magnitude generated within the San Francisco Bay Area and Central Valley regions could cause considerable ground shaking at the site, similar to that which has occurred in the past. To mitigate the shaking effects, all structures should be designed using sound engineering judgment and the 2007 California Building Code (CBC) requirements, as a minimum. 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. Conformance to the current building code recommendations does not constitute any kind of guarantee that significant structural damage would not occur in the event of a maximum magnitude earthquake; however, it is reasonable to expect that a well-designed and well-constructed structure will not collapse or cause loss of life in a major earthquake (SEAOC, 1996).

3.3.3 Liquefaction

Soil liquefaction results from loss of strength during cyclic loading, such as imposed by earthquakes. Soils most susceptible to liquefaction are clean, loose, saturated, uniformly graded, fine-grained sands. The sands encountered in our borings were generally medium to very dense and contained a significant amount of fine-grained material. In addition, ground water was not encountered to the terminal depth of our borings. For these reasons and based upon engineering judgment, it is our opinion that our preliminary findings indicate the site as having a low potential for liquefaction during seismic shaking.

3.3.4 Ground Lurching

Ground lurching is a result of the rolling motion imparted to the ground surface during energy released by an earthquake. Such rolling motion can cause ground cracks to form in weaker soils. The potential for the formation of these cracks is considered greater at contacts between deep alluvium and bedrock. Such an occurrence is possible at the site as in other locations in the San Francisco Bay Area and Central Valley regions, but based on the site location, it is our opinion that the offset is expected to be very minor. We provide preliminary recommendations for foundation and pavement design in this report that can reduce the potential for adverse impacts from lurch cracking.

3.3.5 Flooding

Based on site elevation and distance from water sources, flooding is not expected at the subject site; however, the Civil Engineer should review pertinent information relating to possible flood levels for the subject site based on final pad elevations and provide appropriate design measures for development of the project, if necessary.

3.4 SEISMIC DESIGN PARAMETERS

The 2010 California Building Code (CBC) stipulates the use of design criteria set forth in the 2005 ASCE Standard 7-05. Based on the subsurface soil conditions encountered during our subsurface exploration and local seismic sources, the site may be characterized for design based on 2010 California Building Code using the following information that was obtained from the USGS website U.S. Seismic Design Maps Web:

TABLE 3.4-1
2010 CBC SEISMIC PARAMETERS
(Latitude: 37.726698° Longitude: -121.461499°)

Item	Design Value
Site Class	D
0.2 second Spectral response Acceleration, S_s	1.72
1.0 second Spectral response Acceleration, S_1	0.58
Site Coefficient, F_a	1.0
Site Coefficient, F_V	1.5
Maximum considered earthquake spectral response accelerations for short periods, S_{MS}	1.72
Maximum considered earthquake spectral response accelerations for 1-second periods, S_{M1}	0.58
Design spectral response acceleration at short periods, S_{DS}	1.15
Design spectral response acceleration at 1-second periods, S_{D1}	0.58
Long-period Transition Period, T_L	12 sec

4.0 DESIGN GEOTECHNICAL REPORT

This report presents preliminary geotechnical findings, conclusions, and recommendations intended for preliminary planning purposes only. Design-level geotechnical explorations and assessments should be performed when development plans are finalized. Design-level exploration should be performed to further evaluate the presence of undocumented fill, the potential for expansive soils, liquefaction and other geotechnical hazards. Soil samples should be obtained and tested for engineering properties to evaluate geotechnical hazards of the onsite soil. Specific recommendations for site grading and the design and construction of foundations and utilities should be included in the design-level report.

5.0 PRELIMINARY EARTHWORK RECOMMENDATIONS

The relative compaction and optimum moisture content of soil and aggregate base referred to in this report are based on the most recent ASTM D1557 test method. Compacted soil is not acceptable if it is unstable. It should exhibit only minimal *flexing* or *pumping*, as determined by an ENGEO representative.

As used in this report, the term "moisture condition" refers to adjusting the moisture content of the soil by either drying if too wet or adding water if too dry.

We define "structural areas" in this report as any area sensitive to settlement of compacted soil. These areas include, but are not limited to building pads, sidewalks, pavement areas, and retaining walls.

5.1 EXISTING FILL REMOVAL

Remove all existing fill to competent native soil, as determined by ENGEO. Based on our field observations, the existing basin in the north of the property has been constructed by placing earthen berms above grade. The lateral extent and depth of fill may vary; an ENGEO representative should observe the fill removal to determine its extents during construction. We recommend complete removal and, if complete or partial reconstruction is proposed, recompaction of the existing fill in accordance with the subsequent sections in this preliminary report.

5.2 EXPANSIVE SOIL MITIGATION – CONVENTIONAL FOUNDATIONS

For non-residential structures (such as the recreation facilities), it might be economically feasible to use conventional foundations underlain by nonexpansive fill. To reduce the risk of structural damage associated with the variably expansive soil conditions using conventional foundations, we recommend constructing the upper 18 inches of the building pad with non-expansive fill. As an alternative to importing non-expansive fill for grading the building pad, it may be cost effective to lime-treat the upper 18 inches of the finished building pad and to 10 feet laterally beyond.

In structural areas where properly designed post-tensioned mat foundations are the utilized foundation system, constructing the upper 18 inches of the pad with non-expansive fill would not be necessary.

5.3 GENERAL SITE CLEARING

Clear areas to be developed of all surface and subsurface deleterious materials including existing building foundations, slabs, buried utility and irrigation lines, pavements, debris, and designated trees, shrubs, and associated roots. Clean and backfill excavations extending below the planned finished site grades with suitable material compacted to the recommendations presented in the subsequent sections of this preliminary report. Retain ENGEO to observe and test all backfilling.

Following clearing, strip the site to remove surface organic materials. Strip organics from the ground surface to a depth of at least 2 to 3 inches below the surface. Remove strippings from the site or, if considered suitable by the landscape architect and owner, use them in landscape fill.

It may also be feasible to mulch organics in place, depending on the amount and type of vegetation present at the time of grading as well as the proposed mulching method. If desired, ENGEO can evaluate site vegetation at the time of grading to determine the feasibility of mulching organics in place.

5.4 OVER-OPTIMUM SOIL MOISTURE CONDITIONS

The contractor should anticipate encountering excessively over-optimum (wet) soil moisture conditions during winter or spring grading, or during or following periods of rain. Wet soil can make proper compaction difficult or impossible. Wet soil conditions can be mitigated by:

1. Frequent spreading and mixing during warm dry weather;
2. Mixing with drier materials;
3. Mixing with a lime, lime-flyash, or cement product; or
4. Stabilizing with aggregate, geotextile stabilization fabric, or both.

Options 3 and 4 should be evaluated and approved by ENGEO following a design-level geotechnical exploration and prior to implementation.

5.5 ACCEPTABLE FILL

On-site soil material is suitable as fill material provided it is processed to remove concentrations of organic material, debris, and particles greater than 8 inches in maximum dimension.

Imported fill materials should meet the above requirements and have a plasticity index less than 12, and at least 20 percent passing the No. 200 sieve. Allow ENGEO to sample and test proposed imported fill materials at least 72 hours prior to delivery to the site.

5.6 FILL COMPACTION

5.6.1 Grading in Structural Areas

Perform subgrade compaction prior to fill placement, following cutting operations, and in areas left at grade as follows.

1. Scarify to a depth of at least 8 inches;

2. Moisture condition soil to at least 1 percentage point above the optimum moisture content for nonexpansive soils (PI less than 12) and 3 percentage points above the optimum moisture content for expansive soils (PI equal to or greater than 12); **and**

3. Compact the subgrade to at least 90 percent relative compaction. Compact the upper 6-inches of finish pavement subgrade to at least 95 percent relative compaction prior to aggregate base placement.

After the subgrade soil has been compacted, place and compact acceptable fill (defined in Section 4) as follows:

1. Spread fill in loose lifts that do not exceed 8 inches;

2. Moisture condition soil to at least 1 percentage point above the optimum moisture content for nonexpansive soils (PI less than 12) and 3 percentage points above the optimum moisture content for expansive soils (PI equal to or greater than 12); **and**

3. Compact fill to a minimum of 90 percent relative compaction. Compact the upper 6 inches of fill in pavement areas to 95 percent relative compaction prior to aggregate base placement.

5.6.2 Lime Treated Soils

Where lime treatment of the soil is used to mitigate expansive soil conditions, we recommend uniformly mixing the subgrade soil with high calcium lime; the soil should be moisture conditioned to an above optimum moisture content before mixing. The specific percentage of high calcium lime to be mixed in with the subgrade can be provided in a design-level geotechnical exploration report; similarly, the specific above optimum moisture content can also be provided in that document. The mixing should be performed in accordance with the current version of Caltrans Standard Specifications with the following exceptions:

1. Following mixing, the treated soils should be allowed to fully hydrate prior to compaction.

2. Following hydration, the treated soil should be compacted according to ASTM D-1557 to not less than 95 percent relative compaction at a moisture content at least 2 percentage points above the optimum to a non-yielding surface.

5.6.3 Aggregate Base Rock

Compact the pavement Caltrans Class 2 Aggregate Base section to at least 95 percent relative compaction (ASTM D1557). Moisture condition aggregate base to or slightly above the optimum moisture content prior to compaction.

5.6.4 Underground Utility Trench Backfill

5.6.4.1 General

The contractor is responsible for conducting all trenching and shoring in accordance with CALOSHA requirements. Project consultants involved in utility design should specify pipe bedding materials.

Jetting of backfill is not an acceptable means of compaction. We may allow thicker loose lift thicknesses based on acceptable density test results, where increased effort is applied to rocky fill, or for the first lift of fill over pipe bedding.

5.6.4.2 Structural Areas

Place and compact trench backfill as follows:

1. Trench backfill should have a maximum particle size of 6 inches;

2. Moisture condition trench backfill to at least the optimum moisture content for nonexpansive soils (PI less than 12) and 3 percentage points above the optimum moisture content for expansive soils (PI equal to or greater than 12). Additionally, expansive soils should be moisture conditioned outside the trench;

3. Place fill in loose lifts not exceeding 12 inches; **and**

4. Compact fill to a minimum of 90 percent relative compaction. Compact the upper 6 inches of fill in pavement areas to 95 percent relative compaction prior to aggregate base placement.

Where fill or subgrade materials contain more than 30 percent rock retained on a ¾-inch sieve, a performance specification should be used to evaluate compaction. For this condition, we recommend a maximum loose lift thickness of 12 inches. Moisture condition rocky fill such that the moisture content of the matrix soil (minus ¾-inch material) is at or slightly above the optimum moisture content determined by visual/manual methods. Compact each lift of rocky fill with at least 6 passes and 8 passes of a Caterpillar 235 or larger excavator with a sheepsfoot wheel attachment for minimum 90 and 95 percent relative compaction, respectively. We can develop other performance standards for different compaction equipment if necessary during construction.

5.6.5 Landscape Fill

Process, place and compact fill in accordance with the Underground Utility Trench Backfill section of this report, except compact to at least 85 percent relative compaction (ASTM D1557).

5.7 SLOPE GRADIENT

Construct final slope gradients to 2:1 (horizontal:vertical) or flatter. The contractor is responsible to construct temporary construction slopes in accordance with CALOSHA requirements.

5.8 SITE DRAINAGE

5.8.1 Surface Drainage

The project civil engineer is responsible for designing surface drainage improvements. With regard to geotechnical engineering issues, we provide the following minimum recommendation for surface drainage.

1. Slope pavement areas a minimum of 1 percent towards drop inlets or other surface drainage devices.

2. Slope finished grade away from building exteriors at a minimum of 3 percent for a distance of at least 7 feet.

3. Discharge roof down spouts into closed conduits and direct away from buildings to appropriate drainage devices.

5.8.2 Subsurface Drainage

Based on our site exploration and current grading concepts for the site, we do not anticipate that subdrainage systems will be necessary. We recommend that we review the site grading plans to further evaluate the need for subdrainage systems as well as observe the earthwork operations during site grading.

5.9 LANDSCAPING CONSIDERATION

Based on the findings of our preliminary subsurface soil exploration, the near surface soils are moderately to highly expansive; we therefore recommend greatly restricting the amount of surface water infiltration near structures, pavements, flatwork, and slabs-on-grade. This may be accomplished by:

- Selecting landscaping that requires little or no watering, especially within 3 feet of structures, slabs-on-grade, or pavements,

- Using low precipitation sprinkler heads,

- Regulating the amount of water distributed to lawn or planter areas by installing timers on the sprinkler system,

- Providing surface grades to drain rainfall or landscape watering to appropriate collection systems and away from structures, slabs-on-grade, or pavements,

- Preventing water from draining toward or ponding near building foundations, slabs-on-grade, or pavements, and

- Avoiding open planting areas within 3 feet of the building perimeter.

We recommend that these items be incorporated into the landscaping plans.

6.0 PRELIMINARY FOUNDATION RECOMMENDATIONS

Based on our understanding of the proposed improvements, we present below our preliminary recommendations for single- and multi-family residential structures under three stories in height.

6.1 POST-TENSIONED MAT FOUNDATIONS

From a structural performance standpoint, post-tensioned (PT) foundations are superior for limiting structural damage resulting from expansive soil movement. In addition, PT slabs reduce problems with non-geotechnical issues such as shrinkage cracking and slab moisture transmission. We anticipate the site soil conditions would likely result in a 10- to 12-inch-thick post-tensioned mat. PT mats should be designed based on the procedure presented by the Post-Tensioning Institute "Design of Post-Tensioned Slabs-on-Ground" Third Edition, including appropriate addenda.

Underlay PT mats with a moisture reduction system as recommended below. In addition, moisture condition the pad subgrade to a moisture content at least 5 percentage points above optimum prior to foundation construction. The subgrade should not be allowed to dry prior to concrete placement. We also recommend that we be retained to observe the prepour moisture conditions to check that our report recommendations have been followed.

6.2 CONVENTIONAL FOOTINGS WITH SLAB-ON-GRADE

As an alternative to post-tensioned mat foundation systems for non-residential structures, conventional footings with slab-on-grade floors underlain by nonexpansive soil as discussed in Section 5.2 may be used.

6.2.1 Footing Dimensions and Allowable Bearing Capacity

For both continuous and isolated footing types, provide a minimum footing depth and width of 24-inches and 12-inches, respectively. Minimum footing depths shown above are taken from lowest adjacent pad grade. The cold joint between the exterior footing and slab-on-grade should be located at least 4 inches above adjacent exterior grade.

Design foundations recommended above for a maximum allowable bearing pressure of 2,000 pounds per square foot (psf) for dead plus live loads. Increase this bearing capacity by one-third for the short-term effects of wind or seismic loading

The maximum allowable bearing pressure is a net value; the weight of the footing may be neglected for design purposes. All footings located adjacent to utility trenches should have their bearing surfaces below an imaginary 1:1 (horizontal:vertical) plane projected upward from the bottom edge of the trench to the footing.

6.2.2 Waterstop

If a two pour system is used for footings and slab, the cold joint between the exterior footing and slab-on-grade should be located at least 4 inches above adjacent finish exterior grade. If this is not done, then we recommend the addition of a waterstop between the two pours to reduce moisture penetration through the cold joint and migration under the slab. Use of a monolithic pour would eliminate the need for the waterstop.

6.2.3 Reinforcement

The structural engineer should design footing reinforcement to support the intended structural loads without excessive settlement. Reinforce all continuous footings with top and bottom steel to provide structural continuity and to permit spanning of local irregularities. At a minimum, design continuous footings to structurally span a clear distance of 5 feet. To help resist expansive soil movement, reinforce continuous footings with at least four No. 4 steel reinforcement bars, two top and two bottom.

6.2.4 Foundation Lateral Resistance

Lateral loads may be resisted by friction along the base and by passive pressure along the sides of foundations. The passive pressure is based on an equivalent fluid pressure in pounds per cubic foot (pcf). We recommend the following allowable values for design:

Passive Lateral Pressure: 300 pcf

Coefficient of Friction: 0.30

The above allowable values include a factor of safety of 1.5. Increase the above values by one-third for the short-term effects of wind or seismic loading. Passive lateral pressure should not be used for footings on or above slopes.

6.2.5 Settlement

Provided our report recommendations are followed, and given our understanding of the proposed construction as described in the Project Location and Description section of this report, we estimate total and differential foundation settlements will be less than approximately ¾ and ½-inch, respectively.

6.3 UTILITY TRENCH PLUGS BENEATH FOUNDATIONS

Where utility trenches enter beneath structures, backfill with native clay soil for pipe bedding and backfill for a distance of 3 feet on each side of the foundation. This will help prevent the normally granular bedding materials from acting as a conduit for water to enter beneath the building. As an alternative, a sand cement slurry (minimum 28-day compressive strength of 500 psi) may be used in place of native clay soil.

6.4 SLAB MOISTURE VAPOR REDUCTION

When buildings are constructed with concrete slab-on-grade, such as post-tensioned and conventional foundation systems, water vapor from beneath the slab will migrate through the slab and into the building. This water vapor can be reduced but not stopped. Vapor transmission can negatively affect floor coverings and lead to increased moisture within a building. When water vapor migrating through the slab would be undesirable, we recommend the following to reduce, but not stop, water vapor transmission upward through the slab-on-grade.

1. Construct a moisture retarder system directly beneath the slab on-grade that consists of the following:

    a) Vapor retarder membrane sealed at all seams and pipe penetrations and connected to all footings. Vapor retarders shall conform to Class A vapor retarder per ASTM E 1745-97 "Standard Specification for Plastic Water Vapor Retarders used in Contact with Soil or Granular Fill under Concrete Slabs". The vapor retarder should be **underlain by**

    b) 4 inches of clean crushed rock. Crushed rock should have 100 percent passing the ¾-inch sieve and less than 5 percent passing the No. 4 Sieve.

2. Use a concrete water-cement ratio for slabs-on-grade of no more than 0.50.

3. Provide inspection and testing during concrete placement to check that the proper concrete and water cement ratio are used.

4. Moist cure slabs for a minimum of 3 days or use other equivalent curing specified by the structural engineer.

The structural engineer should be consulted as to the use of a layer of clean sand or pea gravel (less than 5 percent passing the U.S. Standard No. 200 Sieve) placed on top of the vapor retarder membrane to assist in concrete curing.

7.0 SLABS-ON-GRADE

7.1 INTERIOR CONCRETE FLOOR SLABS

7.1.1 Non-Expansive Fill

Due to the high expansion potential of the near surface soils, we recommend that interior floor slabs be supported on non-expansive fill to reduce the likelihood of slab damage from heave or shrinkage. For a conventional slab, we recommend at least 18 inches of non-expansive fill over 12 inches of moisture conditioned subgrade in accordance with the Preliminary Earthwork Recommendations sections of this report. The structural engineer should provide final design thickness and additional reinforcement, if necessary, for the intended structural loads. Non-expansive fill is not necessary for properly design post-tensioned mat foundation systems.

7.1.2 Subgrade Modulus for Structural Slab Design

Provided the site earthwork is conducted in accordance with the recommendations of this report, a subgrade modulus of 100 psi/in can be used for structural slab design.

7.2 EXTERIOR FLATWORK

Based on our preliminary findings of onsite expansive soils, exterior flatwork includes items such as concrete sidewalks, steps, and outdoor courtyards exposed to foot traffic only. Provide a minimum section of 6 inches of concrete over 4 inches of aggregate base. Compact the aggregate base to at least 90 percent relative compaction (ASTM D1557). Thicken flatwork edges to at least 10 inches to help control moisture variations in the subgrade and place wire mesh or rebar within the middle third of the slab to help control the width and offset of cracks. Construct control and construction joints in accordance with current Portland Cement Association Guidelines.

7.3 TRENCH BACKFILL

Backfill and compact all trenches below building slabs-on-grade and to 5 feet laterally beyond any edge in accordance with the Underground Utility Backfill section of this report.

8.0 RETAINING WALLS

8.1 LATERAL SOIL PRESSURES

Design proposed retaining walls to resist lateral earth pressures from adjoining natural materials and/or backfill and from any surcharge loads. Provided that adequate drainage is included as recommended below, design walls restrained from movement at the top to resist an equivalent fluid pressure of 60 pounds per cubic foot (pcf). In addition, design restrained walls to resist an additional uniform pressure equivalent to one-half of any surcharge loads applied at the surface.

Design unrestrained retaining walls with adequate drainage to resist an equivalent fluid pressure of 40 pcf plus one-third of any surcharge loads.

The above lateral earth pressures assume level backfill conditions and sufficient drainage behind the walls to prevent any build-up of hydrostatic pressures from surface water infiltration and/or a rise in the groundwater level. If adequate drainage is not provided, we recommend that an additional equivalent fluid pressure of 40 pcf be added to the values recommended above for both restrained and unrestrained walls. Damp-proofing of the walls should be included in areas where wall moisture would be problematic.

Construct a drainage system, per preliminary recommendations contained in this report, to reduce hydrostatic forces behind the retaining wall.

8.2 RETAINING WALL DRAINAGE

Construct either graded rock drains or geosynthetic drainage composites behind the retaining walls to reduce hydrostatic lateral forces. For rock drain construction, we recommend two types of rock drain alternatives:

1. A minimum 12-inch-thick layer of Class 2 Permeable Filter Material (Caltrans Specification 68-1.025) placed directly behind the wall, or

2. A minimum 12-inch-thick layer of washed, crushed rock with 100 percent passing the ¾-inch sieve and less than 5 percent passing the No. 4 sieve. Envelop rock in a minimum 6-ounce, nonwoven geotextile filter fabric.

For both types of rock drains:

1. Place the rock drain directly behind the walls of the structure.

2. Extend rock drains from the wall base to within 12 inches of the top of the wall.

3. Place a minimum of 4-inch-diameter perforated pipe at the base of the wall, inside the rock drain and fabric, with perforations placed down.

4. Place pipe at a gradient at least 1 percent to direct water away from the wall by gravity to a drainage facility.

ENGEO should review and approve geosynthetic composite drainage systems prior to use.

8.3 BACKFILL

Backfill behind retaining walls should be placed and compacted in accordance with the Preliminary Earthwork recommendations contained in this report. Use light compaction equipment within 5 feet of the wall face. If heavy compaction equipment is used, the walls should be temporarily braced to avoid excessive wall movement.

8.4 FOUNDATIONS

Retaining walls may be supported on continuous footings in accordance with the preliminary recommendations presented in the Footing Dimensions and Allowable Bearing Capacity section of this report.

9.0 FLEXIBLE PAVEMENTS

On a preliminary basis, we judged an R-value of 5 to be appropriate for preliminary design. The design-level report should verify this value as appropriate. The following preliminary pavement sections have been determined for a Traffic Index of 5 to 8, an assumed R-value of 5, and in accordance with the design methods contained in Topic 630 of Caltrans Highway Design Manual.

TABLE 9.0-1
Preliminary Pavement Sections

Traffic Index	Hot Mix Asphalt (inches)	Class 2 Aggregate Base (inches)
5	3	10
6	3	14
7	4	16
8	4½	19

The above preliminary pavement sections are provided for estimating only. We recommend the Traffic Index and minimum pavement sections be confirmed by the Civil Engineer and with the City of Tracy

9.1 SUBGRADE AND AGGREGATE BASE COMPACTION

Construct subgrade and aggregate base in accordance with the Preliminary Earthwork Recommendations section of this report. Aggregate Base should meet the requirements for ¾-inch maximum Class 2 AB per section 26-1.02a of the latest Caltrans Standard Specifications.

9.2 CUT-OFF CURBS

Saturated pavement subgrade or aggregate base can cause premature failure or increased maintenance of asphalt concrete pavements. This condition often occurs where landscape areas directly abut and drain toward pavements. If desired to install pavement cutoff barriers, they should be considered where pavement areas lie downslope of any landscape areas that are to be sprinklered or irrigated, and should extend to a depth of at least 4 inches below the base rock layer. Cutoff barriers may consist of deepened concrete curbs or deep-root moisture barriers.

If reduced pavement life and greater than normal pavement maintenance are acceptable to the owner, then the cutoff barrier may be eliminated.

10.0 LIMITATIONS AND UNIFORMITY OF CONDITIONS

This report presents preliminary geotechnical recommendations for design of the improvements discussed in the Project Location and Description section of this report for the Homewood project. It is the responsibility of the owner to transmit the information and recommendations of this preliminary report to the appropriate organizations or people involved in design of the project, including but not limited to developers, owners, buyers, architects, engineers, and designers. The conclusions and recommendations contained in this report are solely professional opinions and are valid for a period of no more than 2 years from the date of report issuance.

We strived to perform our professional services in accordance with generally accepted geotechnical engineering principles and practices currently employed in the area; no warranty is expressed or implied. There are risks of earth movement and property damages inherent in building on or with earth materials. We are unable to eliminate all risks or provide insurance; therefore, we are unable to guarantee or warrant the results of our services.

This report is based upon field observations and other conditions discovered at the time of report preparation. We developed this report with limited subsurface exploration data. We assumed that our subsurface exploration data is representative of the actual subsurface conditions across the site. Considering possible underground variability of soil, rock, stockpiled material, and groundwater, additional costs may be required to complete the project. We recommend that the owner establish a contingency fund to cover such costs. If unexpected conditions are encountered, notify ENGEO immediately to review these conditions and provide additional and/or modified recommendations, as necessary.

Our services did not include excavation sloping or shoring, soil volume change factors, flood potential, or a geohazard exploration. In addition, our preliminary geotechnical exploration did not include work to determine the existence of possible hazardous materials. If any hazardous materials are encountered during construction, then notify the proper regulatory officials immediately.

This document must not be subject to unauthorized reuse that is, reusing without written authorization of ENGEO. Such authorization is essential because it requires ENGEO to evaluate the document's applicability given new circumstances, not the least of which is passage of time.

Actual field or other conditions will necessitate clarifications, adjustments, modifications or other changes to ENGEO's documents. Therefore, ENGEO must be engaged to prepare the necessary clarifications, adjustments, modifications or other changes before construction activities commence or further activity proceeds. If ENGEO's scope of services does not include on-site construction observation, or if other persons or entities are retained to provide such services, ENGEO cannot be held responsible for any or all claims arising from or resulting from the performance of such services by other persons or entities, and from any or all claims arising from or resulting from clarifications, adjustments, modifications, discrepancies or other changes necessary to reflect changed field or other conditions.

We determined the lines designating the interface between layers on the exploration logs using visual observations. The transition between the materials may be abrupt or gradual. The exploration logs contain information concerning samples recovered, indications of the presence of various materials such as clay, sand, silt, rock, existing fill, etc., and observations of groundwater encountered. The field logs also contain our interpretation of the subsurface conditions between sample locations. Therefore, the logs contain both factual and interpretative information. Our recommendations are based on the contents of the final logs, which represent our interpretation of the field logs.

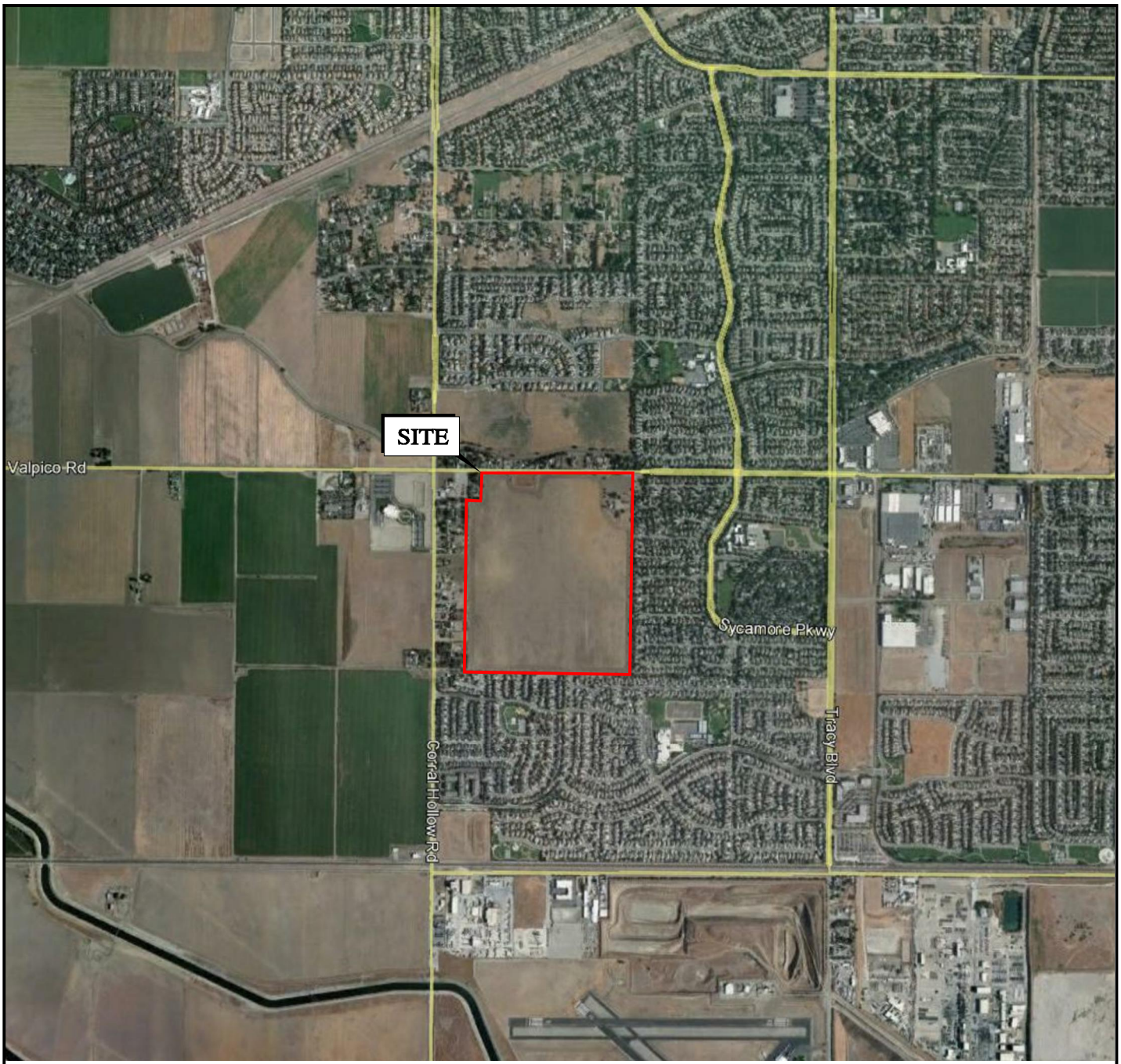
FIGURES

Figure 1 - Vicinity Map
Figure 2 - Site Plan

FIGURES



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N

0 FEET 2000

0 METERS 1000

BASE MAP SOURCE: GOOGLE EARTH PRO

ENGEO Expect Excellence

VICINITY MAP

HOMEWOOD

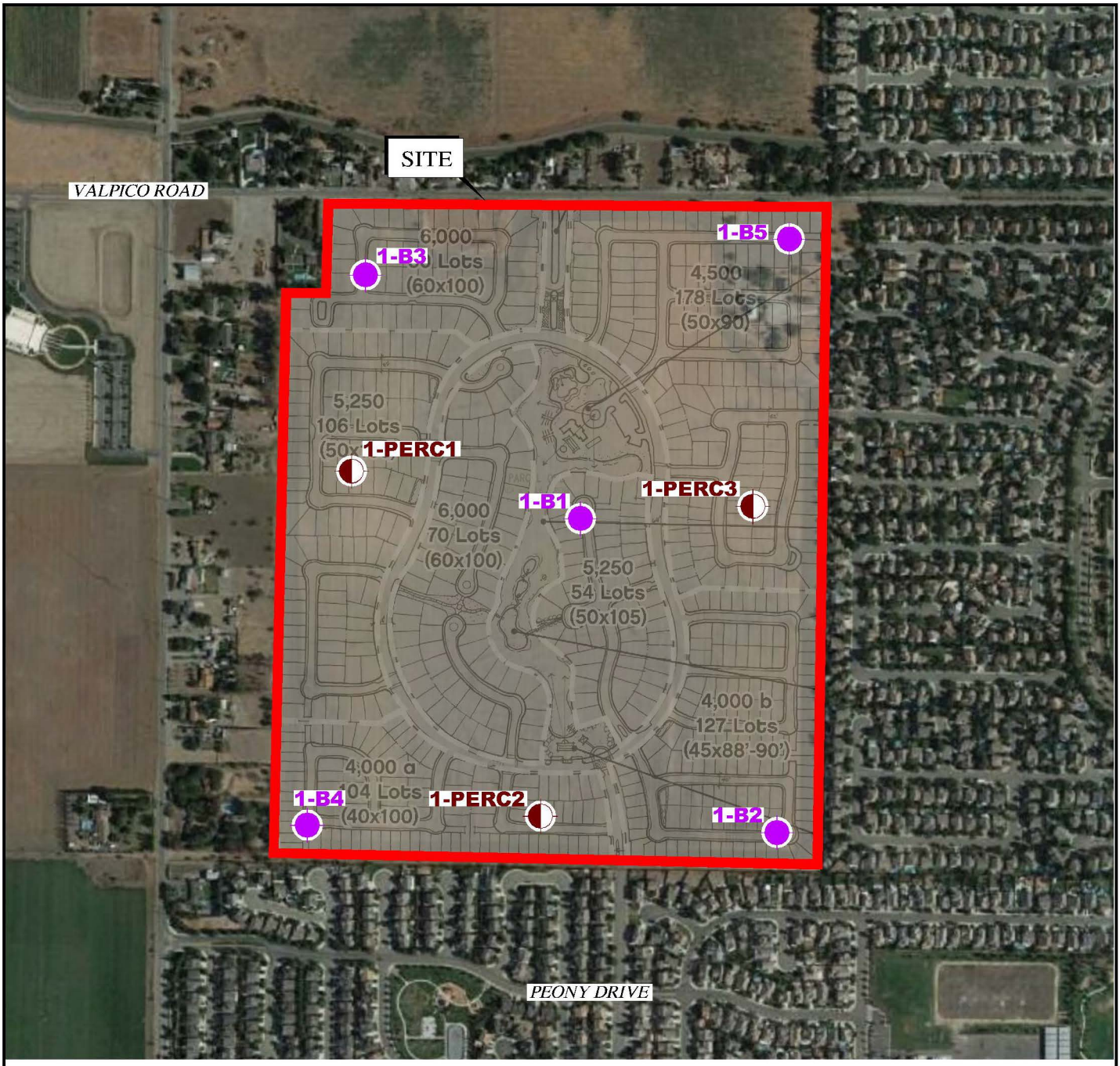
TRACY, CALIFORNIA

PROJECT NO.: 10091.000.000		FIGURE NO. 1
SCALE: AS SHOWN		
DRAWN BY: SRP	CHECKED BY: SH	

G:\Drafting\DRAFTING2_Dwg_10000 to 12999\10091\000\GEX\10091000000-GEX-1-VicinityMap-0413.dwg Plot Date: 4-24-13 dborde

ORIGINAL FIGURE PRINTED IN COLOR

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N

0 FEET 600

0 METERS 300

EXPLANATION

1-B5 APPROXIMATE LOCATION OF BORING

1-PERC3 APPROXIMATE LOCATION OF PERCOLATION TEST

BASE MAP SOURCE: GOOGLE EARTH PRO

ENGEO Expect Excellence

SITE PLAN

HOMEWOOD

TRACY, CALIFORNIA

PROJECT NO.: 10091.000.000		FIGURE NO. 2
SCALE: AS SHOWN		
DRAWN BY: SRP	CHECKED BY: SH	

G:\Drafting\DRAFTING2_Dwg_10000 to 12999\10091\000\GEX\10091000000-GEX-2-SitePlan-0413.dwg Plot Date: 4-24-13 dborde

ORIGINAL FIGURE PRINTED IN COLOR

APPENDIX A

Key to Boring Logs
Exploration Logs

APPENDIX A



KEY TO BORING LOGS

MAJOR TYPES			DESCRIPTION
COARSE-GRAINED SOILS MORE THAN HALF OF MAT'L LARGER THAN #200 SIEVE	GRAVELS MORE THAN HALF COARSE FRACTION IS LARGER THAN NO. 4 SIEVE SIZE	CLEAN GRAVELS WITH LESS THAN 5% FINES	GW - Well graded gravels or gravel-sand mixtures GP - Poorly graded gravels or gravel-sand mixtures
		GRAVELS WITH OVER 12 % FINES	GM - Silty gravels, gravel-sand and silt mixtures GC - Clayey gravels, gravel-sand and clay mixtures
	SANDS MORE THAN HALF COARSE FRACTION IS SMALLER THAN NO. 4 SIEVE SIZE	CLEAN SANDS WITH LESS THAN 5% FINES	SW - Well graded sands, or gravelly sand mixtures SP - Poorly graded sands or gravelly sand mixtures
		SANDS WITH OVER 12 % FINES	SM - Silty sand, sand-silt mixtures SC - Clayey sand, sand-clay mixtures
FINE-GRAINED SOILS MORE THAN HALF OF MAT'L SMALLER THAN #200 SIEVE	SILTS AND CLAYS LIQUID LIMIT 50 % OR LESS		ML - Inorganic silt with low to medium plasticity CL - Inorganic clay with low to medium plasticity OL - Low plasticity organic silts and clays
	SILTS AND CLAYS LIQUID LIMIT GREATER THAN 50 %		MH - Elastic silt with high plasticity CH - Fat clay with high plasticity OH - Highly plastic organic silts and clays
	HIGHLY ORGANIC SOILS		PT - Peat and other highly organic soils

For fine-grained soils with 15 to 29% retained on the #200 sieve, the words "with sand" or "with gravel" (whichever is predominant) are added to the group name.

For fine-grained soil with >30% retained on the #200 sieve, the words "sandy" or "gravelly" (whichever is predominant) are added to the group name.

GRAIN SIZES

U.S. STANDARD SERIES SIEVE SIZE					CLEAR SQUARE SIEVE OPENINGS			
200	40	10	4	3/4 "	3"	12"		
SILTS AND CLAYS	SAND			GRAVEL			COBBLES	BOULDERS
	FINE	MEDIUM	COARSE	FINE	COARSE			

RELATIVE DENSITY

SANDS AND GRAVELS	BLOWS/FOOT (S.P.T.)
VERY LOOSE	0-4
LOOSE	4-10
MEDIUM DENSE	10-30
DENSE	30-50
VERY DENSE	OVER 50

CONSISTENCY

SILTS AND CLAYS	STRENGTH*
VERY SOFT	0-1/4
SOFT	1/4-1/2
MEDIUM STIFF	1/2-1
STIFF	1-2
VERY STIFF	2-4
HARD	OVER 4

SAMPLER SYMBOLS

- Modified California (3" O.D.) sampler
- California (2.5" O.D.) sampler
- S.P.T. - Split spoon sampler
- Shelby Tube
- Continuous Core
- Bag Samples
- Grab Samples
- NR No Recovery

MOISTURE CONDITION

DRY	Dusty, dry to touch
MOIST	Damp but no visible water
WET	Visible freewater

LINE TYPES

- ———— Solid - Layer Break
- – – – – – Dashed - Gradational or approximate layer break

GROUND-WATER SYMBOLS

- Groundwater level during drilling
- Stabilized groundwater level

(S.P.T.) Number of blows of 140 lb. hammer falling 30" to drive a 2-inch O.D. (1-3/8 inch I.D.) sampler

* Unconfined compressive strength in tons/sq. ft., asterisk on log means determined by pocket penetrometer

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LOG OF BORING 1-B1

ENGEO INCORPORATED

Geotechnical Exploration
Homewood
Tracy, California
10091.000.000

DATE DRILLED: 3/13/2013
HOLE DEPTH: Approx. 31½ ft.
HOLE DIAMETER: 4.0 in.
SURF ELEV (MSL): Approx. 116 ft.

LOGGED / REVIEWED BY: C. Crawford / MS
DRILLING CONTRACTOR: West Coast Exploration
DRILLING METHOD: Solid Flight Auger
HAMMER TYPE: 140 lb. Rope and Cathead

Depth in Feet	Depth in Meters	Sample Type	DESCRIPTION	Log Symbol	Water Level	Blow Count/Foot	Atterberg Limits: Liquid Limit	Atterberg Limits: Plastic Limit	Atterberg Limits: Plasticity Index	Fines Content (% passing #200 sieve)	Moisture Content (% dry weight)	Dry Unit Weight (pcf)	Unconfined Strength (tsf) *field approx
			SANDY LEAN CLAY (CL), olive brown, very stiff, moist, fine- to medium-grained sand, 55-65% fines			41	44	17	27		9.9	94.1	
	1		(grades to 15-25% fine- to medium-grained sand)			22							
5			LEAN CLAY (CL), olive brown, stiff to very stiff, moist, fine-grained sand			17				96	12.1		
	2												
10	3					13					10.7		
	4												
15						19							
	5		SILTY SAND (SM), olive brown, medium dense, moist, 20-30% fines								6		
			LEAN CLAY (CL), olive brown, stiff, moist, fine-grained sand, 70-80% fines										
20	6					20					16.1		
	7		(gravel lens at 22.5 ft depth)										
25													

LOG - GEOTECHNICAL 10091.000.000_BORE LOGS.GPJ ENGEO INC.GDT 4/19/13

LOG OF BORING 1-B1

ENGEO INCORPORATED

Geotechnical Exploration
Homewood
Tracy, California
10091.000.000

DATE DRILLED: 3/13/2013
HOLE DEPTH: Approx. 31½ ft.
HOLE DIAMETER: 4.0 in.
SURF ELEV (MSL): Approx. 116 ft.

LOGGED / REVIEWED BY: C. Crawford / MS
DRILLING CONTRACTOR: West Coast Exploration
DRILLING METHOD: Solid Flight Auger
HAMMER TYPE: 140 lb. Rope and Cathead

Depth in Feet	Depth in Meters	Sample Type	DESCRIPTION	Log Symbol	Water Level	Blow Count/Foot	Atterberg Limits: Liquid Limit	Atterberg Limits: Plastic Limit	Atterberg Limits: Plasticity Index	Fines Content (% passing #200 sieve)	Moisture Content (% dry weight)	Dry Unit Weight (pcf)	Unconfined Strength (tsf) *field approx
	8		LEAN CLAY (CL), olive brown, stiff, moist, fine-grained sand, 70-80% fines (2 in layer of poorly graded sand at 26 ft depth)			38					15		
30	9		SILTY SAND (SM), olive brown, dense, fine- to coarse-grained sand, 20-25% fines			63							
			Bottom of boring at approximately 31 1/2 feet Groundwater not encountered										

LOG OF BORING 1-B2

ENGEO INCORPORATED

Geotechnical Exploration
Homewood
Tracy, California
10091.000.000

DATE DRILLED: 3/13/2013
HOLE DEPTH: Approx. 31½ ft.
HOLE DIAMETER: 4.0 in.
SURF ELEV (MSL): Approx. 128 ft.

LOGGED / REVIEWED BY: C. Crawford / MS
DRILLING CONTRACTOR: West Coast Exploration
DRILLING METHOD: Solid Flight Auger
HAMMER TYPE: 140 lb. Rope and Cathead

Depth in Feet	Depth in Meters	Sample Type	DESCRIPTION	Log Symbol	Water Level	Blow Count/Foot	Atterberg Limits: Liquid Limit	Atterberg Limits: Plastic Limit	Atterberg Limits: Plasticity Index	Fines Content (% passing #200 sieve)	Moisture Content (% dry weight)	Dry Unit Weight (pcf)	Unconfined Strength (tsf) *field approx
			SILTY SAND WITH GRAVEL (SM), grayish brown, dense, moist, fine- to coarse-grained sand, <2" gravel										
	1					52					4.5	98.4	
5						26				14			
	2		(grades to 15-20% fines)			65/6					5.9	122.8	
10	3		(cobbles encountered at 12 ft depth)										
			SILTY GRAVEL WITH SAND (GM), light brown, very dense, moist, 55-65% gravel, 10-15% fines, medium- to course-grained sand										
	4					64							
15	5												
	6		LEAN CLAY (CL), yellowish brown, very stiff, moist, fine-grained sand, 75-85% fines			21							
			CLAYEY SAND WITH GRAVEL (SC), light brown, medium dense, moist, fine- to coarse-grained sand, 35-45% fines, <1/2" gravel (encountered trace gravel)										
20	7												
25													

LOG OF BORING 1-B2

ENGEO INCORPORATED

Geotechnical Exploration
Homewood
Tracy, California
10091.000.000

DATE DRILLED: 3/13/2013
HOLE DEPTH: Approx. 31½ ft.
HOLE DIAMETER: 4.0 in.
SURF ELEV (MSL): Approx. 128 ft.

LOGGED / REVIEWED BY: C. Crawford / MS
DRILLING CONTRACTOR: West Coast Exploration
DRILLING METHOD: Solid Flight Auger
HAMMER TYPE: 140 lb. Rope and Cathead

Depth in Feet	Depth in Meters	Sample Type	DESCRIPTION	Log Symbol	Water Level	Blow Count/Foot	Atterberg Limits: Liquid Limit	Atterberg Limits: Plastic Limit	Atterberg Limits: Plasticity Index	Fines Content (% passing #200 sieve)	Moisture Content (% dry weight)	Dry Unit Weight (pcf)	Unconfined Strength (tsf) *field approx
	8		LEAN CLAY WITH SAND (CL), grayish brown, stiff, moist, fine-grained sand, 70-80% fines			13							
30	9		CLAYEY SAND WITH GRAVEL (SC), grayish brown, medium dense, moist, fine- to coarse-grained sand, 35-45% fies, <1/2" gravel			58							
			SILTY SAND WITH GRAVEL (SM), grayish brown, medium dense, moist, fine- to coarse-grained sand, 35-45% fines. <1/2" gravel										
			Bottom of boring at approximately 31 1/2 feet Groundwater not encountered										

LOG OF BORING 1-B3

ENGEO INCORPORATED

Geotechnical Exploration
Homewood
Tracy, California
10091.000.000

DATE DRILLED: 3/13/2013
HOLE DEPTH: Approx. 14 ft.
HOLE DIAMETER: 4.0 in.
SURF ELEV (MSL): Approx. 106 ft.

LOGGED / REVIEWED BY: C. Crawford / MS
DRILLING CONTRACTOR: West Coast Exploration
DRILLING METHOD: Solid Flight Auger
HAMMER TYPE: 140 lb. Rope and Cathead

Depth in Feet	Depth in Meters	Sample Type	DESCRIPTION	Log Symbol	Water Level	Blow Count/Foot	Atterberg Limits: Liquid Limit	Atterberg Limits: Plastic Limit	Atterberg Limits: Plasticity Index	Fines Content (% passing #200 sieve)	Moisture Content (% dry weight)	Dry Unit Weight (pcf)	Unconfined Strength (tsf) *field approx
			SILTY SAND WITH GRAVEL (SM), dark brown, dense, moist, fine- to medium-grained sand, <1" gravel			39					9	92.5	
	1		LEAN CLAY (CL), light brown, very stiff, moist, fine-grained sand			17							
5						52/6				95			
	2		GRAVELLY CLAY WITH SAND (CL), light brown, very stiff, moist, fine- to coarse-grained sand, 50-60% fines, <1" gravel			50							
			SILTY SAND WITH GRAVEL (SM), light brown, dense, moist, fine- to coarse-grained sand, 15-25% fines, <1" gravel										
10	3					47							
	4		(encountered 3" cobbles)										
			Bottom of boring at approximately 14 feet Groundwater not encountered										

LOG - GEOTECHNICAL 10091.000.000_BORE LOGS.GPJ ENGEO INC.GDT 4/19/13

LOG OF BORING 1-B4

ENGEO INCORPORATED

Geotechnical Exploration
Homewood
Tracy, California
10091.000.000

DATE DRILLED: 3/13/2013
HOLE DEPTH: Approx. 21½ ft.
HOLE DIAMETER: 4.0 in.
SURF ELEV (MSL): Approx. 133 ft.

LOGGED / REVIEWED BY: C. Crawford / MS
DRILLING CONTRACTOR: West Coast Exploration
DRILLING METHOD: Solid Flight Auger
HAMMER TYPE: 140 lb. Rope and Cathead

Depth in Feet	Depth in Meters	Sample Type	DESCRIPTION	Log Symbol	Water Level	Blow Count/Foot	Atterberg Limits: Liquid Limit	Atterberg Limits: Plastic Limit	Atterberg Limits: Plasticity Index	Fines Content (% passing #200 sieve)	Moisture Content (% dry weight)	Dry Unit Weight (pcf)	Unconfined Strength (tsf) *field approx
			LEAN CLAY WITH SAND (CL), light brown, medium stiff, moist, fine- to medium-grained sand			17				82			
	1		(encountered <1" gravel)			23							
5			SILTY SAND WITH GRAVEL (SM), light brown, dense, moist, fine- to coarse-grained sand, 35-45% fines, <1/2" gravel			32							
	2												
10	3		(grades to <3/4" gravel)			50/6							
	4		SILTY SAND WITH GRAVEL (SM), brown, very dense, moist, fine- to coarse-grained sand, 15-20% fines, <1/2" gravel										
15	5					50/4							
20	6					53/6							
			Bottom of boring at approximately 21 1/2 feet Groundwater not encountered										

LOG OF BORING 1-B5

ENGEO INCORPORATED

Geotechnical Exploration
Homewood
Tracy, California
10091.000.000

DATE DRILLED: 3/13/2013
HOLE DEPTH: Approx. 16½ ft.
HOLE DIAMETER: 4.0 in.
SURF ELEV (MSL): Approx. 107 ft.

LOGGED / REVIEWED BY: C. Crawford / MS
DRILLING CONTRACTOR: West Coast Exploration
DRILLING METHOD: Solid Flight Auger
HAMMER TYPE: 140 lb. Rope and Cathead

Depth in Feet	Depth in Meters	Sample Type	DESCRIPTION	Log Symbol	Water Level	Blow Count/Foot	Atterberg Limits: Liquid Limit	Atterberg Limits: Plastic Limit	Atterberg Limits: Plasticity Index	Fines Content (% passing #200 sieve)	Moisture Content (% dry weight)	Dry Unit Weight (pcf)	Unconfined Strength (tsf) *field approx
			SILTY SAND (SM), olive brown, medium dense, moist, fine- to medium-grained sand, trace gravel			18					6.7	103.6	
	1		SANDY LEAN CLAY (CL), olive brown, stiff, moist, fine-grained sand			10				67			
5						40							
	2		SILTY GRAVEL WITH SAND (GM), light brown, dense, moist, 15-25% fines, <1.5" gravel										
			LEAN CLAY (CL), light brown, very stiff, moist, fine-grained sand, 85-90% fines										
10	3					19							
	4												
15						18							
	5		Bottom of boring at approximately 16 1/2 feet Groundwater not encountered										

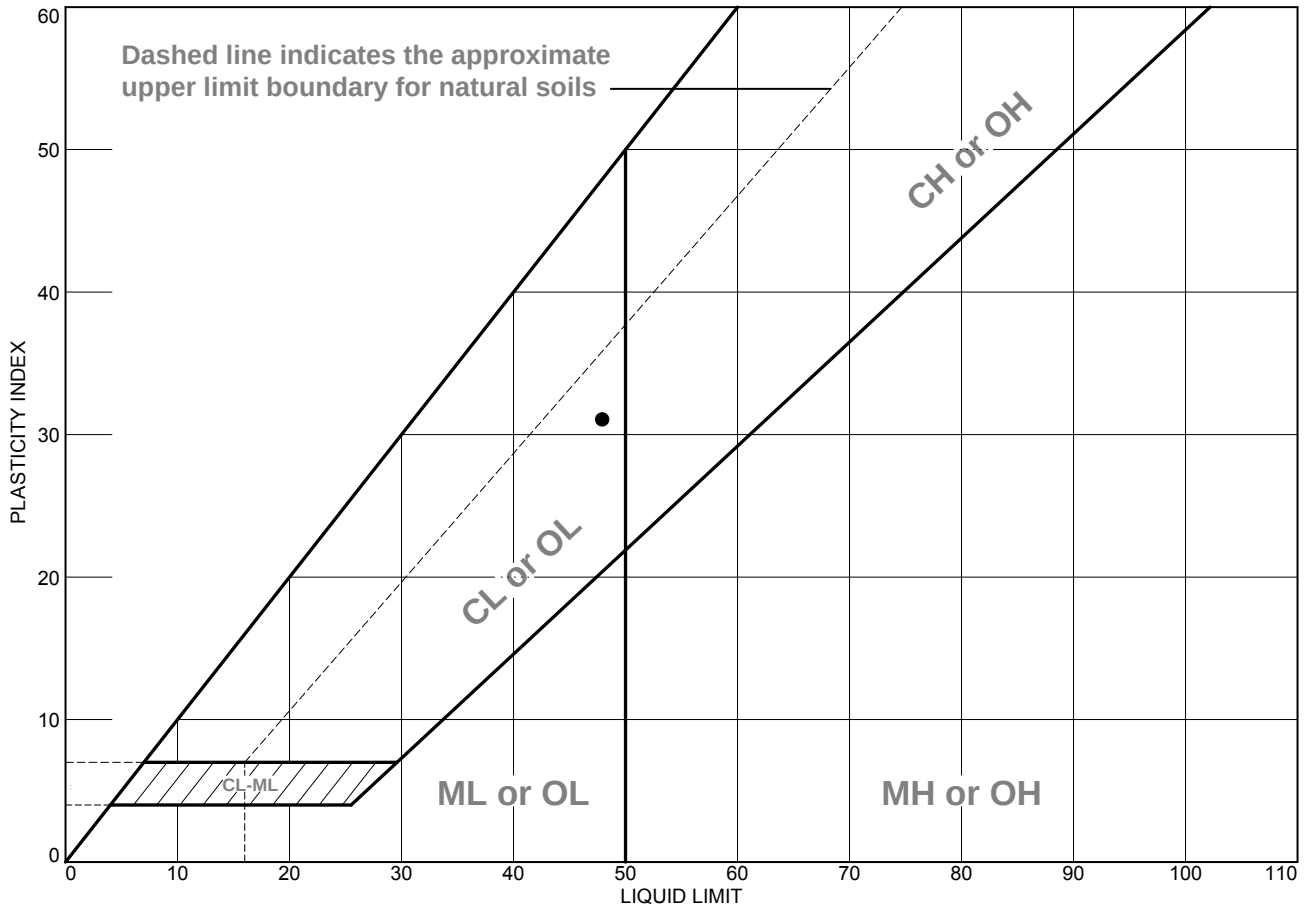
APPENDIX B
LABORATORY TEST DATA

Liquid and Plastic Limits Test Report
Particle Size Distribution Report

APPENDIX B



LIQUID AND PLASTIC LIMITS TEST REPORT



	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	SEE EXPLORATORY BORING LOGS	48	17	31			

Project No. 10091.000.000 **Client:** Ponderosa Homes

Project: Homewood

●**Location:** 1-B1@2' **Depth:** 2' **Sample Number:** 6

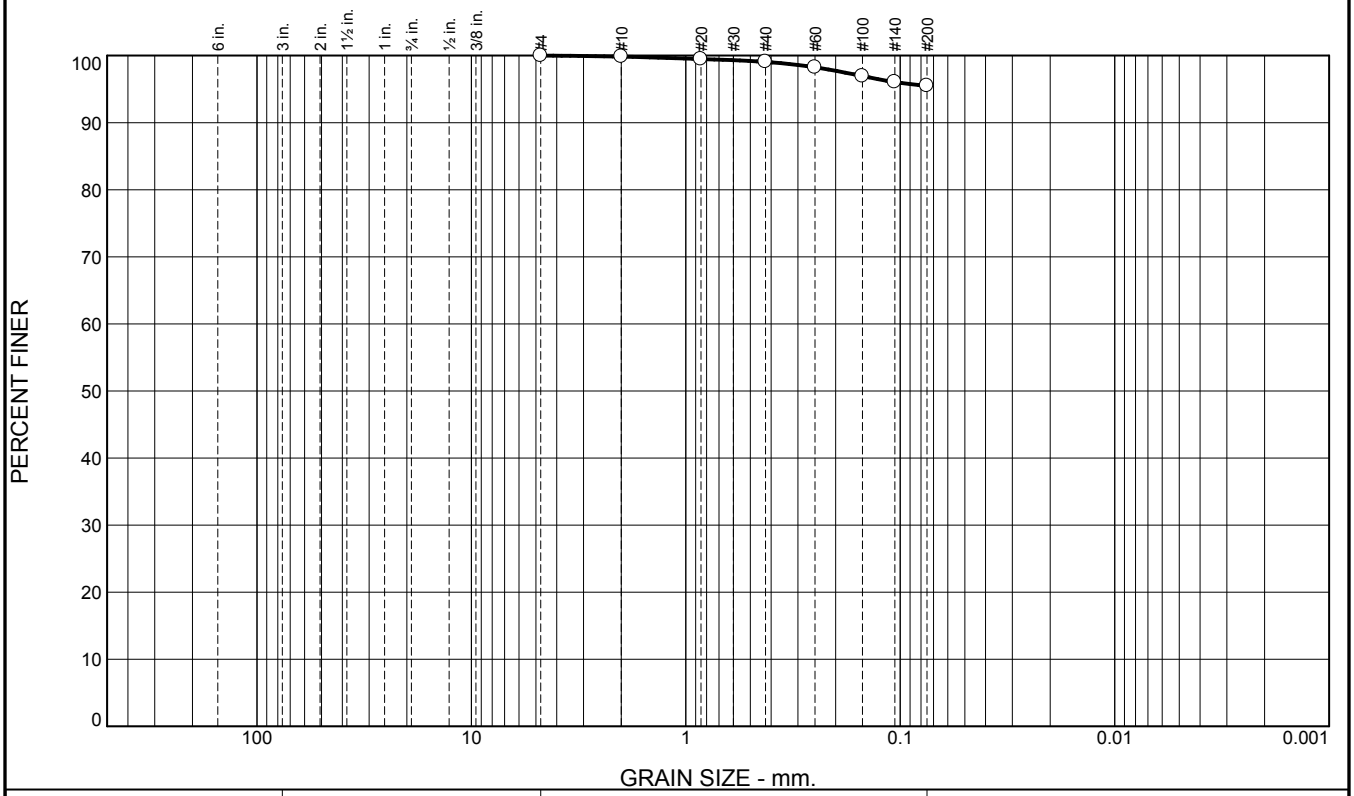
Remarks:

ENGEO INCORPORATED

Figure

Tested By: RWS/MT **Checked By:** KEL

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	0.7	3.6	95.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#10	99.8		
#20	99.5		
#40	99.1		
#60	98.3		
#100	96.9		
#140	96.0		
#200	95.5		

* (no specification provided)

Material Description

SEE EXPLORATORY BORING LOGS

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= D_{85}= D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= AASHTO=

Remarks

Location: 1-B1@5'
Sample Number: 1 **Depth:** 5' **Date:** 04-02-2013

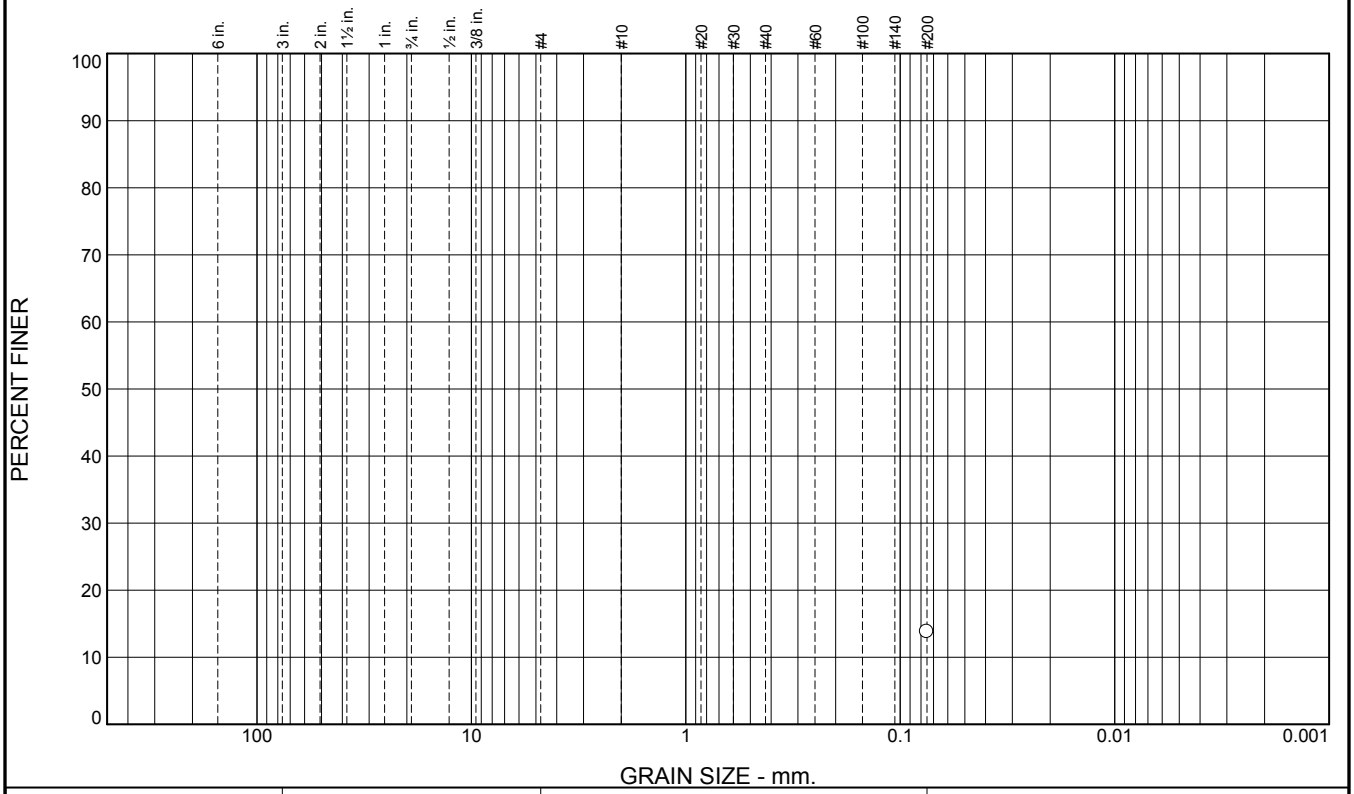
ENGEO INCORPORATED

Client: Ponderosa Homes
Project: Homewood

Project No: 10091.000.000 (002) **Figure**

Tested By: RWS/CC **Checked By:** KEL

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
						13.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#200	13.8		

* (no specification provided)

Material Description

SEE EXPLORATORY BORING LOGS

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= D_{85}= D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= AASHTO=

Remarks

Location: 1-B2@4.5'
Sample Number: 2 **Depth:** 4.5' **Date:** 04-02-2013

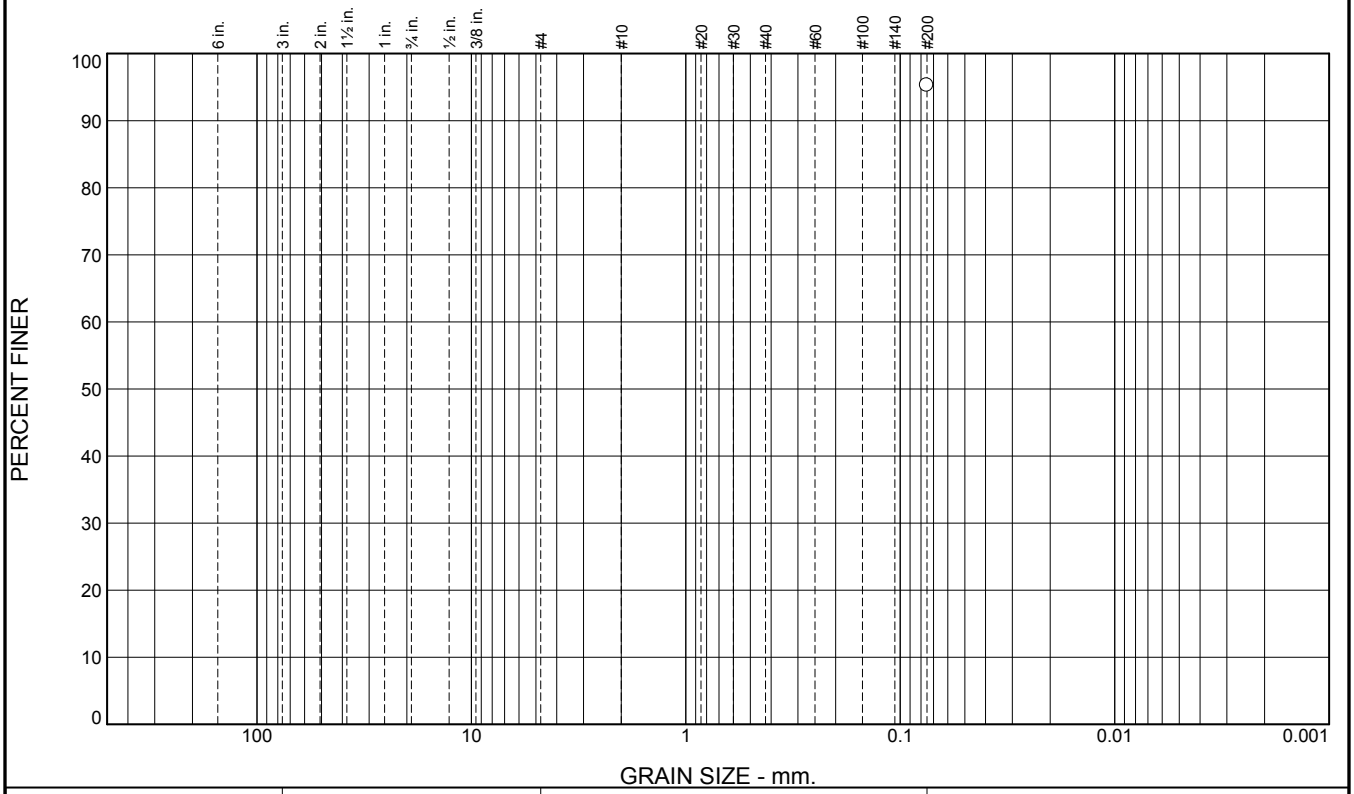
ENGEO INCORPORATED

Client: Ponderosa Homes
Project: Homewood

Project No: 10091.000.000 (002) **Figure**

Tested By: CC **Checked By:** KEL

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
						95.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#200	95.3		

* (no specification provided)

Material Description

SEE EXPLORATORY BORING LOGS

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= D_{85}= D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= AASHTO=

Remarks

Location: 1-B3@5.5'
Sample Number: 3 **Depth:** 5.5' **Date:** 04-02-2013

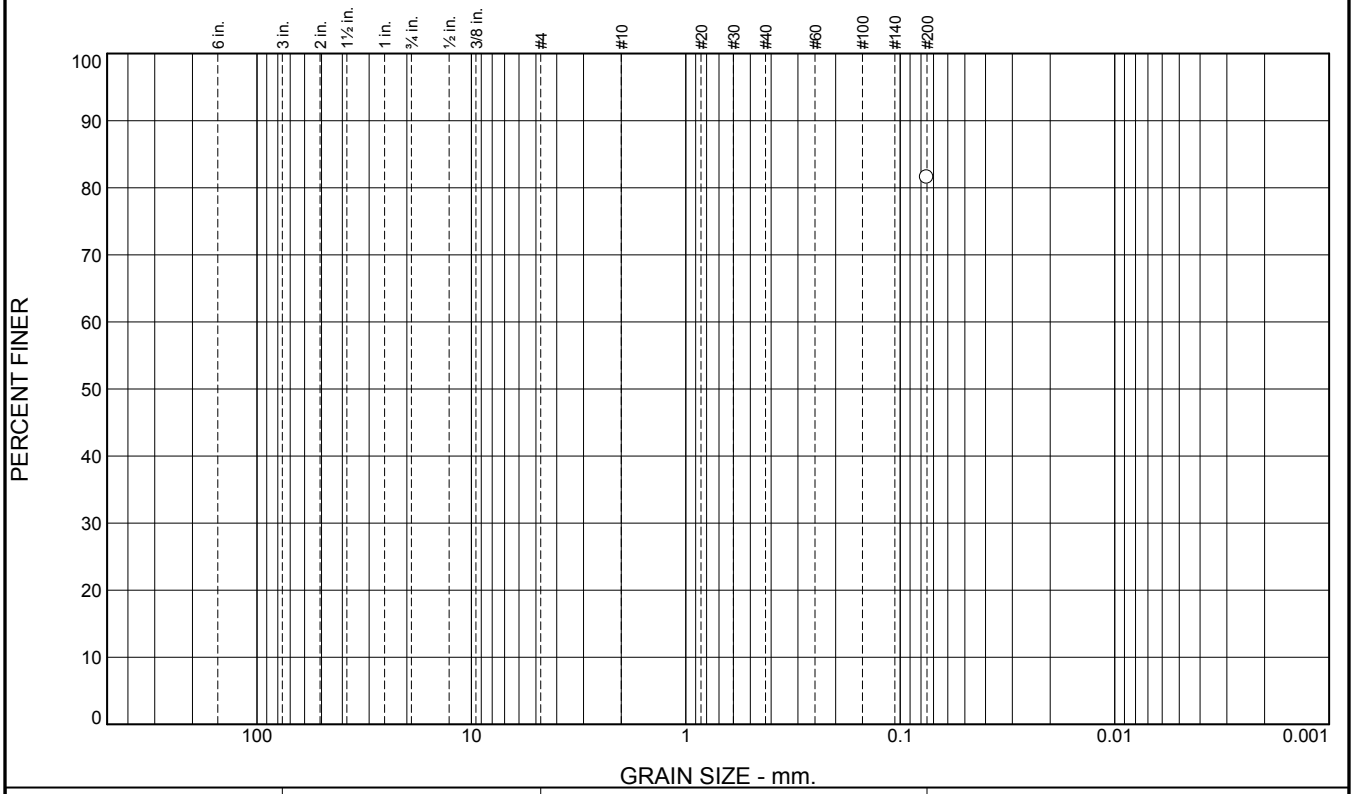
ENGEO INCORPORATED

Client: Ponderosa Homes
Project: Homewood

Project No: 10091.000.000 (002) **Figure**

Tested By: CC **Checked By:** KEL

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
						81.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#200	81.5		

* (no specification provided)

Material Description

SEE EXPLORATORY BORING LOGS

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= D_{85}= D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= AASHTO=

Remarks

Location: 1-B4@2'
Sample Number: 4 **Depth:** 2' **Date:** 04-02-2013

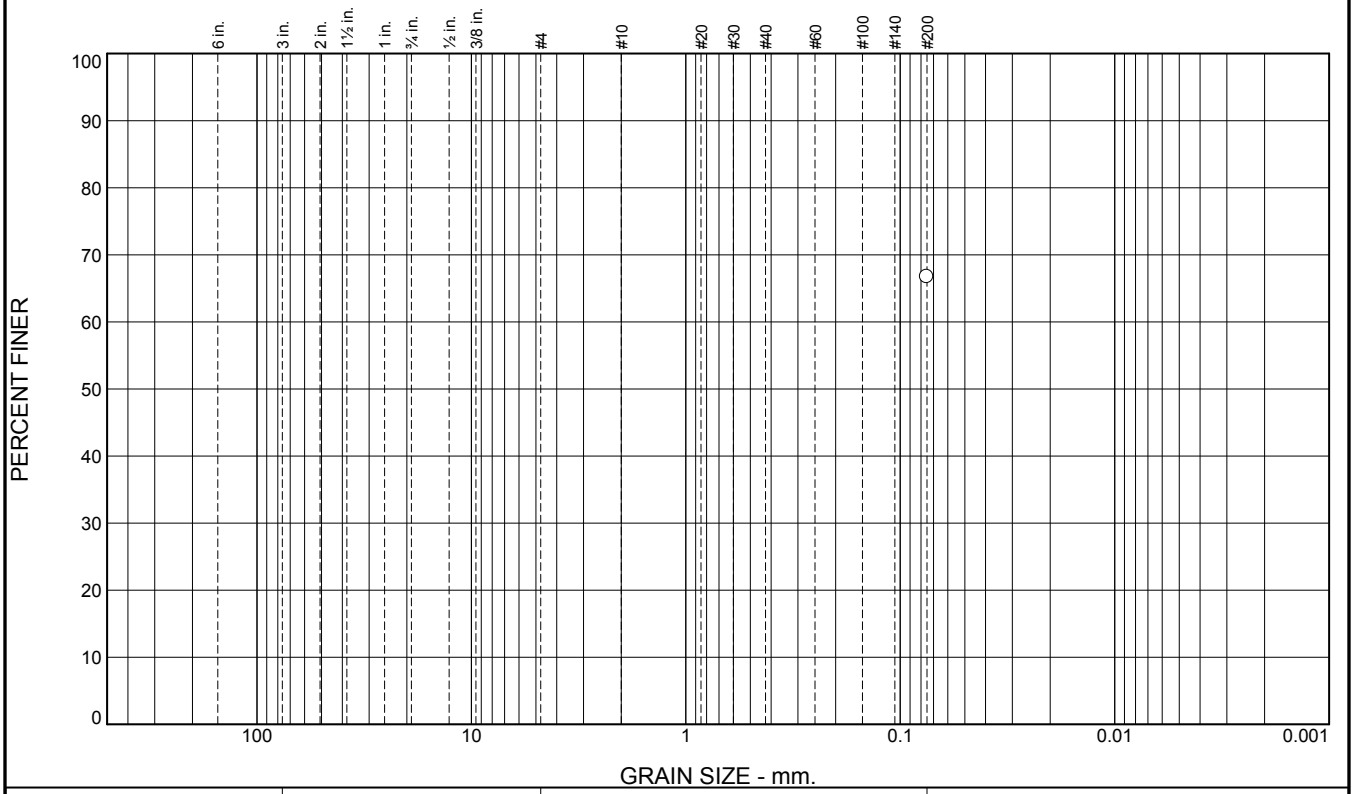
ENGEO INCORPORATED

Client: Ponderosa Homes
Project: Homewood

Project No: 10091.000.000 (002) **Figure**

Tested By: CC **Checked By:** KEL

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
						66.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#200	66.7		

* (no specification provided)

Material Description

SEE EXPLORATORY BORING LOGS

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= D_{85}= D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= AASHTO=

Remarks

Location: 1-B5@2.5'
Sample Number: 5 **Depth:** 2.5' **Date:** 04-02-2013

ENGEO INCORPORATED

Client: Ponderosa Homes
Project: Homewood

Project No: 10091.000.000 (002) **Figure**

Tested By: CC **Checked By:** KEL

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Appendix F:
Phase I Environmental Assessment

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MODIFIED PHASE I ENVIRONMENTAL SITE ASSESSMENT REPORT

HOMEWOOD
11150 WEST VALPICO ROAD
APN 244-040-01
TRACY (UNINCORPORATED), CALIFORNIA



Submitted to:
Mr. Jeffrey C. Schroeder
Ponderosa Homes, Incorporated
6130 Stoneridge Mall Road, Suite 185
Pleasanton, CA 94588

Prepared by:
ENGEO Incorporated

April 4, 2013

Project No:
10091.000.000
Phase 001

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Project No.
10091.000.000

April 4, 2013

Mr. Jeffrey C. Schroeder
Ponderosa Homes, Incorporated
6130 Stoneridge Mall Road, Suite 185
Pleasanton, CA 94588

Subject: Homewood
11150 W. Valpico Road (APN 244-040-001)
Tracy (unicorporated), California

MODIFIED PHASE I ENVIRONMENTAL SITE ASSESSMENT

Dear Mr. Schroeder:

ENGEO is pleased to present our modified phase I environmental site assessment of the subject Property located in unincorporated Tracy, California. The attached report includes a description of the site assessment activities, along with ENGEO's findings, opinions, and conclusions regarding the Property.

ENGEO has the specific qualifications based on education, training, and experience to assess the nature, history, and setting of the Property, and has developed and performed all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312. We declare that, to the best of our professional knowledge and belief, the responsible charge for this study meets the definition of Environmental Professional as defined in Section 312.10 of 40 CFR 312 and ASTM 1527-05.

We are pleased to be of service to you on this project. If you have any questions concerning the contents of our report, please contact us.

Sincerely,

ENGEO Incorporated

Richard Gandolfo
rg/sm/jf

Shawn Munger, CHG

TABLE OF CONTENTS

Letter of Transmittal

Page

EXECUTIVE SUMMARY 1

1.0 INTRODUCTION 2

1.1 PURPOSE OF MODIFIED PHASE I ENVIRONMENTAL SITE ASSESSMENT 2
1.2 DETAILED SCOPE OF SERVICES 2
1.3 LIMITATIONS AND EXCEPTIONS OF ASSESSMENT 2
1.4 SPECIAL TERMS AND CONDITIONS 3

2.0 PROPERTY INFORMATION 4

2.1 SITE LOCATION 4
2.2 SITE AND VICINITY CHARACTERISTICS 4
2.3 CURRENT USE OF PROPERTY/DESCRIPTION OF SITE IMPROVEMENTS 4
2.4 CURRENT USE OF ADJOINING PROPERTIES 4

3.0 RECORDS REVIEW 4

3.1 PROPERTY RECORDS 4
3.1.1 Title Report/Ownership 4
3.2 HISTORICAL RECORD SOURCES 5
3.2.1 Historical Topographic Maps 5
3.2.2 Aerial Photographs 6
3.2.3 Fire Insurance Maps 7
3.2.4 City Directory 8
3.2.5 Government Agencies 8
3.2.6 Previous Reports 9
3.3 ENVIRONMENTAL RECORD SOURCES 9
3.3.1 Federal ASTM Standard/Supplemental Sources 10
3.3.1.1 Subject Property 10
3.3.1.2 Other Properties 10
3.3.2 State ASTM Standard/Supplemental Sources 10
3.3.2.1 Subject Property 10
3.3.2.2 Other Properties 10
3.3.3 Local And Other ASTM Supplemental Sources 11
3.3.3.1 Subject Property 11
3.3.3.2 Other Properties 11

4.0 SITE RECONNAISSANCE 12

4.1 METHODOLOGY 12

TABLE OF CONTENTS (Continued)

4.2 GENERAL SITE SETTING....12
4.3 EXTERIOR OBSERVATIONS....12
4.4 ASBESTOS-CONTAINING MATERIALS AND LEAD-BASED PAINT....14
4.5 INDOOR AIR QUALITY....14

5.0 INTERVIEWS....15

6.0 LIMITED AGRICULTURAL CHEMICAL ASSESSMENT....15

7.0 OPINIONS AND DATA GAPS....15

8.0 CONCLUSIONS....16

REFERENCES

FIGURES
APPENDIX A – Environmental Data Resources, Inc., Radius Map Report
APPENDIX B – First American Title Company, Preliminary Title Report
APPENDIX C – Environmental Data Resources, Inc., Historical Topographic Map Report
APPENDIX D – Environmental Data Resources, Inc., Aerial Photo Decade Package
APPENDIX E – Environmental Data Resources, Inc., Sanborn Map Report
APPENDIX F – Environmental Data Resources, Inc., City Directory
APPENDIX G – Sunstar Labs, Analytical Laboratory Report
APPENDIX H – Environmental Data Site Assessment Questionnaires (2)
APPENDIX I – Qualification(s) of Environmental Professional(s)

EXECUTIVE SUMMARY

The subject site (Property) is located at 11150 W. Valpico Road in unincorporated Tracy, California (Figure 1). The Property is bound to the north by W. Valpico Road and rural residential lots, to the west by rural residential lots, and to the east and south by residential developments. The 133.60-acre Property is identified as APN 244-040-001 (Figure 2).

The site reconnaissance and records research did not find documentation or physical evidence of soil or groundwater impairments associated with the use of the Property. A review of regulatory databases maintained by county, state, and federal agencies found no documentation of hazardous materials violations or discharge on the Property.

The Property generally consists of undeveloped agricultural land with a multi-structure farm compound, which has been present since at least 1916. It is our understanding that the proposed development consists of a residential subdivision.

This assessment included a review of local, state, tribal, and federal environmental record sources, standard historical sources, aerial photographs, fire insurance maps and physical setting sources. A reconnaissance of the Property was conducted to review site use and current conditions to check for the storage, use, production or disposal of hazardous or potentially hazardous materials and interviews with persons knowledgeable about current and past site use.

In addition to the phase I assessment scope, soil samples were collected from 96 locations within the Property to create 24 discrete samples and 24 four-point composite samples for laboratory analysis. The purpose of the sampling and testing was to address potential environmental concerns associated with past agricultural use. In all samples, arsenic was non-detect with respect to laboratory reporting limits. DDE was detected in all but one of the composite samples collected; however, these concentrations, which ranged from 7.6 µg/kg to 63 µg/kg, fall well below the applicable CAL-EPA residential screening level. Alpha-chlordane was detected in small amounts in one sample. Given the details of the proposed project, the pesticides concentrations do not represent an environmental concern for the future residential development. Section 6.0 provides further details regarding the sampling activities.

Based on the findings of this assessment, the following Recognized Environmental Conditions (RECs) were identified for the Property;

- Documents received from the San Joaquin County Environmental Health Department indicate the former presence of an underground storage tank adjacent to the northernmost detached garage; however, no documents were available regarding the removal and subsequent analytical analysis of the soil below the former tank.

ENGEO has performed a modified phase I environmental site assessment of the Property in general conformance with the scope and limitations of ASTM E 1527-05 “Standard Practice for Environmental Site Assessments” and USEPA “Standards and Practices for All Appropriate Inquires”, 40 CFR Part 312. Based on the findings of this assessment, further studies are recommended at this time to determine the extent of contamination, if any, due to the presence of the former UST. These additional studies may be performed prior to or at the onset of site development.

1.0 INTRODUCTION

The 133.60-acre Property is located at 11150 W. Valpico Road in unincorporated Tracy, California (Figure 1) and is identified by APN 244-040-001 (Figure 2).

1.1 PURPOSE OF MODIFIED PHASE I ENVIRONMENTAL SITE ASSESSMENT

This assessment was performed at the request of Ponderosa Homes for the purpose of environmental due diligence. The objective of this modified phase I environmental site assessment is to identify recognized environmental conditions associated with the Property. As defined in the ASTM Standard Practice E 1527-05, a REC is "the presence or likely presence of any hazardous substances or petroleum products on a Property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the Property or into the ground, groundwater, or surface water of the Property".

1.2 DETAILED SCOPE OF SERVICES

The scope of services performed included the following:

- A review of publicly available and practically reviewable standard local, state, tribal, and federal environmental record sources.
- A review of publicly available and practically reviewable standard historical sources, aerial photographs, fire insurance maps and physical setting sources.
- A reconnaissance of the Property to review site use and current conditions. The reconnaissance was conducted to check for the storage, use, production or disposal of hazardous or potentially hazardous materials.
- Interviews with owners/occupants and public sector officials.
- Collection of 96 discrete soil samples throughout the Property from a depth interval of 3 to 9 inches below existing grade.
- Laboratory analysis of 24 four-point composite samples for organochlorine pesticides (EPA 8081) and analysis of 24 discrete samples for total arsenic (EPA 6010).
- Preparation of this modified ESA report with our findings..

1.3 LIMITATIONS AND EXCEPTIONS OF ASSESSMENT

The professional staff at ENGEO strives to perform its services in a proper and professional manner with reasonable care and competence but is not infallible. The recommendations and conclusions presented in this report were based on the findings of our study, which were

developed solely from the contracted services. The findings of the report are based in part on contracted database research, out-of-house reports and personal communications. The opinions formed by ENGEO are based on the assumed accuracy of the relied upon data in conjunction with our relevant professional experience related to such data interpretation. ENGEO assumes no liability for the validity of the materials relied upon in the preparation of this report.

This document must not be subject to unauthorized reuse; that is, reuse without written authorization of ENGEO. Such authorization is essential because it requires ENGEO to evaluate the document's applicability given new circumstances, not the least of which is passage of time. The findings from a modified phase I environmental site assessment are valid for one year after completion of the report. Updates of portions of the assessment may be necessary after a period of 180 days after completion.

This modified phase I environmental site assessment is not intended to represent a complete soil or groundwater characterization, nor define the depth or extent of soil or groundwater contamination. It is intended to provide an evaluation of potential environmental concerns associated with the use of the Property. A more extensive assessment that would include additional subsurface exploration with laboratory testing of soil and groundwater samples could provide more definitive information concerning site-specific conditions. If additional assessment activities are considered for the Property and if other entities are retained to provide such services, ENGEO cannot be held responsible for any and all claims arising from or resulting from the performance of such services by other persons or entities. ENGEO can also not be held responsible from any and all claims arising or resulting from clarifications, adjustments, modifications, discrepancies or other changes necessary to reflect changed field or other conditions.

1.4 SPECIAL TERMS AND CONDITIONS

ENGEO has prepared this report for the exclusive use of our client, Ponderosa Homes. It is recognized and agreed that ENGEO has assumed responsibility only for undertaking the study for the client. The responsibility for disclosures or reports to a third party and for remedial or mitigative action shall be solely that of the Client.

Limited laboratory testing of soil samples was included as part of the contracted services. The assessment did not include an asbestos survey, an evaluation of lead-based paint, an inspection of light ballasts for polychlorinated biphenyls (PCBs), a radon evaluation, or a mold survey.

This report is based upon field and other conditions discovered at the time of preparation of ENGEO's assessment. Visual observations referenced in this report are intended only to represent conditions at the time of the reconnaissance. ENGEO would not be aware of site contamination, such as dumping and/or accidental spillage that occurred subsequent to the reconnaissance conducted by ENGEO personnel.

2.0 PROPERTY INFORMATION

2.1 SITE LOCATION

The Property is located at 11150 W. Valpico Road in unincorporated Tracy, California (Figure 1). The Property is bound to the north by W. Valpico Road and rural residential lots, to the west by rural residential lots, and to the east and south by residential developments. The 133.60-acre Property is identified by APN 244-040-001 (Figure 2).

2.2 SITE AND VICINITY CHARACTERISTICS

Natural slope gradients trend toward the northeast. Total relief on the site is approximately 33 feet, ranging from approximately 135 feet above mean sea level (msl) in the southwestern portion of the Property to approximately 102 feet in the northcentral basin. Review of the Geologic Map of the San Francisco-San Jose Quadrangle (Wagner et al., 1991) indicated that the Property is underlain by alluvial deposits (Qf). This Quaternary-age alluvium consists of alluvial fan and basin deposits of gravel, sand, silt, and clay.

Geocheck – Physical Setting Source Summary of the Environmental Resources Data report (Appendix A) showed nine Federal United States Geological Survey (USGS) wells, nine State wells, and two State oil/gas wells located between ½ and 1 mile of the Property.

The site-specific depth to groundwater and direction of groundwater flow was not determined as part of this assessment. Fluctuations in groundwater levels may occur seasonally and over a period of years due to variations in precipitation, temperature, irrigation and other factors.

2.3 CURRENT USE OF PROPERTY/DESCRIPTION OF SITE IMPROVEMENTS

The Property currently mainly consists of undeveloped agricultural land with one residential dwelling and several outbuildings near the northeast section.

2.4 CURRENT USE OF ADJOINING PROPERTIES

Properties to the north and east consist of rural residential lots, while parcels to the east and south consist of residential developments.

3.0 RECORDS REVIEW

3.1 PROPERTY RECORDS

3.1.1 Title Report/Ownership

A Title Report lists recorded land title detail, ownership fees, leases, land contracts, easements, liens, deficiencies, and other encumbrances attached to or recorded against a subject Property. Laws and regulations pertaining to land trusts vary from state to state and the detail of

information presented in a Title Report can vary greatly by jurisdiction. As a result, ENGEO utilizes a Title Report, when provided to us, as a supplement to other historical record sources.

A Preliminary Title Report for the Property, as provided by First American Title Insurance Company and dated October 12, 2011, indicates that the Property is vested in J.C Tracy Group, a California Limited Liability Company. No environmentally related liens, deficiencies, or other encumbrances were noted. The Preliminary Title Report is presented in Appendix B.

3.2 HISTORICAL RECORD SOURCES

The purpose of the historical record review is to develop a history of the previous uses or occupancies of the Property and surrounding area in order to identify those uses or occupancies that are likely to have led to recognized environmental conditions on the Property.

3.2.1 Historical Topographic Maps

Historical USGS topographic maps were reviewed to determine if discernible changes in topography or improvements pertaining to the Property had been recorded. The following maps were provided to us through an EDR Historical Topographic Map Report, presented in Appendix C.

TABLE 3.2.1-1
Historical Topographic Maps

Quad	Year	Series	Scale
Tracy	1916	7.5-minute	1:31,680
Carbona	1922	15-minute	1:62,500
Carbona	1947	15-minute	1:50,000
Tracy	1954	7.5-minute	1:24,000
Tracy	1968	7.5-minute	1:24,000
Tracy	1981	7.5-minute	1:24,000

1916 Topographical Map – The 1916 topographical map shows that the Property slopes to the north, with a total elevation change of about 50 feet. A drainage appears in the western portion of the Property. A structure appears in the approximate northeast corner of the Property. Unpaved and unnamed roads appear in the approximate location of what are currently Valpico Road, Coral Hollow Road, and South Tracy Boulevard. A paved road and railroad line in the approximate location of what is currently West Linne Road is labeled *Western*. The town of Tracy is mapped northeast of the Property, and several railroad lines are mapped throughout the quadrangle.

1922 Topographical Map – The 1922 topographical map shows similar land use of the Property and the surrounding properties.

1947 Topographical Map – The 1947 topographical map depicts a group of five structures in the approximate northeast corner of the Property. A canal appears to the immediate north of the Property.

1954 Topographical Map – The 1954 topographical map shows two residential structures in the approximate northeast corner of the Property. Valpico Road, Corral Hollow Road, are named and appear to be paved. A road in the approximate location of South Tracy Boulevard is mapped as Jefferson Road. A road named Canal Road is now mapped immediately north of the Property. Linne Road is also identified. Surrounding properties appear to be used as orchards. The properties immediately to the west of the Property appear to have several residential structures.

1968 Topographical Map – The 1968 topographical map shows five residential structures in the northeast corner of the Property. A drainage basin appears in the northern portion of the Property, along Valpico Road.

1981 Topographical Map – The 1981 topographical map shows similar land use of the Property. The properties to the immediate west of the Property appear to be used as orchards.

3.2.2 Aerial Photographs

The following aerial photographs, provided by EDR, were reviewed for information regarding past conditions and land use at the Property and in the immediate vicinity. These photographs are presented in Appendix D.

TABLE 3.2.2-1
Aerial Photographs

Flyer	Year	Scale
Cartwright	1957	1” = 500'
USGS	1967	1” = 500'
USGS	1974	1” = 500'
USGS	1982	1” = 500'
EDR	1993 (Composite DOQQ)	1” = 500'
EDR	2005	1” = 500'
EDR	2006	1” = 500'
EDR	2009	1” = 500'
EDR	2010	1” = 500'

1957 Photograph – The 1957 photograph shows that the Property is primarily used for dry crop agriculture. Several irrigation canals extend east to west throughout the Property. Residential and barn structures appear in the northeast corner of the Property. An orchard appears adjacent to the residential structures. A basin appears in the north central portion of the Property. The

surrounding properties appear to be used primarily for dry crop agriculture, with isolated plots of row crops. Several residential structures appear along the northern and western borders of the Property. An irrigation canal is located north of the Property.

1967 Photograph – The 1967 photograph shows similar land use of the Property and surrounding properties. An increased number of plots along the western border of the Property appear to be used for row crops.

1974 Photograph – The 1974 photograph shows that the Property is still used primarily for dry crops. The orchard in the northeast corner of the Property and irrigation canals in the western area are no longer present. The irrigation canals in the eastern portion of the Property appear to change configuration.

1982 Photograph – The 1982 photograph shows similar land use of the Property and surrounding properties.

1993 Photograph – The 1993 photograph shows that the Property is still used primarily for dry crops. One of the barn structures in the northeastern corner of the Property is no longer present. The basin in the north-central portion of the Property appears to have increased vegetation. The property adjacent to the site along the northeastern border now appears to be residential development. The properties adjacent to the site along the western border no longer appear to be used for row crops.

2005 Photograph – The 2005 photograph shows that another residential structure in the northeastern corner of the Property has been demolished. The basin in the north-central portion of the Property is no longer vegetated. The irrigation canals no longer appear on the Property. The properties adjacent to the site along the southeastern and southern borders now appear to be residential development. A portion of the southern residential development is undergoing construction.

2006 Photograph – The 2006 photograph shows similar land use of the Property and surrounding properties. The residential development south of the Property has been completed.

2009 Photograph – The 2009 photograph shows that the Property has been recently tilled. A paved parking lot and recreational facility appear to the west of the Property.

3.2.3 Fire Insurance Maps

EDR prepared a Sanborn Fire insurance map search for the Property and surrounding properties. EDR reported that no maps were available for the Property and surrounding properties. The Sanborn Map Report is located in Appendix E.

3.2.4 City Directory

City Directories, published since the 18th century for major towns and cities, lists the name of the resident or business associated with each address. The city directory did not record any physical addresses that would reasonably be considered to be associated with the Property. A city directory search conducted by EDR is located in Appendix F.

3.2.5 Government Agencies

The following agencies were contacted pertaining to possible past development and/or activity at the Property.

- City of Tracy Community Development Department
- San Joaquin County Community Development Department
- City of Tracy Fire Prevention Bureau
- San Joaquin County Fire Prevention BureauSan Joaquin County Department of Environmental Health
- San Joaquin County Assessor's Office
- Department of Conservation, Division of Oil, Gas, and Geothermal Resources (DOGGR)
- California Regional Water Quality Control Board
- CAL-EPA Department of Toxic Substances Control

City of Tracy Community Development Department. The City of Tracy Community Development Department was contacted regarding files for the Property. A representative of the Community Development Department indicated that because the Property is not within city limits, the city would not retain any files related to the Property. The representative suggested we contact the San Joaquin County Community Development Department.

San Joaquin County Community Development Department. The San Joaquin County Community Development Department's website was viewed in regards to files associated with the Property. The following files were listed on the website;

- Sign Permit; 12-16-2002 (BP-02004396)
- Demo Permit for Barn; 11-10-1998 (BP-9803465)
- Improvement Plan for off site sign; 12-11-2002 (PA-0200626)
- Commercial Sign; 8-27-1998 (BP-9802504)

City of Tracy Fire Prevention Bureau. The City of Tracy Fire Prevention Bureau was contacted regarding files for the Property. A representative of the Bureau indicated that they do not keep records relating to environmental issues and directed us to the San Joaquin County Environmental Health Department.

San Joaquin County Fire Prevention Bureau. The San Joaquin County Fire Prevention Bureau was contacted regarding files, if any, for the Property. A representative of the Bureau indicated

that they do not keep records relating to environmental issues and directed us to the San Joaquin County Environmental Health Department.

San Joaquin County Environmental Health Department. The San Joaquin County Environmental Health Department website was viewed regarding applicable files for the Property. A representative of the EHD forwarded the following files for our review:

- A 1996 proposal and authorization for a Phase II Environmental Site Assessment. The actual Phase II assessment was not available for review; however, a hand-written note regarding sampling at a former UST site indicated "no odor" at Geoprobe intervals of 9' to 11', 14' to 16', and 18' to 20' below ground surface.
- Permission slips allowing the environmental consultant to sample on the Property.

San Joaquin County Assessor's Office. The San Joaquin County Assessor's Office's website was viewed for information regarding the Property. The website indicated that the Property located at 11150 W. Valpico Road consists of 113.60 acres and is zoned as "AU-20".

Department of Conservation, Division of Oil, Gas, and Geothermal Resources. The DOGGR online database was reviewed for the Property. No oil or geothermal producing wells are located within the Property.

California Regional Water Quality Control Board. We reviewed the GeoTracker Database maintained by the State Water Resources Control Board (SWRCB) to identify ongoing environmental site assessment and remedial activities in the immediate vicinity of the Property. The GeoTracker database identified one site in the immediate vicinity of the Property. The LLNL Site 300- Building 812 site is located within ½ mile of the Property and is identified as "open-site remediation"; however, no exact address (other then "Coral Hollow Road" is given and no details regarding the open investigation were listed.

CAL-EPA Department of Toxic Substances Control. We reviewed the EnviroStor Database maintained by Department of Toxic Substances Control (DTSC) to identify ongoing environmental site assessment and remedial activities in the immediate vicinity of the Property. The EnviroStor database did not identify sites in the immediate vicinity of the Property.

3.2.6 Previous Reports

No previous reports were provided for our review.

3.3 ENVIRONMENTAL RECORD SOURCES

EDR performed a search of federal, tribal, state, and local databases regarding the Property and nearby properties. Details regarding the databases searched by EDR are provided in Appendix A. A list of the facilities documented by EDR within the approximate minimum search distance of the Property is provided below:

3.3.1 Federal ASTM Standard/Supplemental Sources

3.3.1.1 Subject Property

The Property is not listed on the Federal ASTM Standard or supplemental sources.

3.3.1.2 Other Properties

The following facilities were listed within the appropriate ASTM search distances of the Property on Federal ASTM Standard or supplemental sources:

- CORRACTS – Corrective Action Report – CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

  Lower Elevation
  Georgia-Pacific Corp Chem Pac *75 W. Valpico Rd.*

3.3.2 State ASTM Standard/Supplemental Sources

3.3.2.1 Subject Property

The Property is not listed on the State ASTM Standard or supplemental sources.

3.3.2.2 Other Properties

The following facilities were listed within the appropriate ASTM search distances of the Property on State ASTM Standard or supplemental sources:

- ENVIROSTOR – EnviroStor Database – The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifies sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites and provides additional site information, including, but not limited to, identification of formerly contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

  Equal/Higher Elevation
  Anthony Traina Elementary School *4256 Windsong Dr.*
  Status: No Further Action

Lower Elevation
Georgia-Pacific Corp Chem Pac *75 W. Valpico Rd.*
Status: Inactive
Georgia-Pacific Former Tracy *75 West Valpico Rd.*
Status: Refer: RWQCB

3.3.3 Local And Other ASTM Supplemental Sources

3.3.3.1 Subject Property

The Property is not listed on Local and/or Other ASTM supplemental databases.

3.3.3.2 Other Properties

The following facilities were listed within the appropriate ASTM search distances of the Property on Local or other ASTM Standard or supplemental sources:

- SCH – School Property Evaluation Program – This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

  Equal/Higher Elevation
  Anthony Traina Elementary School *4256 Windsong Dr.*

- CA BOND EXP. PLAN – Bond Expenditure Plan – Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

  Lower Elevation
  Georgia-Pacific Former Tracy *75 West Valpico Rd.*

- HIST CORTESE – "Cortese" Hazardous Waste & Substances Sites List – The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites). This listing is no longer updated by the state agency.

  Equal/Higher Elevation
  Tracy Municipal Airport *5749 Tracy*

- HWP – Detailed information on permitted hazardous waste facilities and corrective actions "clean ups" tracked in EnviroStor.

  Lower Elevation
  Georgia-Pacific Corp Chem Pac *75 W. Valpico Rd.*

- EDR US HIST AUTO STAT – EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, auto mobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

  Equal/Higher Elevation
  Not reported *1836 Calaveras Lane.*

Based on the distances to the identified database sites, regional topographic gradients, the EDR findings, and the supplemental research, it is unlikely that the above-stated database sites pose an environmental risk to the Property.

Properties that are on the "Orphan Summary" list appear to be located beyond the ASTM recommended radius search criteria.

4.0 SITE RECONNAISSANCE

4.1 METHODOLOGY

ENGEO conducted a reconnaissance of the Property on March 13, 2013. The site was viewed for hazardous materials storage, superficial staining or discoloration, debris, stressed vegetation, or other conditions that may be indicative of potential sources of soil or groundwater contamination. The site was also checked for evidence of fill/ventilation pipes, ground subsidence, or other evidence of existing or preexisting underground storage tanks. Photographs taken during the site reconnaissance are presented in Figure 3.

4.2 GENERAL SITE SETTING

The Property currently consists of undeveloped land with one farmhouse and nine outbuildings such as detached garages, sheds, barns, and animal pens.

4.3 EXTERIOR OBSERVATIONS

Structures. The following structures were observed within the Property during the reconnaissance;

- Residential dwelling - Single-story, wood-sided, asphalt-shingle roofing, severely flaking paint (See Photograph 3).
- Detached garages (x2) - Single-story, wood-shingle roofing, stucco siding, paint still intact.

- Tank house - Two-story, wood-sided, wood-shingle roofing, severely fading paint (See Photograph 5).
- Barns (x2) - Wood-sided, wood-shingle and/or tin-sheet roofing, residual paint only.
- Sheds (x3) - Wood-sided, tin-sheet roofing, trace paint only.
- Well house - Stucco-sided, wood-shingle roofing, paint still intact.

Hazardous Substances and Petroleum Products in Connection with Identified Uses. No hazardous substances or petroleum products were observed within the Property during the reconnaissance.

Storage Tanks. Other than an onsite propane tank at the north side of the residential dwelling and an empty rectangular storage tank (See Photograph 10), no other storage tanks were observed within the Property during the reconnaissance. A May 22, 1996, phase II proposal mentioned a "former underground storage tank" located adjacent to the northernmost detached garage. No evidence of the former tank was observed adjacent to the aforementioned detached garage.

Odors. No odors indicative of hazardous materials or petroleum material impacts were noted at the time of the reconnaissance.

Pools of Potentially Hazardous Liquid. No pools of potentially hazardous liquid were observed within the Property at the time of our reconnaissance.

Drums. At least eight 55-gallon drums were observed on the Property at the time of our reconnaissance. The metal drums, which were nearly all empty, appeared severely rusted and used as waste bins. Two empty 55-gallon blue polyurethane drums were observed in the basin. A red 55-gallon polyurethane drum was observed adjacent to the Tank House. The drum did not have any secondary containment. It was partially filled with an unknown liquid. No stains were observed beneath or near the container.

Hazardous Substance and Petroleum Product Containers. Several hazardous or hazardous substance or petroleum product containers were observed on the Property at the time of our reconnaissance. The containers were generally located adjacent to the storage sheds and appeared to be empty. No obvious impacts associated with the containers were noted.

Polychlorinated Biphenyls (PCBs). One pole-mounted transformer observed within the Property during our site reconnaissance. Visible staining beneath the unit was observed (See Photograph 8). The vegetation beneath the transformer, as well as most of the area in the vicinity of the residential compound) appeared to have been recently treated with herbicides; therefore, stressed vegetation could not be positively linked to the transformer.

Pits, Ponds and Lagoons. No ponds or lagoons were observed within the Property at the time of our reconnaissance; however, a basin was observed along W. Valpico Road. The basin, which appeared to be connected to irrigation runoff from the Property, was approximately 272 feet long by 172 feet long, by approximately 6 feet deep. The basin was dry at the time of our reconnaissance and contained waste debris and household type garbage (See Photograph 7).

Stained Soil/Pavement. No stained soil or pavement was observed within the Property at the time of our reconnaissance.

Stressed Vegetation. The vegetation in the vicinity of some of the barns appeared stressed, but was consistent with vegetation that has been exposed to herbicides (See Photograph 6).

Solid Waste/Debris. Sporadic solid waste/debris were observed on the Property at the time of our reconnaissance. The debris consisted of, but was not necessarily limited to, concrete piping, old vehicle parts and tires, old metal and plastic cans, bricks, metal and plastic fencing material, cinder blocks, farm implements (not appearing to be in recent use), vegetation, tin sheets, ceramic pipe sections, wood debris, broken concrete, trailer parts, a camper shell, and general household type refuse.

Wastewater. No wastewater conveyance systems were observed at the Property during the reconnaissance.

Wells. One well was observed adjacent to the Tank house. No other wells were observed in the open.

Septic Systems. No septic systems were observed at the Property during the reconnaissance; however, it is believed that the Property contains a septic tank and leach line.

4.4 ASBESTOS-CONTAINING MATERIALS AND LEAD-BASED PAINT

An asbestos and lead-based paint survey was not conducted as part of this assessment; however, given the age of the farmhouse and some of the barns/sheds, it is conceivable that lead-based paint and/or asbestos building materials may be present on the Property.

4.5 INDOOR AIR QUALITY

An evaluation of indoor air quality, mold, or radon was not included as part of the contracted scope of services. The California Department of Health Services has conducted studies of radon risks throughout the state, sorted by zip code. Results of the studies indicate that two tests were conducted within the Property zip code, with no tests exceeding the current EPA action level of 4 picocuries per liter [pCi/L][1]).

In accordance with ASTM E2600-10 (Tier 1) (*Standard Guide for Vapor Encroachment Screening on Property Involved in Real Estate Transactions*); there are no potential petroleum hydrocarbon sources for vapor intrusion within 1/10 mile of the Property or volatile organic compound (VOCs) sources within 1/3 mile of the Property.

5.0 INTERVIEWS

Mr. Jeff Schroeder completed an environmental site assessment questionnaire pertaining to user-related applicable environmental information regarding the Property. In the questionnaire, Mr. Schroeder did not note any environmental concerns relating to the Property.

The completed Questionnaire is presented in Appendix H.

6.0 LIMITED AGRICULTURAL CHEMICAL ASSESSMENT

A limited agricultural chemical assessment was performed to determine if near-surface soils had been impacted by agricultural activities at the Property. Field work was conducted on March 13, 2013. A total of 96 (24 four-point composites and 24 discrete) soil samples were collected using laboratory supplied 4-ounce collection jars. The samples were recovered between approximately 3 to 9 inches below the ground surface at the approximate locations depicted in Figure 4.

The samples were labeled to indicate a unique sample number, sample location, time and date collected, and the sampler's identification. Samples were preserved in a chilled cooler and transported to Sunstar Laboratories in Lake Forest, California under documented chain-of-custody.

Laboratory analysis of the soil samples included the following target analytes:

- Organochlorine Pesticides (EPA Method 8081) – 24 four-point composites samples.
- Arsenic (EPA Methods 200.7/6010) – 24 discrete samples.

The reported arsenic levels for the discrete soil samples were non-detect with respect to laboratory reporting limits. The reported pesticide levels for the composited soil samples were non-detect with respect to laboratory reporting limits, with the exception of 4,4' DDE, which ranged in concentration from non-detect to 63 µg/kg. One sample reported a chlordane concentration of 12 µg/kg. These levels are well below 1,700 µg/kg and 440 µg/kg direct exposure screening levels as established by the SF Bay RWQCB for DDE and chlordane, respectively. The laboratory report is provided in Appendix G.

7.0 OPINIONS AND DATA GAPS

It is our opinion that the findings of this study may not be based on a sufficient level of information obtained during our contracted scope of services to render a conclusion as to whether additional appropriate investigation is required to identify the presence or likely presence of a REC. The following data gap was identified during the preparation of this report:

- A copy of the 1996 Phase II Environmental Site Assessment was not available for review.

8.0 CONCLUSIONS

The study included a review of local, state and federal environmental record sources, standard historical sources, aerial photographs, fire insurance maps and physical setting sources; a reconnaissance of the Property to review site use and current conditions to check for the storage, use, production or disposal of hazardous or potentially hazardous materials; and interviews with persons knowledgeable about current and past site use.

The site reconnaissance, records review, and limited sampling activities did not find documentation or physical evidence of soil and/or groundwater impairments associated with the use of the Property. A review of regulatory databases maintained by county, state, and federal agencies found no documentation of hazardous materials violations or discharge on the Property. A review of regulatory agency records and available databases did not identify contaminated facilities within the appropriate ASTM search distances that could impact the Property.

Based on the findings of this assessment, the following Recognized Environmental Conditions (RECs) were identified for the Property;

- Documents received from the San Joaquin County Environmental Health Department indicate the former presence of an underground storage tank adjacent to the northernmost detached garage; however, no documents were available regarding the removal and subsequent analytical analysis of the soil below the former tank.

In addition to the phase I assessment scope, soil samples were collected from 96 locations within the Property to create 24 discrete samples and 24 four-point composite samples for laboratory analysis. The purpose of the sampling and testing was to address potential environmental concerns associated with past agricultural use. Detected pesticides were not above their respective screening levels. Arsenic was not reported in any of the samples. Given the details of the proposed project, the pesticide concentrations do not represent an environmental concern for the development of the Property for residential use.

ENGEO has performed a modified phase I environmental site assessment of the Property in general conformance with the scope and limitations of ASTM E 1527-05 “Standard Practice for Environmental Site Assessments” and USEPA “Standards and Practices for All Appropriate Inquires”, 40 CFR Part 312.

Based on the findings of this assessment, further studies are recommended at this time to determine the extent of contamination, if any, due to the presence of the former UST. These additional studies may be performed prior to or at the onset of site development.

SELECTED REFERENCES

Google Maps (http://maps.google.com).

California Department of Conservation, Division of Mines and Geology; Geologic Map of the San Francisco – San Jose Quadrangle—D.L. Wagner, E.J. Bortugno and R.D. McJunkin, 1991.

California Department of Water Resources (http://wdl.water.ca.gov).

San Joaquin County (http://www.co.san-joaquin.ca.us/).

City of Tracy (http://www.ci.Tracy.ca.us/).

EnviroStor Website, Department of Toxic Substances Control, http://www.envirostor.dtsc.ca.gov/public/.

Microsoft Research Maps USA (http://www.msrmaps.com).

Microsoft TerraServer USA (http://www.terraserver.microsoft.com).

Historical Aerials (http://www.historicaerials.com/).

United States Environmental Protection Agency Indoor Air Quality Website (http://ww2.cdph.ca.gov/HealthInfo/environhealth/Documents/Radon/CaliforniaRadonDatabase.pdf).

California Department of Conservation, Division of Oil, Gas and Geothermal, DOMS 2.0 Mapping System (http://maps.conservation.ca.gov/doms/index.html).

Wagner, D.L., et al., 1991, Geologic Map of the San Francisco-San Jose Quadrangle, California, 1:250,000.

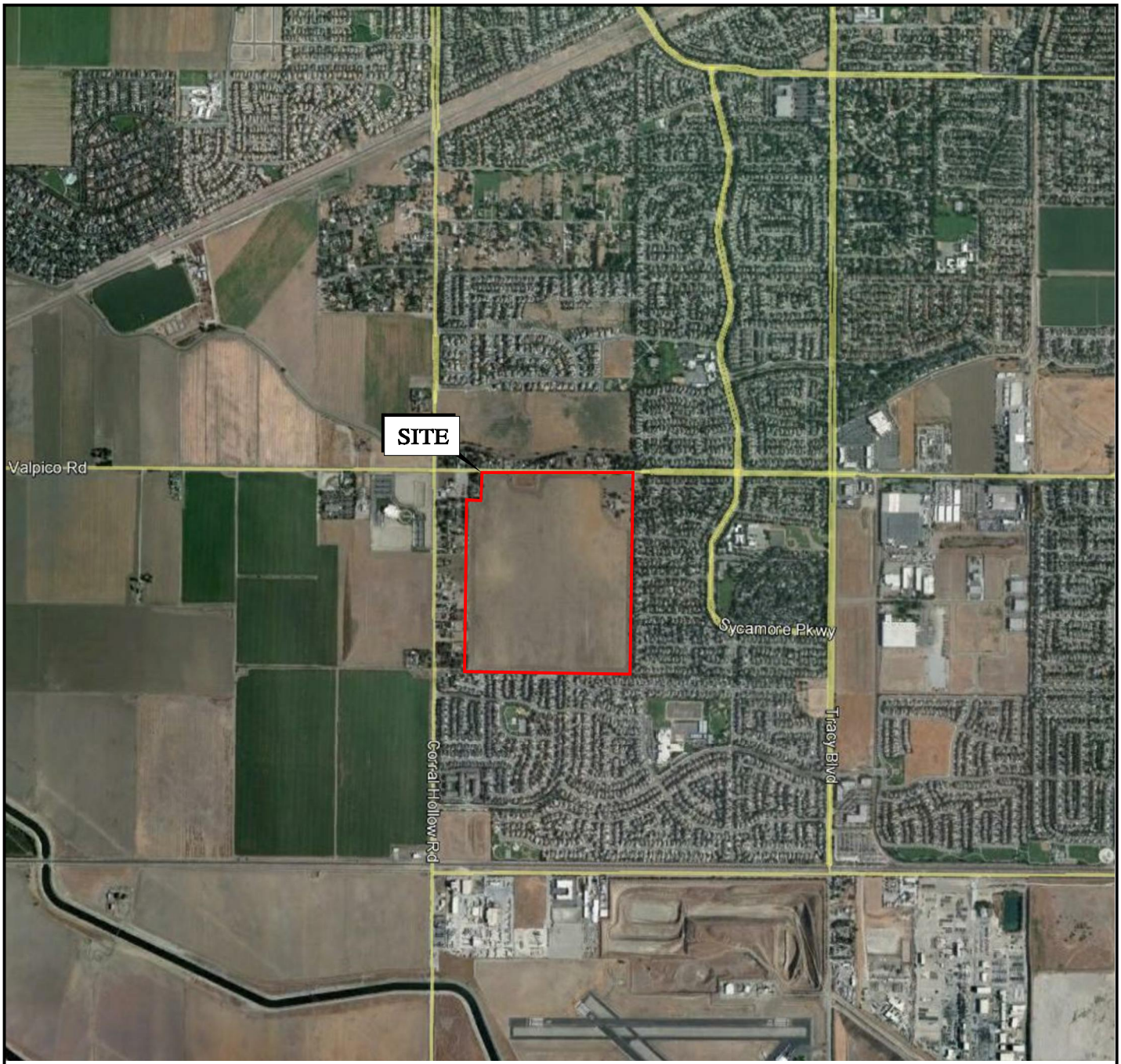
FIGURES

LIST OF FIGURES

Figure 1 – Vicinity Map
Figure 2 – Assessor's Parcel Map
Figure 3 – Site Photographs
Figure 4 – Sample Location Plan



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N

0 FEET 2000

0 METERS 1000

BASE MAP SOURCE: GOOGLE EARTH PRO

ENGEO Expect Excellence

VICINITY MAP

HOMEWOOD - 1150 W. VALPICO ROAD

TRACY, CALIFORNIA

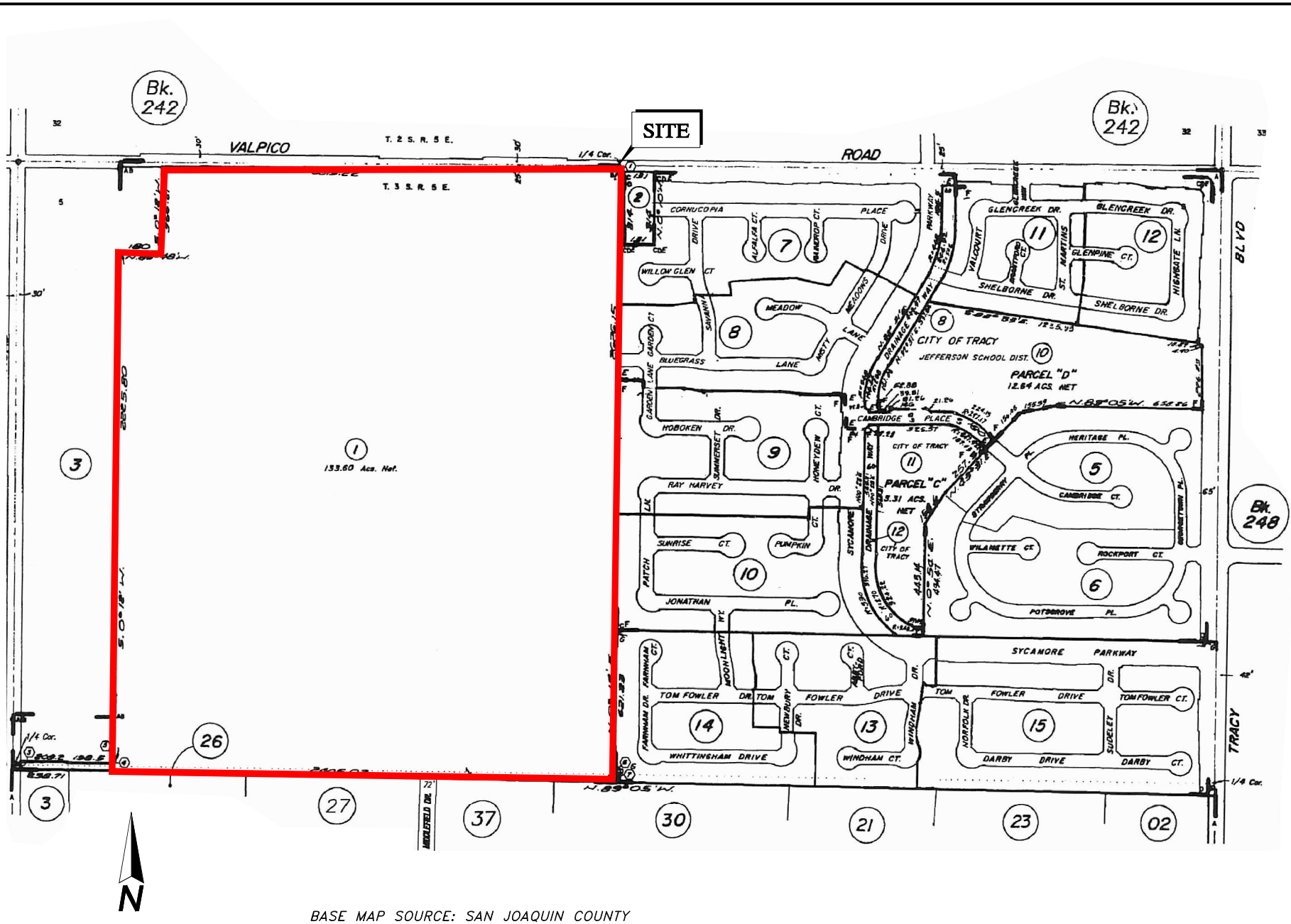
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DRAWN BY: SRP	CHECKED BY: CC	

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ORIGINAL FIGURE PRINTED IN COLOR

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BASE MAP SOURCE: SAN JOAQUIN COUNTY

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ENGEO Expect Excellence

ASSESSOR'S PARCEL MAP

HOMEWOOD - 1150 W. VALPICO ROAD

TRACY, CALIFORNIA

PROJECT NO.: 10091.000.000	FIGURE NO. 2
SCALE: AS SHOWN	
DRAWN BY: SRP	CHECKED BY: CC

ORIGINAL FIGURE PRINTED IN COLOR

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LOOKING NORTHWEST FROM THE SOUTHERN END OF THE PROPERTY



LOOKING NORTHEAST FROM THE SOUTHERN END OF THE PROPERTY



LOOKING EAST TOWARDS THE RESIDENTIAL DWELLING



LOOKING WEST FROM THE RESIDENTIAL COMPOUND



VIEW OF THE FORMER TANKHOUSE



LOOKING SOUTH FROM THE RESIDENTIAL COMPOUND

ENGEO Expect Excellence

SITE PHOTOGRAPHS

HOMEWOOD - 1150 W. VALPICO ROAD

TRACY, CALIFORNIA

PROJECT NO.: 10091.000.000		FIGURE NO. 3A
SCALE: NO SCALE		
DRAWN BY: SRP	CHECKED BY: CC	

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REFUSE WITHIN THE BASIN LOCATED ADJACENT TO W. VALPICO ROAD



MINOR STAINING OBSERVED ON THE BOTTOM OF A POLE-MOUNTED TRANSFORMER



TYPICAL DEBRIS IN THE VICINITY OF THE SHEDS



ABANDONED STORAGE TANK LOCATED ON THE NORTHSIDE OF THE RESIDENTIAL COMPOUND

ENGEO Expect Excellence

SITE PHOTOGRAPHS

HOMEWOOD - 1150 W. VALPICO ROAD

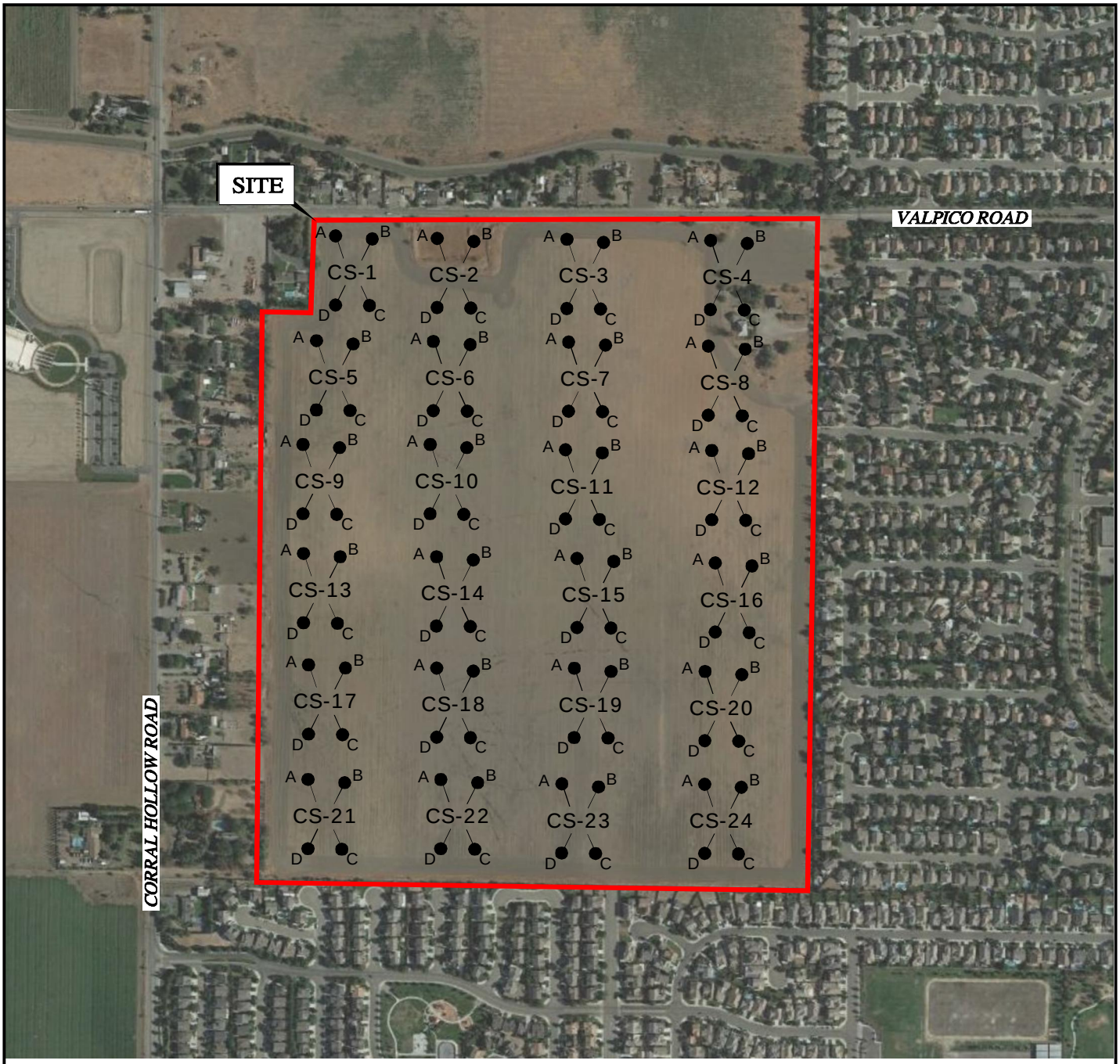
TRACY, CALIFORNIA

PROJECT NO.: 10091.000.000	FIGURE NO. 3B
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EXPLANATION

CS-24

APPROXIMATE LOCATION OF COMPOSITE SAMPLE

BASE MAP SOURCE: GOOGLE EARTH PRO

ENGEO Expect Excellence

SAMPLE PLAN

HOMEWOOD - 1150 W. VALPICO ROAD

TRACY, CALIFORNIA

PROJECT NO.: 10091.000.000			FIGURE NO. 4
SCALE: AS SHOWN			
DRAWN BY: SRP	CHECKED BY: CC		

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ORIGINAL FIGURE PRINTED IN COLOR

APPENDIX A

ENVIRONMENTAL DATA RESOURCES, INC.

Radius Map Report

APPENDIX A



Homewood
11150 W. Valpico Road
Tracy, CA 95377

Inquiry Number: 3544806.2s
March 14, 2013

The EDR Radius Map™ Report with GeoCheck®

EDR® Environmental Data Resources Inc

440 Wheelers Farms Road
Milford, CT 06461
Toll Free: 800.352.0050
www.edrnet.com

TABLE OF CONTENTS

SECTION	PAGE
Executive Summary	ES1
Overview Map	2
Detail Map	3
Map Findings Summary	4
Map Findings	8
Orphan Summary	23
Government Records Searched/Data Currency Tracking	GR-1

GEOCHECK ADDENDUM

Physical Setting Source Addendum	A-1
Physical Setting Source Summary	A-2
Physical Setting SSURGO Soil Map	A-5
Physical Setting Source Map	A-8
Physical Setting Source Map Findings	A-10
Physical Setting Source Records Searched	A-22

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-05) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

11150 W. VALPICO ROAD
TRACY, CA 95377

COORDINATES

Latitude (North):	37.7068000 - 37° 42' 24.48''
Longitude (West):	121.4477000 - 121° 26' 51.72''
Universal Tranverse Mercator:	Zone 10
UTM X (Meters):	636836.2
UTM Y (Meters):	4174213.5
Elevation:	114 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	37121-F4 TRACY, CA
Most Recent Revision:	1981

AERIAL PHOTOGRAPHY IN THIS REPORT

Photo Year:	2010
Source:	USDA

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL---------- National Priority List

EXECUTIVE SUMMARY

Proposed NPL ---------- Proposed National Priority List Sites
NPL LIENS ---------- Federal Superfund Liens

Federal Delisted NPL site list

Delisted NPL ---------- National Priority List Deletions

Federal CERCLIS list

CERCLIS ---------- Comprehensive Environmental Response, Compensation, and Liability Information System
FEDERAL FACILITY ---------- Federal Facility Site Information listing

Federal CERCLIS NFRAP site List

CERC-NFRAP ---------- CERCLIS No Further Remedial Action Planned

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF ---------- RCRA - Treatment, Storage and Disposal

Federal RCRA generators list

RCRA-LQG ---------- RCRA - Large Quantity Generators
RCRA-SQG ---------- RCRA - Small Quantity Generators
RCRA-CESQG ---------- RCRA - Conditionally Exempt Small Quantity Generator

Federal institutional controls / engineering controls registries

US ENG CONTROLS ---------- Engineering Controls Sites List
US INST CONTROL ---------- Sites with Institutional Controls
LUCIS ---------- Land Use Control Information System

Federal ERNS list

ERNS ---------- Emergency Response Notification System

State- and tribal - equivalent NPL

RESPONSE ---------- State Response Sites

State and tribal landfill and/or solid waste disposal site lists

SWF/LF ---------- Solid Waste Information System

State and tribal leaking storage tank lists

LUST ---------- Geotracker's Leaking Underground Fuel Tank Report
SLIC ---------- Statewide SLIC Cases
INDIAN LUST ---------- Leaking Underground Storage Tanks on Indian Land

State and tribal registered storage tank lists

UST ---------- Active UST Facilities
AST ---------- Aboveground Petroleum Storage Tank Facilities
INDIAN UST ---------- Underground Storage Tanks on Indian Land

FEMA UST ---------- Underground Storage Tank Listing

State and tribal voluntary cleanup sites

VCP ---------- Voluntary Cleanup Program Properties
INDIAN VCP ---------- Voluntary Cleanup Priority Listing

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS ---------- A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites

ODI ---------- Open Dump Inventory
DEBRIS REGION 9 ---------- Torres Martinez Reservation Illegal Dump Site Locations
WMUDS/SWAT ---------- Waste Management Unit Database
SWRCY ---------- Recycler Database
HAULERS ---------- Registered Waste Tire Haulers Listing
INDIAN ODI ---------- Report on the Status of Open Dumps on Indian Lands

Local Lists of Hazardous waste / Contaminated Sites

US CDL ---------- Clandestine Drug Labs
HIST Cal-Sites ---------- Historical Calsites Database
Toxic Pits ---------- Toxic Pits Cleanup Act Sites
CDL ---------- Clandestine Drug Labs
US HIST CDL ---------- National Clandestine Laboratory Register

Local Lists of Registered Storage Tanks

CA FID UST ---------- Facility Inventory Database
HIST UST ---------- Hazardous Substance Storage Container Database
SWEEPS UST ---------- SWEEPS UST Listing

Local Land Records

LIENS 2 ---------- CERCLA Lien Information
LIENS ---------- Environmental Liens Listing
DEED ---------- Deed Restriction Listing

Records of Emergency Release Reports

HMIRS ---------- Hazardous Materials Information Reporting System
CHMIRS ---------- California Hazardous Material Incident Report System
LDS ---------- Land Disposal Sites Listing
MCS ---------- Military Cleanup Sites Listing

Other Ascertainable Records

RCRA NonGen / NLR ---------- RCRA - Non Generators
DOT OPS ---------- Incident and Accident Data
DOD ---------- Department of Defense Sites

EXECUTIVE SUMMARY

FUDS	Formerly Used Defense Sites
CONSENT	Superfund (CERCLA) Consent Decrees
ROD	Records Of Decision
UMTRA	Uranium Mill Tailings Sites
US MINES	Mines Master Index File
TRIS	Toxic Chemical Release Inventory System
TSCA	Toxic Substances Control Act
FTTS	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
HIST FTTS	FIFRA/TSCA Tracking System Administrative Case Listing
SSTS	Section 7 Tracking Systems
ICIS	Integrated Compliance Information System
PADS	PCB Activity Database System
MLTS	Material Licensing Tracking System
RADINFO	Radiation Information Database
FINDS	Facility Index System/Facility Registry System
RAATS	RCRA Administrative Action Tracking System
RMP	Risk Management Plans
UIC	UIC Listing
NPDES	NPDES Permits Listing
Cortese	"Cortese" Hazardous Waste & Substances Sites List
CUPA Listings	CUPA Resources List
Notify 65	Proposition 65 Records
DRYCLEANERS	Cleaner Facilities
WIP	Well Investigation Program Case List
ENF	Enforcement Action Listing
HAZNET	Facility and Manifest Data
EMI	Emissions Inventory Data
INDIAN RESERV	Indian Reservations
SCRD DRYCLEANERS	State Coalition for Remediation of Drycleaners Listing
COAL ASH DOE	Steam-Electric Plant Operation Data
COAL ASH EPA	Coal Combustion Residues Surface Impoundments List
HWT	Registered Hazardous Waste Transporter Database
Financial Assurance	Financial Assurance Information Listing
2020 COR ACTION	2020 Corrective Action Program List
US AIRS	Aerometric Information Retrieval System Facility Subsystem
PRP	Potentially Responsible Parties
WDS	Waste Discharge System
EPA WATCH LIST	EPA WATCH LIST
US FIN ASSUR	Financial Assurance Information
PCB TRANSFORMER	PCB Transformer Registration Database
PROC	Certified Processors Database
MWMP	Medical Waste Management Program Listing

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP	EDR Proprietary Manufactured Gas Plants
EDR US Hist Cleaners	EDR Exclusive Historic Dry Cleaners

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

EXECUTIVE SUMMARY

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

STANDARD ENVIRONMENTAL RECORDS

Federal RCRA CORRACTS facilities list

CORRACTS: CORRACTS is a list of handlers with RCRA Corrective Action Activity. This report shows which nationally-defined corrective action core events have occurred for every handler that has had corrective action activity.

A review of the CORRACTS list, as provided by EDR, and dated 02/12/2013 has revealed that there is 1 CORRACTS site within approximately 1 mile of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
GEORGIA-PACIFIC CORP CHEM PAC	***75 W VALPICO RD***	***ENE 1/2 - 1 (0.937 mi.)***	***A5***	***13***

State- and tribal - equivalent CERCLIS

ENVIROSTOR: The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

A review of the ENVIROSTOR list, as provided by EDR, and dated 12/05/2012 has revealed that there are 3 ENVIROSTOR sites within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
ANTHONY TRAINA ELEMENTARY SCHO	***4256 WINDSONG DRIVE***	***SSE 1/8 - 1/4 (0.191 mi.)***	***1***	***8***
Status: No Further Action				

Lower Elevation	Address	Direction / Distance	Map ID	Page
GEORGIA-PACIFIC CORP CHEM PAC	***75 W VALPICO RD***	***ENE 1/2 - 1 (0.937 mi.)***	***A5***	***13***
Status: * Inactive				
GEORGIA PACIFIC - FORMER TRACY	***75 WEST VALPICO ROAD***	***ENE 1/2 - 1 (0.937 mi.)***	***A6***	***20***
Status: Refer: RWQCB				

ADDITIONAL ENVIRONMENTAL RECORDS

Local Lists of Hazardous waste / Contaminated Sites

SCH: This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category. depending on the level of threat to public health and safety or the. environment they pose.

A review of the SCH list, as provided by EDR, and dated 12/05/2012 has revealed that there is 1 SCH site within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
ANTHONY TRAINA ELEMENTARY SCHO	***4256 WINDSONG DRIVE***	***SSE 1/8 - 1/4 (0.191 mi.)***	***1***	***8***

Other Ascertainable Records

CA BOND EXP. PLAN: Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

A review of the CA BOND EXP. PLAN list, as provided by EDR, and dated 01/01/1989 has revealed that there is 1 CA BOND EXP. PLAN site within approximately 1 mile of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
GEORGIA PACIFIC - FORMER TRACY	***75 WEST VALPICO ROAD***	***ENE 1/2 - 1 (0.937 mi.)***	***A6***	***20***

HIST CORTESE: The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSITES]. This listing is no longer updated by the state agency.

A review of the HIST CORTESE list, as provided by EDR, and dated 04/01/2001 has revealed that there is 1 HIST CORTESE site within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
TRACY MUNICIPAL AIRPORT	5749 TRACY	E 1/4 - 1/2 (0.498 mi.)	3	12

HWP: Detailed information on permitted hazardous waste facilities and corrective action ("cleanups") tracked in EnviroStor.

A review of the HWP list, as provided by EDR, and dated 11/26/2012 has revealed that there is 1 HWP site within approximately 1 mile of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
GEORGIA-PACIFIC CORP CHEM PAC	***75 W VALPICO ROAD***	***ENE 1/2 - 1 (0.937 mi.)***	***A4***	***12***

EXECUTIVE SUMMARY

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR US Hist Auto Stat: EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

A review of the EDR US Hist Auto Stat list, as provided by EDR, has revealed that there is 1 EDR US Hist Auto Stat site within approximately 0.25 miles of the target property.

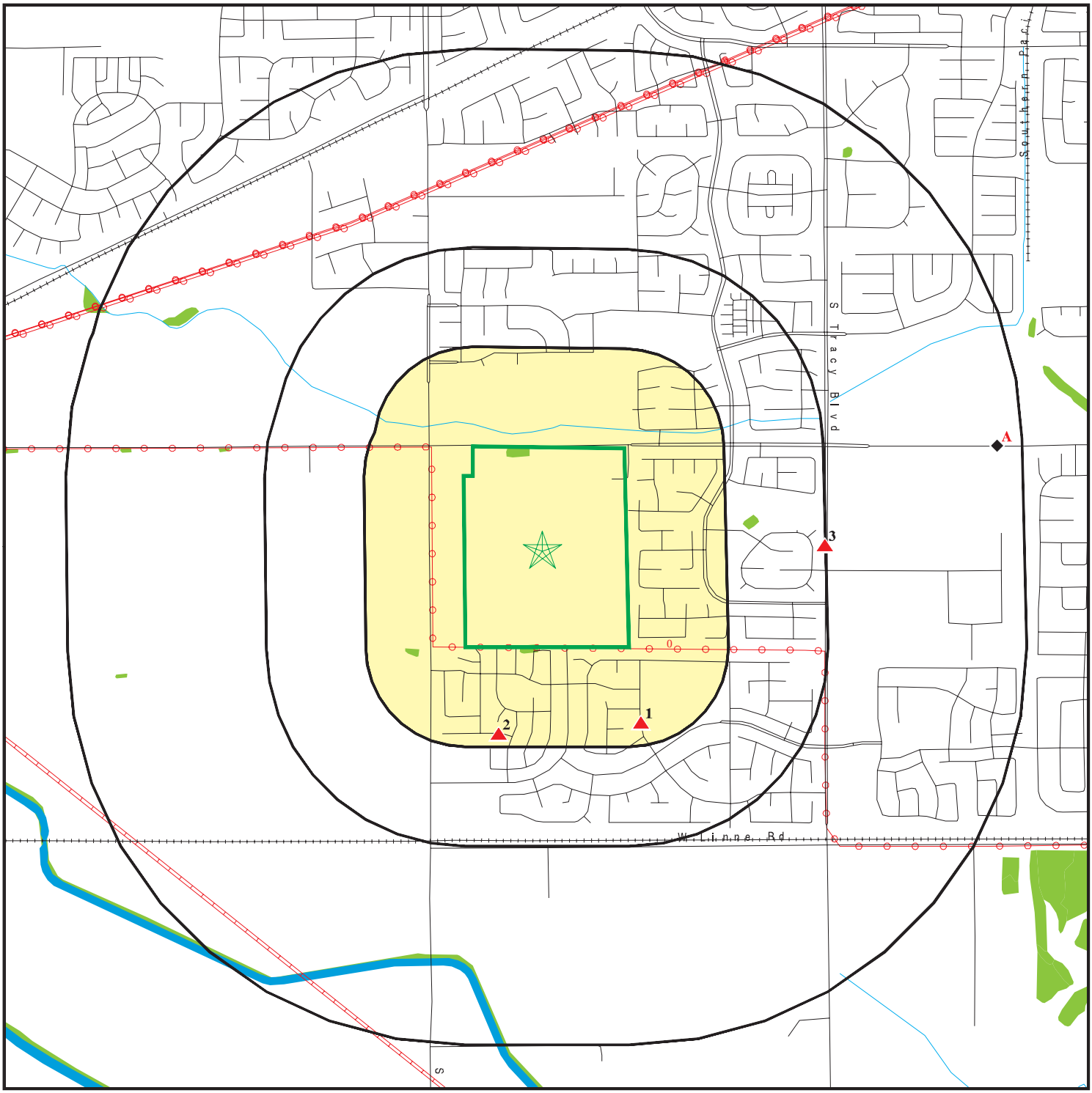
Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
Not reported	1836 CALAVERAS LN	SSW 1/8 - 1/4 (0.217 mi.)	2	11

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 23 records.

Site Name	Database(s)
PWD CORRAL HOLLOW LANDFIL	HIST CORTESE
TRACY OIL PIT	HIST CORTESE
VAQUERO FARMS, INC.	CA FID UST, CONTRA COSTA CO.
	SITE LIST, SWEEPS UST
	SLIC, CHMIRS
	HIST UST, CHMIRS
	SLIC, CHMIRS
PG&E GAS PLANT TRACY	CERC-NFRAP
TRACY OIL PIT	CERC-NFRAP
TRACY MUNI LDFL	CERC-NFRAP
LAWRENCE LIVERMORE NATIONAL LABORA	SWF/LF
LLNL-SITE 300*	LUST, UST
LLNL, SITE 300	LUST
PWD CORRAL HOLLOW LANDFILL	LUST
RHODES BEAN SUPPLY COOP	UST
UNION OIL BULK PLANT # 0788	HIST UST
E. THOMAS GRAHAM	HIST UST
MOBIL OIL CORPORATION	HIST UST
EVA COELHO	HIST UST
PACIFIC BELL	RCRA-SQG, FINDS
NICKELES TRUCKING INC	RCRA-SQG, FINDS
FMC CORP AGRI CHEM GROUP	RCRA-SQG, FINDS
CHEVRON, TAOC TRACY GRAVEL PITS	SLIC
TRACY OIL PIT	ENVIROSTOR

OVERVIEW MAP - 3544806.2s



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

National Priority List Sites

Dept. Defense Sites

0 1/4 1/2 1 Miles

Indian Reservations BIA

Power transmission lines

Oil & Gas pipelines from USGS

100-year flood zone

500-year flood zone

National Wetland Inventory

Areas of Concern

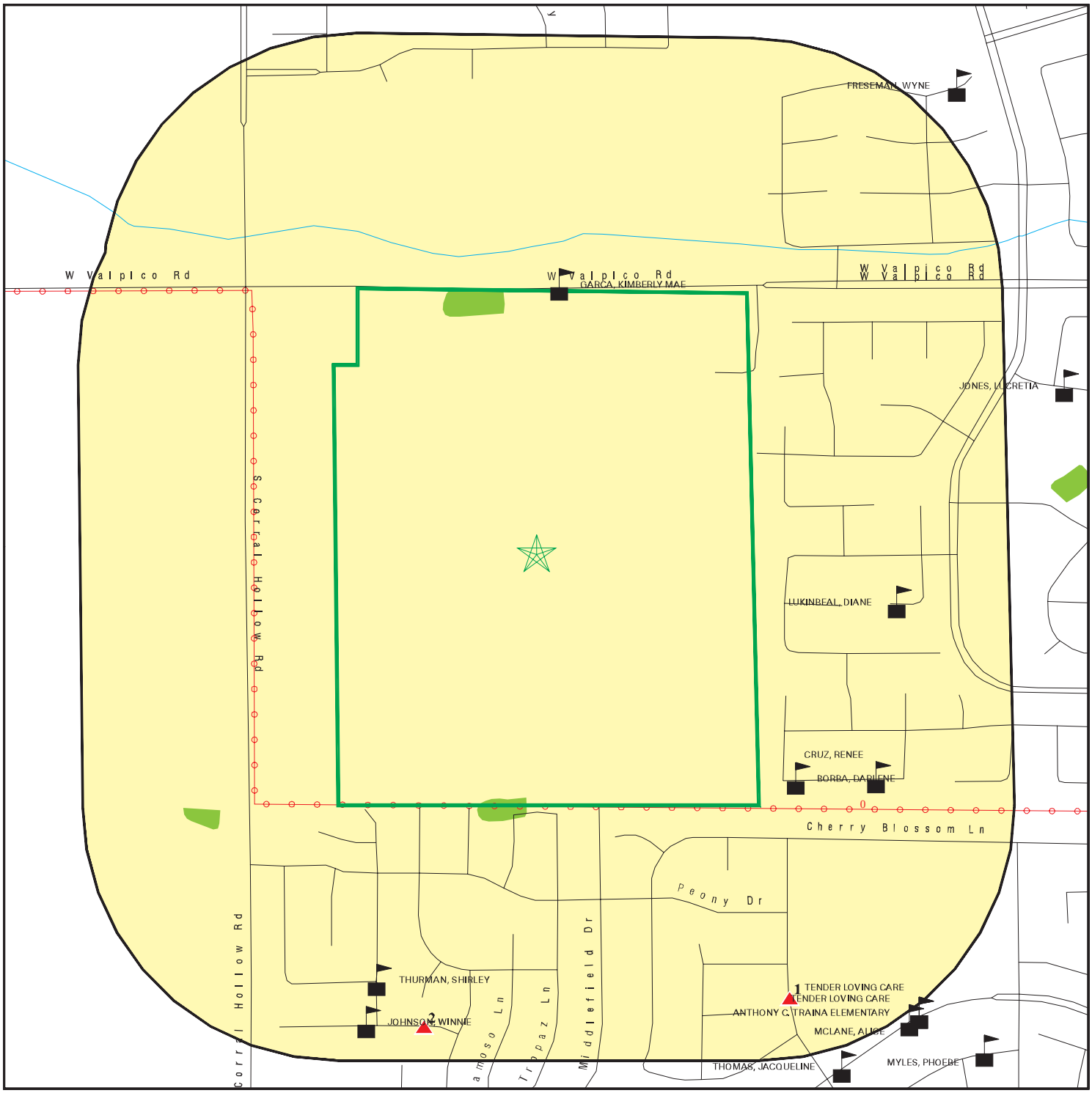
N

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Homewood ADDRESS: 11150 W. Valpico Road Tracy CA 95377 LAT/LONG: 37.7068 / 121.4477	CLIENT: Engeo Inc. CONTACT: Richard Gandolfo INQUIRY #: 3544806.2s DATE: March 14, 2013 3:02 pm

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DETAIL MAP - 3544806.2s



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Power transmission lines
- Oil & Gas pipelines from USGS
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- Areas of Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Homewood	CLIENT: Engeo Inc.
ADDRESS: 11150 W. Valpico Road Tracy CA 95377	CONTACT: Richard Gandolfo
LAT/LONG: 37.7068 / 121.4477	INQUIRY #: 3544806.2s DATE: March 14, 2013 3:03 pm

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MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
Federal NPL site list								
NPL	1.000		0	0	0	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	TP		NR	NR	NR	NR	NR	0
Federal Delisted NPL site list								
Delisted NPL	1.000		0	0	0	0	NR	0
Federal CERCLIS list								
CERCLIS	0.500		0	0	0	NR	NR	0
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
Federal CERCLIS NFRAP site List								
CERC-NFRAP	0.500		0	0	0	NR	NR	0
Federal RCRA CORRACTS facilities list								
CORRACTS	1.000		0	0	0	1	NR	1
Federal RCRA non-CORRACTS TSD facilities list								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
Federal RCRA generators list								
RCRA-LQG	0.250		0	0	NR	NR	NR	0
RCRA-SQG	0.250		0	0	NR	NR	NR	0
RCRA-CESQG	0.250		0	0	NR	NR	NR	0
Federal institutional controls / engineering controls registries								
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROL	0.500		0	0	0	NR	NR	0
LUCIS	0.500		0	0	0	NR	NR	0
Federal ERNS list								
ERNS	TP		NR	NR	NR	NR	NR	0
State- and tribal - equivalent NPL								
RESPONSE	1.000		0	0	0	0	NR	0
State- and tribal - equivalent CERCLIS								
ENVIROSTOR	1.000		0	1	0	2	NR	3
State and tribal landfill and/or solid waste disposal site lists								
SWF/LF	0.500		0	0	0	NR	NR	0
State and tribal leaking storage tank lists								
LUST	0.500		0	0	0	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
SLIC	0.500		0	0	0	NR	NR	0
INDIAN LUST	0.500		0	0	0	NR	NR	0
State and tribal registered storage tank lists								
UST	0.250		0	0	NR	NR	NR	0
AST	0.250		0	0	NR	NR	NR	0
INDIAN UST	0.250		0	0	NR	NR	NR	0
FEMA UST	0.250		0	0	NR	NR	NR	0
State and tribal voluntary cleanup sites								
VCP	0.500		0	0	0	NR	NR	0
INDIAN VCP	0.500		0	0	0	NR	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
Local Lists of Landfill / Solid Waste Disposal Sites								
ODI	0.500		0	0	0	NR	NR	0
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
WMUDS/SWAT	0.500		0	0	0	NR	NR	0
SWRCY	0.500		0	0	0	NR	NR	0
HAULERS	TP		NR	NR	NR	NR	NR	0
INDIAN ODI	0.500		0	0	0	NR	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US CDL	TP		NR	NR	NR	NR	NR	0
HIST Cal-Sites	1.000		0	0	0	0	NR	0
SCH	0.250		0	1	NR	NR	NR	1
Toxic Pits	1.000		0	0	0	0	NR	0
CDL	TP		NR	NR	NR	NR	NR	0
US HIST CDL	TP		NR	NR	NR	NR	NR	0
Local Lists of Registered Storage Tanks								
CA FID UST	0.250		0	0	NR	NR	NR	0
HIST UST	0.250		0	0	NR	NR	NR	0
SWEEPS UST	0.250		0	0	NR	NR	NR	0
Local Land Records								
LIENS 2	TP		NR	NR	NR	NR	NR	0
LIENS	TP		NR	NR	NR	NR	NR	0
DEED	0.500		0	0	0	NR	NR	0
Records of Emergency Release Reports								
HMIRS	TP		NR	NR	NR	NR	NR	0
CHMIRS	TP		NR	NR	NR	NR	NR	0
LDS	TP		NR	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
MCS	TP		NR	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	0.250		0	0	NR	NR	NR	0
DOT OPS	TP		NR	NR	NR	NR	NR	0
DOD	1.000		0	0	0	0	NR	0
FUDS	1.000		0	0	0	0	NR	0
CONSENT	1.000		0	0	0	0	NR	0
ROD	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
US MINES	0.250		0	0	NR	NR	NR	0
TRIS	TP		NR	NR	NR	NR	NR	0
TSCA	TP		NR	NR	NR	NR	NR	0
FTTS	TP		NR	NR	NR	NR	NR	0
HIST FTTS	TP		NR	NR	NR	NR	NR	0
SSTS	TP		NR	NR	NR	NR	NR	0
ICIS	TP		NR	NR	NR	NR	NR	0
PADS	TP		NR	NR	NR	NR	NR	0
MLTS	TP		NR	NR	NR	NR	NR	0
RADINFO	TP		NR	NR	NR	NR	NR	0
FINDS	TP		NR	NR	NR	NR	NR	0
RAATS	TP		NR	NR	NR	NR	NR	0
RMP	TP		NR	NR	NR	NR	NR	0
CA BOND EXP. PLAN	1.000		0	0	0	1	NR	1
UIC	TP		NR	NR	NR	NR	NR	0
NPDES	TP		NR	NR	NR	NR	NR	0
Cortese	0.500		0	0	0	NR	NR	0
HIST CORTESE	0.500		0	0	1	NR	NR	1
CUPA Listings	0.250		0	0	NR	NR	NR	0
Notify 65	1.000		0	0	0	0	NR	0
DRYCLEANERS	0.250		0	0	NR	NR	NR	0
WIP	0.250		0	0	NR	NR	NR	0
ENF	TP		NR	NR	NR	NR	NR	0
HAZNET	TP		NR	NR	NR	NR	NR	0
EMI	TP		NR	NR	NR	NR	NR	0
INDIAN RESERV	1.000		0	0	0	0	NR	0
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
COAL ASH DOE	TP		NR	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
HWT	0.250		0	0	NR	NR	NR	0
HWP	1.000		0	0	0	1	NR	1
Financial Assurance	TP		NR	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
US AIRS	TP		NR	NR	NR	NR	NR	0
PRP	TP		NR	NR	NR	NR	NR	0
WDS	TP		NR	NR	NR	NR	NR	0
EPA WATCH LIST	TP		NR	NR	NR	NR	NR	0
US FIN ASSUR	TP		NR	NR	NR	NR	NR	0
PCB TRANSFORMER	TP		NR	NR	NR	NR	NR	0
PROC	0.500		0	0	0	NR	NR	0
MWMP	0.250		0	0	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
EDR HIGH RISK HISTORICAL RECORDS								
EDR Exclusive Records								
EDR MGP	1.000		0	0	0	0	NR	0
EDR US Hist Auto Stat	0.250		0	1	NR	NR	NR	1
EDR US Hist Cleaners	0.250		0	0	NR	NR	NR	0

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

1
SSE
1/8-1/4
0.191 mi.
1011 ft.

ANTHONY TRAINA ELEMENTARY SCHOOL
4256 WINDSONG DRIVE
TRACY, CA 95377

SCH **S112141983**
NPDES **N/A**
ENVIROSTOR

Relative:
Higher

Actual:
137 ft.

SCH:

Facility ID:	39010020
Site Type:	School Investigation
Site Type Detail:	School
Site Mgmt. Req.:	NONE SPECIFIED
Acres:	16
National Priorities List:	NO
Cleanup Oversight Agencies:	DTSC
Lead Agency:	DTSC
Lead Agency Description:	* DTSC
Project Manager:	Not reported
Supervisor:	Charles Ridenour
Division Branch:	Northern California Schools & Santa Susana
Site Code:	104194
Assembly:	13
Senate:	05
Special Program Status:	Not reported
Status:	No Further Action
Status Date:	10/18/2001
Restricted Use:	NO
Funding:	School District
Latitude:	37.70056
Longitude:	-121.4422
APN:	NONE SPECIFIED
Past Use:	AGRICULTURAL - ROW CROPS
Potential COC:	30001, 30004, 30006, 30007, 30008, 30013
Confirmed COC:	30001-NO,30004-NO,30006-NO,30007-NO,30008-NO,30013-NO
Potential Description:	SOIL
Alias Name:	EDGEWOOD ELEMENTARY SCHOOL SITE
Alias Type:	Alternate Name
Alias Name:	JEFFERSON ELEM SD-EDGEWOOD
Alias Type:	Alternate Name
Alias Name:	JEFFERSON ELEMENTARY SCHOOL DISTRICT
Alias Type:	Alternate Name
Alias Name:	104194
Alias Type:	Project Code (Site Code)
Alias Name:	39010020
Alias Type:	Envirostor ID Number

Completed Info:

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Cost Recovery Closeout Memo
Completed Date:	11/14/2001
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Environmental Oversight Agreement
Completed Date:	04/25/2001
Comments:	Not reported
Completed Area Name:	PROJECT WIDE

ANTHONY TRAINA ELEMENTARY SCHOOL (Continued) **S112141983**

Completed Sub Area Name: Not reported
Completed Document Type: Site Inspections/Visit (Non LUR)
Completed Date: 05/17/2001
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Endangerment Assessment Report
Completed Date: 10/18/2001
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Phase 1
Completed Date: 01/10/2000
Comments: DTSC approved the Phase 1 with a further action determination

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: * Workplan
Completed Date: 05/09/2001
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

NPDES:
Npdes Number: CAS000002
Facility Status: Active
Agency Id: 0
Region: 5S
Regulatory Measure Id: 426833
Order No: 2009-0009-DWQ
Regulatory Measure Type: Enrollee
Place Id: Not reported
WDID: 5S39C363897
Program Type: Construction
Adoption Date Of Regulatory Measure: Not reported
Effective Date Of Regulatory Measure: 06/19/2012
Expiration Date Of Regulatory Measure: Not reported
Termination Date Of Regulatory Measure: Not reported
Discharge Name: Jefferson Elementary School District
Discharge Address: 1219 Whispering Wind Drive
Discharge City: Tracy
Discharge State: California
Discharge Zip: 95377

ENVIROSTOR:
Site Type: School Investigation

ANTHONY TRAINA ELEMENTARY SCHOOL (Continued) **S112141983**

Site Type Detailed: School
Acres: 16
NPL: NO
Regulatory Agencies: DTSC
Lead Agency: DTSC
Program Manager: Not reported
Supervisor: Charles Ridenour
Division Branch: Northern California Schools & Santa Susana
Facility ID: 39010020
Site Code: 104194
Assembly: 13
Senate: 05
Special Program: Not reported
Status: No Further Action
Status Date: 10/18/2001
Restricted Use: NO
Site Mgmt. Req.: NONE SPECIFIED
Funding: School District
Latitude: 37.70056
Longitude: -121.4422
APN: NONE SPECIFIED
Past Use: AGRICULTURAL - ROW CROPS
Potential COC: 30001, 30004, 30006, 30007, 30008, 30013
Confirmed COC: 30001-NO,30004-NO,30006-NO,30007-NO,30008-NO,30013-NO
Potential Description: SOIL
Alias Name: EDGEWOOD ELEMENTARY SCHOOL SITE
Alias Type: Alternate Name
Alias Name: JEFFERSON ELEM SD-EDGEWOOD
Alias Type: Alternate Name
Alias Name: JEFFERSON ELEMENTARY SCHOOL DISTRICT
Alias Type: Alternate Name
Alias Name: 104194
Alias Type: Project Code (Site Code)
Alias Name: 39010020
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Cost Recovery Closeout Memo
Completed Date: 11/14/2001
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Environmental Oversight Agreement
Completed Date: 04/25/2001
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Site Inspections/Visit (Non LUR)
Completed Date: 05/17/2001
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Endangerment Assessment Report

ANTHONY TRAINA ELEMENTARY SCHOOL (Continued) **S112141983**

Completed Date: 10/18/2001
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Phase 1
Completed Date: 01/10/2000
Comments: DTSC approved the Phase 1 with a further action determination

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: * Workplan
Completed Date: 05/09/2001
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

---

2 **EDR US Hist Auto Stat** **1015283388**
SSW **1836 CALAVERAS LN** **N/A**
1/8-1/4 **TRACY, CA 95377**
0.217 mi.
1146 ft.

Relative:
Higher

Actual:
144 ft.

EDR Historical Auto Stations:

Name: A & Z AUTO REPAIR
Year: 2004
Address: 1836 CALAVERAS LN

Name: A & Z AUTO REPAIR
Year: 2005
Address: 1836 CALAVERAS LN

Name: A & Z AUTO REPAIR
Year: 2006
Address: 1836 CALAVERAS LN

Name: A1 AUTO BODY & REPAIR
Year: 2008
Address: 1836 CALAVERAS LN

3
East
1/4-1/2
0.498 mi.
2629 ft.

TRACY MUNICIPAL AIRPORT
5749 TRACY
TRACY, CA 95376

HIST CORTESE **S101302949**
N/A

Relative:
Higher

Actual:
120 ft.

CORTESE:
Region: CORTESE
Facility County Code: 39
Reg By: LTNKA
Reg Id: 390391

A4
ENE
1/2-1
0.937 mi.
4949 ft.

GEORGIA-PACIFIC CORP CHEM PAC DIVISION
75 W VALPICO ROAD
TRACY, CA 95376

Site 1 of 3 in cluster A

HAZNET **S107144649**
HWP **N/A**

Relative:
Lower

Actual:
107 ft.

HAZNET:
Year: 2003
Gepaid: CAD096233564
Contact: INACT PER 96 VQ AD
Telephone: 2098362151
Mailing Name: Not reported
Mailing Address: 75 WEST VALPICO RD
Mailing City,St,Zip: TRACY, CA 953760000
Gen County: San Joaquin
TSD EPA ID: CAD044429835
TSD County: San Joaquin
Waste Category: Liquids with pH <= 2
Disposal Method: Disposal, Other
Tons: 0.35
Facility County: San Joaquin

HWP:
EPA Id: CAD096233564
Latitude: 37.70748
Longitude: -121.4246
Facility Type: Historical - Non-Operating
Cleanup Status: PROTECTIVE FILER
Supervisor: Not reported
Site Code: Not reported
Assembly District: 13
Senate District: 5
Public Information Officer: Not reported

Activities:
EPA Id: CAD096233564
Facility Type: Historical - Non-Operating
Unit Names: CONTAIN1, TANKSTR1
Event Description: Protective Filer Status - PROTECTIVE FILER (RECEIVED)
Actual Date: 8/22/1988

EPA Id: CAD096233564
Facility Type: Historical - Non-Operating
Unit Names: CONTAIN1, TANKSTR1
Event Description: Protective Filer Status - PROTECTIVE FILER (APPROVED)
Actual Date: 8/22/1988

GEORGIA-PACIFIC CORP CHEM PAC DIVISION (Continued) **S107144649**

Alias:
EPA Id: CAD096233564
Facility Type: Historical - Non-Operating
Alias Type: Envirostor ID Number
Alias: 39280028

A5
ENE
1/2-1
0.937 mi.
4949 ft.

Relative:
Lower

Actual:
107 ft.

GEORGIA-PACIFIC CORP CHEM PAC DIVISION
75 W VALPICO RD
TRACY, CA 95376

Site 2 of 3 in cluster A

RCRA-TSDF **1000357755**
CERC-NFRAP **CAD096233564**
CORRACTS
RCRA-SQG
FINDS
NPDES
HIST UST
ENVIROSTOR
2020 COR ACTION

RCRA-TSDF:
Date form received by agency: 09/01/1996
Facility name: GEORGIA-PACIFIC CORP CHEM PAC DIVISION
Facility address: 75 W VALPICO RD
TRACY, CA 95376
EPA ID: CAD096233564
Mailing address: PO BOX 239
TRACY, CA 95376
Contact: Not reported
Contact address: Not reported
Not reported
Contact country: Not reported
Contact telephone: Not reported
Contact email: Not reported
EPA Region: 09
Land type: Facility is not located on Indian land. Additional information is not known.
Classification: TSDF
Description: Handler is engaged in the treatment, storage or disposal of hazardous waste

Owner/Operator Summary:
Owner/operator name: GEORGIA-PACIFIC CORP
Owner/operator address: 900 S W FIFTH AVENUE
CITY NOT REPORTED, OR 99999
Owner/operator country: Not reported
Owner/operator telephone: (503) 222-5561
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: STEWART/WALKER CO
Owner/operator address: 900 S W FIFTH AVENUE
PORTLAND, OR 97204
Owner/operator country: Not reported
Owner/operator telephone: (503) 222-5561
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

GEORGIA-PACIFIC CORP CHEM PAC DIVISION (Continued) **1000357755**

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 07/28/1993
Facility name: GEORGIA-PACIFIC CORP CHEM PAC DIVISION
Classification: Not a generator, verified

Corrective Action Summary:
Event date: 08/29/1991
Event: CA029WQ

Event date: 08/29/1991
Event: CA Prioritization, Facility or area was assigned a medium corrective action priority.

Event date: 08/29/1991
Event: CA049PA

Event date: 01/30/1992
Event: CA Prioritization, Facility or area was assigned a medium corrective action priority.

Event date: 01/30/1992
Event: Stabilization Measures Evaluation,This facility is not amenable to stabilization activity at the present time for reasons other than 1- it appears to be technically infeasible or inappropriate (NF) or 2- there is a lack of technical information (IN). Reasons for this conclusion may be the status of closure at the facility, the degree of risk, timing considerations, the status of corrective action work at the facility, or other administrative considerations.

Event date: 03/21/2012
Event: Current Human Exposures under Control, Yes, Current Human Exposures Under Control has been verified. Based on a review of information contained in the EI determination, current human exposures are expected to be under control at the facility under current and reasonably expected conditions. This determination will be re-evaluated when the Agency/State becomes aware of significant changes at the facility.

Event date: Not reported

GEORGIA-PACIFIC CORP CHEM PAC DIVISION (Continued) **1000357755**

Event: CA03193

Facility Has Received Notices of Violations:
Regulation violated: Not reported
Area of violation: TSD - General
Date violation determined: 08/12/1988
Date achieved compliance: 09/14/1988
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: TSD - Financial Requirements
Date violation determined: 08/01/1988
Date achieved compliance: 10/26/1992
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 08/01/1988
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Evaluation Action Summary:
Evaluation date: 10/26/1992
Evaluation: FINANCIAL RECORD REVIEW
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 10/14/1992
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 08/12/1988
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD - General
Date achieved compliance: 09/14/1988
Evaluation lead agency: State

Evaluation date: 08/01/1988
Evaluation: FINANCIAL RECORD REVIEW
Area of violation: TSD - Financial Requirements
Date achieved compliance: 10/26/1992
Evaluation lead agency: State

GEORGIA-PACIFIC CORP CHEM PAC DIVISION (Continued) **1000357755**

CERC-NFRAP:
Site ID: 0900332
Federal Facility: Not a Federal Facility
NPL Status: Not on the NPL
Non NPL Status: Deferred to RCRA

CERCLIS-NFRAP Site Contact Details:
Contact Sequence ID: 13054021.00000
Person ID: 9271184.00000

Contact Sequence ID: 13286097.00000
Person ID: 13003854.00000

Contact Sequence ID: 13291692.00000
Person ID: 13003858.00000

Contact Sequence ID: 13297550.00000
Person ID: 13004003.00000

Program Priority:
Description: RCRA Deferral Audit

Description: RCRA Deferral - Lead Confirmed

Description: RCRA Deferral - Further Superfund Assessment

CERCLIS-NFRAP Assessment History:
Action: ARCHIVE SITE
Date Started: / /
Date Completed: 01/23/96
Priority Level: Not reported

Action: DISCOVERY
Date Started: / /
Date Completed: 04/01/91
Priority Level: Not reported

Action: PRELIMINARY ASSESSMENT
Date Started: / /
Date Completed: 09/24/91
Priority Level: Deferred to RCRA (Subtitle C)

CORRACTS:

EPA ID: CAD096233564
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 19920130
Action: CA075ME - CA Prioritization, Facility or area was assigned a medium corrective action priority
NAICS Code(s): 325211 325998
Plastics Material and Resin Manufacturing
All Other Miscellaneous Chemical Product and Preparation Manufacturing
Original schedule date: 19920130

GEORGIA-PACIFIC CORP CHEM PAC DIVISION (Continued) **1000357755**

Schedule end date: Not reported

EPA ID: CAD096233564
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 20120321
Action: CA725YE - Current Human Exposures Under Control, Yes, Current Human Exposures Under Control has been verified
NAICS Code(s): 325211 325998
Plastics Material and Resin Manufacturing
All Other Miscellaneous Chemical Product and Preparation Manufacturing
Original schedule date: 20120321
Schedule end date: Not reported

EPA ID: CAD096233564
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 19910829
Action: CA075ME - CA Prioritization, Facility or area was assigned a medium corrective action priority
NAICS Code(s): 325211 325998
Plastics Material and Resin Manufacturing
All Other Miscellaneous Chemical Product and Preparation Manufacturing
Original schedule date: Not reported
Schedule end date: Not reported

FINDS:

Registry ID: 110000609896

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

NPDES:
Npdes Number: CAS000001
Facility Status: Active
Agency Id: 0
Region: 5S
Regulatory Measure Id: 201868
Order No: 97-03-DWQ
Regulatory Measure Type: Enrollee
Place Id: Not reported
WDID: 5S39I017394
Program Type: Industrial
Adoption Date Of Regulatory Measure: Not reported
Effective Date Of Regulatory Measure: 07/29/2002
Expiration Date Of Regulatory Measure: Not reported
Termination Date Of Regulatory Measure: Not reported
Discharge Name: Consolidated Container Co LLC
Discharge Address: 75 W Valpico Rd

GEORGIA-PACIFIC CORP CHEM PAC DIVISION (Continued) **1000357755**

Discharge City: Tracy
Discharge State: California
Discharge Zip: 95376

HIST UST:
Region: STATE
Facility ID: 00000008404
Facility Type: Other
Other Type: CHEMICAL PKG.
Total Tanks: 0004
Contact Name: LEROY WHITELY, PLANT MANAGER
Telephone: 2098362151
Owner Name: GEORGIA-PACIFIC CORPORATION
Owner Address: 133 PECHTREE STREET, N.E.
Owner City,St,Zip: ATLANTA, GA 30303

Tank Num: 001
Container Num: #4
Year Installed: 1978
Tank Capacity: 00000075
Tank Used for: WASTE
Type of Fuel: Not reported
Tank Construction: Not reported
Leak Detection: None

Tank Num: 002
Container Num: #1
Year Installed: 1978
Tank Capacity: 00000075
Tank Used for: WASTE
Type of Fuel: Not reported
Tank Construction: Not reported
Leak Detection: Visual

Tank Num: 003
Container Num: #2
Year Installed: 1978
Tank Capacity: 00000150
Tank Used for: WASTE
Type of Fuel: Not reported
Tank Construction: Not reported
Leak Detection: Not reported

Tank Num: 004
Container Num: #3
Year Installed: 1978
Tank Capacity: 00000150
Tank Used for: WASTE
Type of Fuel: Not reported
Tank Construction: Not reported
Leak Detection: Not reported

ENVIROSTOR:
Site Type: Corrective Action
Site Type Detailed: Corrective Action
Acres: 0

GEORGIA-PACIFIC CORP CHEM PAC DIVISION (Continued) **1000357755**

NPL: NO
Regulatory Agencies: SMBRP
Lead Agency: WM
Program Manager: Not reported
Supervisor: * Unknown
Division Branch: Cleanup Sacramento
Facility ID: 80001723
Site Code: Not reported
Assembly: 13
Senate: 05
Special Program: Not reported
Status: * Inactive
Status Date: 01/01/2008
Restricted Use: NO
Site Mgmt. Req.: NONE SPECIFIED
Funding: Not reported
Latitude: 37.70748
Longitude: -121.4246
APN: NONE SPECIFIED
Past Use: NONE SPECIFIED
Potential COC: NONE SPECIFIED
Confirmed COC: NONE SPECIFIED
Potential Description: NONE SPECIFIED
Alias Name: CAD096233564
Alias Type: EPA Identification Number
Alias Name: 39280028
Alias Type: Envirostor ID Number
Alias Name: 80001723
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Interim Measures Questionnaire
Completed Date: 01/30/1992
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Assessment Report
Completed Date: 08/29/1991
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Other Report
Completed Date: 01/20/2010
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

GEORGIA-PACIFIC CORP CHEM PAC DIVISION (Continued) **1000357755**

2020 COR ACTION:
EPA ID: CAD096233564
Region: 9
Action: Not reported

A6 GEORGIA PACIFIC - FORMER TRACY PLANT **CA BOND EXP. PLAN** **S100833452**
ENE 75 WEST VALPICO ROAD **SLIC** **N/A**
1/2-1 TRACY, CA **ENVIROSTOR**
0.937 mi.
4949 ft. **Site 3 of 3 in cluster A**

Relative:
Lower

Actual:
107 ft.

CA BOND EXP. PLAN:
Reponsible Party: RWQCB REFERRAL SITE
Project Revenue Source Company: Not reported
Project Revenue Source Addr: Not reported
Project Revenue Source City,St,Zip: Not reported
Project Revenue Source Desc: The responsible party is remediating this site under the direction of the RWQCB. Until such time as the RWQCB refers this site to DHS for oversight, there are no plans to spend Bond funds at this facility.
Site Description: A chemical packaging plant is in operation at this site. Products packaged include bleach (sodium hypochlorite), muratic acid, sulfuric acid and antifreeze (ethylene glycol). Different chemicals are handled by separate storage systems. Hazardous wastes are generated primarily from spillage during filling procedures. Samples taken from a storm drainage pond indicated high levels of ethylene glycol.
Hazardous Waste Desc: Samples indicated ethylene glycol concentrations at 10,000 milligrams per litre (mg/l).
Threat To Public Health & Env: The waste water pond was designed as a percolation pond. The threat of ground water contamination is present. The City of Tracy has a domestic well 100 feet from the pond and there are other private wells in the vicinity. There have been public complaints about odor from the pond.
Site Activity Status: A cease and desist order has been issued. Georgia Pacific is required by the RWQCB to submit a plan for ground water monitoring.

SLIC:
Region: STATE
Facility Status: Completed - Case Closed
Status Date: 11/15/2011
Global Id: SL185552923
Lead Agency: CENTRAL VALLEY RWQCB (REGION 5S)
Lead Agency Case Number: Not reported
Latitude: 37.7145844579159
Longitude: -121.426520347595
Case Type: Cleanup Program Site
Case Worker: GJD
Local Agency: Not reported
RB Case Number: SL185552923
File Location: Regional Board
Potential Media Affected: Other Groundwater (uses other than drinking water)
Potential Contaminants of Concern: * Volatile Organic Compounds (VOC)
Site History: Georgia-Pacific Corporation operated a chemical packaging facility at 75 W. Valpico Road in Tracy from 1978 to 1986. A percolation basin being used for the disposal of waste cooling water and stormwater runoff was treated with sodium hypochlorite bleach in July 1984 to mitigate sulfite-type odors, resulting in the formation of chloroform. Actions: On 25 September 1984, the Regional Board issued a Cleanup and Abatement order to Georgia-Pacific to stop seepage of

GEORGIA PACIFIC - FORMER TRACY PLANT (Continued) **S100833452**

pollutants from the storm-water pond and stop pollution of the groundwater and odor nuisance. Starting in October 1984, 150,000 gallons of standing water were pumped out of the basin and disposed offsite. Wastewater flow to the basin was discontinued. Impacted soil beneath the basin was sampled. Chloroform concentrations in the samples ranged from 0.020 to 200 milligrams per kilogram (mg/kg). Based on sampling results, nearly 1,500 cubic yards of sludge and soil were excavated from the basin floor and sidewalls and shipped offsite during February and March 1985. Confirmation soil samples were collected from the sidewalls and bottom of the excavated area. Chloroform concentrations in the samples ranged from 0.004 to 3.4 mg/kg. Contaminated ground water in the basin area was extracted and treated using a ground water extraction and air stripper treatment system between June 1985 and February 1992. Approximately 194 million gallons of ground water was treated, removing about 139 pounds of chloroform. An in situ air ozone sparge system containing 12 sparge wells for treatment of residual chloroform was approved on 11 September 2003. The CAO was rescinded on 5 November 2003. The ozone sparge system was discontinued on 15 August 2006 due to a very low rate of destruction of contaminant mass and formation of unwanted compounds including bromodichloromethane and dibromochloromethane in ground water due to naturally occurring bromine reacting with ozone. On-site monitoring wells have well documented decreases in chloroform and continue to decline. The chloroform is naturally attenuating, is below the California Primary Maximum Contaminant Level (MCL) of 80 ug/l in all monitoring wells, and is approaching the cleanup goal of 5 ug/l set in 1996. It is expected that the cleanup goal will be reached in 2016. On 1/14/2011 a Public Notice that the Central Valley Water Board was considering closure of this site was sent out to residents near the facility and Tracy City Council members. No comments were received. On 2/16/2011 a final No Further Action recommendation was prepared by Cental Valley Water Board staff. On 4/26/2011 the Central Valley Water Board Assistant Executive Officer signed a Conditional No Further Action Letter. A No Further Action letter will be issued after all monitoring wells are destroyed under the specifications of the San Joaquin County Environmental Health Department. The final No Further Action Letter was signed on 11/15/2011.

Click here to access the California GeoTracker records for this facility:

ENVIROSTOR:

Site Type:	Evaluation
Site Type Detailed:	Evaluation
Acres:	1
NPL:	NO
Regulatory Agencies:	NONE SPECIFIED
Lead Agency:	NONE SPECIFIED
Program Manager:	Not reported
Supervisor:	Referred - Not Assigned
Division Branch:	Cleanup Sacramento
Facility ID:	39280028
Site Code:	100065
Assembly:	13
Senate:	05
Special Program:	Not reported
Status:	Refer: RWQCB

GEORGIA PACIFIC - FORMER TRACY PLANT (Continued) **S100833452**

Status Date: 02/03/2003
Restricted Use: NO
Site Mgmt. Req.: NONE SPECIFIED
Funding: Not reported
Latitude: 37.71246
Longitude: -121.4266
APN: NONE SPECIFIED
Past Use: NONE SPECIFIED
Potential COC: 10003
Confirmed COC: NONE SPECIFIED
Potential Description: NONE SPECIFIED
Alias Name: GEORGIA PACIFIC CORP CHEM PAC DIV
Alias Type: Alternate Name
Alias Name: STEWART WALKER COMPANY
Alias Type: Alternate Name
Alias Name: CAD096233564
Alias Type: EPA Identification Number
Alias Name: SL185552923
Alias Type: GeoTracker Global ID
Alias Name: 100065
Alias Type: Project Code (Site Code)
Alias Name: 39280028
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: * Discovery
Completed Date: 03/22/1982
Comments: FACILITY IDENTIFIED INDUSTRIAL INDEX.

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

Count: 23 records. ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
BRENTWOOD	S101626868	VAQUERO FARMS, INC.	1200 HIGHWAY 4	95376	CA FID UST, CONTRA COSTA CO. SITE LIST, SWEEPS UST
TRACY	1000250973	PACIFIC BELL	N & S HWY 50	95376	RCRA-SQG, FINDS
TRACY	S100275892		11TH ST	95376	SLIC, CHMIRS
TRACY	1000268546	NICKELES TRUCKING INC	10131 HWY 33	95376	RCRA-SQG, FINDS
TRACY	U001608455		BANTA RD		HIST UST, CHMIRS
TRACY	1003878929	PG&E GAS PLANT TRACY	BET 11TH & 20TH STS	95376	CERC-NFRAP
TRACY	1003879450	TRACY OIL PIT	SW CORNER S MACARTHUR DR & VA	95376	CERC-NFRAP
TRACY	S105027095	PWD CORRAL HOLLOW LANDFIL	CORRAL HOLLOW / BYRON HWY	95376	HIST CORTESE
TRACY	U003786381	LLNL-SITE 300*	CORRAL HOLLOW RD	95376	LUST, UST
TRACY	S110655188	LLNL, SITE 300	CORRAL HOLLOW RD		LUST
TRACY	S110655182	PWD CORRAL HOLLOW LANDFILL	CORRAL HOLW & I 580	95376	LUST
TRACY	U001608559	UNION OIL BULK PLANT # 0788	EAST HIGHWAY 50	95376	HIST UST
TRACY	1000109406	FMC CORP AGRI CHEM GROUP	5161 W HWY 50	95376	RCRA-SQG, FINDS
TRACY	U001608446	E. THOMAS GRAHAM	26200 S. HWY 33	95376	HIST UST
TRACY	U004024687	RHODES BEAN SUPPLY COOP	24710 S HWY 33	95376	UST
TRACY	U001608505	MOBIL OIL CORPORATION	14371 E. HWY 120	95376	HIST UST
TRACY	U001608450	EVA COELHO	26391 S. HWY. 33	95376	HIST UST
TRACY	S110496276	LAWRENCE LIVERMORE NATIONAL LABORA	SITE 300 PIT RD & I 580		SWF/LF
TRACY	S105669191		TRACY BLVD AND SUGAR RD	95376	SLIC, CHMIRS
TRACY	1003878522	TRACY MUNI LDFL	S TRACY BLVD W	95376	CERC-NFRAP
TRACY	S105027100	TRACY OIL PIT	VALPICO RD 1/2 MI E. OF T	95376	HIST CORTESE
TRACY	S101482132	TRACY OIL PIT	VALPICO RD 1 & 2 MILE EAST OF	95376	ENVIROSTOR
TRACY	S108937579	CHEVRON, TAOC TRACY GRAVEL PITS	VALPICO ST	95376	SLIC

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 02/01/2013
Date Data Arrived at EDR: 03/01/2013
Date Made Active in Reports: 03/13/2013
Number of Days to Update: 12

Source: EPA
Telephone: N/A
Last EDR Contact: 03/01/2013
Next Scheduled EDR Contact: 04/22/2013
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 7
Telephone: 913-551-7247

EPA Region 4
Telephone 404-562-8033

EPA Region 8
Telephone: 303-312-6774

EPA Region 5
Telephone 312-886-6686

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 02/01/2013
Date Data Arrived at EDR: 03/01/2013
Date Made Active in Reports: 03/13/2013
Number of Days to Update: 12

Source: EPA
Telephone: N/A
Last EDR Contact: 03/01/2013
Next Scheduled EDR Contact: 04/22/2013
Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Federal Delisted NPL site list

DELISTED NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 02/01/2013
Date Data Arrived at EDR: 03/01/2013
Date Made Active in Reports: 03/13/2013
Number of Days to Update: 12

Source: EPA
Telephone: N/A
Last EDR Contact: 03/01/2013
Next Scheduled EDR Contact: 04/22/2013
Data Release Frequency: Quarterly

Federal CERCLIS list

CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System

CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 02/04/2013
Date Data Arrived at EDR: 03/01/2013
Date Made Active in Reports: 03/13/2013
Number of Days to Update: 12

Source: EPA
Telephone: 703-412-9810
Last EDR Contact: 03/01/2013
Next Scheduled EDR Contact: 06/10/2013
Data Release Frequency: Quarterly

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 07/31/2012
Date Data Arrived at EDR: 10/09/2012
Date Made Active in Reports: 12/20/2012
Number of Days to Update: 72

Source: Environmental Protection Agency
Telephone: 703-603-8704
Last EDR Contact: 01/11/2013
Next Scheduled EDR Contact: 04/22/2013
Data Release Frequency: Varies

Federal CERCLIS NFRAP site List

CERCLIS-NFRAP: CERCLIS No Further Remedial Action Planned

Archived sites are sites that have been removed and archived from the inventory of CERCLIS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list this site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.

Date of Government Version: 02/05/2013
Date Data Arrived at EDR: 03/01/2013
Date Made Active in Reports: 03/13/2013
Number of Days to Update: 12

Source: EPA
Telephone: 703-412-9810
Last EDR Contact: 01/04/2013
Next Scheduled EDR Contact: 03/11/2013
Data Release Frequency: Quarterly

Federal RCRA CORRACTS facilities list

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 02/12/2013
Date Data Arrived at EDR: 02/21/2013
Date Made Active in Reports: 02/27/2013
Number of Days to Update: 6

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 02/08/2013
Next Scheduled EDR Contact: 05/27/2013
Data Release Frequency: Quarterly

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 02/12/2013
Date Data Arrived at EDR: 02/15/2013
Date Made Active in Reports: 02/27/2013
Number of Days to Update: 12

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 02/15/2013
Next Scheduled EDR Contact: 04/15/2013
Data Release Frequency: Quarterly

Federal RCRA generators list

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 02/12/2013
Date Data Arrived at EDR: 02/15/2013
Date Made Active in Reports: 02/27/2013
Number of Days to Update: 12

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 02/15/2013
Next Scheduled EDR Contact: 04/15/2013
Data Release Frequency: Quarterly

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 02/12/2013
Date Data Arrived at EDR: 02/15/2013
Date Made Active in Reports: 02/27/2013
Number of Days to Update: 12

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 02/15/2013
Next Scheduled EDR Contact: 04/15/2013
Data Release Frequency: Quarterly

RCRA-CESQG: RCRA - Conditionally Exempt Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 02/12/2013
Date Data Arrived at EDR: 02/15/2013
Date Made Active in Reports: 02/27/2013
Number of Days to Update: 12

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 02/15/2013
Next Scheduled EDR Contact: 04/15/2013
Data Release Frequency: Varies

Federal institutional controls / engineering controls registries

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 12/19/2012
Date Data Arrived at EDR: 12/26/2012
Date Made Active in Reports: 02/27/2013
Number of Days to Update: 63

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 03/11/2013
Next Scheduled EDR Contact: 06/24/2013
Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 12/19/2012
Date Data Arrived at EDR: 12/26/2012
Date Made Active in Reports: 02/27/2013
Number of Days to Update: 63

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 03/11/2013
Next Scheduled EDR Contact: 06/24/2013
Data Release Frequency: Varies

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 12/09/2005
Date Data Arrived at EDR: 12/11/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 31

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 02/18/2013
Next Scheduled EDR Contact: 06/03/2013
Data Release Frequency: Varies

Federal ERNS list

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 12/31/2012
Date Data Arrived at EDR: 01/17/2013
Date Made Active in Reports: 02/15/2013
Number of Days to Update: 29

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 01/17/2013
Next Scheduled EDR Contact: 04/15/2013
Data Release Frequency: Annually

State- and tribal - equivalent NPL

RESPONSE: State Response Sites

Identifies confirmed release sites where DTSC is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk.

Date of Government Version: 12/05/2012
Date Data Arrived at EDR: 12/06/2012
Date Made Active in Reports: 01/15/2013
Number of Days to Update: 40

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 03/14/2013
Next Scheduled EDR Contact: 05/20/2013
Data Release Frequency: Quarterly

State- and tribal - equivalent CERCLIS

ENVIROSTOR: EnviroStor Database

The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

Date of Government Version: 12/05/2012
Date Data Arrived at EDR: 12/06/2012
Date Made Active in Reports: 01/15/2013
Number of Days to Update: 40

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 03/14/2013
Next Scheduled EDR Contact: 05/20/2013
Data Release Frequency: Quarterly

State and tribal landfill and/or solid waste disposal site lists

SWF/LF (SWIS): Solid Waste Information System

Active, Closed and Inactive Landfills. SWF/LF records typically contain an inve ntory of solid waste disposal facilities or landfills. These may be active or i nactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 11/19/2012
Date Data Arrived at EDR: 11/19/2012
Date Made Active in Reports: 01/04/2013
Number of Days to Update: 46

Source: Department of Resources Recycling and Recovery
Telephone: 916-341-6320
Last EDR Contact: 02/18/2013
Next Scheduled EDR Contact: 06/03/2013
Data Release Frequency: Quarterly

State and tribal leaking storage tank lists

LUST REG 8: Leaking Underground Storage Tanks

California Regional Water Quality Control Board Santa Ana Region (8). For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/14/2005
Date Data Arrived at EDR: 02/15/2005
Date Made Active in Reports: 03/28/2005
Number of Days to Update: 41

Source: California Regional Water Quality Control Board Santa Ana Region (8)
Telephone: 909-782-4496
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Varies

LUST REG 7: Leaking Underground Storage Tank Case Listing

Leaking Underground Storage Tank locations. Imperial, Riverside, San Diego, Santa Barbara counties.

Date of Government Version: 02/26/2004
Date Data Arrived at EDR: 02/26/2004
Date Made Active in Reports: 03/24/2004
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Colorado River Basin Region (7)
Telephone: 760-776-8943
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST REG 6V: Leaking Underground Storage Tank Case Listing

Leaking Underground Storage Tank locations. Inyo, Kern, Los Angeles, Mono, San Bernardino counties.

Date of Government Version: 06/07/2005
Date Data Arrived at EDR: 06/07/2005
Date Made Active in Reports: 06/29/2005
Number of Days to Update: 22

Source: California Regional Water Quality Control Board Victorville Branch Office (6)
Telephone: 760-241-7365
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 6L: Leaking Underground Storage Tank Case Listing
For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/09/2003
Date Data Arrived at EDR: 09/10/2003
Date Made Active in Reports: 10/07/2003
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Lahontan Region (6)
Telephone: 530-542-5572
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 5: Leaking Underground Storage Tank Database
Leaking Underground Storage Tank locations. Alameda, Alpine, Amador, Butte, Colusa, Contra Costa, Calveras, El Dorado, Fresno, Glenn, Kern, Kings, Lake, Lassen, Madera, Mariposa, Merced, Modoc, Napa, Nevada, Placer, Plumas, Sacramento, San Joaquin, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Tuolumne, Yolo, Yuba counties.

Date of Government Version: 07/01/2008
Date Data Arrived at EDR: 07/22/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 9

Source: California Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-4834
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: No Update Planned

LUST REG 4: Underground Storage Tank Leak List
Los Angeles, Ventura counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6710
Last EDR Contact: 09/06/2011
Next Scheduled EDR Contact: 12/19/2011
Data Release Frequency: No Update Planned

LUST REG 3: Leaking Underground Storage Tank Database
Leaking Underground Storage Tank locations. Monterey, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz counties.

Date of Government Version: 05/19/2003
Date Data Arrived at EDR: 05/19/2003
Date Made Active in Reports: 06/02/2003
Number of Days to Update: 14

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-542-4786
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: No Update Planned

LUST REG 2: Fuel Leak List
Leaking Underground Storage Tank locations. Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, Sonoma counties.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: California Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-622-2433
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Quarterly

LUST REG 1: Active Toxic Site Investigation
Del Norte, Humboldt, Lake, Mendocino, Modoc, Siskiyou, Sonoma, Trinity counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/01/2001
Date Data Arrived at EDR: 02/28/2001
Date Made Active in Reports: 03/29/2001
Number of Days to Update: 29

Source: California Regional Water Quality Control Board North Coast (1)
Telephone: 707-570-3769
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST: Geotracker's Leaking Underground Fuel Tank Report

Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state. For more information on a particular leaking underground storage tank sites, please contact the appropriate regulatory agency.

Date of Government Version: 12/17/2012
Date Data Arrived at EDR: 12/17/2012
Date Made Active in Reports: 01/25/2013
Number of Days to Update: 39

Source: State Water Resources Control Board
Telephone: see region list
Last EDR Contact: 01/31/2013
Next Scheduled EDR Contact: 04/01/2013
Data Release Frequency: Quarterly

LUST REG 9: Leaking Underground Storage Tank Report

Orange, Riverside, San Diego counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 03/01/2001
Date Data Arrived at EDR: 04/23/2001
Date Made Active in Reports: 05/21/2001
Number of Days to Update: 28

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-637-5595
Last EDR Contact: 09/26/2011
Next Scheduled EDR Contact: 01/09/2012
Data Release Frequency: No Update Planned

SLIC: Statewide SLIC Cases

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 12/17/2012
Date Data Arrived at EDR: 12/17/2012
Date Made Active in Reports: 01/25/2013
Number of Days to Update: 39

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 01/31/2013
Next Scheduled EDR Contact: 04/01/2013
Data Release Frequency: Varies

SLIC REG 1: Active Toxic Site Investigations

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2003
Date Data Arrived at EDR: 04/07/2003
Date Made Active in Reports: 04/25/2003
Number of Days to Update: 18

Source: California Regional Water Quality Control Board, North Coast Region (1)
Telephone: 707-576-2220
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 2: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Quarterly

SLIC REG 3: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/18/2006
Date Data Arrived at EDR: 05/18/2006
Date Made Active in Reports: 06/15/2006
Number of Days to Update: 28

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: Semi-Annually

SLIC REG 4: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/17/2004
Date Data Arrived at EDR: 11/18/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 47

Source: Region Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6600
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: Varies

SLIC REG 5: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/01/2005
Date Data Arrived at EDR: 04/05/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 16

Source: Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-3291
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Semi-Annually

SLIC REG 6V: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/24/2005
Date Data Arrived at EDR: 05/25/2005
Date Made Active in Reports: 06/16/2005
Number of Days to Update: 22

Source: Regional Water Quality Control Board, Victorville Branch
Telephone: 619-241-6583
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Semi-Annually

SLIC REG 6L: SLIC Sites
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board, Lahontan Region
Telephone: 530-542-5574
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

SLIC REG 7: SLIC List
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/24/2004
Date Data Arrived at EDR: 11/29/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 36

Source: California Regional Quality Control Board, Colorado River Basin Region
Telephone: 760-346-7491
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 8: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2008
Date Data Arrived at EDR: 04/03/2008
Date Made Active in Reports: 04/14/2008
Number of Days to Update: 11

Source: California Region Water Quality Control Board Santa Ana Region (8)
Telephone: 951-782-3298
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Semi-Annually

SLIC REG 9: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/10/2007
Date Data Arrived at EDR: 09/11/2007
Date Made Active in Reports: 09/28/2007
Number of Days to Update: 17

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980
Last EDR Contact: 08/08/2011
Next Scheduled EDR Contact: 11/21/2011
Data Release Frequency: Annually

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 08/01/2012
Date Data Arrived at EDR: 08/02/2012
Date Made Active in Reports: 10/16/2012
Number of Days to Update: 75

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 10/30/2012
Next Scheduled EDR Contact: 05/13/2013
Data Release Frequency: Quarterly

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 04/12/2012
Date Data Arrived at EDR: 05/09/2012
Date Made Active in Reports: 07/10/2012
Number of Days to Update: 62

Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 02/01/2013
Next Scheduled EDR Contact: 05/13/2013
Data Release Frequency: Varies

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 08/27/2012
Date Data Arrived at EDR: 08/28/2012
Date Made Active in Reports: 10/16/2012
Number of Days to Update: 49

Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 01/28/2013
Next Scheduled EDR Contact: 05/13/2013
Data Release Frequency: Quarterly

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 09/12/2011
Date Data Arrived at EDR: 09/13/2011
Date Made Active in Reports: 11/11/2011
Number of Days to Update: 59

Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 01/28/2013
Next Scheduled EDR Contact: 05/13/2013
Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 12/14/2011
Date Data Arrived at EDR: 12/15/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 26

Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 01/28/2013
Next Scheduled EDR Contact: 05/13/2013
Data Release Frequency: Semi-Annually

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 08/17/2012
Date Data Arrived at EDR: 08/28/2012
Date Made Active in Reports: 10/16/2012
Number of Days to Update: 49

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 01/28/2013
Next Scheduled EDR Contact: 05/13/2013
Data Release Frequency: Varies

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 09/06/2012
Date Data Arrived at EDR: 09/07/2012
Date Made Active in Reports: 10/16/2012
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 01/28/2013
Next Scheduled EDR Contact: 05/13/2013
Data Release Frequency: Quarterly

State and tribal registered storage tank lists

UST: Active UST Facilities
Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 12/17/2012
Date Data Arrived at EDR: 12/18/2012
Date Made Active in Reports: 01/25/2013
Number of Days to Update: 38

Source: SWRCB
Telephone: 916-341-5851
Last EDR Contact: 01/31/2013
Next Scheduled EDR Contact: 04/01/2013
Data Release Frequency: Semi-Annually

AST: Aboveground Petroleum Storage Tank Facilities
Registered Aboveground Storage Tanks.

Date of Government Version: 08/01/2009
Date Data Arrived at EDR: 09/10/2009
Date Made Active in Reports: 10/01/2009
Number of Days to Update: 21

Source: State Water Resources Control Board
Telephone: 916-327-5092
Last EDR Contact: 01/07/2013
Next Scheduled EDR Contact: 04/22/2013
Data Release Frequency: Quarterly

INDIAN UST R10: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 08/01/2012
Date Data Arrived at EDR: 08/02/2012
Date Made Active in Reports: 10/16/2012
Number of Days to Update: 75

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 01/28/2013
Next Scheduled EDR Contact: 05/13/2013
Data Release Frequency: Quarterly

INDIAN UST R9: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 09/06/2012
Date Data Arrived at EDR: 09/07/2012
Date Made Active in Reports: 10/16/2012
Number of Days to Update: 39

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 01/28/2013
Next Scheduled EDR Contact: 05/13/2013
Data Release Frequency: Quarterly

INDIAN UST R8: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 08/27/2012
Date Data Arrived at EDR: 08/28/2012
Date Made Active in Reports: 10/16/2012
Number of Days to Update: 49

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 01/28/2013
Next Scheduled EDR Contact: 05/13/2013
Data Release Frequency: Quarterly

INDIAN UST R7: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 08/17/2012
Date Data Arrived at EDR: 08/28/2012
Date Made Active in Reports: 10/16/2012
Number of Days to Update: 49

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 01/28/2013
Next Scheduled EDR Contact: 05/13/2013
Data Release Frequency: Varies

INDIAN UST R6: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 05/10/2011
Date Data Arrived at EDR: 05/11/2011
Date Made Active in Reports: 06/14/2011
Number of Days to Update: 34

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 01/28/2013
Next Scheduled EDR Contact: 05/13/2013
Data Release Frequency: Semi-Annually

INDIAN UST R5: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 08/02/2012
Date Data Arrived at EDR: 08/03/2012
Date Made Active in Reports: 11/05/2012
Number of Days to Update: 94

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 01/28/2013
Next Scheduled EDR Contact: 05/13/2013
Data Release Frequency: Varies

INDIAN UST R4: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 12/14/2011
Date Data Arrived at EDR: 12/15/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 26

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 01/28/2013
Next Scheduled EDR Contact: 05/13/2013
Data Release Frequency: Semi-Annually

INDIAN UST R1: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 04/12/2012
Date Data Arrived at EDR: 05/02/2012
Date Made Active in Reports: 07/16/2012
Number of Days to Update: 75

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 02/01/2013
Next Scheduled EDR Contact: 05/13/2013
Data Release Frequency: Varies

FEMA UST: Underground Storage Tank Listing

A listing of all FEMA owned underground storage tanks.

Date of Government Version: 01/01/2010
Date Data Arrived at EDR: 02/16/2010
Date Made Active in Reports: 04/12/2010
Number of Days to Update: 55

Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 01/14/2013
Next Scheduled EDR Contact: 04/29/2013
Data Release Frequency: Varies

State and tribal voluntary cleanup sites

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng
A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27
Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 04/20/2009
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

VCP: Voluntary Cleanup Program Properties
Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 12/05/2012
Date Data Arrived at EDR: 12/06/2012
Date Made Active in Reports: 01/15/2013
Number of Days to Update: 40
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 03/14/2013
Next Scheduled EDR Contact: 05/20/2013
Data Release Frequency: Quarterly

INDIAN VCP R1: Voluntary Cleanup Priority Listing
A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 09/28/2012
Date Data Arrived at EDR: 10/02/2012
Date Made Active in Reports: 10/16/2012
Number of Days to Update: 14
Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 01/04/2013
Next Scheduled EDR Contact: 04/15/2013
Data Release Frequency: Varies

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites
Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 12/10/2012
Date Data Arrived at EDR: 12/11/2012
Date Made Active in Reports: 12/20/2012
Number of Days to Update: 9
Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 02/14/2013
Next Scheduled EDR Contact: 04/08/2013
Data Release Frequency: Semi-Annually

Local Lists of Landfill / Solid Waste Disposal Sites

ODI: Open Dump Inventory
An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39
Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations
A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137
Source: EPA, Region 9
Telephone: 415-947-4219
Last EDR Contact: 01/28/2013
Next Scheduled EDR Contact: 05/13/2013
Data Release Frequency: No Update Planned

WMUDS/SWAT: Waste Management Unit Database
Waste Management Unit Database System. WMUDS is used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units. WMUDS is composed of the following databases: Facility Information, Scheduled Inspections Information, Waste Management Unit Information, SWAT Program Information, SWAT Report Summary Information, SWAT Report Summary Data, Chapter 15 (formerly Subchapter 15) Information, Chapter 15 Monitoring Parameters, TPCA Program Information, RCRA Program Information, Closure Information, and Interested Parties Information.

Date of Government Version: 04/01/2000
Date Data Arrived at EDR: 04/10/2000
Date Made Active in Reports: 05/10/2000
Number of Days to Update: 30
Source: State Water Resources Control Board
Telephone: 916-227-4448
Last EDR Contact: 02/11/2013
Next Scheduled EDR Contact: 05/27/2013
Data Release Frequency: No Update Planned

SWRCY: Recycler Database
A listing of recycling facilities in California.

Date of Government Version: 12/18/2012
Date Data Arrived at EDR: 12/20/2012
Date Made Active in Reports: 01/25/2013
Number of Days to Update: 36
Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 12/20/2012
Next Scheduled EDR Contact: 04/01/2013
Data Release Frequency: Quarterly

HAULERS: Registered Waste Tire Haulers Listing
A listing of registered waste tire haulers.

Date of Government Version: 11/15/2012
Date Data Arrived at EDR: 11/20/2012
Date Made Active in Reports: 01/04/2013
Number of Days to Update: 45
Source: Integrated Waste Management Board
Telephone: 916-341-6422
Last EDR Contact: 03/04/2013
Next Scheduled EDR Contact: 06/03/2013
Data Release Frequency: Varies

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands
Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52
Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 02/05/2013
Next Scheduled EDR Contact: 05/20/2013
Data Release Frequency: Varies

Local Lists of Hazardous waste / Contaminated Sites

US CDL: Clandestine Drug Labs
A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 11/14/2012
Date Data Arrived at EDR: 12/11/2012
Date Made Active in Reports: 02/15/2013
Number of Days to Update: 66

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 03/04/2013
Next Scheduled EDR Contact: 06/17/2013
Data Release Frequency: Quarterly

HIST CAL-SITES: Calsites Database

The Calsites database contains potential or confirmed hazardous substance release properties. In 1996, California EPA reevaluated and significantly reduced the number of sites in the Calsites database. No longer updated by the state agency. It has been replaced by ENVIROSTOR.

Date of Government Version: 08/08/2005
Date Data Arrived at EDR: 08/03/2006
Date Made Active in Reports: 08/24/2006
Number of Days to Update: 21

Source: Department of Toxic Substance Control
Telephone: 916-323-3400
Last EDR Contact: 02/23/2009
Next Scheduled EDR Contact: 05/25/2009
Data Release Frequency: No Update Planned

SCH: School Property Evaluation Program

This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

Date of Government Version: 12/05/2012
Date Data Arrived at EDR: 12/06/2012
Date Made Active in Reports: 01/15/2013
Number of Days to Update: 40

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 03/14/2013
Next Scheduled EDR Contact: 05/20/2013
Data Release Frequency: Quarterly

TOXIC PITS: Toxic Pits Cleanup Act Sites

Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

Date of Government Version: 07/01/1995
Date Data Arrived at EDR: 08/30/1995
Date Made Active in Reports: 09/26/1995
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 916-227-4364
Last EDR Contact: 01/26/2009
Next Scheduled EDR Contact: 04/27/2009
Data Release Frequency: No Update Planned

CDL: Clandestine Drug Labs

A listing of drug lab locations. Listing of a location in this database does not indicate that any illegal drug lab materials were or were not present there, and does not constitute a determination that the location either requires or does not require additional cleanup work.

Date of Government Version: 06/30/2012
Date Data Arrived at EDR: 09/12/2012
Date Made Active in Reports: 10/03/2012
Number of Days to Update: 21

Source: Department of Toxic Substances Control
Telephone: 916-255-6504
Last EDR Contact: 12/28/2012
Next Scheduled EDR Contact: 04/15/2013
Data Release Frequency: Varies

US HIST CDL: National Clandestine Laboratory Register

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 09/01/2007
Date Data Arrived at EDR: 11/19/2008
Date Made Active in Reports: 03/30/2009
Number of Days to Update: 131

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 03/23/2009
Next Scheduled EDR Contact: 06/22/2009
Data Release Frequency: No Update Planned

Local Lists of Registered Storage Tanks

CA FID UST: Facility Inventory Database

The Facility Inventory Database (FID) contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board. Refer to local/county source for current data.

Date of Government Version: 10/31/1994
Date Data Arrived at EDR: 09/05/1995
Date Made Active in Reports: 09/29/1995
Number of Days to Update: 24

Source: California Environmental Protection Agency
Telephone: 916-341-5851
Last EDR Contact: 12/28/1998
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

UST MENDOCINO: Mendocino County UST Database

A listing of underground storage tank locations in Mendocino County.

Date of Government Version: 09/23/2009
Date Data Arrived at EDR: 09/23/2009
Date Made Active in Reports: 10/01/2009
Number of Days to Update: 8

Source: Department of Public Health
Telephone: 707-463-4466
Last EDR Contact: 03/04/2013
Next Scheduled EDR Contact: 06/17/2013
Data Release Frequency: Annually

HIST UST: Hazardous Substance Storage Container Database

The Hazardous Substance Storage Container Database is a historical listing of UST sites. Refer to local/county source for current data.

Date of Government Version: 10/15/1990
Date Data Arrived at EDR: 01/25/1991
Date Made Active in Reports: 02/12/1991
Number of Days to Update: 18

Source: State Water Resources Control Board
Telephone: 916-341-5851
Last EDR Contact: 07/26/2001
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

SWEEPS UST: SWEEPS UST Listing

Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

Date of Government Version: 06/01/1994
Date Data Arrived at EDR: 07/07/2005
Date Made Active in Reports: 08/11/2005
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/03/2005
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Local Land Records

LIENS 2: CERCLA Lien Information

A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 02/16/2012
Date Data Arrived at EDR: 03/26/2012
Date Made Active in Reports: 06/14/2012
Number of Days to Update: 80

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 01/28/2013
Next Scheduled EDR Contact: 05/13/2013
Data Release Frequency: Varies

LIENS: Environmental Liens Listing

A listing of property locations with environmental liens for California where DTSC is a lien holder.

Date of Government Version: 12/17/2012
Date Data Arrived at EDR: 12/18/2012
Date Made Active in Reports: 01/21/2013
Number of Days to Update: 34

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 03/11/2013
Next Scheduled EDR Contact: 06/24/2013
Data Release Frequency: Varies

DEED: Deed Restriction Listing

Site Mitigation and Brownfields Reuse Program Facility Sites with Deed Restrictions & Hazardous Waste Management Program Facility Sites with Deed / Land Use Restriction. The DTSC Site Mitigation and Brownfields Reuse Program (SMBRP) list includes sites cleaned up under the program's oversight and generally does not include current or former hazardous waste facilities that required a hazardous waste facility permit. The list represents deed restrictions that are active. Some sites have multiple deed restrictions. The DTSC Hazardous Waste Management Program (HWMP) has developed a list of current or former hazardous waste facilities that have a recorded land use restriction at the local county recorder's office. The land use restrictions on this list were required by the DTSC HWMP as a result of the presence of hazardous substances that remain on site after the facility (or part of the facility) has been closed or cleaned up. The types of land use restriction include deed notice, deed restriction, or a land use restriction that binds current and future owners.

Date of Government Version: 12/10/2012
Date Data Arrived at EDR: 12/11/2012
Date Made Active in Reports: 01/15/2013
Number of Days to Update: 35

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 03/12/2013
Next Scheduled EDR Contact: 06/24/2013
Data Release Frequency: Semi-Annually

Records of Emergency Release Reports

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 12/31/2012
Date Data Arrived at EDR: 01/03/2013
Date Made Active in Reports: 02/27/2013
Number of Days to Update: 55

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 01/03/2013
Next Scheduled EDR Contact: 04/15/2013
Data Release Frequency: Annually

CHMIRS: California Hazardous Material Incident Report System

California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).

Date of Government Version: 03/28/2012
Date Data Arrived at EDR: 05/01/2012
Date Made Active in Reports: 05/25/2012
Number of Days to Update: 24

Source: Office of Emergency Services
Telephone: 916-845-8400
Last EDR Contact: 01/29/2013
Next Scheduled EDR Contact: 05/13/2013
Data Release Frequency: Varies

LDS: Land Disposal Sites Listing

The Land Disposal program regulates of waste discharge to land for treatment, storage and disposal in waste management units.

Date of Government Version: 12/17/2012
Date Data Arrived at EDR: 12/17/2012
Date Made Active in Reports: 01/21/2013
Number of Days to Update: 35

Source: State Water Qualilty Control Board
Telephone: 866-480-1028
Last EDR Contact: 01/31/2013
Next Scheduled EDR Contact: 04/01/2013
Data Release Frequency: Quarterly

MCS: Military Cleanup Sites Listing

The State Water Resources Control Board and nine Regional Water Quality Control Boards partner with the Department of Defense (DoD) through the Defense and State Memorandum of Agreement (DSMOA) to oversee the investigation and remediation of water quality issues at military facilities.

Date of Government Version: 12/17/2012
Date Data Arrived at EDR: 12/17/2012
Date Made Active in Reports: 01/25/2013
Number of Days to Update: 39

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 01/31/2013
Next Scheduled EDR Contact: 04/01/2013
Data Release Frequency: Quarterly

Other Ascertainable Records

RCRA NonGen / NLR: RCRA - Non Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 02/12/2013
Date Data Arrived at EDR: 02/15/2013
Date Made Active in Reports: 02/27/2013
Number of Days to Update: 12

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 02/15/2013
Next Scheduled EDR Contact: 04/15/2013
Data Release Frequency: Varies

DOT OPS: Incident and Accident Data

Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 07/31/2012
Date Data Arrived at EDR: 08/07/2012
Date Made Active in Reports: 09/18/2012
Number of Days to Update: 42

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 02/05/2013
Next Scheduled EDR Contact: 05/20/2013
Data Release Frequency: Varies

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/10/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 62

Source: USGS
Telephone: 888-275-8747
Last EDR Contact: 01/17/2013
Next Scheduled EDR Contact: 04/29/2013
Data Release Frequency: Semi-Annually

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 12/31/2011
Date Data Arrived at EDR: 02/26/2013
Date Made Active in Reports: 03/13/2013
Number of Days to Update: 15

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 03/11/2013
Next Scheduled EDR Contact: 06/24/2013
Data Release Frequency: Varies

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 12/31/2011
Date Data Arrived at EDR: 01/15/2013
Date Made Active in Reports: 03/13/2013
Number of Days to Update: 57

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 12/28/2012
Next Scheduled EDR Contact: 04/15/2013
Data Release Frequency: Varies

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 11/02/2012
Date Data Arrived at EDR: 12/11/2012
Date Made Active in Reports: 03/13/2013
Number of Days to Update: 92

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 03/13/2013
Next Scheduled EDR Contact: 06/24/2013
Data Release Frequency: Annually

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 09/14/2010
Date Data Arrived at EDR: 10/07/2011
Date Made Active in Reports: 03/01/2012
Number of Days to Update: 146

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 02/25/2013
Next Scheduled EDR Contact: 06/10/2013
Data Release Frequency: Varies

US MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 08/18/2011
Date Data Arrived at EDR: 09/08/2011
Date Made Active in Reports: 09/29/2011
Number of Days to Update: 21

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 03/06/2013
Next Scheduled EDR Contact: 06/17/2013
Data Release Frequency: Semi-Annually

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2009
Date Data Arrived at EDR: 09/01/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 131

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 02/26/2013
Next Scheduled EDR Contact: 06/10/2013
Data Release Frequency: Annually

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2006
Date Data Arrived at EDR: 09/29/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 64

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 12/28/2012
Next Scheduled EDR Contact: 04/08/2013
Data Release Frequency: Every 4 Years

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 02/25/2013
Next Scheduled EDR Contact: 06/10/2013
Data Release Frequency: Quarterly

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 02/25/2013
Next Scheduled EDR Contact: 06/10/2013
Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing

A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing

A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2009
Date Data Arrived at EDR: 12/10/2010
Date Made Active in Reports: 02/25/2011
Number of Days to Update: 77

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 01/28/2013
Next Scheduled EDR Contact: 05/13/2013
Data Release Frequency: Annually

ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 07/20/2011
Date Data Arrived at EDR: 11/10/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 61

Source: Environmental Protection Agency
Telephone: 202-564-5088
Last EDR Contact: 01/17/2013
Next Scheduled EDR Contact: 04/29/2013
Data Release Frequency: Quarterly

PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 11/01/2010
Date Data Arrived at EDR: 11/10/2010
Date Made Active in Reports: 02/16/2011
Number of Days to Update: 98

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 01/16/2013
Next Scheduled EDR Contact: 04/29/2013
Data Release Frequency: Annually

MLTS: Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 06/21/2011
Date Data Arrived at EDR: 07/15/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 60

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 03/11/2013
Next Scheduled EDR Contact: 06/24/2013
Data Release Frequency: Quarterly

RADINFO: Radiation Information Database

The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 10/02/2012
Date Data Arrived at EDR: 10/02/2012
Date Made Active in Reports: 11/05/2012
Number of Days to Update: 34

Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 01/09/2013
Next Scheduled EDR Contact: 04/22/2013
Data Release Frequency: Quarterly

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 10/23/2011
Date Data Arrived at EDR: 12/13/2011
Date Made Active in Reports: 03/01/2012
Number of Days to Update: 79

Source: EPA
Telephone: (415) 947-8000
Last EDR Contact: 03/12/2013
Next Scheduled EDR Contact: 06/24/2013
Data Release Frequency: Quarterly

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

RMP: Risk Management Plans

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 05/08/2012
Date Data Arrived at EDR: 05/25/2012
Date Made Active in Reports: 07/10/2012
Number of Days to Update: 46
Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 01/28/2013
Next Scheduled EDR Contact: 05/13/2013
Data Release Frequency: Varies

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2009
Date Data Arrived at EDR: 03/01/2011
Date Made Active in Reports: 05/02/2011
Number of Days to Update: 62
Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 02/26/2013
Next Scheduled EDR Contact: 06/10/2013
Data Release Frequency: Biennially

CA BOND EXP. PLAN: Bond Expenditure Plan

Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/1989
Date Data Arrived at EDR: 07/27/1994
Date Made Active in Reports: 08/02/1994
Number of Days to Update: 6
Source: Department of Health Services
Telephone: 916-255-2118
Last EDR Contact: 05/31/1994
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

NPDES: NPDES Permits Listing

A listing of NPDES permits, including stormwater.

Date of Government Version: 11/19/2012
Date Data Arrived at EDR: 11/19/2012
Date Made Active in Reports: 01/15/2013
Number of Days to Update: 57
Source: State Water Resources Control Board
Telephone: 916-445-9379
Last EDR Contact: 02/18/2013
Next Scheduled EDR Contact: 06/03/2013
Data Release Frequency: Quarterly

UIC: UIC Listing

A listing of underground control injection wells.

Date of Government Version: 10/17/2012
Date Data Arrived at EDR: 12/21/2012
Date Made Active in Reports: 01/25/2013
Number of Days to Update: 35
Source: Deaprtment of Conservation
Telephone: 916-445-2408
Last EDR Contact: 12/21/2012
Next Scheduled EDR Contact: 12/31/2012
Data Release Frequency: Varies

CORTESE: "Cortese" Hazardous Waste & Substances Sites List

The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites).

Date of Government Version: 01/02/2013
Date Data Arrived at EDR: 01/03/2013
Date Made Active in Reports: 02/22/2013
Number of Days to Update: 50

Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-3400
Last EDR Contact: 01/03/2013
Next Scheduled EDR Contact: 04/15/2013
Data Release Frequency: Quarterly

HIST CORTESE: Hazardous Waste & Substance Site List

The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSITES]. This listing is no longer updated by the state agency.

Date of Government Version: 04/01/2001
Date Data Arrived at EDR: 01/22/2009
Date Made Active in Reports: 04/08/2009
Number of Days to Update: 76

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/22/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

NOTIFY 65: Proposition 65 Records

Listings of all Proposition 65 incidents reported to counties by the State Water Resources Control Board and the Regional Water Quality Control Board. This database is no longer updated by the reporting agency.

Date of Government Version: 10/21/1993
Date Data Arrived at EDR: 11/01/1993
Date Made Active in Reports: 11/19/1993
Number of Days to Update: 18

Source: State Water Resources Control Board
Telephone: 916-445-3846
Last EDR Contact: 12/18/2012
Next Scheduled EDR Contact: 04/08/2013
Data Release Frequency: No Update Planned

DRYCLEANERS: Cleaner Facilities

A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaner's agents; linen supply; coin-operated laundries and cleaning; drycleaning plants, except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

Date of Government Version: 12/11/2012
Date Data Arrived at EDR: 12/12/2012
Date Made Active in Reports: 01/04/2013
Number of Days to Update: 23

Source: Department of Toxic Substance Control
Telephone: 916-327-4498
Last EDR Contact: 03/11/2013
Next Scheduled EDR Contact: 12/24/2012
Data Release Frequency: Annually

WIP: Well Investigation Program Case List

Well Investigation Program case in the San Gabriel and San Fernando Valley area.

Date of Government Version: 07/03/2009
Date Data Arrived at EDR: 07/21/2009
Date Made Active in Reports: 08/03/2009
Number of Days to Update: 13

Source: Los Angeles Water Quality Control Board
Telephone: 213-576-6726
Last EDR Contact: 12/28/2012
Next Scheduled EDR Contact: 04/15/2013
Data Release Frequency: Varies

ENF: Enforcement Action Listing

A listing of Water Board Enforcement Actions. Formal is everything except Oral/Verbal Communication, Notice of Violation, Expedited Payment Letter, and Staff Enforcement Letter.

Date of Government Version: 11/16/2012
Date Data Arrived at EDR: 11/20/2012
Date Made Active in Reports: 01/21/2013
Number of Days to Update: 62

Source: State Water Resoruces Control Board
Telephone: 916-445-9379
Last EDR Contact: 01/08/2013
Next Scheduled EDR Contact: 05/13/2013
Data Release Frequency: Varies

HAZNET: Facility and Manifest Data

Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, and disposal method.

Date of Government Version: 12/31/2011
Date Data Arrived at EDR: 06/22/2012
Date Made Active in Reports: 07/06/2012
Number of Days to Update: 14

Source: California Environmental Protection Agency
Telephone: 916-255-1136
Last EDR Contact: 01/14/2013
Next Scheduled EDR Contact: 04/29/2013
Data Release Frequency: Annually

EMI: Emissions Inventory Data

Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

Date of Government Version: 12/31/2008
Date Data Arrived at EDR: 09/29/2010
Date Made Active in Reports: 10/18/2010
Number of Days to Update: 19

Source: California Air Resources Board
Telephone: 916-322-2990
Last EDR Contact: 12/28/2012
Next Scheduled EDR Contact: 04/08/2013
Data Release Frequency: Varies

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 12/08/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 34

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 01/17/2013
Next Scheduled EDR Contact: 04/29/2013
Data Release Frequency: Semi-Annually

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 03/07/2011
Date Data Arrived at EDR: 03/09/2011
Date Made Active in Reports: 05/02/2011
Number of Days to Update: 54

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 01/21/2013
Next Scheduled EDR Contact: 05/06/2013
Data Release Frequency: Varies

US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 11/20/2012
Date Data Arrived at EDR: 11/30/2012
Date Made Active in Reports: 02/27/2013
Number of Days to Update: 89

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 02/19/2013
Next Scheduled EDR Contact: 06/03/2013
Data Release Frequency: Quarterly

PCB TRANSFORMER: PCB Transformer Registration Database

The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 02/01/2011
Date Data Arrived at EDR: 10/19/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 83

Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 02/01/2013
Next Scheduled EDR Contact: 05/13/2013
Data Release Frequency: Varies

PROC: Certified Processors Database

A listing of certified processors.

Date of Government Version: 12/18/2012
Date Data Arrived at EDR: 12/20/2012
Date Made Active in Reports: 01/25/2013
Number of Days to Update: 36

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 12/20/2012
Next Scheduled EDR Contact: 04/01/2013
Data Release Frequency: Quarterly

MWMP: Medical Waste Management Program Listing

The Medical Waste Management Program (MWMP) ensures the proper handling and disposal of medical waste by permitting and inspecting medical waste Offsite Treatment Facilities (PDF) and Transfer Stations (PDF) throughout the state. MWMP also oversees all Medical Waste Transporters.

Date of Government Version: 12/07/2012
Date Data Arrived at EDR: 12/12/2012
Date Made Active in Reports: 01/15/2013
Number of Days to Update: 34

Source: Department of Public Health
Telephone: 916-558-1784
Last EDR Contact: 03/11/2013
Next Scheduled EDR Contact: 06/24/2013
Data Release Frequency: Varies

COAL ASH DOE: Sleam-Electric Plan Operation Data

A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 08/07/2009
Date Made Active in Reports: 10/22/2009
Number of Days to Update: 76

Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 01/15/2013
Next Scheduled EDR Contact: 04/29/2013
Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List

A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 08/17/2010
Date Data Arrived at EDR: 01/03/2011
Date Made Active in Reports: 03/21/2011
Number of Days to Update: 77

Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 12/11/2012
Next Scheduled EDR Contact: 03/25/2013
Data Release Frequency: Varies

HWT: Registered Hazardous Waste Transporter Database

A listing of hazardous waste transporters. In California, unless specifically exempted, it is unlawful for any person to transport hazardous wastes unless the person holds a valid registration issued by DTSC. A hazardous waste transporter registration is valid for one year and is assigned a unique registration number.

Date of Government Version: 01/15/2013
Date Data Arrived at EDR: 01/15/2013
Date Made Active in Reports: 02/22/2013
Number of Days to Update: 38

Source: Department of Toxic Substances Control
Telephone: 916-440-7145
Last EDR Contact: 01/15/2013
Next Scheduled EDR Contact: 04/29/2013
Data Release Frequency: Quarterly

HWP: EnviroStor Permitted Facilities Listing

Detailed information on permitted hazardous waste facilities and corrective action ("cleanups") tracked in EnviroStor.

Date of Government Version: 11/26/2012
Date Data Arrived at EDR: 11/28/2012
Date Made Active in Reports: 01/09/2013
Number of Days to Update: 42

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 02/26/2013
Next Scheduled EDR Contact: 06/10/2013
Data Release Frequency: Quarterly

Financial Assurance 2: Financial Assurance Information Listing

A listing of financial assurance information for solid waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 11/19/2012
Date Data Arrived at EDR: 11/20/2012
Date Made Active in Reports: 01/04/2013
Number of Days to Update: 45

Source: California Integrated Waste Management Board
Telephone: 916-341-6066
Last EDR Contact: 02/18/2013
Next Scheduled EDR Contact: 06/03/2013
Data Release Frequency: Varies

Financial Assurance 1: Financial Assurance Information Listing
Financial Assurance information

Date of Government Version: 03/01/2007
Date Data Arrived at EDR: 06/01/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 28

Source: Department of Toxic Substances Control
Telephone: 916-255-3628
Last EDR Contact: 02/01/2013
Next Scheduled EDR Contact: 05/13/2013
Data Release Frequency: Varies

2020 COR ACTION: 2020 Corrective Action Program List
The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 11/11/2011
Date Data Arrived at EDR: 05/18/2012
Date Made Active in Reports: 05/25/2012
Number of Days to Update: 7

Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 02/15/2013
Next Scheduled EDR Contact: 05/27/2013
Data Release Frequency: Varies

FEDLAND: Federal and Indian Lands
Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 02/06/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 339

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 01/17/2013
Next Scheduled EDR Contact: 04/29/2013
Data Release Frequency: N/A

PRP: Potentially Responsible Parties
A listing of verified Potentially Responsible Parties

Date of Government Version: 12/02/2012
Date Data Arrived at EDR: 01/03/2013
Date Made Active in Reports: 03/13/2013
Number of Days to Update: 69

Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 01/03/2013
Next Scheduled EDR Contact: 04/15/2013
Data Release Frequency: Quarterly

WDS: Waste Discharge System
Sites which have been issued waste discharge requirements.

Date of Government Version: 06/19/2007
Date Data Arrived at EDR: 06/20/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 9

Source: State Water Resources Control Board
Telephone: 916-341-5227
Last EDR Contact: 02/25/2013
Next Scheduled EDR Contact: 06/10/2013
Data Release Frequency: Quarterly

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)
The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 11/15/2012
Date Data Arrived at EDR: 11/16/2012
Date Made Active in Reports: 02/15/2013
Number of Days to Update: 91

Source: EPA
Telephone: 202-564-5962
Last EDR Contact: 12/28/2012
Next Scheduled EDR Contact: 04/15/2013
Data Release Frequency: Annually

US AIRS MINOR: Air Facility System Data
A listing of minor source facilities.

Date of Government Version: 11/15/2012
Date Data Arrived at EDR: 11/16/2012
Date Made Active in Reports: 02/15/2013
Number of Days to Update: 91

Source: EPA
Telephone: 202-564-5962
Last EDR Contact: 12/28/2012
Next Scheduled EDR Contact: 04/15/2013
Data Release Frequency: Annually

EPA WATCH LIST: EPA WATCH LIST
EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 07/31/2012
Date Data Arrived at EDR: 08/13/2012
Date Made Active in Reports: 09/18/2012
Number of Days to Update: 36

Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 02/12/2013
Next Scheduled EDR Contact: 05/27/2013
Data Release Frequency: Quarterly

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP: EDR Proprietary Manufactured Gas Plants
The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

EDR US Hist Auto Stat: EDR Exclusive Historic Gas Stations
EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR US Hist Cleaners: EDR Exclusive Historic Dry Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR US Hist Cleaners: EDR Proprietary Historic Dry Cleaners - Cole

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: N/A
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR US Hist Auto Stat: EDR Proprietary Historic Gas Stations - Cole

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: N/A
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

COUNTY RECORDS

ALAMEDA COUNTY:

Contaminated Sites

A listing of contaminated sites overseen by the Toxic Release Program (oil and groundwater contamination from chemical releases and spills) and the Leaking Underground Storage Tank Program (soil and ground water contamination from leaking petroleum USTs).

Date of Government Version: 01/16/2013
Date Data Arrived at EDR: 01/17/2013
Date Made Active in Reports: 02/22/2013
Number of Days to Update: 36

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 12/28/2012
Next Scheduled EDR Contact: 04/15/2013
Data Release Frequency: Semi-Annually

Underground Tanks

Underground storage tank sites located in Alameda county.

Date of Government Version: 01/16/2013
Date Data Arrived at EDR: 01/17/2013
Date Made Active in Reports: 01/31/2013
Number of Days to Update: 14

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 12/28/2012
Next Scheduled EDR Contact: 04/15/2013
Data Release Frequency: Semi-Annually

AMADOR COUNTY:

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

CUPA Facility List
Cupa Facility List

Date of Government Version: 12/20/2012
Date Data Arrived at EDR: 01/04/2013
Date Made Active in Reports: 02/22/2013
Number of Days to Update: 49

Source: Amador County Environmental Health
Telephone: 209-223-6439
Last EDR Contact: 03/11/2013
Next Scheduled EDR Contact: 06/24/2013
Data Release Frequency: Varies

BUTTE COUNTY:

CUPA Facility Listing
Cupa facility list.

Date of Government Version: 10/16/2012
Date Data Arrived at EDR: 10/17/2012
Date Made Active in Reports: 11/13/2012
Number of Days to Update: 27

Source: Public Health Department
Telephone: 530-538-7149
Last EDR Contact: 01/28/2013
Next Scheduled EDR Contact: 04/29/2013
Data Release Frequency: Varies

CALVERAS COUNTY:

CUPA Facility Listing
Cupa Facility Listing

Date of Government Version: 12/21/2012
Date Data Arrived at EDR: 01/04/2013
Date Made Active in Reports: 02/22/2013
Number of Days to Update: 49

Source: Calveras County Environmental Health
Telephone: 209-754-6399
Last EDR Contact: 12/20/2012
Next Scheduled EDR Contact: 04/15/2013
Data Release Frequency: Quarterly

COLUSA COUNTY:

CUPA Facility List
Cupa facility list.

Date of Government Version: 01/04/2013
Date Data Arrived at EDR: 01/14/2013
Date Made Active in Reports: 03/01/2013
Number of Days to Update: 46

Source: Health & Human Services
Telephone: 530-458-0396
Last EDR Contact: 02/11/2013
Next Scheduled EDR Contact: 05/27/2013
Data Release Frequency: Varies

CONTRA COSTA COUNTY:

Site List
List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 11/27/2012
Date Data Arrived at EDR: 11/28/2012
Date Made Active in Reports: 01/15/2013
Number of Days to Update: 48

Source: Contra Costa Health Services Department
Telephone: 925-646-2286
Last EDR Contact: 02/04/2013
Next Scheduled EDR Contact: 05/20/2013
Data Release Frequency: Semi-Annually

DEL NORTE COUNTY:

CUPA Facility List
Cupa Facility list

Date of Government Version: 01/09/2013
Date Data Arrived at EDR: 01/10/2013
Date Made Active in Reports: 02/25/2013
Number of Days to Update: 46

Source: Del Norte County Environmental Health Division
Telephone: 707-465-0426
Last EDR Contact: 01/08/2013
Next Scheduled EDR Contact: 05/20/2013
Data Release Frequency: Varies

EL DORADO COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 11/19/2012
Date Data Arrived at EDR: 11/20/2012
Date Made Active in Reports: 01/15/2013
Number of Days to Update: 56

Source: El Dorado County Environmental Management Department
Telephone: 530-621-6623
Last EDR Contact: 02/04/2013
Next Scheduled EDR Contact: 05/20/2013
Data Release Frequency: Varies

FRESNO COUNTY:

CUPA Resources List
Certified Unified Program Agency. CUPA's are responsible for implementing a unified hazardous materials and hazardous waste management regulatory program. The agency provides oversight of businesses that deal with hazardous materials, operate underground storage tanks or aboveground storage tanks.

Date of Government Version: 02/07/2013
Date Data Arrived at EDR: 02/08/2013
Date Made Active in Reports: 03/01/2013
Number of Days to Update: 21

Source: Dept. of Community Health
Telephone: 559-445-3271
Last EDR Contact: 02/08/2013
Next Scheduled EDR Contact: 04/29/2013
Data Release Frequency: Semi-Annually

HUMBOLDT COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 12/21/2012
Date Data Arrived at EDR: 12/21/2012
Date Made Active in Reports: 01/22/2013
Number of Days to Update: 32

Source: Humboldt County Environmental Health
Telephone: N/A
Last EDR Contact: 02/25/2013
Next Scheduled EDR Contact: 06/10/2013
Data Release Frequency: Varies

IMPERIAL COUNTY:

CUPA Facility List
Cupa facility list.

Date of Government Version: 05/01/2012
Date Data Arrived at EDR: 05/02/2012
Date Made Active in Reports: 06/11/2012
Number of Days to Update: 40

Source: San Diego Border Field Office
Telephone: 760-339-2777
Last EDR Contact: 01/28/2013
Next Scheduled EDR Contact: 05/13/2013
Data Release Frequency: Varies

INYO COUNTY:

CUPA Facility List
Cupa facility list.

Date of Government Version: 06/26/2012
Date Data Arrived at EDR: 06/27/2012
Date Made Active in Reports: 08/17/2012
Number of Days to Update: 51

Source: Inyo County Environmental Health Services
Telephone: 760-878-0238
Last EDR Contact: 02/25/2013
Next Scheduled EDR Contact: 06/10/2013
Data Release Frequency: Varies

KERN COUNTY:

Underground Storage Tank Sites & Tank Listing
Kern County Sites and Tanks Listing.

Date of Government Version: 08/31/2010
Date Data Arrived at EDR: 09/01/2010
Date Made Active in Reports: 09/30/2010
Number of Days to Update: 29

Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Last EDR Contact: 02/11/2013
Next Scheduled EDR Contact: 05/27/2013
Data Release Frequency: Quarterly

KINGS COUNTY:

CUPA Facility List
A listing of sites included in the county?s Certified Unified Program Agency database. California?s Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 07/10/2012
Date Data Arrived at EDR: 07/12/2012
Date Made Active in Reports: 09/06/2012
Number of Days to Update: 56

Source: Kings County Department of Public Health
Telephone: 559-584-1411
Last EDR Contact: 02/12/2013
Next Scheduled EDR Contact: 06/10/2013
Data Release Frequency: Varies

LAKE COUNTY:

CUPA Facility List
Cupa facility list

Date of Government Version: 01/23/2013
Date Data Arrived at EDR: 01/25/2013
Date Made Active in Reports: 02/27/2013
Number of Days to Update: 33

Source: Lake County Environmental Health
Telephone: 707-263-1164
Last EDR Contact: 01/22/2013
Next Scheduled EDR Contact: 05/06/2013
Data Release Frequency: Varies

LOS ANGELES COUNTY:

San Gabriel Valley Areas of Concern
San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office.

Date of Government Version: 03/30/2009
Date Data Arrived at EDR: 03/31/2009
Date Made Active in Reports: 10/23/2009
Number of Days to Update: 206

Source: EPA Region 9
Telephone: 415-972-3178
Last EDR Contact: 12/18/2012
Next Scheduled EDR Contact: 04/01/2013
Data Release Frequency: No Update Planned

HMS: Street Number List
Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 10/31/2012
Date Data Arrived at EDR: 12/28/2012
Date Made Active in Reports: 01/25/2013
Number of Days to Update: 28
Source: Department of Public Works
Telephone: 626-458-3517
Last EDR Contact: 07/16/2012
Next Scheduled EDR Contact: 10/26/2012
Data Release Frequency: Semi-Annually

List of Solid Waste Facilities
Solid Waste Facilities in Los Angeles County.

Date of Government Version: 10/22/2012
Date Data Arrived at EDR: 10/23/2012
Date Made Active in Reports: 11/30/2012
Number of Days to Update: 38
Source: La County Department of Public Works
Telephone: 818-458-5185
Last EDR Contact: 01/22/2013
Next Scheduled EDR Contact: 05/06/2013
Data Release Frequency: Varies

City of Los Angeles Landfills
Landfills owned and maintained by the City of Los Angeles.

Date of Government Version: 03/05/2009
Date Data Arrived at EDR: 03/10/2009
Date Made Active in Reports: 04/08/2009
Number of Days to Update: 29
Source: Engineering & Construction Division
Telephone: 213-473-7869
Last EDR Contact: 02/18/2013
Next Scheduled EDR Contact: 06/03/2013
Data Release Frequency: Varies

Site Mitigation List
Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 12/29/2011
Date Data Arrived at EDR: 02/02/2012
Date Made Active in Reports: 02/21/2012
Number of Days to Update: 19
Source: Community Health Services
Telephone: 323-890-7806
Last EDR Contact: 01/21/2013
Next Scheduled EDR Contact: 05/06/2013
Data Release Frequency: Annually

City of El Segundo Underground Storage Tank
Underground storage tank sites located in El Segundo city.

Date of Government Version: 10/23/2012
Date Data Arrived at EDR: 10/25/2012
Date Made Active in Reports: 11/30/2012
Number of Days to Update: 36
Source: City of El Segundo Fire Department
Telephone: 310-524-2236
Last EDR Contact: 01/21/2013
Next Scheduled EDR Contact: 05/06/2013
Data Release Frequency: Semi-Annually

City of Long Beach Underground Storage Tank
Underground storage tank sites located in the city of Long Beach.

Date of Government Version: 03/28/2003
Date Data Arrived at EDR: 10/23/2003
Date Made Active in Reports: 11/26/2003
Number of Days to Update: 34
Source: City of Long Beach Fire Department
Telephone: 562-570-2563
Last EDR Contact: 01/29/2013
Next Scheduled EDR Contact: 05/13/2013
Data Release Frequency: Annually

City of Torrance Underground Storage Tank
Underground storage tank sites located in the city of Torrance.

Date of Government Version: 01/14/2013
Date Data Arrived at EDR: 01/15/2013
Date Made Active in Reports: 01/31/2013
Number of Days to Update: 16
Source: City of Torrance Fire Department
Telephone: 310-618-2973
Last EDR Contact: 01/14/2013
Next Scheduled EDR Contact: 04/29/2013
Data Release Frequency: Semi-Annually

MADERA COUNTY:

CUPA Facility List

A listing of sites included in the county?s Certified Unified Program Agency database. California?s Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 12/18/2012
Date Data Arrived at EDR: 12/20/2012
Date Made Active in Reports: 02/08/2013
Number of Days to Update: 50

Source: Madera County Environmental Health
Telephone: 559-675-7823
Last EDR Contact: 02/25/2013
Next Scheduled EDR Contact: 06/10/2013
Data Release Frequency: Varies

MARIN COUNTY:

Underground Storage Tank Sites

Currently permitted USTs in Marin County.

Date of Government Version: 11/26/2012
Date Data Arrived at EDR: 11/28/2012
Date Made Active in Reports: 01/21/2013
Number of Days to Update: 54

Source: Public Works Department Waste Management
Telephone: 415-499-6647
Last EDR Contact: 01/21/2013
Next Scheduled EDR Contact: 04/22/2013
Data Release Frequency: Semi-Annually

MERCED COUNTY:

CUPA Facility List

CUPA facility list.

Date of Government Version: 12/18/2012
Date Data Arrived at EDR: 12/21/2012
Date Made Active in Reports: 03/05/2013
Number of Days to Update: 74

Source: Merced County Environmental Health
Telephone: 209-381-1094
Last EDR Contact: 02/25/2013
Next Scheduled EDR Contact: 06/10/2013
Data Release Frequency: Varies

MONO COUNTY:

CUPA Facility List

CUPA Facility List

Date of Government Version: 12/26/2012
Date Data Arrived at EDR: 01/08/2013
Date Made Active in Reports: 02/25/2013
Number of Days to Update: 48

Source: Mono County Health Department
Telephone: 760-932-5580
Last EDR Contact: 03/04/2013
Next Scheduled EDR Contact: 06/17/2013
Data Release Frequency: Varies

MONTEREY COUNTY:

CUPA Facility Listing

CUPA Program listing from the Environmental Health Division.

Date of Government Version: 12/18/2012
Date Data Arrived at EDR: 12/20/2012
Date Made Active in Reports: 02/08/2013
Number of Days to Update: 50

Source: Monterey County Health Department
Telephone: 831-796-1297
Last EDR Contact: 02/25/2013
Next Scheduled EDR Contact: 06/10/2013
Data Release Frequency: Varies

NAPA COUNTY:

Sites With Reported Contamination
A listing of leaking underground storage tank sites located in Napa county.

Date of Government Version: 12/05/2011
Date Data Arrived at EDR: 12/06/2011
Date Made Active in Reports: 02/07/2012
Number of Days to Update: 63
Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 03/04/2013
Next Scheduled EDR Contact: 06/17/2013
Data Release Frequency: No Update Planned

Closed and Operating Underground Storage Tank Sites
Underground storage tank sites located in Napa county.

Date of Government Version: 01/15/2008
Date Data Arrived at EDR: 01/16/2008
Date Made Active in Reports: 02/08/2008
Number of Days to Update: 23
Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 03/04/2013
Next Scheduled EDR Contact: 06/17/2013
Data Release Frequency: No Update Planned

NEVADA COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 11/05/2012
Date Data Arrived at EDR: 11/06/2012
Date Made Active in Reports: 11/30/2012
Number of Days to Update: 24
Source: Community Development Agency
Telephone: 530-265-1467
Last EDR Contact: 03/08/2013
Next Scheduled EDR Contact: 05/20/2013
Data Release Frequency: Varies

ORANGE COUNTY:

List of Industrial Site Cleanups
Petroleum and non-petroleum spills.

Date of Government Version: 11/05/2012
Date Data Arrived at EDR: 11/16/2012
Date Made Active in Reports: 12/03/2012
Number of Days to Update: 17
Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 02/13/2013
Next Scheduled EDR Contact: 05/27/2013
Data Release Frequency: Annually

List of Underground Storage Tank Cleanups
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 11/05/2012
Date Data Arrived at EDR: 11/16/2012
Date Made Active in Reports: 12/03/2012
Number of Days to Update: 17
Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 02/12/2013
Next Scheduled EDR Contact: 05/27/2013
Data Release Frequency: Quarterly

List of Underground Storage Tank Facilities
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 11/05/2012
Date Data Arrived at EDR: 11/15/2012
Date Made Active in Reports: 12/03/2012
Number of Days to Update: 18
Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 02/12/2013
Next Scheduled EDR Contact: 05/27/2013
Data Release Frequency: Quarterly

PLACER COUNTY:

Master List of Facilities
List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 12/11/2012
Date Data Arrived at EDR: 12/12/2012
Date Made Active in Reports: 01/15/2013
Number of Days to Update: 34
Source: Placer County Health and Human Services
Telephone: 530-745-2363
Last EDR Contact: 03/11/2013
Next Scheduled EDR Contact: 06/24/2013
Data Release Frequency: Semi-Annually

RIVERSIDE COUNTY:

Listing of Underground Tank Cleanup Sites
Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 10/16/2012
Date Data Arrived at EDR: 10/18/2012
Date Made Active in Reports: 11/07/2012
Number of Days to Update: 20
Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 12/26/2012
Next Scheduled EDR Contact: 04/08/2013
Data Release Frequency: Quarterly

Underground Storage Tank Tank List
Underground storage tank sites located in Riverside county.

Date of Government Version: 10/16/2012
Date Data Arrived at EDR: 10/18/2012
Date Made Active in Reports: 11/07/2012
Number of Days to Update: 20
Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 12/26/2012
Next Scheduled EDR Contact: 04/08/2013
Data Release Frequency: Quarterly

SACRAMENTO COUNTY:

Toxic Site Clean-Up List
List of sites where unauthorized releases of potentially hazardous materials have occurred.

Date of Government Version: 11/29/2012
Date Data Arrived at EDR: 01/10/2013
Date Made Active in Reports: 02/22/2013
Number of Days to Update: 43
Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 01/07/2013
Next Scheduled EDR Contact: 04/22/2013
Data Release Frequency: Quarterly

Master Hazardous Materials Facility List
Any business that has hazardous materials on site - hazardous material storage sites, underground storage tanks, waste generators.

Date of Government Version: 11/02/2012
Date Data Arrived at EDR: 01/15/2013
Date Made Active in Reports: 02/22/2013
Number of Days to Update: 38
Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 01/07/2013
Next Scheduled EDR Contact: 04/22/2013
Data Release Frequency: Quarterly

SAN BERNARDINO COUNTY:

Hazardous Material Permits
This listing includes underground storage tanks, medical waste handlers/generators, hazardous materials handlers, hazardous waste generators, and waste oil generators/handlers.

Date of Government Version: 12/12/2012
Date Data Arrived at EDR: 12/18/2012
Date Made Active in Reports: 01/25/2013
Number of Days to Update: 38

Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
Last EDR Contact: 02/11/2013
Next Scheduled EDR Contact: 05/27/2013
Data Release Frequency: Quarterly

SAN DIEGO COUNTY:

Hazardous Materials Management Division Database

The database includes: HE58 - This report contains the business name, site address, business phone number, establishment 'H' permit number, type of permit, and the business status. HE17 - In addition to providing the same information provided in the HE58 listing, HE17 provides inspection dates, violations received by the establishment, hazardous waste generated, the quantity, method of storage, treatment/disposal of waste and the hauler, and information on underground storage tanks. Unauthorized Release List - Includes a summary of environmental contamination cases in San Diego County (underground tank cases, non-tank cases, groundwater contamination, and soil contamination are included.)

Date of Government Version: 08/17/2012
Date Data Arrived at EDR: 08/20/2012
Date Made Active in Reports: 10/03/2012
Number of Days to Update: 44

Source: Hazardous Materials Management Division
Telephone: 619-338-2268
Last EDR Contact: 03/08/2013
Next Scheduled EDR Contact: 06/24/2013
Data Release Frequency: Quarterly

Solid Waste Facilities

San Diego County Solid Waste Facilities.

Date of Government Version: 10/31/2012
Date Data Arrived at EDR: 11/06/2012
Date Made Active in Reports: 11/30/2012
Number of Days to Update: 24

Source: Department of Health Services
Telephone: 619-338-2209
Last EDR Contact: 01/28/2013
Next Scheduled EDR Contact: 05/13/2013
Data Release Frequency: Varies

Environmental Case Listing

The listing contains all underground tank release cases and projects pertaining to properties contaminated with hazardous substances that are actively under review by the Site Assessment and Mitigation Program.

Date of Government Version: 03/23/2010
Date Data Arrived at EDR: 06/15/2010
Date Made Active in Reports: 07/09/2010
Number of Days to Update: 24

Source: San Diego County Department of Environmental Health
Telephone: 619-338-2371
Last EDR Contact: 03/12/2013
Next Scheduled EDR Contact: 06/24/2013
Data Release Frequency: No Update Planned

SAN FRANCISCO COUNTY:

Local Oversite Facilities

A listing of leaking underground storage tank sites located in San Francisco county.

Date of Government Version: 09/19/2008
Date Data Arrived at EDR: 09/19/2008
Date Made Active in Reports: 09/29/2008
Number of Days to Update: 10

Source: Department Of Public Health San Francisco County
Telephone: 415-252-3920
Last EDR Contact: 02/11/2013
Next Scheduled EDR Contact: 05/27/2013
Data Release Frequency: Quarterly

Underground Storage Tank Information

Underground storage tank sites located in San Francisco county.

Date of Government Version: 11/29/2010
Date Data Arrived at EDR: 03/10/2011
Date Made Active in Reports: 03/15/2011
Number of Days to Update: 5

Source: Department of Public Health
Telephone: 415-252-3920
Last EDR Contact: 02/11/2013
Next Scheduled EDR Contact: 05/27/2013
Data Release Frequency: Quarterly

SAN JOAQUIN COUNTY:

San Joaquin Co. UST
A listing of underground storage tank locations in San Joaquin county.

Date of Government Version: 12/18/2012
Date Data Arrived at EDR: 12/21/2012
Date Made Active in Reports: 01/30/2013
Number of Days to Update: 40

Source: Environmental Health Department
Telephone: N/A
Last EDR Contact: 01/22/2013
Next Scheduled EDR Contact: 04/08/2013
Data Release Frequency: Semi-Annually

SAN LUIS OBISPO COUNTY:

CUPA Facility List
Cupa Facility List.

Date of Government Version: 11/26/2012
Date Data Arrived at EDR: 11/26/2012
Date Made Active in Reports: 01/17/2013
Number of Days to Update: 52

Source: San Luis Obispo County Public Health Department
Telephone: 805-781-5596
Last EDR Contact: 02/25/2013
Next Scheduled EDR Contact: 06/10/2013
Data Release Frequency: Varies

SAN MATEO COUNTY:

Business Inventory
List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 01/02/2013
Date Data Arrived at EDR: 01/03/2013
Date Made Active in Reports: 02/22/2013
Number of Days to Update: 50

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 12/12/2012
Next Scheduled EDR Contact: 04/01/2013
Data Release Frequency: Annually

Fuel Leak List
A listing of leaking underground storage tank sites located in San Mateo county.

Date of Government Version: 12/12/2012
Date Data Arrived at EDR: 12/17/2012
Date Made Active in Reports: 01/22/2013
Number of Days to Update: 36

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 12/12/2012
Next Scheduled EDR Contact: 04/01/2013
Data Release Frequency: Semi-Annually

SANTA BARBARA COUNTY:

CUPA Facility Listing
CUPA Program Listing from the Environmental Health Services division.

Date of Government Version: 09/08/2011
Date Data Arrived at EDR: 09/09/2011
Date Made Active in Reports: 10/07/2011
Number of Days to Update: 28

Source: Santa Barbara County Public Health Department
Telephone: 805-686-8167
Last EDR Contact: 03/12/2013
Next Scheduled EDR Contact: 06/10/2013
Data Release Frequency: Varies

SANTA CLARA COUNTY:

Cupa Facility List
Cupa facility list

Date of Government Version: 01/08/2013
Date Data Arrived at EDR: 01/10/2013
Date Made Active in Reports: 02/08/2013
Number of Days to Update: 29

Source: Department of Environmental Health
Telephone: 408-918-1973
Last EDR Contact: 03/04/2013
Next Scheduled EDR Contact: 06/17/2013
Data Release Frequency: Varies

HIST LUST - Fuel Leak Site Activity Report
A listing of open and closed leaking underground storage tanks. This listing is no longer updated by the county. Leaking underground storage tanks are now handled by the Department of Environmental Health.

Date of Government Version: 03/29/2005
Date Data Arrived at EDR: 03/30/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 22

Source: Santa Clara Valley Water District
Telephone: 408-265-2600
Last EDR Contact: 03/23/2009
Next Scheduled EDR Contact: 06/22/2009
Data Release Frequency: No Update Planned

LOP Listing
A listing of leaking underground storage tanks located in Santa Clara county.

Date of Government Version: 12/03/2012
Date Data Arrived at EDR: 12/05/2012
Date Made Active in Reports: 01/15/2013
Number of Days to Update: 41

Source: Department of Environmental Health
Telephone: 408-918-3417
Last EDR Contact: 03/04/2013
Next Scheduled EDR Contact: 06/17/2013
Data Release Frequency: Annually

Hazardous Material Facilities
Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 11/13/2012
Date Data Arrived at EDR: 11/14/2012
Date Made Active in Reports: 12/03/2012
Number of Days to Update: 19

Source: City of San Jose Fire Department
Telephone: 408-535-7694
Last EDR Contact: 02/11/2013
Next Scheduled EDR Contact: 05/27/2013
Data Release Frequency: Annually

SANTA CRUZ COUNTY:

CUPA Facility List
CUPA facility listing.

Date of Government Version: 11/29/2012
Date Data Arrived at EDR: 11/30/2012
Date Made Active in Reports: 01/15/2013
Number of Days to Update: 46

Source: Santa Cruz County Environmental Health
Telephone: 831-464-2761
Last EDR Contact: 02/25/2013
Next Scheduled EDR Contact: 06/10/2013
Data Release Frequency: Varies

SHASTA COUNTY:

CUPA Facility List
Cupa Facility List.

Date of Government Version: 11/27/2012
Date Data Arrived at EDR: 11/28/2012
Date Made Active in Reports: 01/17/2013
Number of Days to Update: 50

Source: Shasta County Department of Resource Management
Telephone: 530-225-5789
Last EDR Contact: 02/25/2013
Next Scheduled EDR Contact: 06/10/2013
Data Release Frequency: Varies

SOLANO COUNTY:

Leaking Underground Storage Tanks
A listing of leaking underground storage tank sites located in Solano county.

Date of Government Version: 12/12/2012
Date Data Arrived at EDR: 12/17/2012
Date Made Active in Reports: 01/22/2013
Number of Days to Update: 36

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 12/12/2012
Next Scheduled EDR Contact: 04/01/2013
Data Release Frequency: Quarterly

Underground Storage Tanks
Underground storage tank sites located in Solano county.

Date of Government Version: 12/12/2012
Date Data Arrived at EDR: 12/17/2012
Date Made Active in Reports: 01/25/2013
Number of Days to Update: 39

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 12/12/2012
Next Scheduled EDR Contact: 04/01/2013
Data Release Frequency: Quarterly

SONOMA COUNTY:

Cupa Facility List
Cupa Facility list

Date of Government Version: 01/10/2013
Date Data Arrived at EDR: 01/16/2013
Date Made Active in Reports: 02/27/2013
Number of Days to Update: 42

Source: County of Sonoma Fire & Emergency Services Department
Telephone: 707-565-1174
Last EDR Contact: 01/08/2013
Next Scheduled EDR Contact: 04/15/2013
Data Release Frequency: Varies

Leaking Underground Storage Tank Sites
A listing of leaking underground storage tank sites located in Sonoma county.

Date of Government Version: 01/02/2013
Date Data Arrived at EDR: 01/02/2013
Date Made Active in Reports: 01/25/2013
Number of Days to Update: 23

Source: Department of Health Services
Telephone: 707-565-6565
Last EDR Contact: 12/28/2012
Next Scheduled EDR Contact: 04/15/2013
Data Release Frequency: Quarterly

SUTTER COUNTY:

Underground Storage Tanks
Underground storage tank sites located in Sutter county.

Date of Government Version: 12/10/2012
Date Data Arrived at EDR: 12/11/2012
Date Made Active in Reports: 01/15/2013
Number of Days to Update: 35

Source: Sutter County Department of Agriculture
Telephone: 530-822-7500
Last EDR Contact: 03/11/2013
Next Scheduled EDR Contact: 06/24/2013
Data Release Frequency: Semi-Annually

TUOLUMNE COUNTY:

CUPA Facility List
Cupa facility list

Date of Government Version: 01/14/2013
Date Data Arrived at EDR: 01/16/2013
Date Made Active in Reports: 02/27/2013
Number of Days to Update: 42

Source: Divison of Environmental Health
Telephone: 209-533-5633
Last EDR Contact: 01/04/2013
Next Scheduled EDR Contact: 04/29/2013
Data Release Frequency: Varies

VENTURA COUNTY:

Business Plan, Hazardous Waste Producers, and Operating Underground Tanks

The BWT list indicates by site address whether the Environmental Health Division has Business Plan (B), Waste Producer (W), and/or Underground Tank (T) information.

Date of Government Version: 03/30/2012
Date Data Arrived at EDR: 05/25/2012
Date Made Active in Reports: 07/06/2012
Number of Days to Update: 42

Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 02/21/2013
Next Scheduled EDR Contact: 06/03/2013
Data Release Frequency: Quarterly

Inventory of Illegal Abandoned and Inactive Sites

Ventura County Inventory of Closed, Illegal Abandoned, and Inactive Sites.

Date of Government Version: 12/01/2011
Date Data Arrived at EDR: 12/01/2011
Date Made Active in Reports: 01/19/2012
Number of Days to Update: 49

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 01/07/2013
Next Scheduled EDR Contact: 04/22/2013
Data Release Frequency: Annually

Listing of Underground Tank Cleanup Sites

Ventura County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 05/29/2008
Date Data Arrived at EDR: 06/24/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 37

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 02/18/2013
Next Scheduled EDR Contact: 06/03/2013
Data Release Frequency: Quarterly

Medical Waste Program List

To protect public health and safety and the environment from potential exposure to disease causing agents, the Environmental Health Division Medical Waste Program regulates the generation, handling, storage, treatment and disposal of medical waste throughout the County.

Date of Government Version: 10/29/2012
Date Data Arrived at EDR: 11/06/2012
Date Made Active in Reports: 12/03/2012
Number of Days to Update: 27

Source: Ventura County Resource Management Agency
Telephone: 805-654-2813
Last EDR Contact: 01/29/2013
Next Scheduled EDR Contact: 05/13/2013
Data Release Frequency: Quarterly

Underground Tank Closed Sites List

Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 12/04/2012
Date Data Arrived at EDR: 12/20/2012
Date Made Active in Reports: 01/25/2013
Number of Days to Update: 36

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 12/17/2012
Next Scheduled EDR Contact: 04/01/2013
Data Release Frequency: Quarterly

YOLO COUNTY:

Underground Storage Tank Comprehensive Facility Report

Underground storage tank sites located in Yolo county.

Date of Government Version: 12/19/2012
Date Data Arrived at EDR: 12/28/2012
Date Made Active in Reports: 01/30/2013
Number of Days to Update: 33

Source: Yolo County Department of Health
Telephone: 530-666-8646
Last EDR Contact: 12/18/2012
Next Scheduled EDR Contact: 04/08/2013
Data Release Frequency: Annually

YUBA COUNTY:

CUPA Facility List
CUPA facility listing for Yuba County.

Date of Government Version: 08/16/2012
Date Data Arrived at EDR: 08/16/2012
Date Made Active in Reports: 10/03/2012
Number of Days to Update: 48

Source: Yuba County Environmental Health Department
Telephone: 530-749-7523
Last EDR Contact: 02/18/2013
Next Scheduled EDR Contact: 05/20/2013
Data Release Frequency: Varies

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data
Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 11/19/2012
Date Data Arrived at EDR: 11/19/2012
Date Made Active in Reports: 01/03/2013
Number of Days to Update: 45

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 02/18/2013
Next Scheduled EDR Contact: 06/03/2013
Data Release Frequency: Annually

NJ MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2011
Date Data Arrived at EDR: 07/19/2012
Date Made Active in Reports: 08/28/2012
Number of Days to Update: 40

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 01/15/2013
Next Scheduled EDR Contact: 04/29/2013
Data Release Frequency: Annually

NY MANIFEST: Facility and Manifest Data
Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 11/01/2012
Date Data Arrived at EDR: 11/07/2012
Date Made Active in Reports: 12/11/2012
Number of Days to Update: 34

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 02/07/2013
Next Scheduled EDR Contact: 05/20/2013
Data Release Frequency: Annually

PA MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2011
Date Data Arrived at EDR: 07/23/2012
Date Made Active in Reports: 09/18/2012
Number of Days to Update: 57

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 01/21/2013
Next Scheduled EDR Contact: 05/06/2013
Data Release Frequency: Annually

RI MANIFEST: Manifest information
Hazardous waste manifest information

Date of Government Version: 12/31/2011
Date Data Arrived at EDR: 06/22/2012
Date Made Active in Reports: 07/31/2012
Number of Days to Update: 39

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 02/25/2013
Next Scheduled EDR Contact: 06/10/2013
Data Release Frequency: Annually

WI MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2011
Date Data Arrived at EDR: 07/19/2012
Date Made Active in Reports: 09/27/2012
Number of Days to Update: 70

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 12/13/2012
Next Scheduled EDR Contact: 04/01/2013
Data Release Frequency: Annually

Oil/Gas Pipelines: This data was obtained by EDR from the USGS in 1994. It is referred to by USGS as GeoData Digital Line Graphs from 1:100,000-Scale Maps. It was extracted from the transportation category including some oil, but primarily gas pipelines.

Electric Power Transmission Line Data
Source: Rextag Strategies Corp.
Telephone: (281) 769-2247
U.S. Electric Transmission and Power Plants Systems Digital GIS Data

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Licensed Facilities
Source: Department of Social Services
Telephone: 916-657-4041

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 2003 & 2011 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 and 2005 from the U.S. Fish and Wildlife Service.

Scanned Digital USGS 7.5' Topographic Map (DRG)
Source: United States Geologic Survey
A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) projection.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

STREET AND ADDRESS INFORMATION

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GEOCHECK ®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

HOMEWOOD
11150 W. VALPICO ROAD
TRACY, CA 95377

TARGET PROPERTY COORDINATES

Latitude (North):	37.7068 - 37° 42' 24.48''
Longitude (West):	121.4477 - 121° 26' 51.72''
Universal Tranverse Mercator:	Zone 10
UTM X (Meters):	636836.2
UTM Y (Meters):	4174213.5
Elevation:	114 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	37121-F4 TRACY, CA
Most Recent Revision:	1981

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principal investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

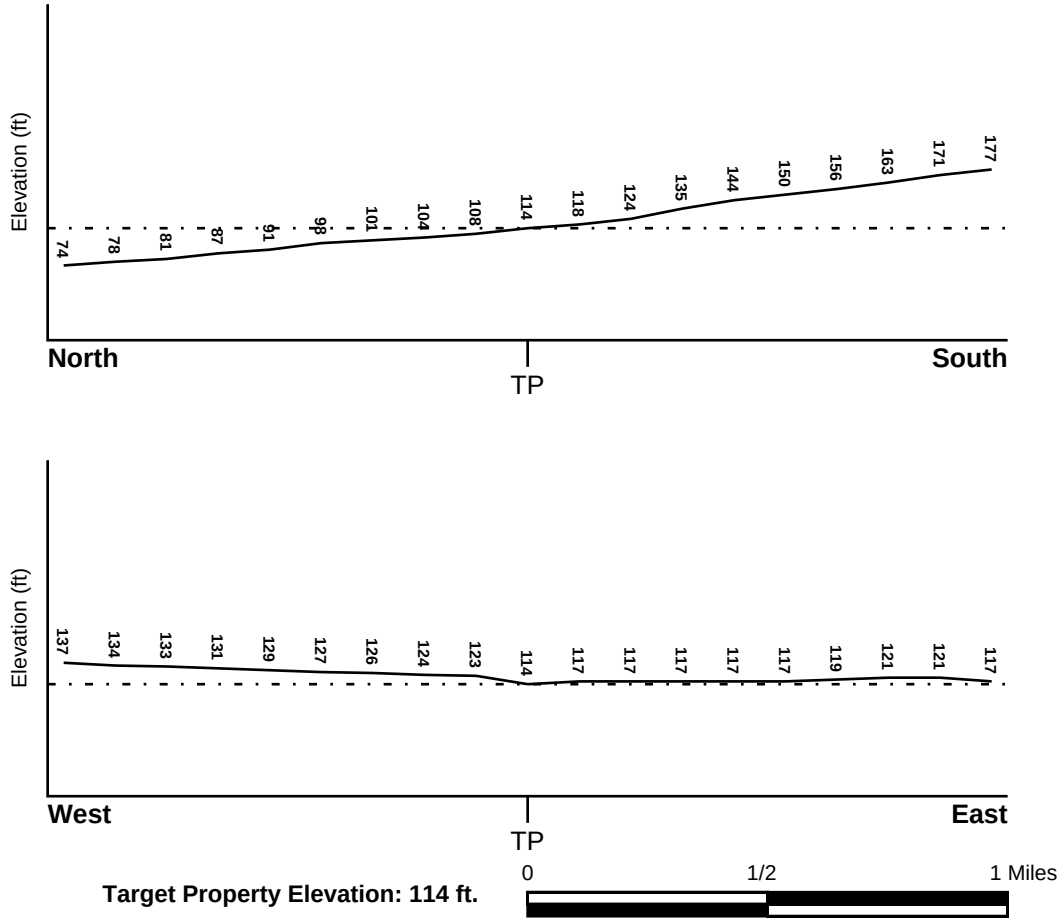
TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General NNE

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Target Property County	FEMA Flood Electronic Data
SAN JOAQUIN, CA	YES - refer to the Overview Map and Detail Map

Flood Plain Panel at Target Property: 06077C - FEMA DFIRM Flood data

Additional Panels in search area: Not Reported

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
TRACY	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Site-Specific Hydrogeological Data*:

Search Radius:	1.25 miles
Status:	Not found

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
Not Reported		

* ©1996 Site−specific hydrogeological data gathered by CERCLIS Alerts, Inc., Bainbridge Island, WA. All rights reserved. All of the information and opinions presented are those of the cited EPA report(s), which were completed under a Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) investigation.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

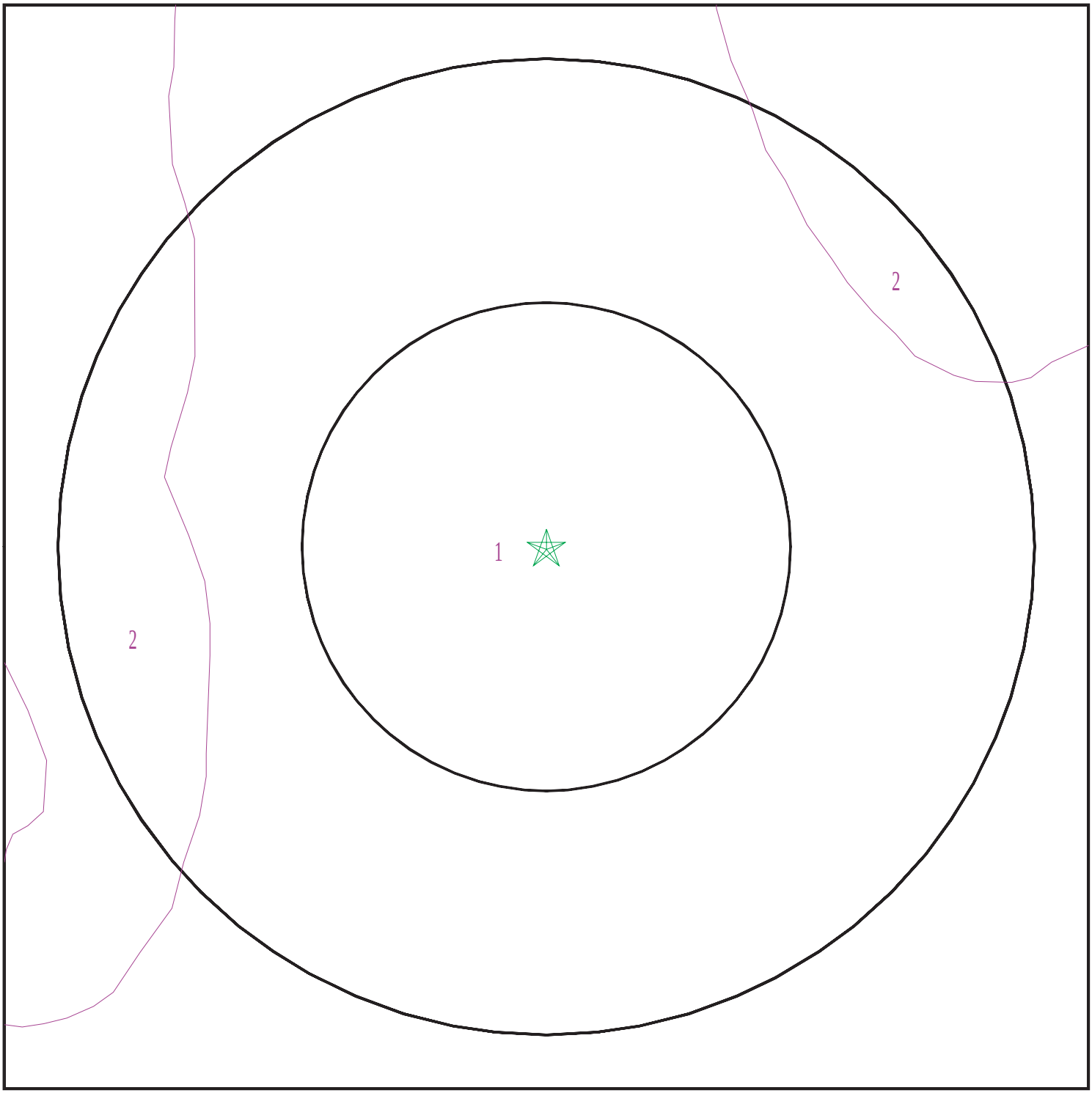
Era:	Cenozoic
System:	Quaternary
Series:	Quaternary
Code:	Q *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Stratifed Sequence

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

SSURGO SOIL MAP - 3544806.2s



Target Property
SSURGO Soil
Water

0 1/16 1/8 1/4 Miles

N

SITE NAME:	Homewood	CLIENT:	Engeo Inc.
ADDRESS:	11150 W. Valpico Road Tracy CA 95377	CONTACT:	Richard Gandolfo
LAT/LONG:	37.7068 / 121.4477	INQUIRY #:	3544806.2s
		DATE:	March 14, 2013 3:03 pm

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GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

Soil Map ID: 1

Soil Component Name: ZACHARIAS

Soil Surface Texture: gravelly clay loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	14 inches	gravelly clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel	Max: 14 Min: 4	Max: 8.4 Min: 6.6
2	14 inches	29 inches	gravelly clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel	Max: 14 Min: 4	Max: 8.4 Min: 6.6
3	29 inches	59 inches	gravelly loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel	Max: 14 Min: 4	Max: 8.4 Min: 6.6

Soil Map ID: 2

Soil Component Name: ZACHARIAS

Soil Surface Texture: clay loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information

	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	18 inches	clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 4 Min: 1.4	Max: 8.4 Min: 6.6
2	18 inches	53 inches	clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 4 Min: 1.4	Max: 8.4 Min: 6.6
3	53 inches	59 inches	gravelly clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 4 Min: 1.4	Max: 8.4 Min: 6.6

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
1	USGS3222893	1/4 - 1/2 Mile NW
A2	USGS3222894	1/2 - 1 Mile WNW
5	USGS3223065	1/2 - 1 Mile SW
6	USGS3223053	1/2 - 1 Mile SE
B8	USGS3223080	1/2 - 1 Mile ESE
10	USGS3222905	1/2 - 1 Mile ENE
11	USGS3222941	1/2 - 1 Mile North
C13	USGS3223199	1/2 - 1 Mile SE
D14	USGS3223184	1/2 - 1 Mile SSW

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

MAP ID	WELL ID	LOCATION FROM TP

No PWS System Found

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

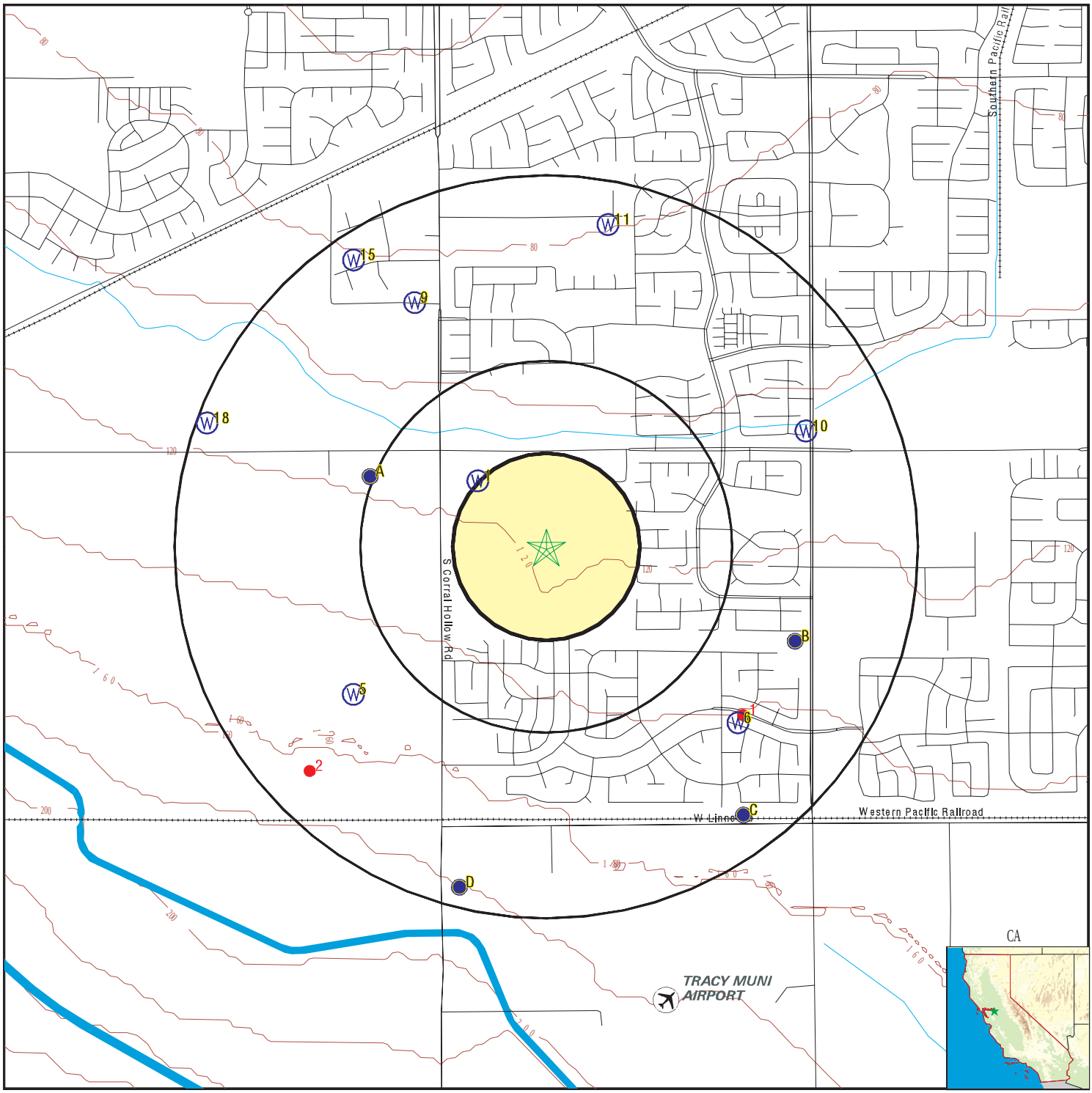
MAP ID	WELL ID	LOCATION FROM TP
A3	CADW40000038106	1/2 - 1 Mile WNW
A4	CADW40000038107	1/2 - 1 Mile WNW
B7	CADW40000038088	1/2 - 1 Mile ESE
9	CADW40000038158	1/2 - 1 Mile NNW
C12	CADW40000038062	1/2 - 1 Mile SE
15	2480	1/2 - 1 Mile NW
D16	CADW40000038025	1/2 - 1 Mile SSW
D17	CADW40000038026	1/2 - 1 Mile SSW
18	CADW40000038137	1/2 - 1 Mile WNW

OTHER STATE DATABASE INFORMATION

STATE OIL/GAS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
1	CAOG9A000207046	1/2 - 1 Mile SE
2	CAOG9A000207041	1/2 - 1 Mile SW

PHYSICAL SETTING SOURCE MAP - 3544806.2s



- County Boundary
- Major Roads
- Contour Lines
- Earthquake Fault Lines
- Airports
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons
- Groundwater Flow Direction
- GI Indeterminate Groundwater Flow at Location
- GV Groundwater Flow Varies at Location
- HD Closest Hydrogeological Data
- Oil, gas or related wells

SITE NAME: Homewood	CLIENT: Engeo Inc.
ADDRESS: 11150 W. Valpico Road Tracy CA 95377	CONTACT: Richard Gandolfo
LAT/LONG: 37.7068 / 121.4477	INQUIRY #: 3544806.2s DATE: March 14, 2013 3:03 pm

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GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

1
NW
1/4 - 1/2 Mile
Lower

FED USGS **USGS3222893**

Agency cd:	USGS	Site no:	374234121270001
Site name:	003S005E05D001M		
Latitude:	374234	EDR Site id:	USGS3222893
Longitude:	1212700	Dec lat:	37.7093741
Dec lon:	-121.45105601	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	077
Country:	US	Land net:	NWNWNWS05T03SR05EM
Location map:	TRACY	Map scale:	24000
Altitude:	107.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	2.5		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	San Joaquin Delta. California. Area = 938 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19641201
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	140	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	8479423710		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1967-07-25	Ground water data end date:	1967-07-25
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1967-07-25	38.88	

A2
WNW
1/2 - 1 Mile
Higher

FED USGS **USGS3222894**

Agency cd:	USGS	Site no:	374234121271901
Site name:	003S005E06A001M		
Latitude:	374234	EDR Site id:	USGS3222894
Longitude:	1212719	Dec lat:	37.70937411
Dec lon:	-121.4563339	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	077
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	113.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	San Joaquin Delta. California. Area = 938 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19550101
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	ALLUVIUM ABOVE E-CLAY		
Well depth:	150	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1963-03-19
Water quality data end date:	1967-05-12	Water quality data count:	2
Ground water data begin date:	1967-05-01	Ground water data end date:	1967-05-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1967-05-01	53.00	

A3
WNW
1/2 - 1 Mile
Higher

CA WELLS **CADW40000038106**

Longitude:	-121.4553
Latiude:	37.7097
Stwellno:	03S05E06A001M
Districtco:	8
Welluseco:	Z
Countyco:	39
Gwcode:	502215
Site id:	CADW40000038106

A4
WNW
1/2 - 1 Mile
Higher

CA WELLS **CADW40000038107**

Longitude:	-121.4553
Latiude:	37.7097
Stwellno:	03S05E06A002M
Districtco:	8
Welluseco:	Z
Countyco:	39
Gwcode:	502215
Site id:	CADW40000038107

5
SW **FED USGS** **USGS3223065**
1/2 - 1 Mile
Higher

Agency cd:	USGS	Site no:	374204121272201
Site name:	003S005E06J001M		
Latitude:	374204	EDR Site id:	USGS3223065
Longitude:	1212722	Dec lat:	37.70104091
Dec lon:	-121.45716709	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	077
Country:	US	Land net:	NWNESES06T03SR05EM
Location map:	TRACY	Map scale:	24000
Altitude:	150.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	2.5		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	San Joaquin Delta. California. Area = 938 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19620410
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	261	Hole depth:	261
Source of depth data:	Not Reported		
Project number:	8479423710		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1962-04-10	Ground water data end date:	1962-04-10
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1962-04-10	112.00	

6
SE **FED USGS** **USGS3223053**
1/2 - 1 Mile
Higher

Agency cd:	USGS	Site no:	374200121261401
Site name:	003S005E05J002M		
Latitude:	374200	EDR Site id:	USGS3223053
Longitude:	1212614	Dec lat:	37.69992975
Dec lon:	-121.43827778	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	077
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	Not Reported		
Altitude method:	Not Reported		
Altitude accuracy:	Not Reported		
Altitude datum:	Not Reported		
Hydrologic:	San Joaquin Delta. California. Area = 938 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	9500	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

B7
ESE
1/2 - 1 Mile
Higher

CA WELLS **CADW40000038088**

Longitude:	-121.4344
Latiude:	37.7036
Stwellno:	03S05E05J001M
Districtco:	8
Welluseco:	Z
Countyco:	39
Gwcode:	502215
Site id:	CADW40000038088

B8
ESE
1/2 - 1 Mile
Higher

FED USGS **USGS3223080**

Agency cd:	USGS	Site no:	374210121260401
Site name:	003S005E05J001M		
Latitude:	374210	EDR Site id:	USGS3223080
Longitude:	1212604	Dec lat:	37.70270747
Dec lon:	-121.4355	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	077
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	128.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	San Joaquin Delta. California. Area = 938 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19470101
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	669	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	8479423710		
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

9
NNW
1/2 - 1 Mile
Lower

CA WELLS **CADW40000038158**

Longitude:	-121.4531
Latiude:	37.7164
Stwellno:	02S05E31J001M
Districtco:	8
Welluseco:	Z
Countyco:	39
Gwcode:	502215
Site id:	CADW40000038158

10
ENE
1/2 - 1 Mile
Lower

FED USGS **USGS3222905**

Agency cd:	USGS	Site no:	374241121260201
Site name:	002S005E32R001M		
Latitude:	374241	EDR Site id:	USGS3222905
Longitude:	1212602	Dec lat:	37.71131845
Dec lon:	-121.43494459	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	077
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	101.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	San Joaquin Delta. California. Area = 938 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19490101
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	ALLUVIUM ABOVE AND BELOW E-CLAY (MIOCENE-PLEISTOCENE)		
Well depth:	800	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	8479423710		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1953-07-21
Water quality data end date:	1963-03-12	Water quality data count:	3
Ground water data begin date:	1967-06-01	Ground water data end date:	1967-06-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1967-06-01	43.00	

11
North
1/2 - 1 Mile
Lower

FED USGS **USGS3222941**

Agency cd:	USGS	Site no:	374310121263701
Site name:	002S005E32F001M		
Latitude:	374310	EDR Site id:	USGS3222941
Longitude:	1212637	Dec lat:	37.71937393
Dec lon:	-121.44466718	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	077
Country:	US	Land net:	NESENWS32T02SR05EM
Location map:	TRACY	Map scale:	24000
Altitude:	77.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	2.5		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	San Joaquin Delta. California. Area = 938 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19761214
Date inventoried:	Not Reported	Mean greenwich time offset:	PST

Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	ALLUVIUM ABOVE E-CLAY		
Well depth:	109	Hole depth:	156
Source of depth data:	Not Reported		
Project number:	8479423710		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1979-05-23
Water quality data end date:	1979-05-23	Water quality data count:	1
Ground water data begin date:	1976-12-14	Ground water data end date:	1976-12-14
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1976-12-14	15.00	

C12
SE
1/2 - 1 Mile
Higher

CA WELLS **CADW40000038062**

Longitude:	-121.4367
Latiude:	37.6967
Stwellno:	03S05E05R001M
Districtco:	8
Welluseco:	Z
Countyco:	39
Gwcode:	502215
Site id:	CADW40000038062

C13
SE
1/2 - 1 Mile
Higher

FED USGS **USGS3223199**

Agency cd:	USGS	Site no:	374146121261401
Site name:	003S005E05R002M		
Latitude:	374146	EDR Site id:	USGS3223199
Longitude:	1212614	Dec lat:	37.69604092
Dec lon:	-121.43827771	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	077
Country:	US	Land net:	SWSESES05T03SR05EM
Location map:	TRACY	Map scale:	24000
Altitude:	151.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	2.5		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	San Joaquin Delta. California. Area = 938 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19541106
Date inventoried:	Not Reported	Mean greenwich time offset:	PST

Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	ALLUVIUM ABOVE AND BELOW E-CLAY (MIOCENE-PLEISTOCENE)		
Well depth:	860	Hole depth:	900
Source of depth data:	Not Reported		
Project number:	8479423710		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1963-03-19
Water quality data end date:	1967-05-18	Water quality data count:	2
Ground water data begin date:	0000-00-00	Ground water data end date:	0000-00-00
Ground water data count:	0		

Ground-water levels, Number of Measurements: 0

D14
SSW
1/2 - 1 Mile
Higher

FED USGS **USGS3223184**

Agency cd:	USGS	Site no:	374139121270401
Site name:	003S005E08D001M		
Latitude:	374139	EDR Site id:	USGS3223184
Longitude:	1212704	Dec lat:	37.69409655
Dec lon:	-121.45216685	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	077
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	177.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5.		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	San Joaquin Delta. California. Area = 938 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	19520101
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	220	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1967-07-01	Ground water data end date:	1967-07-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1967-07-01	110.00	

15
NW
1/2 - 1 Mile
Lower

CA WELLS **2480**

Water System Information:

Prime Station Code:	02S/05E-31J03 M	User ID:	39C
FRDS Number:	3901067001	County:	San Joaquin
District Number:	69	Station Type:	WELL/AMBNT/MUN/INTAKE
Water Type:	Well/Groundwater	Well Status:	Active Raw
Source Lat/Long:	374305.0 1212722.0	Precision:	1,000 Feet (10 Seconds)
Source Name:	WELL 01		
System Number:	3901067		
System Name:	CORRAL HOLLOW		
Organization That Operates System:	Not Reported		
Pop Served:	Unknown, Small System	Connections:	Unknown, Small System
Area Served:	Not Reported		

D16
SSW
1/2 - 1 Mile
Higher

CA WELLS **CADW40000038025**

Longitude:	-121.4508
Latiude:	37.6933
Stwellno:	03S05E08D001M
Districtco:	8
Welluseco:	Z
Countyco:	39
Gwcode:	502215
Site id:	CADW40000038025

D17
SSW
1/2 - 1 Mile
Higher

CA WELLS **CADW40000038026**

Longitude:	-121.4508
Latiude:	37.6933
Stwellno:	03S05E08D002M
Districtco:	8
Welluseco:	Z
Countyco:	39
Gwcode:	502215
Site id:	CADW40000038026

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID Direction Distance Elevation		Database	EDR ID Number
18 **WNW** **1/2 - 1 Mile** **Higher**		**CA WELLS**	**CADW40000038137**
Longitude:	-121.4633		
Latiude:	37.7117		
Stwellno:	02S05E31Q001M		
Districtco:	8		
Welluseco:	Z		
Countyco:	39		
Gwcode:	502215		
Site id:	CADW40000038137		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance

Database EDR ID Number

1
SE
1/2 - 1 Mile

OIL_GAS **CAOG9A000207046**

Districtnu:	6	Apinumber:	07720005
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	Y	Wellstatus:	P
Operatorna:	Sun Oil Company		
Countyname:	San Joaquin	Fieldname:	Any Field
Areaname:	Any Area		
Section:	5		
Township:	03S	Range:	05E
Basemeridi:	MD	Elevation:	Not Reported
Locationde:	Not Reported		
Glat:	37.70023		
Glong:	-121.438036		
Gissourcec:	hud		
Comments:	Status Code 006		
Leasename:	Gertrude M. Kennedy	Wellnumber:	1
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	12/30/1899
Welldeptha:	Not Reported	Redrillfoo:	Not Reported
Abandonedd:	/ /	Completion:	/ /
Gissymbol:	PDH	Site id:	CAOG9A000207046

2
SW
1/2 - 1 Mile

OIL_GAS **CAOG9A000207041**

Districtnu:	6	Apinumber:	07700382
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P
Operatorna:	UMC Petroleum Corp.		
Countyname:	San Joaquin	Fieldname:	Any Field
Areaname:	Any Area		
Section:	6		
Township:	03S	Range:	05E
Basemeridi:	MD	Elevation:	Not Reported
Locationde:	Not Reported		
Glat:	37.69805		
Glong:	-121.459316		
Gissourcec:	hud		
Comments:	Status Code 007		
Leasename:	McCulloch Maridon	Wellnumber:	1
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	12/30/1899
Welldeptha:	Not Reported	Redrillfoo:	Not Reported
Abandonedd:	/ /	Completion:	/ /
Gissymbol:	PDH	Site id:	CAOG9A000207041

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

State Database: CA Radon

Radon Test Results

Zipcode	Num Tests	> 4 pCi/L
95377	2	0

Federal EPA Radon Zone for SAN JOAQUIN County: 3

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for SAN JOAQUIN COUNTY, CA

Number of sites tested: 20

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	2.530 pCi/L	90%	10%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	2.050 pCi/L	100%	0%	0%

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Scanned Digital USGS 7.5' Topographic Map (DRG)
Source: United States Geologic Survey
A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) projection.

HYDROLOGIC INFORMATION

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 2003 & 2011 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 and 2005 from the U.S. Fish and Wildlife Service.

HYDROGEOLOGIC INFORMATION

AQUIFLOW^{R} Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Services
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Services (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Services, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

STATE RECORDS

Water Well Database
Source: Department of Water Resources
Telephone: 916-651-9648

California Drinking Water Quality Database
Source: Department of Health Services
Telephone: 916-324-2319
The database includes all drinking water compliance and special studies monitoring for the state of California since 1984. It consists of over 3,200,000 individual analyses along with well and water system information.

OTHER STATE DATABASE INFORMATION

California Oil and Gas Well Locations
Source: Department of Conservation
Telephone: 916-323-1779
Oil and Gas well locations in the state.

RADON

State Database: CA Radon
Source: Department of Health Services
Telephone: 916-324-2208
Radon Database for California

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

California Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines, prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

STREET AND ADDRESS INFORMATION

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APPENDIX B

FIRST AMERICAN TITLE COMPANY.

Preliminary Title Report

APPENDIX B



October 28, 2011
Update

First American Title Insurance Company

1737 North First Street, Suite 500
San Jose, CA 95112

Wyatt Weisel
Keenan Land Company
700 Emerson Street
Palo Alto, CA 94301
Phone: (650)614-6223

Escrow Officer:	Linda Tugade
Phone:	(408)579-8340
Buyer:	Homewood, LLC
Owner:	J.C. Tracy Group, LLC
Property:	11150 West Valpico Road, Tracy, CA

PRELIMINARY REPORT

In response to the above referenced application for a policy of title insurance, this company hereby reports that it is prepared to issue, or cause to be issued, as of the date hereof, a Policy or Policies of Title Insurance describing the land and the estate or interest therein hereinafter set forth, insuring against loss which may be sustained by reason of any defect, lien or encumbrance not shown or referred to as an Exception below or not excluded from coverage pursuant to the printed Schedules, Conditions and Stipulations of said Policy forms.

The printed Exceptions and Exclusions from the coverage of said Policy or Policies are set forth in Exhibit A attached. Copies of the Policy forms should be read. They are available from the office which issued this report.

Please read the exceptions shown or referred to below and the exceptions and exclusions set forth in Exhibit A of this report carefully. The exceptions and exclusions are meant to provide you with notice of matters which are not covered under the terms of the title insurance policy and should be carefully considered.

It is important to note that this preliminary report is not a written representation as to the condition of title and may not list all liens, defects, and encumbrances affecting title to the land.

This report (and any supplements or amendments hereto) is issued solely for the purpose of facilitating the issuance of a policy of title insurance and no liability is assumed hereby. If it is desired that liability be assumed prior to the issuance of a policy of title insurance, a Binder or Commitment should be requested.

Dated as of October 12, 2011 at 7:30 A.M.

The form of Policy of title insurance contemplated by this report is:

ALTA Owner's Policy (10-17-92)

ALTA Loan Policy (10-17-92) with ALTA Endorsement - Form 1 Coverage

A specific request should be made if another form or additional coverage is desired.

Title to said estate or interest at the date hereof is vested in:

J.C. Tracy Group, LLC, a California limited liability company

The estate or interest in the land hereinafter described or referred to covered by this Report is:

Fee Simple as to Parcel One, an easement as to Parcels Two and Three.

The Land referred to herein is described as follows:

(See attached Legal Description)

At the date hereof exceptions to coverage in addition to the printed Exceptions and Exclusions in said policy form would be as follows:

1. General and special taxes and assessments for the fiscal year 2011-2012.

First Installment:	$3,130.19, PAYABLE
Penalty:	$0.00
Second Installment:	$3,130.19, PAYABLE
Penalty:	$0.00
Tax Rate Area:	088-010
A. P. No.:	244-040-010-000

2. The lien of supplemental taxes, if any, assessed pursuant to Chapter 3.5 commencing with Section 75 of the California Revenue and Taxation Code.

3. Rights of the public in and to that portion of the land lying within Valpico Road and Corral Hollow Road.

4. An easement for water run off protection berms and incidental purposes, recorded July 9, 1992 as Instrument No. 92078825 of Official Records.

In Favor of:	Kaufman & Broad of Northern California, Inc.
Affects:	A portion of the land

5. The terms and provisions contained in the document entitled "Grant of Temporary License" recorded July 9, 1993 as Instrument No. 93079411 of Official Records.

6. The terms and provisions contained in the document entitled "Notice of Intent to Preserve Mineral Right" recorded October 7, 1997 as Instrument No. 97100333 of Official Records.

7. An option in favor of Charles J. Keenan, III, Trustee of the Amended and Restated Keenan Declaration of Trust dated February 17, 1998 as contained in or disclosed by a document recorded December 27, 2004 as Instrument No. 2004-294890 of Official Records.

   The terms and provisions contained in the document entitled "Memorandum of Assignment of Option Agreement" recorded November 30, 2005 as Instrument No. 2005-298251 of Official Records.

8. Rights of parties in possession.

9. Any facts, rights, interests or claims which would be disclosed by a correct ALTA/ACSM survey.

10. Prior to the issuance of any policy of title insurance, the Company will require:
    An ALTA/ACSM survey of recent date which complies with the current minimum standard detail requirements for ALTA/ACSM land title surveys.

INFORMATIONAL NOTES

1. According to the latest available equalized assessment roll in the office of the county tax assessor, there is located on the land a(n) Commercial Structure known as 11150 West Valpico Road, Tracy, California.

2. According to the public records, there has been no conveyance of the land within a period of twenty-four months prior to the date of this report, except as follows:

   None

3. Should this report be used to facilitate your transaction, we must be provided with the following prior to the issuance of the policy:

   A. WITH RESPECT TO A CORPORATION:
      a. A certificate of good standing of recent date issued by the Secretary of State of the corporation's state of domicile.

      b. A certificate copy of a resolution of the Board of Directors authorizing the contemplated transaction and designating which corporate officers shall have the power to execute on behalf of the corporation.

      c. Requirements which the Company may impose following its review of the above material and other information which the Company may require.

   B. WITH RESPECT TO A CALIFORNIA LIMITED PARTNERSHIP:
      a. A certified copy of the certificate of limited partnership (form LP-1) and any amendments thereto (form LP-2) to be recorded in the public records;

      b. A full copy of the partnership agreement and any amendments;

      c. Satisfactory evidence of the consent of a majority in interest of the limited partners to the contemplated transaction;

      d. Requirements which the Company may impose following its review of the above material and other information which the Company may require.

   C. WITH RESPECT TO A FOREIGN LIMITED PARTNERSHIP:
      a. A certified copy of the application for registration, foreign limited partnership (form LP-5) and any amendments thereto (form LP-6) to be recorded in the public records;

b. A full copy of the partnership agreement and any amendment;

c. Satisfactory evidence of the consent of a majority in interest of the limited partners to the contemplated transaction;

d. Requirements which the Company may impose following its review of the above material and other information which the Company may require.

D. WITH RESPECT TO A GENERAL PARTNERSHIP:

a. A certified copy of a statement of partnership authority pursuant to Section 16303 of the California Corporation Code (form GP-I), executed by at least two partners, and a certified copy of any amendments to such statement (form GP-7), to be recorded in the public records;

b. A full copy of the partnership agreement and any amendments;

c. Requirements which the Company may impose following its review of the above material required herein and other information which the Company may require.

E. WITH RESPECT TO A LIMITED LIABILITY COMPANY:

a. A copy of its operating agreement and any amendments thereto;

b. If it is a California limited liability company, a certified copy of its articles of organization (LLC-1) and any certificate of correction (LLC-11), certificate of amendment (LLC-2), or restatement of articles of organization (LLC-10) to be recorded in the public records;

c. If it is a foreign limited liability company, a certified copy of its application for registration (LLC-5) to be recorded in the public records;

d. With respect to any deed, deed of trust, lease, subordination agreement or other document or instrument executed by such limited liability company and presented for recordation by the Company or upon which the Company is asked to rely, such document or instrument must be executed in accordance with one of the following, as appropriate:

(i) If the limited liability company properly operates through officers appointed or elected pursuant to the terms of a written operating agreement, such documents must be executed by at least two duly elected or appointed officers, as follows: the chairman of the board, the president or any vice president, and any secretary, assistant secretary, the chief financial officer or any assistant treasurer;

(ii) If the limited liability company properly operates through a manager or managers identified in the articles of organization and/or duly elected pursuant to the terms of a written operating agreement, such document must be executed by at least two such managers or by one manager if the limited liability company properly operates with the existence of only one manager.

e. Requirements which the Company may impose following its review of the above material and other information which the Company may require.

F. WITH RESPECT TO A TRUST:

a. A certification pursuant to Section 18500.5 of the California Probate Code in a form satisfactory to the Company.

b. Copies of those excerpts from the original trust documents and amendments thereto which designate the trustee and confer upon the trustee the power to act in the pending transaction.

c. Other requirements which the Company may impose following its review of the material require herein and other information which the Company may require.

G. WITH RESPECT TO INDIVIDUALS:

a. A statement of information.

The map attached, if any, may or may not be a survey of the land depicted hereon. First American Title Insurance Company expressly disclaims any liability for loss or damage which may result from reliance on this map except to the extent coverage for such loss or damage is expressly provided by the terms and provisions of the title insurance policy, if any, to which this map is attached.

LEGAL DESCRIPTION

Real property in the unincorporated area of the County of San Joaquin, State of California, described as follows:

PARCEL ONE:

A PORTION OF THE NORTHWEST QUARTER OF SECTION 5, TOWNSHIP 3 SOUTH, RANGE 5 EAST, MOUNT DIABLO BASE AND MERIDIAN, DESCRIBED AS FOLLOWS:

PARCEL B, AS SHOWN ON THAT CERTAIN PARCEL MAP FILED FOR RECORD FEBRUARY 24, 1977 IN BOOK 4 OF PARCEL MAPS, PAGE 34, SAN JOAQUIN COUNTY RECORDS.

EXCEPT THEREFROM 1/2 INTEREST OF EVERY TYPE OR NATURE IN THE OIL, MINERAL AND GAS RIGHTS, AS RESERVED BY RICHARD C. KENNEY AND DOROTHY H. KENNEDY, HIS WIFE, IN DEED RECORDED JULY 7, 1977 IN BOOK 4280 OF OFFICIAL RECORDS, PAGE 497, SAN JOAQUIN COUNTY RECORDS.

PARCEL TWO:

A NON-EXCLUSIVE RIGHT OF WAY FOR ROADWAY PURPOSES OVER A STRIP OF LAND 12.5 FEET IN WIDTH WHOSE NORTHERLY LINE EXTENDS FROM POINT A TO POINT B, AS DESCRIBED IN DEED RECORDED NOVEMBER 27, 1964 IN BOOK 2890 OF OFFICIAL RECORDS, PAGE 264, SAN JOAQUIN COUNTY RECORDS.

PARCEL THREE:

A NON-EXCLUSIVE RIGHT OF WAY FOR ROADWAY PURPOSES OVER THE SOUTH 12.5 FEET OF THE FOLLOWING DESCRIBED PARCEL:

BEGINNING AT POINT A; THENCE NORTH 89° 0' 35" WEST, 2632.57 FEET; THENCE NORTH 0° 10' 20" EAST TO A POINT IN THE EAST-WEST ONE-HALF SECTION LINE; THENCE SOUTH 89° 32' 40" EAST ALONG THE EAST-WEST SECTION LINE TO THE EAST QUARTER CORNER; THENCE SOUTH ALONG THE EASTERLY LINE OF SAID SECTION, 60.00 FEET TO THE POINT OF BEGINNING. (SOUTH LINE OF THIS 12.5 FEET RIGHT OF WAY ALSO BEING THE EXTENSION OF LINE BETWEEN POINT A AND POINT B, HEREIN ABOVE DESCRIBED).

APN: 244-040-01

NOTICE I

Section 12413.1 of the California Insurance Code, effective January 1, 1990, requires that any title insurance company, underwritten title company, or controlled escrow company handling funds in an escrow or sub-escrow capacity, wait a specified number of days after depositing funds, before recording any documents in connection with the transaction or disbursing funds. This statute allows for funds deposited by wire transfer to be disbursed the same day as deposit. In the case of cashier's checks or certified checks, funds may be disbursed the next day after deposit. In order to avoid unnecessary delays of three to seven days, or more, please use wire transfer, cashier's checks, or certified checks whenever possible.

If you have any questions about the effect of this new law, please contact your local First American Office for more details.

NOTICE II

As of January 1, 1991, if the transaction which is the subject of this report will be a sale, you as a party to the transaction, may have certain tax reporting and withholding obligations pursuant to the state law referred to below:

In accordance with Sections 18662 and 18668 of the Revenue and Taxation Code, a buyer may be required to withhold an amount equal to three and one-third percent of the sales price in the case of the disposition of California real property interest by either:

1. A seller who is an individual with a last known street address outside of California or when the disbursement instructions authorize the proceeds be sent to a financial intermediary of the seller, OR
2. A corporate seller which has no permanent place of business in California.

The buyer may become subject to penalty for failure to withhold an amount equal to the greater of 10 percent of the amount required to be withheld or five hundred dollars ($500).

However, notwithstanding any other provision included in the California statutes referenced above, no buyer will be required to withhold any amount or be subject to penalty for failure to withhold if:

1. The sales price of the California real property conveyed does not exceed one hundred thousand dollars ($100,000), OR
2. The seller executes a written certificate, under the penalty of perjury, certifying that the seller is a resident of California, or if a corporation, has a permanent place of business in California, OR
3. The seller, who is an individual, executes a written certificate, under the penalty of perjury, that the California real property being conveyed is the seller's principal residence (as defined in Section 1034 of the Internal Revenue Code).

The seller is subject to penalty for knowingly filing a fraudulent certificate for the purpose of avoiding the withholding requirement.

The California statutes referenced above include provisions which authorize the Franchise Tax Board to grant reduced withholding and waivers from withholding on a case-by-case basis.

The parties to this transaction should seek an attorney's, accountant's, or other tax specialist's opinion concerning the effect of this law on this transaction and should not act on any statements made or omitted by the escrow or closing officer.

The Seller May Request a Waiver by Contacting:
Franchise Tax Board
Withhold at Source Unit
P.O. Box 651
Sacramento, CA 95812-0651
(916) 845-4900

Privacy Policy

We Are Committed to Safeguarding Customer Information

In order to better serve your needs now and in the future, we may ask you to provide us with certain information. We understand that you may be concerned about what we will do with such information - particularly any personal or financial information. We agree that you have a right to know how we will utilize the personal information you provide to us. Therefore, together with our parent company, The First American Corporation, we have adopted this Privacy Policy to govern the use and handling of your personal information.

Applicability

This Privacy Policy governs our use of the information which you provide to us. It does not govern the manner in which we may use information we have obtained from any other source, such as information obtained from a public record or from another person or entity. First American has also adopted broader guidelines that govern our use of personal information regardless of its source. First American calls these guidelines its *Fair Information Values*, a copy of which can be found on our website at www.firstam.com.

Types of Information

Depending upon which of our services you are utilizing, the types of nonpublic personal information that we may collect include:

- Information we receive from you on applications, forms and in other communications to us, whether in writing, in person, by telephone or any other means;
- Information about your transactions with us, our affiliated companies, or others; and
- Information we receive from a consumer reporting agency.

Use of Information

We request information from you for our own legitimate business purposes and not for the benefit of any nonaffiliated party. Therefore, we will not release your information to nonaffiliated parties except: (1) as necessary for us to provide the product or service you have requested of us; or (2) as permitted by law. We may, however, store such information indefinitely, including the period after which any customer relationship has ceased. Such information may be used for any internal purpose, such as quality control efforts or customer analysis. We may also provide all of the types of nonpublic personal information listed above to one or more of our affiliated companies. Such affiliated companies include financial service providers, such as title insurers, property and casualty insurers, and trust and investment advisory companies, or companies involved in real estate services, such as appraisal companies, home warranty companies, and escrow companies. Furthermore, we may also provide all the information we collect, as described above, to companies that perform marketing services on our behalf, on behalf of our affiliated companies, or to other financial institutions with whom we or our affiliated companies have joint marketing agreements.

Former Customers

Even if you are no longer our customer, our Privacy Policy will continue to apply to you.

Confidentiality and Security

We will use our best efforts to ensure that no unauthorized parties have access to any of your information. We restrict access to nonpublic personal information about you to those individuals and entities who need to know that information to provide products or services to you. We will use our best efforts to train and oversee our employees and agents to ensure that your information will be handled responsibly and in accordance with this Privacy Policy and First American's *Fair Information Values*. We

currently maintain physical, electronic, and procedural safeguards that comply with federal regulations to guard your nonpublic personal information.

EXHIBIT A
LIST OF PRINTED EXCEPTIONS AND EXCLUSIONS (BY POLICY TYPE)

1. CALIFORNIA LAND TITLE ASSOCIATION STANDARD COVERAGE POLICY - 1990
SCHEDULE B

EXCEPTIONS FROM COVERAGE

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records. Proceedings by a public agency which may result in taxes or assessments, or notice of such proceedings, whether or not shown by the records of such agency or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of the land or which may be asserted by persons in possession thereof.
3. Easements, liens or encumbrances, or claims thereof, which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by the public records.
5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the public records.

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating to (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
   (b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.
3. Defects, liens, encumbrances, adverse claims or other matters:
   (a) whether or not recorded in the public records at Date of Policy, but created, suffered, assumed or agreed to by the insured claimant;
   (b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;
   (c) resulting in no loss or damage to the insured claimant;
   (d) attaching or created subsequent to Date of Policy; or
   (e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the insured mortgage or for the estate or interest insured by this policy.
4. Unenforceability of the lien of the insured mortgage because of the inability or failure of the insured at Date of Policy, or the inability or failure of any subsequent owner of the indebtedness, to comply with applicable "doing business" laws of the state in which the land is situated.
5. Invalidity or unenforceability of the lien of the insured mortgage, or claim thereof, which arises out of the transaction evidenced by the insured mortgage and is based upon usury or any consumer credit protection or truth in lending law.
6. Any claim, which arises out of the transaction vesting in the insured the estate or interest insured by their policy or the transaction creating the interest of the insured lender, by reason of the operation of federal bankruptcy, state insolvency or similar creditors' rights laws.

2. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY FORM B - 1970
SCHEDULE OF EXCLUSIONS FROM COVERAGE

1. Any law, ordinance or governmental regulation (including but not limited to building and zoning ordinances) restricting or regulating or prohibiting the occupancy, use or enjoyment of the land, or regulating the character, dimensions or location of any improvement now or hereafter erected on the land, or prohibiting a separation in ownership or a reduction in the dimensions of area of the land, or the effect of any violation of any such law, ordinance or governmental regulation.
2. Rights of eminent domain or governmental rights of police power unless notice of the exercise of such rights appears in the public records at Date of Policy.
3. Defects, liens, encumbrances, adverse claims, or other matters (a) created, suffered, assumed or agreed to by the insured claimant; (b) not known to the Company and not shown by the public records but known to the insured claimant either at Date of Policy or at the date such claimant acquired an estate or interest insured by this policy and not disclosed in writing by the insured claimant to the Company prior to the

date such insured claimant became an insured hereunder; (c) resulting in no loss or damage to the insured claimant; (d) attaching or created subsequent to Date of Policy; or (e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the estate or interest insured by this policy.

3. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY FORM B - 1970 WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 2 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage by reason of the matters shown in parts one and two following:
Part One

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material heretofore or hereafter furnished, imposed by law and not shown by the public records.

4. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1970 WITH A.L.T.A. ENDORSEMENT FORM 1 COVERAGE SCHEDULE OF EXCLUSIONS FROM COVERAGE

1. Any law, ordinance or governmental regulation (including but not limited to building and zoning ordinances) restricting or regulating or prohibiting the occupancy, use or enjoyment of the land, or regulating the character, dimensions or location of any improvement now or hereafter erected on the land, or prohibiting a separation in ownership or a reduction in the dimensions or area of the land, or the effect of any violation of any such law ordinance or governmental regulation.
2. Rights of eminent domain or governmental rights of police power unless notice of the exercise of such rights appears in the public records at Date of Policy.
3. Defects, liens, encumbrances, adverse claims, or other matters (a) created, suffered, assumed or agreed to by the insured claimant, (b) not known to the Company and not shown by the public records but known to the insured claimant either at Date of Policy or at the date such claimant acquired an estate or interest insured by this policy or acquired the insured mortgage and not disclosed in writing by the insured claimant to the Company prior to the date such insured claimant became an insured hereunder, (c) resulting in no loss or damage to the insured claimant; (d) attaching or created subsequent to Date of Policy (except to the extent insurance is afforded herein as to any statutory lien for labor or material or to the extent insurance is afforded herein as to assessments for street improvements under construction or completed at Date of Policy).
4. Unenforceability of the lien of the insured mortgage because of failure of the insured at Date of Policy or of any subsequent owner of the indebtedness to comply with applicable "doing business" laws of the state in which the land is situated.

5. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1970 WITH REGIONAL EXCEPTIONS

When the American Land Title Association Lenders Policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy, the exclusions set forth in paragraph 4 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage by reason of the matters shown in parts one and two following:
Part One

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.

6. Any lien, or right to a lien, for services, labor or material theretofore or hereafter furnished, imposed by law and not shown by the public records.

6. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1992
WITH A.L.T.A. ENDORSEMENT FORM 1 COVERAGE
EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating to (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy;
   (b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.
3. Defects, liens, encumbrances, adverse claims, or other matters:
   (a) whether or not recorded in the public records at Date of Policy, but created, suffered, assumed or agreed to by the insured claimant;
   (b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;
   (c) resulting in no loss or damage to the insured claimant;
   (d) attaching or created subsequent to Date of Policy (except to the extent that this policy insures the priority of the lien of the insured mortgage over any statutory lien for services, labor or material or the extent insurance is afforded herein as to assessments for street improvements under construction or completed at date of policy); or
   (e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the insured mortgage.
4. Unenforceability of the lien of the insured mortgage because of the inability or failure of the insured at Date of Policy, or the inability or failure of any subsequent owner of the indebtedness, to comply with the applicable "doing business" laws of the state in which the land is situated.
5. Invalidity or unenforceability of the lien of the insured mortgage, or claim thereof, which arises out of the transaction evidenced by the insured mortgage and is based upon usury or any consumer credit protection or truth in lending law.
6. Any statutory lien for services, labor or materials (or the claim of priority of any statutory lien for services, labor or materials over the lien of the insured mortgage) arising from an improvement or work related to the land which is contracted for and commenced subsequent to Date of Policy and is not financed in whole or in part by proceeds of the indebtedness secured by the insured mortgage which at Date of Policy the insured has advanced or is obligated to advance.
7. Any claim, which arises out of the transaction creating the interest of the mortgagee insured by this policy, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that is based on:
   (i) the transaction creating the interest of the insured mortgagee being deemed a fraudulent conveyance or fraudulent transfer; or
   (ii) the subordination of the interest of the insured mortgagee as a result of the application of the doctrine of equitable subordination; or
   (iii) the transaction creating the interest of the insured mortgagee being deemed a preferential transfer except where the preferential transfer results from the failure:
   (a) to timely record the instrument of transfer; or
   (b) of such recordation to impart notice to a purchaser for value or a judgment or lien creditor.

7. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1992
WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 6 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.

6. Any lien, or right to a lien, for services, labor or material theretofore or hereafter furnished, imposed by law and not shown by the public records.

8. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 1992
EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating to (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
   (b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.
3. Defects, liens, encumbrances, adverse claims, or other matters:
   (a) created, suffered, assumed or agreed to by the insured claimant;
   (b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;
   (c) resulting in no loss or damage to the insured claimant;
   (d) attaching or created subsequent to Date of Policy; or
   (e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the estate or interest insured by this policy.
4. Any claim, which arises out of the transaction vesting in the insured the estate or interest insured by this policy, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that is based on:
   (i) the transaction creating the estate or interest insured by this policy being deemed a fraudulent conveyance or fraudulent transfer; or
   (ii) the transaction creating the estate or interest insured by this policy being deemed a preferential transfer except where the preferential transfer results from the failure:
   (a) to timely record the instrument of transfer; or
   (b) of such recordation to impart notice to a purchaser for value or a judgment or lien creditor.

9. AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY - 1992
WITH REGIONAL EXCEPTIONS

When the American Land Title Association policy is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 8 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:
Part One:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material theretofore or hereafter furnished, imposed by law and not shown by the public records.

10. AMERICAN LAND TITLE ASSOCIATION RESIDENTIAL
TITLE INSURANCE POLICY - 1987
EXCLUSIONS

In addition to the Exceptions in Schedule B, you are not insured against loss, costs, attorneys' fees and expenses resulting from:

1. Governmental police power, and the existence or violation of any law or government regulation. This includes building and zoning ordinances and also laws and regulations concerning:
   * land use
   * land division
   * improvements on the land
   * environmental protection

   This exclusion does not apply to violations or the enforcement of these matters which appear in the public records at Policy Date.
   This exclusion does not limit the zoning coverage described in items 12 and 13 of Covered Title Risks.
2. The right to take the land by condemning it, unless:
   * a notice of exercising the right appears in the public records on the Policy Date
   * the taking happened prior to the Policy Date and is binding on you if you bought the land without knowing of the taking.
3. Title Risks:
   * that are created, allowed, or agreed to by you
   * that are known to you, but not to us, on the Policy Date - unless they appeared in the public records
   * that result in no loss to you
   * that first affect your title after the Policy Date - this does not limit the labor and material lien coverage in Item 8 of Covered Title Risks
4. Failure to pay value for your title.
5. Lack of a right:
   * to any land outside the area specifically described and referred to in Item 3 of Schedule A, or
   * in streets, alleys, or waterways that touch your land

   This exclusion does not limit the access coverage in Item 5 of Covered Title Risks.

11. EAGLE PROTECTION OWNER'S POLICY

CLTA HOMEOWNER'S POLICY OF TITLE INSURANCE - 1998
ALTA HOMEOWNER'S POLICY OF TITLE INSURANCE - 1998

Covered Risks 14 (Subdivision Law Violation). 15 (Building Permit). 16 (Zoning) and 18 (Encroachment of boundary walls or fences) are subject to Deductible Amounts and Maximum Dollar Limits of Liability

EXCLUSIONS

In addition to the Exceptions in Schedule B, you are not insured against loss, costs, attorneys' fees, and expenses resulting from:

1. Governmental police power, and the existence or violation of any law or government regulation. This includes ordinances, laws and regulations concerning:
   a. building
   b. zoning
   c. land use
   d. improvements on the land
   e. land division
   f. environmental protection

   This exclusion does not apply to violations or the enforcement of these matters if notice of the violation or enforcement appears in the Public Records at the Policy Date.
   This exclusion does not limit the coverage described in Covered Risk 14, 15, 16, 17 or 24.
2. The failure of Your existing structures, or any part of them, to be constructed in accordance with applicable building codes. This Exclusion does not apply to violations of building codes if notice of the violation appears in the Public Records at the Policy Date.
3. The right to take the Land by condemning it, unless:
   a. a notice of exercising the right appears in the Public Records at the Policy Date; or
   b. the taking happened before the Policy Date and is binding on You if You bought the Land without Knowing of the taking.
4. Risks:
   a. that are created, allowed, or agreed to by You, whether or not they appear in the Public Records;
   b. that are Known to You at the Policy Date, but not to Us, unless they appear in the Public Records at the Policy Date;
   c. that result in no loss to You; or
   d. that first occur after the Policy Date - this does not limit the coverage described in Covered Risk 7, 8.d, 22, 23, 24 or 25.
5. Failure to pay value for Your Title.
6. Lack of a right:
   a. to any Land outside the area specifically described and referred to in paragraph 3 of Schedule A; and
   b. in streets, alleys, or waterways that touch the Land.

   This exclusion does not limit the coverage described in Covered Risk 11 or 18.

12. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1992 WITH A.L.T.A. ENDORSEMENT FORM 1 COVERAGE WITH EAGLE PROTECTION ADDED

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating to (i) the occupancy, use, or enjoyment of the Land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the Land; (iii) a separation in ownership or a change in the dimensions or area of the Land or any parcel of which the Land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the Land has been recorded in the Public Records at Date of Policy. This exclusion does not limit the coverage provided under insuring provisions 14, 15, 16 and 24 of this policy.
   (b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the Public Records at Date of Policy. This exclusion does not limit the coverage provided under insuring provisions 14, 15, 16 and 24 of this policy.
2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the Public Records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without Knowledge.
3. Defects, liens, encumbrances, adverse claims or other matters:
   (a) created, suffered, assumed or agreed to by the Insured Claimant;
   (b) not known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;
   (c) resulting in no loss or damage to the Insured Claimant;
   (d) attaching or created subsequent to Date of Policy (this paragraph (d) does not limit the coverage provided under insuring provisions 7, 8, 16, 17, 19, 20, 21, 23, 24 and 25); or
   (e) resulting in loss or damage which would not have been sustained if the Insured Claimant had paid value for the Insured Mortgage.
4. Unenforceability of the lien of the Insured Mortgage because of the inability or failure of the Insured at Date of Policy, or the inability or failure of any subsequent owner of the indebtedness, to comply with applicable doing business laws of the state in which the Land is situated.
5. Invalidity or unenforceability of the lien of the Insured Mortgage, or claim thereof, which arises out of the transaction evidenced by the Insured Mortgage and is based upon:
   (a) usury, except as provided under insuring provision 10 of this policy; or
   (b) any consumer credit protection or truth in lending law.
6. Taxes or assessments of any taxing or assessment authority which become a lien on the Land subsequent to Date of Policy.
7. Any claim, which arises out of the transaction creating the interest of the mortgagee insured by this policy, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that is based on:
   (a) the transaction creating the interest of the insured mortgagee being deemed a fraudulent conveyance or fraudulent transfer; or
   (b) the subordination of the interest of the insured mortgagee as a result of the application of the doctrine of equitable subordination; or
   (c) the transaction creating the interest of the insured mortgagee being deemed a preferential transfer except where the preferential transfer results from the failure:
   (i) to timely record the instrument of transfer; or
   (ii) of such recordation to impart notice to a purchaser for value or a judgment or lien creditor.
8. Any claim of invalidity, unenforceability or lack of priority of the lien of the Insured Mortgage as to advances or modifications made after the Insured has Knowledge that the vestee shown in Schedule A is no longer the owner of the estate or interest covered by this policy. This exclusion does not limit the coverage provided under insuring provision 7.
9. Lack of priority of the lien of the Insured Mortgage as to each and every advance made after Date of Policy, and all interest charged thereon, over liens, encumbrances and other matters affecting title, the existence of which are Known to the Insured at:
   (a) The time of the advance; or
   (b) The time a modification is made to the terms of the Insured Mortgage which changes the rate of interest charged, if the rate of interest is greater as a result of the modification than **it would have** been before the modification**.**
   This exclusion does not limit the coverage provided under insuring provision 7.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. Environmental protection liens provided for by the following existing statutes, which liens will have priority over the lien of the Insured Mortgage when they arise: NONE.

13. AMERICAN LAND TITLE ASSOCIATION LOAN POLICY - 1992
WITH EAGLE PROTECTION ADDED
WITH REGIONAL EXCEPTIONS

When the American Land Title Association loan policy with EAGLE Protection Added is used as a Standard Coverage Policy and not as an Extended Coverage Policy the exclusions set forth in paragraph 12 above are used and the following exceptions to coverage appear in the policy.

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:
Part One:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material theretofore or hereafter furnished, imposed by law and not shown by the public records.

Part Two:

1. Environmental protection liens provided for by the following existing statutes, which liens will have priority over the lien of the Insured Mortgage when they arise: NONE

APPENDIX C

ENVIRONMENTAL DATA RESOURCES, INC.

Historical Topographic Map Report

APPENDIX C



Homewood
11150 W. Valpico Road
Tracy, CA 95377

Inquiry Number: 3544806.4
March 14, 2013

EDR Historical Topographic Map Report

EDR® Environmental Data Resources Inc

440 Wheelers Farms Road
Milford, CT 06461
800.352.0050
www.edrnet.com

EDR Historical Topographic Map Report

Environmental Data Resources, Inc.s (EDR) Historical Topographic Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDRs Historical Topographic Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the early 1900s.

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

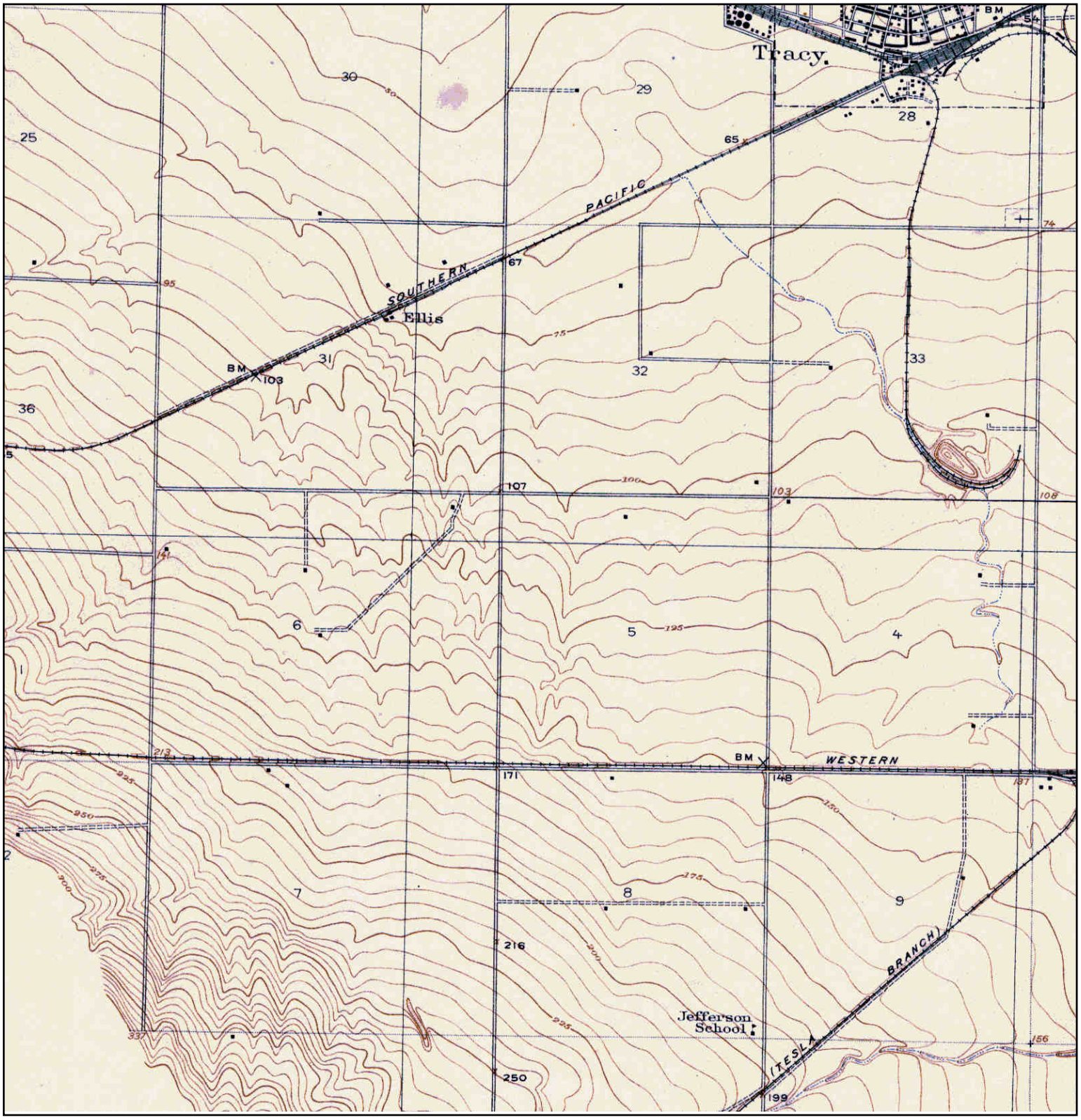
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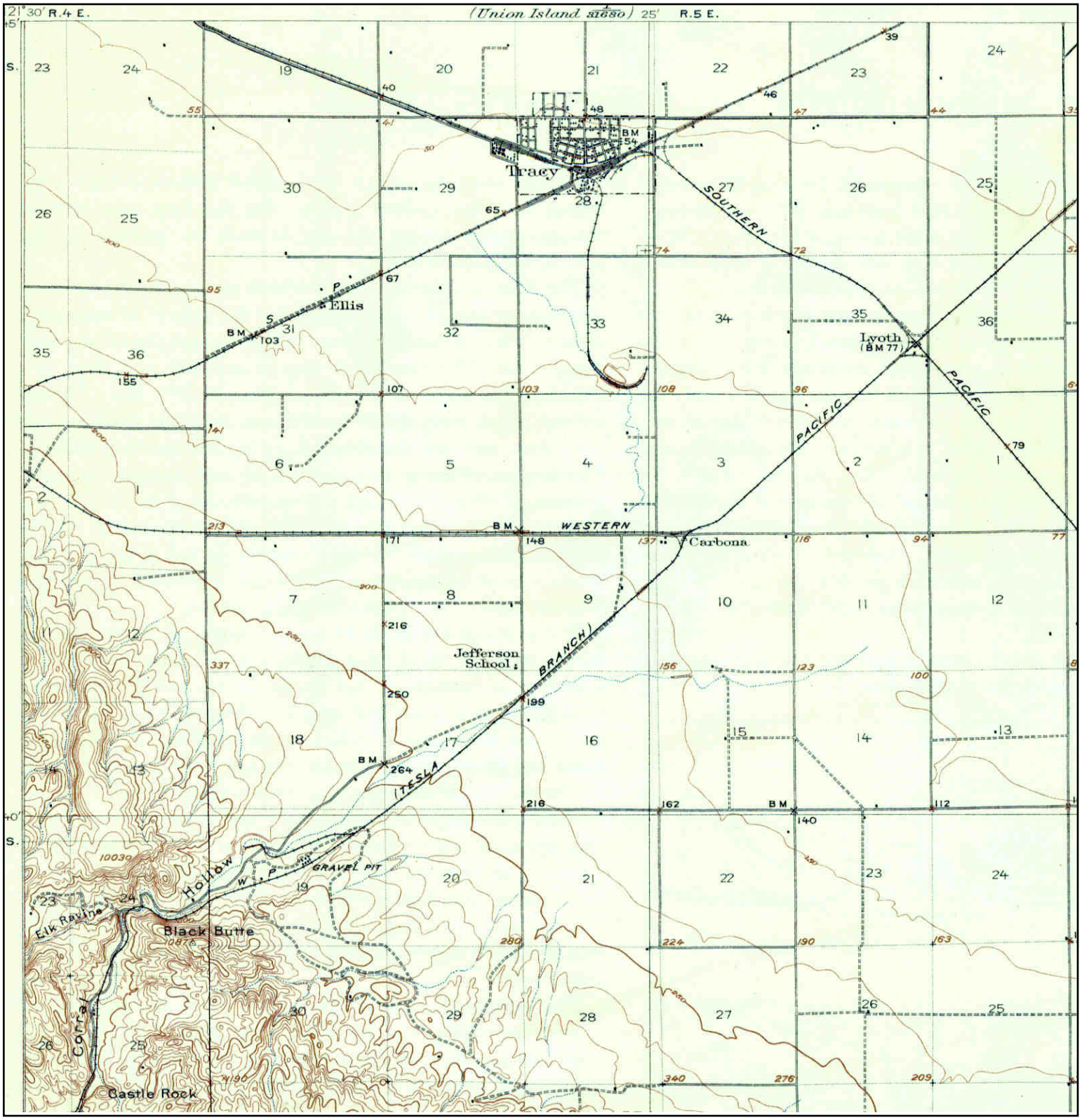
Historical Topographic Map



Unsurveyed Area on the Topographic Map

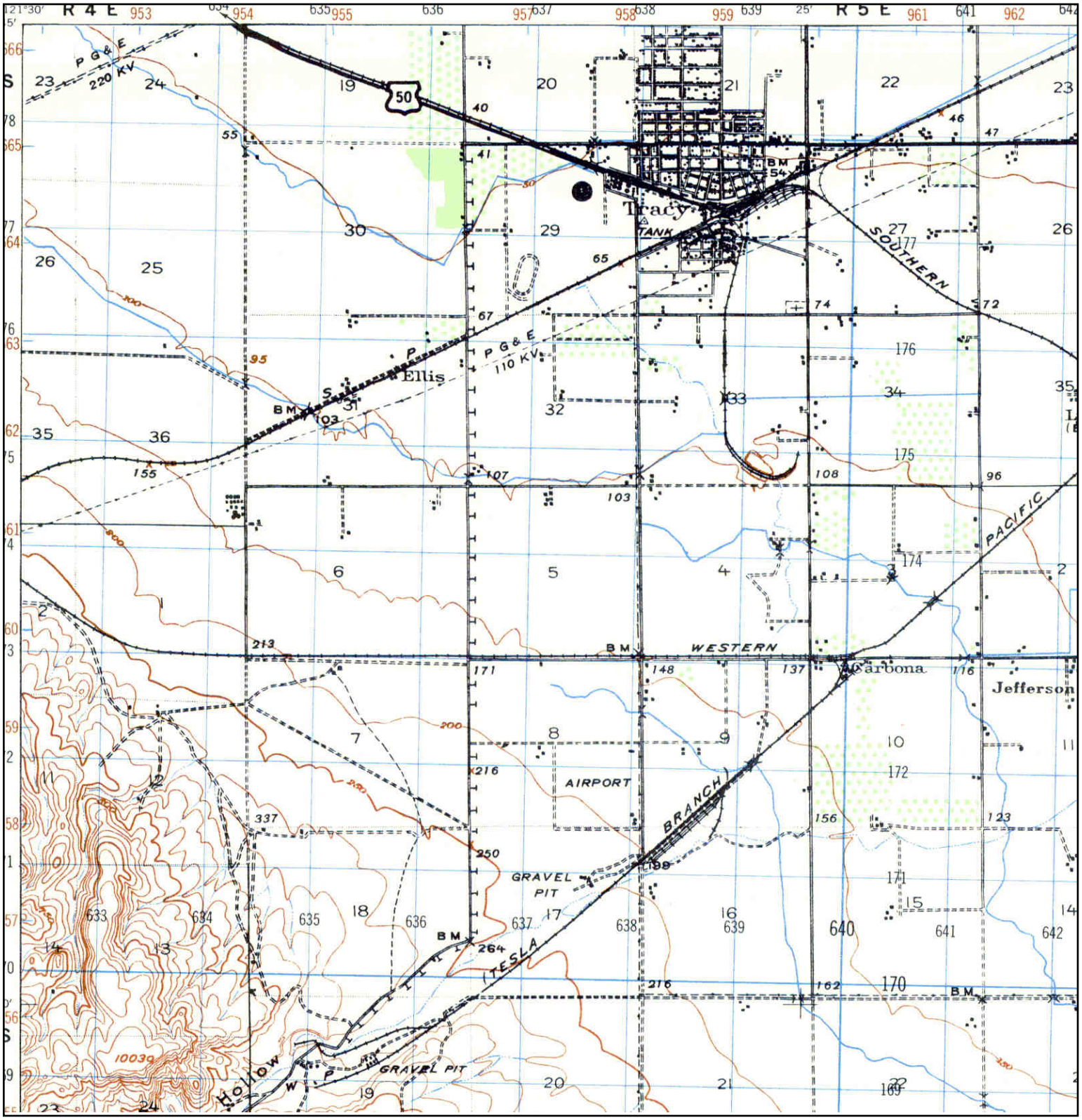
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Historical Topographic Map



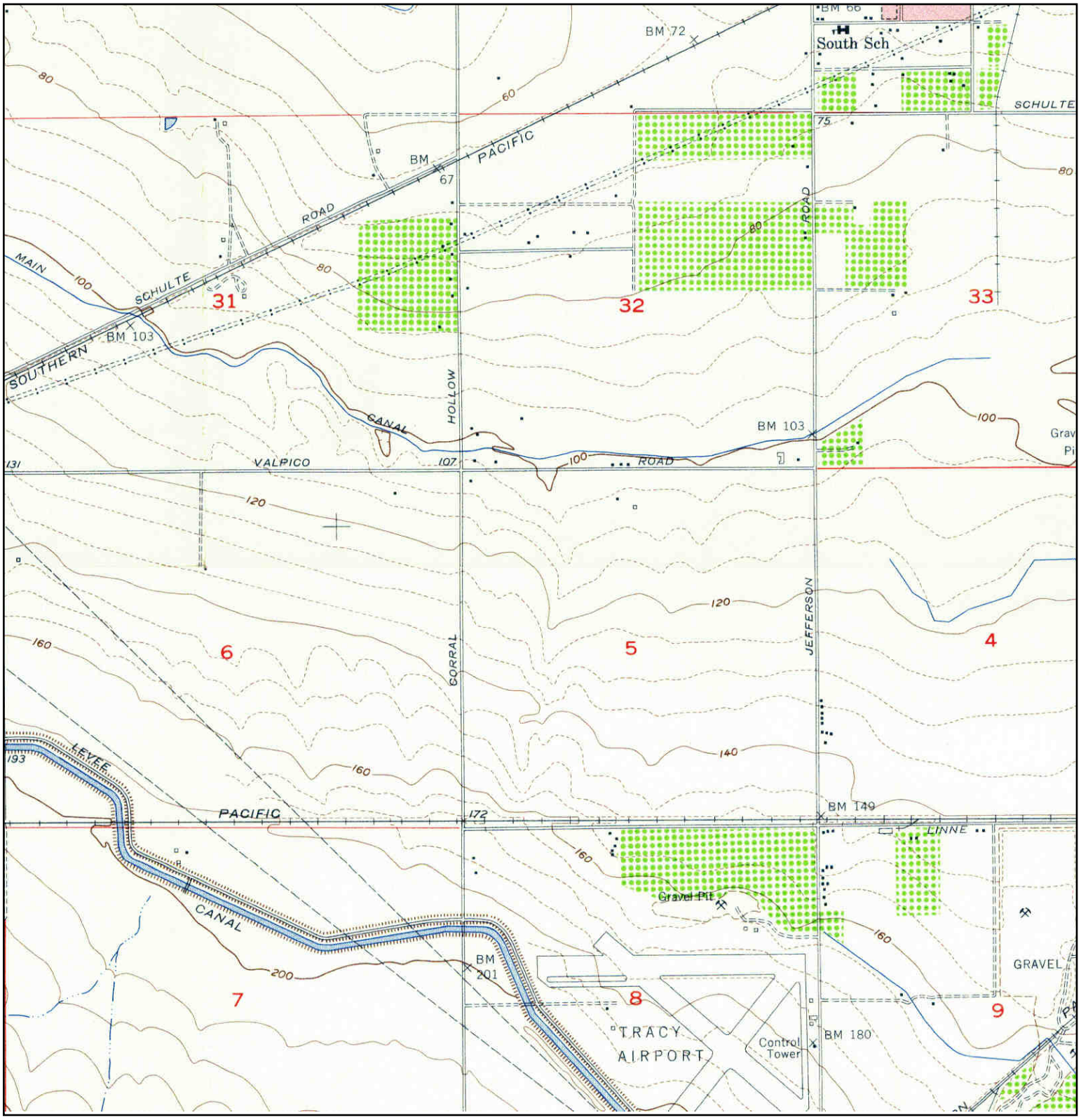
N	TARGET QUAD NAME: CARBONA MAP YEAR: 1922 SERIES: 15 SCALE: 1:62500	SITE NAME: Homewood ADDRESS: 11150 W. Valpico Road Tracy, CA 95377 LAT/LONG: 37.7068 / -121.4477	CLIENT: Engeo Inc. CONTACT: Richard Gandolfo INQUIRY#: 3544806.4 RESEARCH DATE: 03/14/2013

Historical Topographic Map



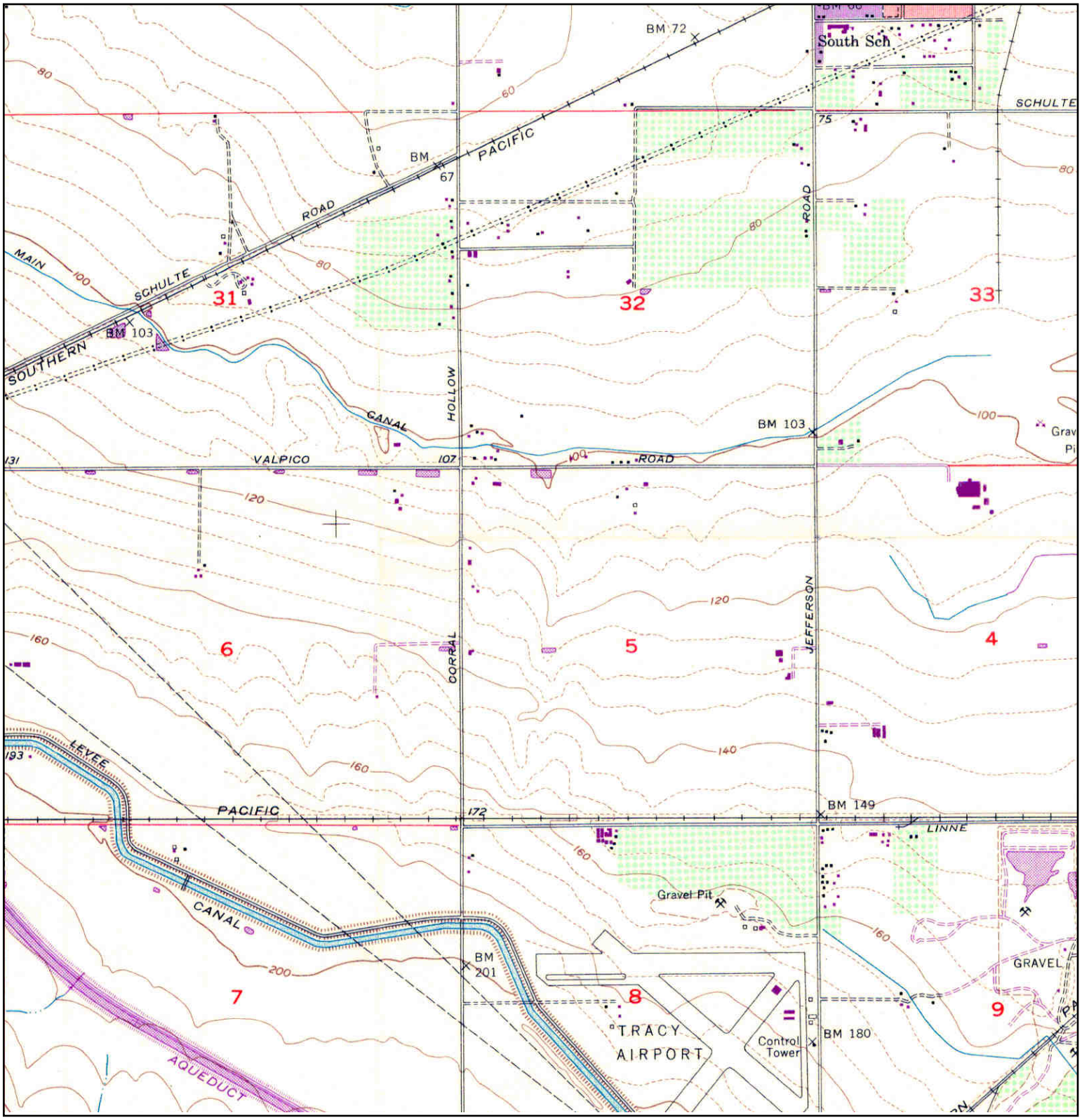
N	TARGET QUAD NAME: CARBONA MAP YEAR: 1947 SERIES: 15 SCALE: 1:50000	SITE NAME: Homewood ADDRESS: 11150 W. Valpico Road Tracy, CA 95377 LAT/LONG: 37.7068 / -121.4477	CLIENT: Engeo Inc. CONTACT: Richard Gandolfo INQUIRY#: 3544806.4 RESEARCH DATE: 03/14/2013

Historical Topographic Map



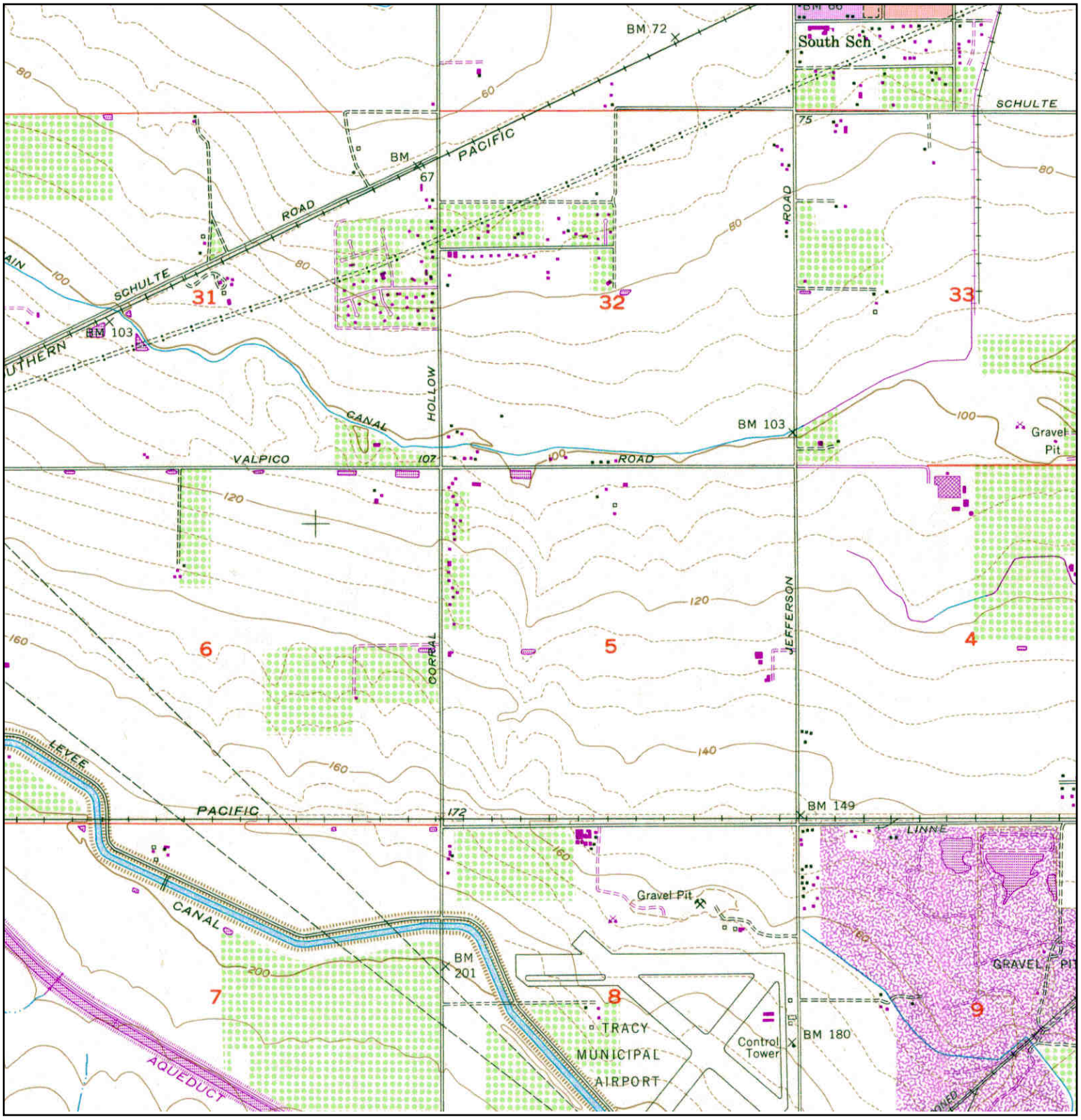
N	TARGET QUAD NAME: TRACY MAP YEAR: 1954 SERIES: 7.5 SCALE: 1:24000	SITE NAME: Homewood ADDRESS: 11150 W. Valpico Road Tracy, CA 95377 LAT/LONG: 37.7068 / -121.4477	CLIENT: Engeo Inc. CONTACT: Richard Gandolfo INQUIRY#: 3544806.4 RESEARCH DATE: 03/14/2013

Historical Topographic Map



N	TARGET QUAD				
	NAME:	TRACY	SITE NAME:	Homewood	CLIENT: Engeo Inc.
	MAP YEAR:	1968	ADDRESS:	11150 W. Valpico Road	CONTACT: Richard Gandolfo
	PHOTOREVISED FROM :	1954		Tracy, CA 95377	INQUIRY#: 3544806.4
	SERIES:	7.5	LAT/LONG:	37.7068 / -121.4477	RESEARCH DATE: 03/14/2013
	SCALE:	1:24000			

Historical Topographic Map



N	TARGET QUAD NAME: TRACY MAP YEAR: 1981 PHOTOREVISED FROM :1954 SERIES: 7.5 SCALE: 1:24000	SITE NAME: Homewood ADDRESS: 11150 W. Valpico Road Tracy, CA 95377 LAT/LONG: 37.7068 / -121.4477	CLIENT: Engeo Inc. CONTACT: Richard Gandolfo INQUIRY#: 3544806.4 RESEARCH DATE: 03/14/2013

APPENDIX D

ENVIRONMENTAL DATA RESOURCES, INC.

Aerial Photo Decade Package

APPENDIX D



Homewood
11150 W. Valpico Road
Tracy, CA 95377

Inquiry Number: 3544806.5
March 19, 2013

The EDR Aerial Photo Decade Package

EDR® Environmental Data Resources Inc

440 Wheelers Farms Road
Milford, CT 06461
800.352.0050
www.edrnet.com

EDR Aerial Photo Decade Package

Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

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Date EDR Searched Historical Sources:

Aerial Photography March 19, 2013

Target Property:

11150 W. Valpico Road

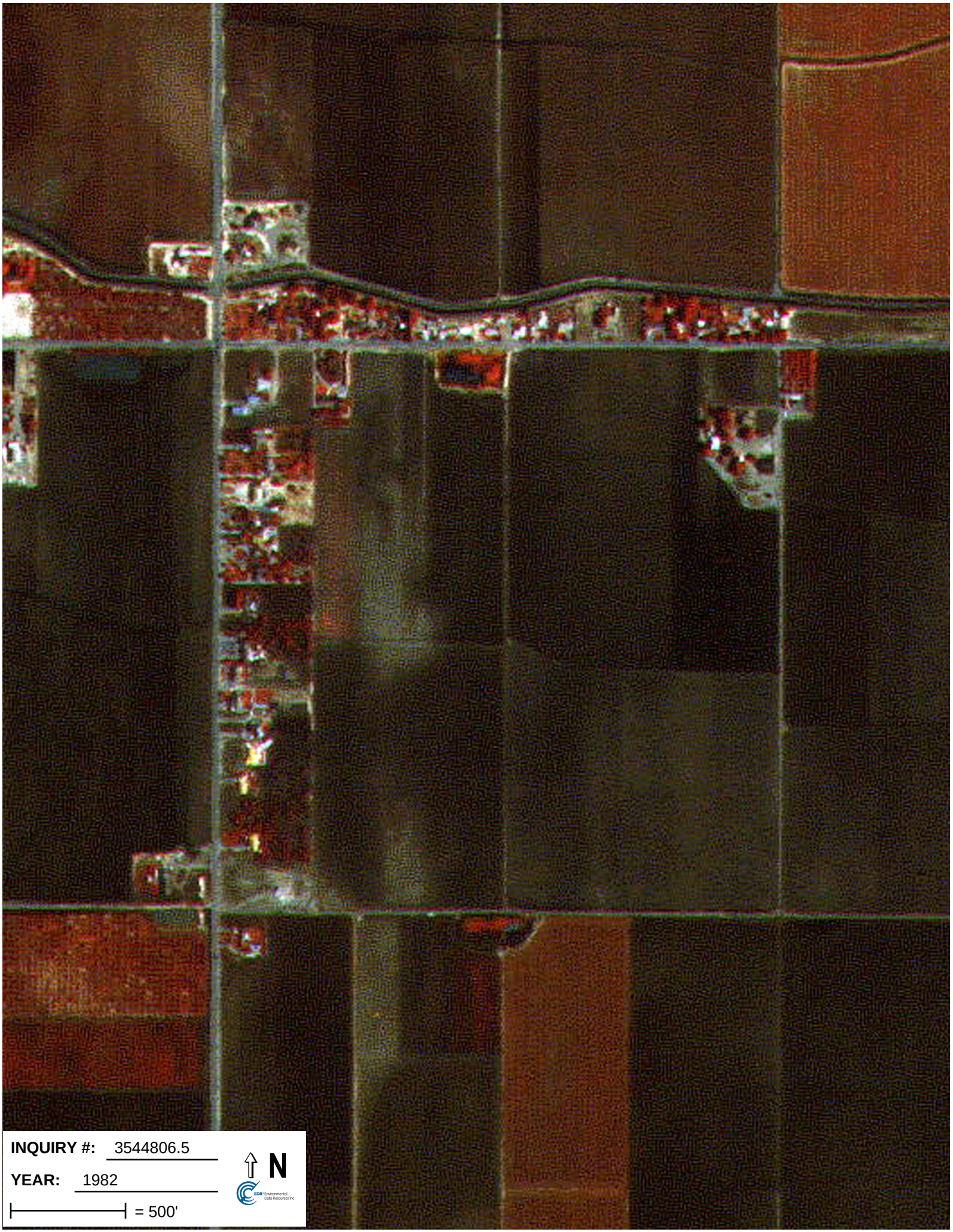
Tracy, CA 95377

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1967	Aerial Photograph. Scale: 1"=500'	Flight Year: 1967	USGS
1974	Aerial Photograph. Scale: 1"=500'	Flight Year: 1974	USGS
1982	Aerial Photograph. Scale: 1"=500'	Flight Year: 1982	USGS
1993	Aerial Photograph. Scale: 1"=500'	/Composite DOQQ - acquisition dates: 1993	EDR
2005	Aerial Photograph. Scale: 1"=500'	Flight Year: 2005	EDR
2006	Aerial Photograph. Scale: 1"=500'	Flight Year: 2006	EDR
2009	Aerial Photograph. Scale: 1"=500'	Flight Year: 2009	EDR
2010	Aerial Photograph. Scale: 1"=500'	Flight Year: 2010	EDR


INQUIRY #: 3544806.5
YEAR: 1957
= 500'
N
EDR Environmental Data Resources Inc


INQUIRY #: 3544806.5
YEAR: 1967
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EDR Environmental Data Resources Inc


INQUIRY #: 3544806.5
YEAR: 1974
= 500'
N
EDR Environmental Data Resources Inc


INQUIRY #: 3544806.5
YEAR: 1982
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INQUIRY #: 3544806.5
YEAR: 1993
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EDR Environmental Data Resources Inc


INQUIRY #: 3544806.5
YEAR: 2005
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EDR Environmental Data Resources Inc


INQUIRY #: 3544806.5
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= 500'
N


INQUIRY #: 3544806.5
YEAR: 2009
= 500'
N


INQUIRY #: 3544806.5
YEAR: 2010
= 500'
N

APPENDIX E

ENVIRONMENTAL DATA RESOURCES, INC.

Sanborn Map

APPENDIX E



Homewood
11150 W. Valpico Road
Tracy, CA 95377

Inquiry Number: 3544806.3
March 14, 2013

Certified Sanborn® Map Report

EDR® Environmental Data Resources Inc

440 Wheelers Farms Road
Milford, CT 06461
800.352.0050
www.edrnet.com

Certified Sanborn® Map Report

3/14/13

Site Name:
Homewood
11150 W. Valpico Road
Tracy, CA 95377

Client Name:
Engeo Inc.
580 North Wilma Avenue
Ripon, CA 95366

EDR Inquiry # 3544806.3

Contact: Richard Gandolfo

EDR® Environmental Data Resources Inc

The complete Sanborn Library collection has been searched by EDR, and fire insurance maps covering the target property location provided by Engeo Inc. were identified for the years listed below. The certified Sanborn Library search results in this report can be authenticated by visiting www.edrnet.com/sanborn and entering the certification number. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by Sanborn Library LLC, the copyright holder for the collection.

Certified Sanborn Results:

Site Name: Homewood
Address: 11150 W. Valpico Road
City, State, Zip: Tracy, CA 95377
Cross Street:
P.O. # 10091.000.000
Project: Homewood
Certification # D084-4A20-AD47

Sanborn® Library search results
Certification # D084-4A20-AD47

UNMAPPED PROPERTY

This report certifies that the complete holdings of the Sanborn Library, LLC collection have been searched based on client supplied target property information, and fire insurance maps covering the target property were not found.

The Sanborn Library includes more than 1.2 million Sanborn fire insurance maps, which track historical property usage in approximately 12,000 American cities and towns. Collections searched:

- ☑ Library of Congress
- ☑ University Publications of America
- ☑ EDR Private Collection

The Sanborn Library LLC Since 1866™

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APPENDIX F

ENVIRONMENTAL DATA RESOURCES, INC.

City Directory Report

APPENDIX F



Homewood
11150 W. Valpico Road
Tracy, CA 95377

Inquiry Number: 3544806.6
March 15, 2013

The EDR-City Directory Image Report

Environmental Data Resources Inc

440 Wheelers Farms Road
Milford, CT 06461
800.352.0050
www.edrnet.com

TABLE OF CONTENTS

SECTION

Executive Summary

Findings

City Directory Images

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EXECUTIVE SUMMARY

DESCRIPTION

Environmental Data Resources, Inc.'s (EDR) City Directory Report is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Report includes a search of available city directory data at 5 year intervals.

RESEARCH SUMMARY

The following research sources were consulted in the preparation of this report. A check mark indicates where information was identified in the source and provided in this report.

Year	Target Street	Cross Street	Source
2000	☑	☑	Polk's City Directory
1996	☑	☑	Polk's City Directory
1991	☑	☑	Polk's City Directory
1986	☐	☑	Polk's City Directory
1981	☐	☐	Polk's City Directory
1976	☐	☐	Polk's City Directory
1971	☐	☐	Polk's City Directory
1965	☐	☐	Polk's City Directory
1959	☐	☐	Polk's City Directory

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FINDINGS

TARGET PROPERTY STREET

11150 W. Valpico Road
Tracy, CA 95377

Year	*CD Image*	*Source*	
W. Valpico Road			
2000	pg A1	Polk's City Directory	
2000	pg A2	Polk's City Directory	
1996	pg A3	Polk's City Directory	
1991	pg A4	Polk's City Directory	
1986	-	Polk's City Directory	Street not listed in Source
1981	-	Polk's City Directory	Street not listed in Source
1976	-	Polk's City Directory	Street not listed in Source
1971	-	Polk's City Directory	Street not listed in Source
1965	-	Polk's City Directory	Street not listed in Source
1959	-	Polk's City Directory	Street not listed in Source

FINDINGS

CROSS STREETS

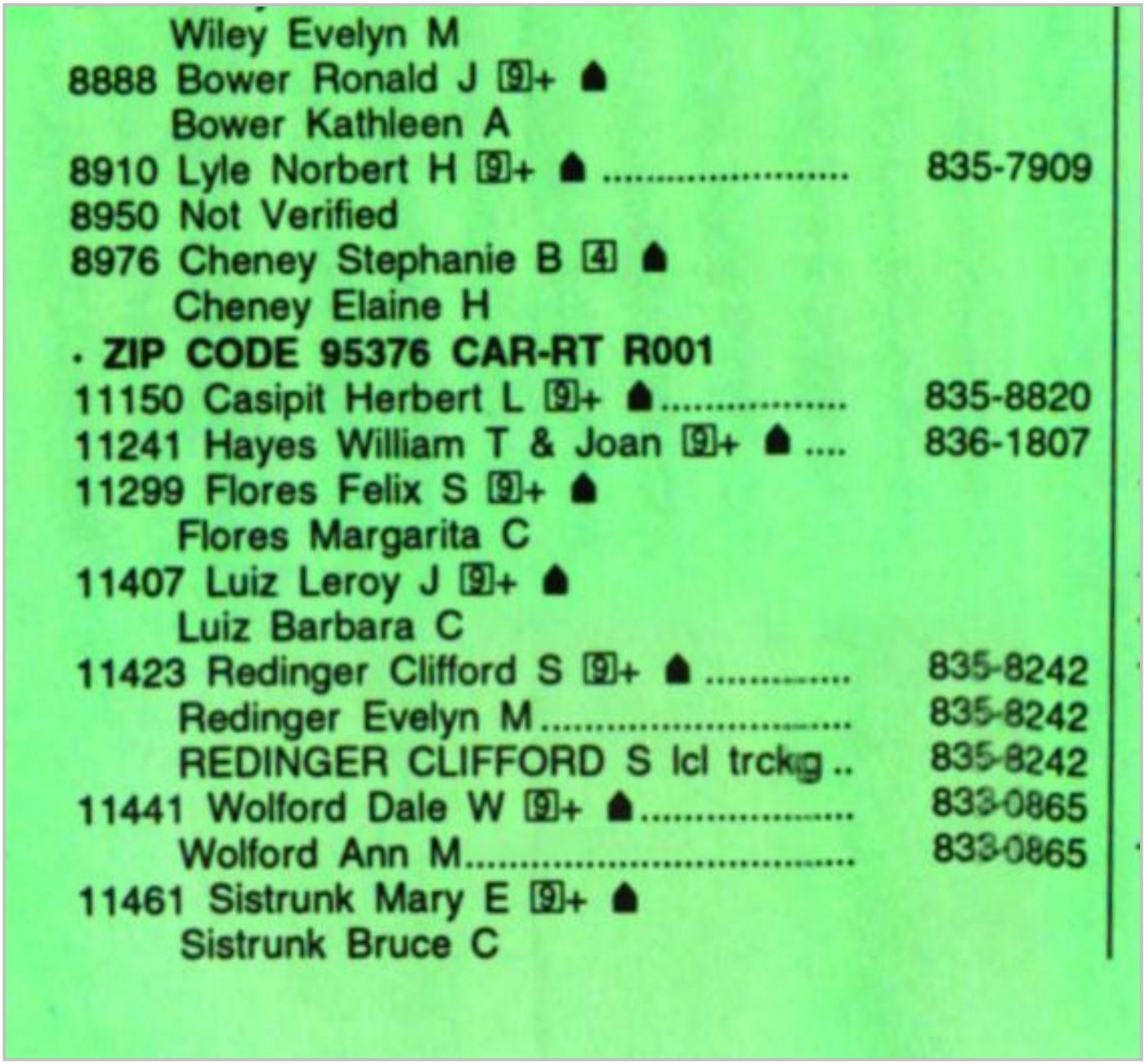
S. Corral Hollow Road

Year	*CD Image*	*Source*	
2000	pg. A5	Polk's City Directory	
1996	pg. A6	Polk's City Directory	
1991	pg. A7	Polk's City Directory	
1986	pg. A8	Polk's City Directory	
1981	-	Polk's City Directory	Target and Adjoining not listed in Source
1976	-	Polk's City Directory	Target and Adjoining not listed in Source
1971	-	Polk's City Directory	Target and Adjoining not listed in Source
1965	-	Polk's City Directory	Target and Adjoining not listed in Source
1959	-	Polk's City Directory	Street not listed in Source

City Directory Images

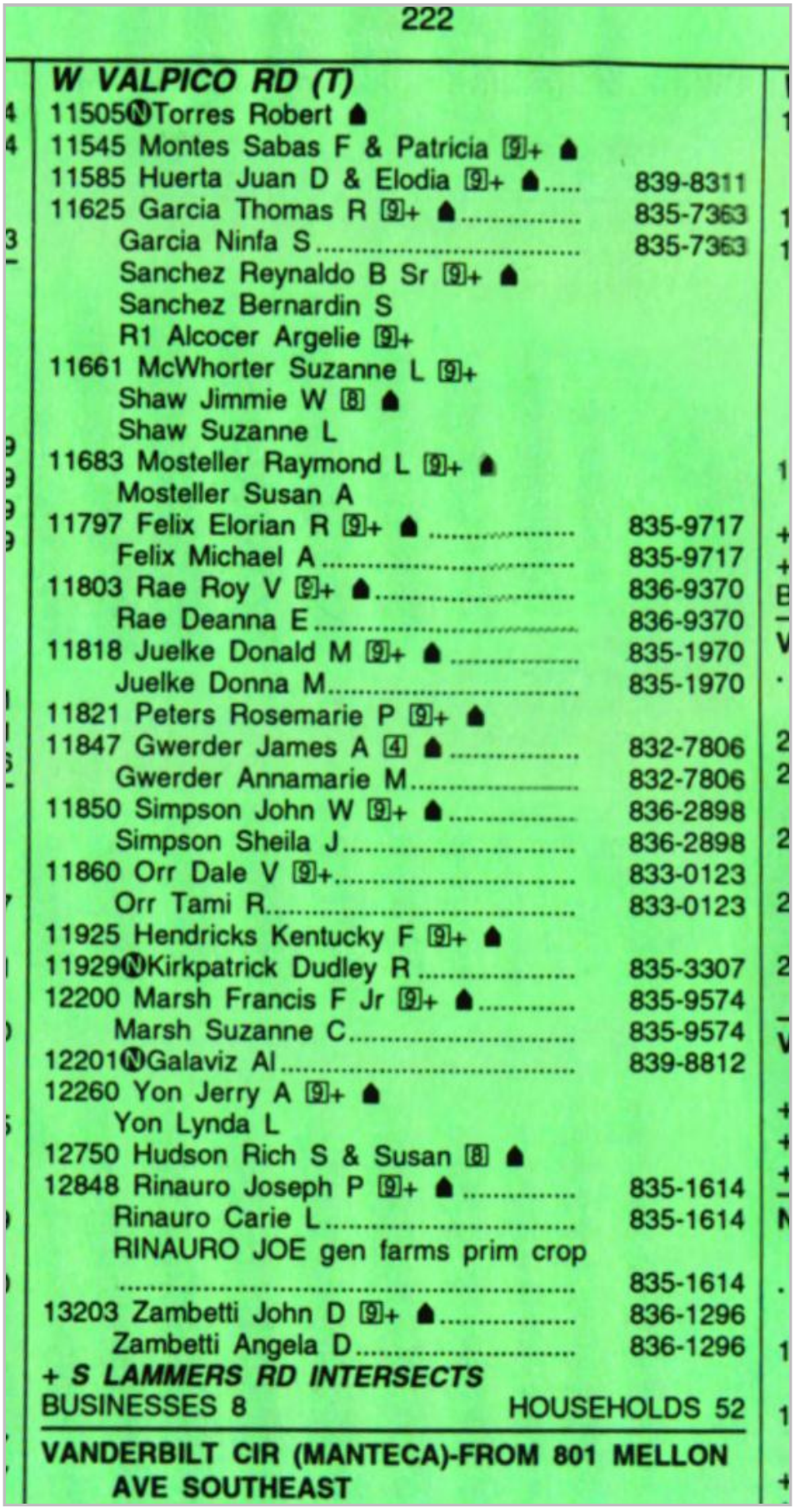
Target Street	Cross Street	Source
✓	-	Polk's City Directory

W. Valpico Road 2000



Target Street	Cross Street	Source
✓	-	Polk's City Directory

W. Valpico Road 2000



222

W VALPICO RD (T)

11505 (N) Torres Robert
11545 Montes Sabas F & Patricia [9]+
11585 Huerta Juan D & Elodia [9]+ 839-8311
11625 Garcia Thomas R [9]+ 835-7363
Garcia Ninfa S 835-7363
Sanchez Reynaldo B Sr [9]+
Sanchez Bernardin S
R1 Alcocer Argelie [9]+
11661 McWhorter Suzanne L [9]+
Shaw Jimmie W [8]
Shaw Suzanne L
11683 Mosteller Raymond L [9]+
Mosteller Susan A
11797 Felix Elorian R [9]+ 835-9717
Felix Michael A 835-9717
11803 Rae Roy V [9]+ 836-9370
Rae Deanna E 836-9370
11818 Juelke Donald M [9]+ 835-1970
Juelke Donna M 835-1970
11821 Peters Rosemarie P [9]+
11847 Gwerder James A [4] 832-7806
Gwerder Annamarie M 832-7806
11850 Simpson John W [9]+ 836-2898
Simpson Sheila J 836-2898
11860 Orr Dale V [9]+ 833-0123
Orr Tami R 833-0123
11925 Hendricks Kentucky F [9]+
11929 (N) Kirkpatrick Dudley R 835-3307
12200 Marsh Francis F Jr [9]+ 835-9574
Marsh Suzanne C 835-9574
12201 (N) Galaviz Al 839-8812
12260 Yon Jerry A [9]+
Yon Lynda L
12750 Hudson Rich S & Susan [8]
12848 Rinauro Joseph P [9]+ 835-1614
Rinauro Carie L 835-1614
RINAURO JOE gen farms prim crop
..... 835-1614
13203 Zambetti John D [9]+ 836-1296
Zambetti Angela D 836-1296

+ S LAMMERS RD INTERSECTS

BUSINESSES 8 HOUSEHOLDS 52

VANDERBILT CIR (MANTECA)-FROM 801 MELLON AVE SOUTHEAST

Target Street	Cross Street	Source
✓	-	Polk's City Directory

W. Valpico Road 1996

8820	Edwards Barbara	-9143	R012	835-4519
	Edwards David	-9143	R012	835-4519
11150	Casipit Herbert L	-8103	R001	835-8820
11299	Rubio Dimas	-8117	R001	835-9619
11423	Redinger Clifford S	-8118	R001	835-8242
11441	Wolford Ann	-8118	R001	833-0865
	Wolford Dale	-8118	R001	833-0865
11505	Silva Joseph D	-9124	R001	836-5938
11545	Berumen R	-9124	R001	833-7688
11625	Garcia Thomas R	-9124	R001	835-7363
11797	Felix E R	-9124	R001	835-9717
11818	Juelke Donald M	-9124	R001	835-1970
11847	Frydendahl Art	-9124	R001	835-1109
11860	Orr Dale	-9124	R001	833-0123
	Orr Tami	-9124	R001	833-0123
12848	Rinauro Joe	-9119	R001	835-1614

BUSINESSES 13 HOUSEHOLDS 20

VALVERDE CT *(LA)* **95330**

Target Street	Cross Street	Source
✓	-	Polk's City Directory

W. Valpico Road 1991

3

VALPICO RD WEST –FROM TRACY BLVD WEST TO CITY LIMITS

ZIP CODE 95376

75 Walker Stewart Co
Matthes Trucking 835-4907
100 No Return
400 Inland Container Corp
836-1971
1100 Bal Ball & Brosamer
7855★Elissagaray Roger
7913★Fisher Jack A Jr
8001 No Return
8033★Bakerink Joyce
8036-8079 No Return (2 Hses)
8207★Fisher James V
8364★Frerichs S John
8696★Martin Tony
8717★Matthews Thos F
8738 No Return
8820★Edwards David
8830★Kaiser Edw
8888-8910 No Return (2 Hses)
8950★Cose Donald A
8952-8976 No Return (2 Hses)

Target Street	Cross Street	Source
-	✓	Polk's City Directory

S. Corral Hollow Road 2000

Skelton Rebecca S	832-1307
26930 Pineda Santiago [8]	835-3694
26978 Rodriguez Roberto [5]	832-7623
27022 Waltrip Sally L [7] ☗	
Waltrip Charles G Sr	
27088 (N) Gadow John	833-7026
Lanza Richard Z & Rebecca [9]+ ☗	835-6065
27104 Barenchi Ronald L [9]+ ☗	835-6602
Barenchi Phyllis A	835-6602
27110 Ortega Daniel R [2] ☗	
Ortega Tina M	
27162 (N) Ramirez Julian R Jr	835-2573
27220 McIntyre Michael [9]+ ☗	836-3257
McIntyre Brian S	836-3257
27290 Not Verified	
27310 Serpa Arthur J & Dolores [9]+ ☗	
27350 Fresques Michael S Jr [9]+ ☗	
Fresques Bonny L	
27452 Crume Alfred G [9]+ ☗	
Crume Mary R	
27488 Krasna Steve N [3] ☗	832-5393
Krasna Joanne D	832-5393
27510 Mello Francoise K [9]+ ☗	
Mello Arthur	
27550 Villarreal Paul X Jr [7] ☗	832-5287
Villarreal Policarpio Jr	832-5287
27600 Weberski Mark [9]+ ☗	
Weberski Deborah A	
27608 (N) Scialabba Karen	
27680 (N) Roycroft William F ☗	833-0948
Roycroft Teresa R	833-0948
27743 Haynes Joyce L [7] ☗	
Haynes Roy E	
27766 Aspeitia Michel [9]+ ☗	835-5391
Aspeitia Jill M	835-5391
27784 (N) Rhodes Jeffrey M ☗	
Rhodes Anne W	
28001 (N) Valdez Ana M ☗	
28720 (N) Torres Alberto A	
29272 Griffith Larry E & Marla [7] ☗	
29290 Goodson Robert K & Shelly [9]+ ☗	
	836-0142

Target Street	Cross Street	Source
-	✓	Polk's City Directory

S. Corral Hollow Road 1996



E	-9108	R001	835-6031
26101 Figueiredo David P	-9108	R001	835-8385
26111 Jones Dwight	-9108	R001	835-8305
Jones Jody	-9108	R001	835-8305
26172 Alexander F E	-9108	R001	833-9588
26193 Bradley Fred J	-9108	R001	832-4712
26395 Callahan Lawrence A	-9118	R001	835-8075
26930 Pineda Santia	-9118	R001	835-3694
26978 Rodriguez Roberto	-9118	R001	832-7623
27088 Lanza Richard	-8114	R001	835-6065
27104 Barenchi Ronald	-8114	R001	835-6602
27162 Ramirez Julian R Jr	-8114	R001	835-2573
27220 McIntyre Mike	-8115	R001	836-3257
27488 Reese Ron	-9121	R001	836-3137
27680 LASITER JANITORIAL & LANDSCAPE	-9121	R001	836-2382
27766 Azpeitia Jill	-8884	R001	835-5391
Azpeitia Mike	-8884	R001	835-5391
29272 SARGENT & LUNDY	-9122	R001	836-5963
30003 BITTERTOY KENNEL	-9122	R001	836-2149
Bitter Henry Jr	-9122	R001	836-2149

BUSINESSES 7 HOUSEHOLDS 49

CORREIA PL (M) 95337

Target Street	Cross Street	Source
-	✓	Polk's City Directory

S. Corral Hollow Road **1991**

26267-26275 No Return (2 Hses)
26325★Lohr Victor E 835-3272
26391★Haney Leland R
26395★Callahan Lawrence A
26909-26978 No Return (2 Hses)
27088★Lanza Richd ◎ 835-6065
27104★Barenchi Ronald 835-6602
27220★Mc Intyre Michl ◎
836-3257
27290-27452 No Return (2 Hses)
27488★Reese Ronald ◎
27510 No Return
27550★Cannon Bob J ◎ 835-7401
27600-27688 No Return (2 Hses)
27743 Tarowski Construction contr
835-2786
★Tarowski Ray 835-2786
27766★Azpeitia Mike ◎
29290★Goodson Robt ◎
30003 Bittertoy Kennels 836-2149
★Bitter Henry Jr ◎
836-2149

Target Street	Cross Street	Source
-	✓	Polk's City Directory

S. Corral Hollow Road 1986



5

CORRAL HOLLOW RD
—FROM HIGHWAY 50
SOUTH

ZIP CODE 95376
24155 State Div Of Highways
(Tracy Mtce Sta)
835-6779
KROHN RD INTERSECTS
24516 Sharp Ralph V Jr ◎
835-6936
24534 Walter Al L ◎ 835-2694
24550 Calvary Baptist Church
835-1892
24696 Bradshaw John M ◎
836-1130
24765 Soares Heavy Equipment
Transport 835-0325
24767★Bell Sheila ◎ 835-7969
SCHULTE RD INTERSECTS
25003 No Return
25473 Jaques Tony E ◎ 835-1888
S P R R INTERSECTS

30

COSTA CT —FROM 1600
DUNCAN DR

ZIP CODE 95376
2160★Zigler Wm ◎

APPENDIX G

SUNSTAR LABORATORIES

Analytical Laboratory Report

APPENDIX G



SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

21 March 2013

Richard Gandolfo
Engeo
2213 Plaza Dr.
Rocklin, CA 95765

RE: 11150 W. Valpico

Enclosed are the results of analyses for samples received by the laboratory on 03/14/13 09:50. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Daniel Chavez
Project Manager

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Engeo	Project: 11150 W. Valpico	
2213 Plaza Dr.	Project Number: [none]	**Reported:**
Rocklin CA, 95765	Project Manager: Richard Gandolfo	03/21/13 13:56

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
CS1-A	T130581-01	Soil	03/13/13 08:30	03/14/13 09:50
CS2-A	T130581-05	Soil	03/13/13 09:38	03/14/13 09:50
CS3-A	T130581-09	Soil	03/13/13 10:25	03/14/13 09:50
CS4-A	T130581-13	Soil	03/13/13 11:19	03/14/13 09:50
CS5-A	T130581-17	Soil	03/13/13 08:50	03/14/13 09:50
CS6-A	T130581-21	Soil	03/13/13 10:08	03/14/13 09:50
CS7-A	T130581-25	Soil	03/13/13 10:33	03/14/13 09:50
CS8-A	T130581-29	Soil	03/13/13 11:11	03/14/13 09:50
CS9-A	T130581-33	Soil	03/13/13 08:55	03/14/13 09:50
CS10-A	T130581-37	Soil	03/13/13 10:04	03/14/13 09:50
CS11-A	T130581-41	Soil	03/13/13 10:40	03/14/13 09:50
CS12-A	T130581-45	Soil	03/13/13 11:11	03/14/13 09:50
COMP: CS1-ABCD	T130581-49	Soil	03/13/13 00:00	03/14/13 09:50
COMP: CS2-ABCD	T130581-50	Soil	03/13/13 00:00	03/14/13 09:50
COMP: CS3-ABCD	T130581-51	Soil	03/13/13 00:00	03/14/13 09:50
COMP: CS4-ABCD	T130581-52	Soil	03/13/13 00:00	03/14/13 09:50
COMP: CS5-ABCD	T130581-53	Soil	03/13/13 00:00	03/14/13 09:50
COMP: CS6-ABCD	T130581-54	Soil	03/13/13 00:00	03/14/13 09:50
COMP: CS7-ABCD	T130581-55	Soil	03/13/13 00:00	03/14/13 09:50
COMP: CS8-ABCD	T130581-56	Soil	03/13/13 00:00	03/14/13 09:50
COMP: CS9-ABCD	T130581-57	Soil	03/13/13 00:00	03/14/13 09:50
COMP: CS10-ABCD	T130581-58	Soil	03/13/13 00:00	03/14/13 09:50
COMP: CS11-ABCD	T130581-59	Soil	03/13/13 00:00	03/14/13 09:50
COMP: CS12-ABCD	T130581-60	Soil	03/13/13 00:00	03/14/13 09:50

SunStar Laboratories, Inc.

Daniel J Chavez

Daniel Chavez, Project Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Engeo	Project: 11150 W. Valpico	
2213 Plaza Dr.	Project Number: [none]	**Reported:**
Rocklin CA, 95765	Project Manager: Richard Gandolfo	03/21/13 13:56

CS1-A

T130581-01 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SunStar Laboratories, Inc.									
Metals by EPA 6010B									
Arsenic	ND	5.0	mg/kg	1	3031445	03/14/13	03/15/13	EPA 6010B	

SunStar Laboratories, Inc.

Daniel Chavez, Project Manager

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SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Engeo	Project: 11150 W. Valpico	
2213 Plaza Dr.	Project Number: [none]	**Reported:**
Rocklin CA, 95765	Project Manager: Richard Gandolfo	03/21/13 13:56

CS2-A

T130581-05 (Soil)

SunStar Laboratories, Inc.

Metals by EPA 6010B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	5.0	mg/kg	1	3031445	03/14/13	03/15/13	EPA 6010B	

SunStar Laboratories, Inc.

Daniel Chavez, Project Manager

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SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Engeo	Project: 11150 W. Valpico	
2213 Plaza Dr.	Project Number: [none]	**Reported:**
Rocklin CA, 95765	Project Manager: Richard Gandolfo	03/21/13 13:56

CS3-A

T130581-09 (Soil)

SunStar Laboratories, Inc.

Metals by EPA 6010B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	5.0	mg/kg	1	3031445	03/14/13	03/15/13	EPA 6010B	

SunStar Laboratories, Inc.

Daniel Chavez, Project Manager

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SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Engeo	Project: 11150 W. Valpico	
2213 Plaza Dr.	Project Number: [none]	**Reported:**
Rocklin CA, 95765	Project Manager: Richard Gandolfo	03/21/13 13:56

CS4-A

T130581-13 (Soil)

SunStar Laboratories, Inc.

Metals by EPA 6010B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	5.0	mg/kg	1	3031445	03/14/13	03/15/13	EPA 6010B	

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Engeo	Project: 11150 W. Valpico	
2213 Plaza Dr.	Project Number: [none]	**Reported:**
Rocklin CA, 95765	Project Manager: Richard Gandolfo	03/21/13 13:56

CS5-A

T130581-17 (Soil)

SunStar Laboratories, Inc.

Metals by EPA 6010B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	5.0	mg/kg	1	3031445	03/14/13	03/15/13	EPA 6010B	

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Engeo	Project: 11150 W. Valpico	
2213 Plaza Dr.	Project Number: [none]	**Reported:**
Rocklin CA, 95765	Project Manager: Richard Gandolfo	03/21/13 13:56

CS6-A

T130581-21 (Soil)

SunStar Laboratories, Inc.

Metals by EPA 6010B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	5.0	mg/kg	1	3031445	03/14/13	03/15/13	EPA 6010B	

SunStar Laboratories, Inc.

Daniel Chavez, Project Manager

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SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Engeo	Project: 11150 W. Valpico	
2213 Plaza Dr.	Project Number: [none]	**Reported:**
Rocklin CA, 95765	Project Manager: Richard Gandolfo	03/21/13 13:56

CS7-A

T130581-25 (Soil)

SunStar Laboratories, Inc.

Metals by EPA 6010B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	5.0	mg/kg	1	3031445	03/14/13	03/15/13	EPA 6010B	

SunStar Laboratories, Inc.

Daniel Chavez, Project Manager

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SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Engeo	Project: 11150 W. Valpico	
2213 Plaza Dr.	Project Number: [none]	**Reported:**
Rocklin CA, 95765	Project Manager: Richard Gandolfo	03/21/13 13:56

CS8-A

T130581-29 (Soil)

SunStar Laboratories, Inc.

Metals by EPA 6010B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	5.0	mg/kg	1	3031445	03/14/13	03/15/13	EPA 6010B	

SunStar Laboratories, Inc.

Daniel Chavez, Project Manager

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SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Engeo	Project: 11150 W. Valpico	
2213 Plaza Dr.	Project Number: [none]	**Reported:**
Rocklin CA, 95765	Project Manager: Richard Gandolfo	03/21/13 13:56

CS9-A

T130581-33 (Soil)

SunStar Laboratories, Inc.

Metals by EPA 6010B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	5.0	mg/kg	1	3031445	03/14/13	03/15/13	EPA 6010B	

SunStar Laboratories, Inc.

Daniel Chavez, Project Manager

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SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Engeo	Project: 11150 W. Valpico	
2213 Plaza Dr.	Project Number: [none]	**Reported:**
Rocklin CA, 95765	Project Manager: Richard Gandolfo	03/21/13 13:56

CS10-A

T130581-37 (Soil)

SunStar Laboratories, Inc.

Metals by EPA 6010B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	5.0	mg/kg	1	3031445	03/14/13	03/15/13	EPA 6010B	

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Engeo	Project: 11150 W. Valpico	
2213 Plaza Dr.	Project Number: [none]	**Reported:**
Rocklin CA, 95765	Project Manager: Richard Gandolfo	03/21/13 13:56

CS11-A

T130581-41 (Soil)

SunStar Laboratories, Inc.

Metals by EPA 6010B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	5.0	mg/kg	1	3031445	03/14/13	03/15/13	EPA 6010B	

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Engeo	Project: 11150 W. Valpico	
2213 Plaza Dr.	Project Number: [none]	**Reported:**
Rocklin CA, 95765	Project Manager: Richard Gandolfo	03/21/13 13:56

CS12-A

T130581-45 (Soil)

SunStar Laboratories, Inc.

Metals by EPA 6010B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	5.0	mg/kg	1	3031445	03/14/13	03/15/13	EPA 6010B	

SunStar Laboratories, Inc.

Daniel Chavez, Project Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Engeo	Project: 11150 W. Valpico	
2213 Plaza Dr.	Project Number: [none]	**Reported:**
Rocklin CA, 95765	Project Manager: Richard Gandolfo	03/21/13 13:56

COMP: CS1-ABCD

T130581-49 (Soil)

SunStar Laboratories, Inc.

Organochlorine Pesticides by EPA Method 8081A

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
alpha-BHC	ND	5.0	ug/kg	1	3031446	03/14/13	03/18/13	EPA 8081A	
gamma-BHC (Lindane)	ND	5.0	"	"	"	"	"	"	
beta-BHC	ND	5.0	"	"	"	"	"	"	
delta-BHC	ND	5.0	"	"	"	"	"	"	
Heptachlor	ND	5.0	"	"	"	"	"	"	
Aldrin	ND	5.0	"	"	"	"	"	"	
Heptachlor epoxide	ND	5.0	"	"	"	"	"	"	
gamma-Chlordane	ND	5.0	"	"	"	"	"	"	
alpha-Chlordane	ND	5.0	"	"	"	"	"	"	
Endosulfan I	ND	5.0	"	"	"	"	"	"	
4,4´-DDE	**35**	5.0	"	"	"	"	"	"	
Dieldrin	ND	5.0	"	"	"	"	"	"	
Endrin	ND	5.0	"	"	"	"	"	"	
4,4´-DDD	ND	5.0	"	"	"	"	"	"	
Endosulfan II	ND	5.0	"	"	"	"	"	"	
4,4´-DDT	ND	5.0	"	"	"	"	"	"	
Endrin aldehyde	ND	5.0	"	"	"	"	"	"	
Endosulfan sulfate	ND	5.0	"	"	"	"	"	"	
Methoxychlor	ND	10	"	"	"	"	"	"	
Endrin ketone	ND	5.0	"	"	"	"	"	"	
Toxaphene	ND	200	"	"	"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		*46.3 %*	*35-140*		"	"	"	"	

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Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Engeo	Project: 11150 W. Valpico	
2213 Plaza Dr.	Project Number: [none]	**Reported:**
Rocklin CA, 95765	Project Manager: Richard Gandolfo	03/21/13 13:56

COMP: CS2-ABCD

T130581-50 (Soil)

SunStar Laboratories, Inc.

Organochlorine Pesticides by EPA Method 8081A

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
alpha-BHC	ND	5.0	ug/kg	1	3031446	03/14/13	03/18/13	EPA 8081A	
gamma-BHC (Lindane)	ND	5.0	"	"	"	"	"	"	
beta-BHC	ND	5.0	"	"	"	"	"	"	
delta-BHC	ND	5.0	"	"	"	"	"	"	
Heptachlor	ND	5.0	"	"	"	"	"	"	
Aldrin	ND	5.0	"	"	"	"	"	"	
Heptachlor epoxide	ND	5.0	"	"	"	"	"	"	
gamma-Chlordane	ND	5.0	"	"	"	"	"	"	
alpha-Chlordane	ND	5.0	"	"	"	"	"	"	
Endosulfan I	ND	5.0	"	"	"	"	"	"	
4,4´-DDE	**28**	5.0	"	"	"	"	"	"	
Dieldrin	ND	5.0	"	"	"	"	"	"	
Endrin	ND	5.0	"	"	"	"	"	"	
4,4´-DDD	ND	5.0	"	"	"	"	"	"	
Endosulfan II	ND	5.0	"	"	"	"	"	"	
4,4´-DDT	ND	5.0	"	"	"	"	"	"	
Endrin aldehyde	ND	5.0	"	"	"	"	"	"	
Endosulfan sulfate	ND	5.0	"	"	"	"	"	"	
Methoxychlor	ND	10	"	"	"	"	"	"	
Endrin ketone	ND	5.0	"	"	"	"	"	"	
Toxaphene	ND	200	"	"	"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		*47.5 %*	*35-140*		"	"	"	"	

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949.297.5020 Phone
949.297.5027 Fax

Engeo	Project: 11150 W. Valpico	
2213 Plaza Dr.	Project Number: [none]	**Reported:**
Rocklin CA, 95765	Project Manager: Richard Gandolfo	03/21/13 13:56

COMP: CS3-ABCD

T130581-51 (Soil)

SunStar Laboratories, Inc.

Organochlorine Pesticides by EPA Method 8081A

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
alpha-BHC	ND	5.0	ug/kg	1	3031446	03/14/13	03/18/13	EPA 8081A	
gamma-BHC (Lindane)	ND	5.0	"	"	"	"	"	"	
beta-BHC	ND	5.0	"	"	"	"	"	"	
delta-BHC	ND	5.0	"	"	"	"	"	"	
Heptachlor	ND	5.0	"	"	"	"	"	"	
Aldrin	ND	5.0	"	"	"	"	"	"	
Heptachlor epoxide	ND	5.0	"	"	"	"	"	"	
gamma-Chlordane	ND	5.0	"	"	"	"	"	"	
alpha-Chlordane	ND	5.0	"	"	"	"	"	"	
Endosulfan I	ND	5.0	"	"	"	"	"	"	
4,4´-DDE	**36**	5.0	"	"	"	"	"	"	
Dieldrin	ND	5.0	"	"	"	"	"	"	
Endrin	ND	5.0	"	"	"	"	"	"	
4,4´-DDD	ND	5.0	"	"	"	"	"	"	
Endosulfan II	ND	5.0	"	"	"	"	"	"	
4,4´-DDT	ND	5.0	"	"	"	"	"	"	
Endrin aldehyde	ND	5.0	"	"	"	"	"	"	
Endosulfan sulfate	ND	5.0	"	"	"	"	"	"	
Methoxychlor	ND	10	"	"	"	"	"	"	
Endrin ketone	ND	5.0	"	"	"	"	"	"	
Toxaphene	ND	200	"	"	"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		*49.4 %*	*35-140*		"	"	"	"	

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949.297.5027 Fax

Engeo	Project: 11150 W. Valpico	
2213 Plaza Dr.	Project Number: [none]	**Reported:**
Rocklin CA, 95765	Project Manager: Richard Gandolfo	03/21/13 13:56

COMP: CS4-ABCD

T130581-52 (Soil)

SunStar Laboratories, Inc.

Organochlorine Pesticides by EPA Method 8081A

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
alpha-BHC	ND	5.0	ug/kg	1	3031446	03/14/13	03/18/13	EPA 8081A	
gamma-BHC (Lindane)	ND	5.0	"	"	"	"	"	"	
beta-BHC	ND	5.0	"	"	"	"	"	"	
delta-BHC	ND	5.0	"	"	"	"	"	"	
Heptachlor	ND	5.0	"	"	"	"	"	"	
Aldrin	ND	5.0	"	"	"	"	"	"	
Heptachlor epoxide	ND	5.0	"	"	"	"	"	"	
gamma-Chlordane	ND	5.0	"	"	"	"	"	"	
alpha-Chlordane	**12**	5.0	"	"	"	"	"	"	
Endosulfan I	ND	5.0	"	"	"	"	"	"	
4,4´-DDE	**11**	5.0	"	"	"	"	"	"	
Dieldrin	ND	5.0	"	"	"	"	"	"	
Endrin	ND	5.0	"	"	"	"	"	"	
4,4´-DDD	ND	5.0	"	"	"	"	"	"	
Endosulfan II	ND	5.0	"	"	"	"	"	"	
4,4´-DDT	ND	5.0	"	"	"	"	"	"	
Endrin aldehyde	ND	5.0	"	"	"	"	"	"	
Endosulfan sulfate	ND	5.0	"	"	"	"	"	"	
Methoxychlor	ND	10	"	"	"	"	"	"	
Endrin ketone	ND	5.0	"	"	"	"	"	"	
Toxaphene	ND	200	"	"	"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		*46.9 %*	*35-140*		"	"	"	"	

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Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Engeo	Project: 11150 W. Valpico	
2213 Plaza Dr.	Project Number: [none]	**Reported:**
Rocklin CA, 95765	Project Manager: Richard Gandolfo	03/21/13 13:56

COMP: CS5-ABCD

T130581-53 (Soil)

SunStar Laboratories, Inc.

Organochlorine Pesticides by EPA Method 8081A

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
alpha-BHC	ND	5.0	ug/kg	1	3031446	03/14/13	03/18/13	EPA 8081A	
gamma-BHC (Lindane)	ND	5.0	"	"	"	"	"	"	
beta-BHC	ND	5.0	"	"	"	"	"	"	
delta-BHC	ND	5.0	"	"	"	"	"	"	
Heptachlor	ND	5.0	"	"	"	"	"	"	
Aldrin	ND	5.0	"	"	"	"	"	"	
Heptachlor epoxide	ND	5.0	"	"	"	"	"	"	
gamma-Chlordane	ND	5.0	"	"	"	"	"	"	
alpha-Chlordane	ND	5.0	"	"	"	"	"	"	
Endosulfan I	ND	5.0	"	"	"	"	"	"	
4,4´-DDE	**14**	5.0	"	"	"	"	"	"	
Dieldrin	ND	5.0	"	"	"	"	"	"	
Endrin	ND	5.0	"	"	"	"	"	"	
4,4´-DDD	ND	5.0	"	"	"	"	"	"	
Endosulfan II	ND	5.0	"	"	"	"	"	"	
4,4´-DDT	ND	5.0	"	"	"	"	"	"	
Endrin aldehyde	ND	5.0	"	"	"	"	"	"	
Endosulfan sulfate	ND	5.0	"	"	"	"	"	"	
Methoxychlor	ND	10	"	"	"	"	"	"	
Endrin ketone	ND	5.0	"	"	"	"	"	"	
Toxaphene	ND	200	"	"	"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		*48.2 %*	*35-140*		"	"	"	"	

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949.297.5020 Phone
949.297.5027 Fax

Engeo	Project: 11150 W. Valpico	
2213 Plaza Dr.	Project Number: [none]	**Reported:**
Rocklin CA, 95765	Project Manager: Richard Gandolfo	03/21/13 13:56

COMP: CS6-ABCD

T130581-54 (Soil)

SunStar Laboratories, Inc.

Organochlorine Pesticides by EPA Method 8081A

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
alpha-BHC	ND	5.0	ug/kg	1	3031446	03/14/13	03/18/13	EPA 8081A	
gamma-BHC (Lindane)	ND	5.0	"	"	"	"	"	"	
beta-BHC	ND	5.0	"	"	"	"	"	"	
delta-BHC	ND	5.0	"	"	"	"	"	"	
Heptachlor	ND	5.0	"	"	"	"	"	"	
Aldrin	ND	5.0	"	"	"	"	"	"	
Heptachlor epoxide	ND	5.0	"	"	"	"	"	"	
gamma-Chlordane	ND	5.0	"	"	"	"	"	"	
alpha-Chlordane	ND	5.0	"	"	"	"	"	"	
Endosulfan I	ND	5.0	"	"	"	"	"	"	
4,4´-DDE	**28**	5.0	"	"	"	"	"	"	
Dieldrin	ND	5.0	"	"	"	"	"	"	
Endrin	ND	5.0	"	"	"	"	"	"	
4,4´-DDD	ND	5.0	"	"	"	"	"	"	
Endosulfan II	ND	5.0	"	"	"	"	"	"	
4,4´-DDT	ND	5.0	"	"	"	"	"	"	
Endrin aldehyde	ND	5.0	"	"	"	"	"	"	
Endosulfan sulfate	ND	5.0	"	"	"	"	"	"	
Methoxychlor	ND	10	"	"	"	"	"	"	
Endrin ketone	ND	5.0	"	"	"	"	"	"	
Toxaphene	ND	200	"	"	"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		*46.9 %*	*35-140*		"	"	"	"	

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949.297.5020 Phone
949.297.5027 Fax

Engeo	Project: 11150 W. Valpico	
2213 Plaza Dr.	Project Number: [none]	**Reported:**
Rocklin CA, 95765	Project Manager: Richard Gandolfo	03/21/13 13:56

COMP: CS7-ABCD

T130581-55 (Soil)

SunStar Laboratories, Inc.

Organochlorine Pesticides by EPA Method 8081A

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
alpha-BHC	ND	5.0	ug/kg	1	3031446	03/14/13	03/18/13	EPA 8081A	
gamma-BHC (Lindane)	ND	5.0	"	"	"	"	"	"	
beta-BHC	ND	5.0	"	"	"	"	"	"	
delta-BHC	ND	5.0	"	"	"	"	"	"	
Heptachlor	ND	5.0	"	"	"	"	"	"	
Aldrin	ND	5.0	"	"	"	"	"	"	
Heptachlor epoxide	ND	5.0	"	"	"	"	"	"	
gamma-Chlordane	ND	5.0	"	"	"	"	"	"	
alpha-Chlordane	ND	5.0	"	"	"	"	"	"	
Endosulfan I	ND	5.0	"	"	"	"	"	"	
4,4´-DDE	**59**	5.0	"	"	"	"	"	"	
Dieldrin	ND	5.0	"	"	"	"	"	"	
Endrin	ND	5.0	"	"	"	"	"	"	
4,4´-DDD	ND	5.0	"	"	"	"	"	"	
Endosulfan II	ND	5.0	"	"	"	"	"	"	
4,4´-DDT	ND	5.0	"	"	"	"	"	"	
Endrin aldehyde	ND	5.0	"	"	"	"	"	"	
Endosulfan sulfate	ND	5.0	"	"	"	"	"	"	
Methoxychlor	ND	10	"	"	"	"	"	"	
Endrin ketone	ND	5.0	"	"	"	"	"	"	
Toxaphene	ND	200	"	"	"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		*45.9 %*	*35-140*		"	"	"	"	

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949.297.5027 Fax

Engeo	Project: 11150 W. Valpico	
2213 Plaza Dr.	Project Number: [none]	**Reported:**
Rocklin CA, 95765	Project Manager: Richard Gandolfo	03/21/13 13:56

COMP: CS8-ABCD

T130581-56 (Soil)

SunStar Laboratories, Inc.

Organochlorine Pesticides by EPA Method 8081A

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
alpha-BHC	ND	5.0	ug/kg	1	3031446	03/14/13	03/18/13	EPA 8081A	
gamma-BHC (Lindane)	ND	5.0	"	"	"	"	"	"	
beta-BHC	ND	5.0	"	"	"	"	"	"	
delta-BHC	ND	5.0	"	"	"	"	"	"	
Heptachlor	ND	5.0	"	"	"	"	"	"	
Aldrin	ND	5.0	"	"	"	"	"	"	
Heptachlor epoxide	ND	5.0	"	"	"	"	"	"	
gamma-Chlordane	ND	5.0	"	"	"	"	"	"	
alpha-Chlordane	ND	5.0	"	"	"	"	"	"	
Endosulfan I	ND	5.0	"	"	"	"	"	"	
4,4´-DDE	**30**	5.0	"	"	"	"	"	"	
Dieldrin	ND	5.0	"	"	"	"	"	"	
Endrin	ND	5.0	"	"	"	"	"	"	
4,4´-DDD	ND	5.0	"	"	"	"	"	"	
Endosulfan II	ND	5.0	"	"	"	"	"	"	
4,4´-DDT	ND	5.0	"	"	"	"	"	"	
Endrin aldehyde	ND	5.0	"	"	"	"	"	"	
Endosulfan sulfate	ND	5.0	"	"	"	"	"	"	
Methoxychlor	ND	10	"	"	"	"	"	"	
Endrin ketone	ND	5.0	"	"	"	"	"	"	
Toxaphene	ND	200	"	"	"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		*46.6 %*	*35-140*		"	"	"	"	

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Daniel Chavez, Project Manager

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949.297.5027 Fax

Engeo	Project: 11150 W. Valpico	
2213 Plaza Dr.	Project Number: [none]	**Reported:**
Rocklin CA, 95765	Project Manager: Richard Gandolfo	03/21/13 13:56

COMP: CS9-ABCD

T130581-57 (Soil)

SunStar Laboratories, Inc.

Organochlorine Pesticides by EPA Method 8081A

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
alpha-BHC	ND	5.0	ug/kg	1	3031446	03/14/13	03/18/13	EPA 8081A	
gamma-BHC (Lindane)	ND	5.0	"	"	"	"	"	"	
beta-BHC	ND	5.0	"	"	"	"	"	"	
delta-BHC	ND	5.0	"	"	"	"	"	"	
Heptachlor	ND	5.0	"	"	"	"	"	"	
Aldrin	ND	5.0	"	"	"	"	"	"	
Heptachlor epoxide	ND	5.0	"	"	"	"	"	"	
gamma-Chlordane	ND	5.0	"	"	"	"	"	"	
alpha-Chlordane	ND	5.0	"	"	"	"	"	"	
Endosulfan I	ND	5.0	"	"	"	"	"	"	
4,4´-DDE	**7.6**	5.0	"	"	"	"	"	"	
Dieldrin	ND	5.0	"	"	"	"	"	"	
Endrin	ND	5.0	"	"	"	"	"	"	
4,4´-DDD	ND	5.0	"	"	"	"	"	"	
Endosulfan II	ND	5.0	"	"	"	"	"	"	
4,4´-DDT	ND	5.0	"	"	"	"	"	"	
Endrin aldehyde	ND	5.0	"	"	"	"	"	"	
Endosulfan sulfate	ND	5.0	"	"	"	"	"	"	
Methoxychlor	ND	10	"	"	"	"	"	"	
Endrin ketone	ND	5.0	"	"	"	"	"	"	
Toxaphene	ND	200	"	"	"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		*46.2 %*	*35-140*		"	"	"	"	

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949.297.5027 Fax

Engeo	Project: 11150 W. Valpico	
2213 Plaza Dr.	Project Number: [none]	**Reported:**
Rocklin CA, 95765	Project Manager: Richard Gandolfo	03/21/13 13:56

COMP: CS10-ABCD

T130581-58 (Soil)

SunStar Laboratories, Inc.

Organochlorine Pesticides by EPA Method 8081A

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
alpha-BHC	ND	5.0	ug/kg	1	3031446	03/14/13	03/18/13	EPA 8081A	
gamma-BHC (Lindane)	ND	5.0	"	"	"	"	"	"	
beta-BHC	ND	5.0	"	"	"	"	"	"	
delta-BHC	ND	5.0	"	"	"	"	"	"	
Heptachlor	ND	5.0	"	"	"	"	"	"	
Aldrin	ND	5.0	"	"	"	"	"	"	
Heptachlor epoxide	ND	5.0	"	"	"	"	"	"	
gamma-Chlordane	ND	5.0	"	"	"	"	"	"	
alpha-Chlordane	ND	5.0	"	"	"	"	"	"	
Endosulfan I	ND	5.0	"	"	"	"	"	"	
4,4´-DDE	**35**	5.0	"	"	"	"	"	"	
Dieldrin	ND	5.0	"	"	"	"	"	"	
Endrin	ND	5.0	"	"	"	"	"	"	
4,4´-DDD	ND	5.0	"	"	"	"	"	"	
Endosulfan II	ND	5.0	"	"	"	"	"	"	
4,4´-DDT	ND	5.0	"	"	"	"	"	"	
Endrin aldehyde	ND	5.0	"	"	"	"	"	"	
Endosulfan sulfate	ND	5.0	"	"	"	"	"	"	
Methoxychlor	ND	10	"	"	"	"	"	"	
Endrin ketone	ND	5.0	"	"	"	"	"	"	
Toxaphene	ND	200	"	"	"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		*50.1 %*	*35-140*		"	"	"	"	

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Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Engeo	Project: 11150 W. Valpico	
2213 Plaza Dr.	Project Number: [none]	**Reported:**
Rocklin CA, 95765	Project Manager: Richard Gandolfo	03/21/13 13:56

COMP: CS11-ABCD

T130581-59 (Soil)

SunStar Laboratories, Inc.

Organochlorine Pesticides by EPA Method 8081A

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
alpha-BHC	ND	5.0	ug/kg	1	3031446	03/14/13	03/18/13	EPA 8081A	
gamma-BHC (Lindane)	ND	5.0	"	"	"	"	"	"	
beta-BHC	ND	5.0	"	"	"	"	"	"	
delta-BHC	ND	5.0	"	"	"	"	"	"	
Heptachlor	ND	5.0	"	"	"	"	"	"	
Aldrin	ND	5.0	"	"	"	"	"	"	
Heptachlor epoxide	ND	5.0	"	"	"	"	"	"	
gamma-Chlordane	ND	5.0	"	"	"	"	"	"	
alpha-Chlordane	ND	5.0	"	"	"	"	"	"	
Endosulfan I	ND	5.0	"	"	"	"	"	"	
4,4´-DDE	**63**	5.0	"	"	"	"	"	"	
Dieldrin	ND	5.0	"	"	"	"	"	"	
Endrin	ND	5.0	"	"	"	"	"	"	
4,4´-DDD	ND	5.0	"	"	"	"	"	"	
Endosulfan II	ND	5.0	"	"	"	"	"	"	
4,4´-DDT	ND	5.0	"	"	"	"	"	"	
Endrin aldehyde	ND	5.0	"	"	"	"	"	"	
Endosulfan sulfate	ND	5.0	"	"	"	"	"	"	
Methoxychlor	ND	10	"	"	"	"	"	"	
Endrin ketone	ND	5.0	"	"	"	"	"	"	
Toxaphene	ND	200	"	"	"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		*51.4 %*	*35-140*		"	"	"	"	

SunStar Laboratories, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Daniel Chavez, Project Manager

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Engeo	Project: 11150 W. Valpico	
2213 Plaza Dr.	Project Number: [none]	**Reported:**
Rocklin CA, 95765	Project Manager: Richard Gandolfo	03/21/13 13:56

COMP: CS12-ABCD

T130581-60 (Soil)

SunStar Laboratories, Inc.

Organochlorine Pesticides by EPA Method 8081A

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
alpha-BHC	ND	5.0	ug/kg	1	3031446	03/14/13	03/18/13	EPA 8081A	
gamma-BHC (Lindane)	ND	5.0	"	"	"	"	"	"	
beta-BHC	ND	5.0	"	"	"	"	"	"	
delta-BHC	ND	5.0	"	"	"	"	"	"	
Heptachlor	ND	5.0	"	"	"	"	"	"	
Aldrin	ND	5.0	"	"	"	"	"	"	
Heptachlor epoxide	ND	5.0	"	"	"	"	"	"	
gamma-Chlordane	ND	5.0	"	"	"	"	"	"	
alpha-Chlordane	ND	5.0	"	"	"	"	"	"	
Endosulfan I	ND	5.0	"	"	"	"	"	"	
4,4´-DDE	**27**	5.0	"	"	"	"	"	"	
Dieldrin	ND	5.0	"	"	"	"	"	"	
Endrin	ND	5.0	"	"	"	"	"	"	
4,4´-DDD	ND	5.0	"	"	"	"	"	"	
Endosulfan II	ND	5.0	"	"	"	"	"	"	
4,4´-DDT	ND	5.0	"	"	"	"	"	"	
Endrin aldehyde	ND	5.0	"	"	"	"	"	"	
Endosulfan sulfate	ND	5.0	"	"	"	"	"	"	
Methoxychlor	ND	10	"	"	"	"	"	"	
Endrin ketone	ND	5.0	"	"	"	"	"	"	
Toxaphene	ND	200	"	"	"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		*45.6 %*	*35-140*		"	"	"	"	

SunStar Laboratories, Inc.

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Daniel Chavez, Project Manager

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Engeo	Project: 11150 W. Valpico	
2213 Plaza Dr.	Project Number: [none]	**Reported:**
Rocklin CA, 95765	Project Manager: Richard Gandolfo	03/21/13 13:56

Metals by EPA 6010B - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3031445 - EPA 3051										
Blank (3031445-BLK1)				Prepared: 03/14/13 Analyzed: 03/15/13						
Arsenic	ND	5.0	mg/kg							
LCS (3031445-BS1)				Prepared: 03/14/13 Analyzed: 03/15/13						
Arsenic	106	5.0	mg/kg	100		106	75-125			
Matrix Spike (3031445-MS1)	**Source: T130581-45**			Prepared: 03/14/13 Analyzed: 03/15/13						
Arsenic	95.8	5.0	mg/kg	100	3.84	92.0	75-125			
Matrix Spike Dup (3031445-MSD1)	**Source: T130581-45**			Prepared: 03/14/13 Analyzed: 03/15/13						
Arsenic	96.6	5.0	mg/kg	100	3.84	92.7	75-125	0.789	20	

SunStar Laboratories, Inc.

Daniel J Chávez

Daniel Chavez, Project Manager

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SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Engeo	Project: 11150 W. Valpico	
2213 Plaza Dr.	Project Number: [none]	**Reported:**
Rocklin CA, 95765	Project Manager: Richard Gandolfo	03/21/13 13:56

Organochlorine Pesticides by EPA Method 8081A - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3031446 - EPA 3550 ECD/GCMS										
Blank (3031446-BLK1)				Prepared: 03/14/13 Analyzed: 03/18/13						
alpha-BHC	ND	5.0	ug/kg							
gamma-BHC (Lindane)	ND	5.0	"							
beta-BHC	ND	5.0	"							
delta-BHC	ND	5.0	"							
Heptachlor	ND	5.0	"							
Aldrin	ND	5.0	"							
Heptachlor epoxide	ND	5.0	"							
gamma-Chlordane	ND	5.0	"							
alpha-Chlordane	ND	5.0	"							
Endosulfan I	ND	5.0	"							
4,4´-DDE	ND	5.0	"							
Dieldrin	ND	5.0	"							
Endrin	ND	5.0	"							
4,4´-DDD	ND	5.0	"							
Endosulfan II	ND	5.0	"							
4,4´-DDT	ND	5.0	"							
Endrin aldehyde	ND	5.0	"							
Endosulfan sulfate	ND	5.0	"							
Methoxychlor	ND	10	"							
Endrin ketone	ND	5.0	"							
Toxaphene	ND	200	"							
Surrogate: Tetrachloro-meta-xylene	*45.5*		*"*	*100*		*45.5*	*35-140*			
LCS (3031446-BS1)				Prepared: 03/14/13 Analyzed: 03/18/13						
gamma-BHC (Lindane)	57.0	5.0	ug/kg	100		57.0	40-120			
Heptachlor	54.8	5.0	"	100		54.8	40-120			
Aldrin	50.0	5.0	"	100		50.0	40-120			
Dieldrin	53.1	5.0	"	100		53.1	40-120			
Endrin	59.4	5.0	"	100		59.4	40-120			
4,4´-DDT	54.1	5.0	"	100		54.1	33-147			
Surrogate: Tetrachloro-meta-xylene	*45.1*		*"*	*100*		*45.1*	*35-140*			

SunStar Laboratories, Inc.

Daniel J Chávez

Daniel Chavez, Project Manager

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SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Engeo	Project: 11150 W. Valpico	
2213 Plaza Dr.	Project Number: [none]	**Reported:**
Rocklin CA, 95765	Project Manager: Richard Gandolfo	03/21/13 13:56

Organochlorine Pesticides by EPA Method 8081A - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3031446 - EPA 3550 ECD/GCMS										
Matrix Spike (3031446-MS1)	**Source: T130581-56**			Prepared: 03/14/13	Analyzed: 03/18/13					
gamma-BHC (Lindane)	53.1	5.0	ug/kg	100	ND	53.1	30-120			
Heptachlor	51.0	5.0	"	100	ND	51.0	30-120			
Aldrin	45.6	5.0	"	100	ND	45.6	30-120			
Dieldrin	48.3	5.0	"	100	ND	48.3	30-120			
Endrin	59.2	5.0	"	100	ND	59.2	30-120			
4,4´-DDT	46.5	5.0	"	100	ND	46.5	30-120			
Surrogate: Tetrachloro-meta-xylene	*45.0*		*"*	*100*		*45.0*	*35-140*			
Matrix Spike Dup (3031446-MSD1)	**Source: T130581-56**			Prepared: 03/14/13	Analyzed: 03/18/13					
gamma-BHC (Lindane)	52.3	5.0	ug/kg	100	ND	52.3	30-120	1.59	30	
Heptachlor	56.7	5.0	"	100	ND	56.7	30-120	10.5	30	
Aldrin	44.7	5.0	"	100	ND	44.7	30-120	1.88	30	
Dieldrin	47.8	5.0	"	100	ND	47.8	30-120	1.03	30	
Endrin	56.7	5.0	"	100	ND	56.7	30-120	4.23	30	
4,4´-DDT	57.2	5.0	"	100	ND	57.2	30-120	20.6	30	
Surrogate: Tetrachloro-meta-xylene	*46.6*		*"*	*100*		*46.6*	*35-140*			

SunStar Laboratories, Inc.

Daniel J Chávez

Daniel Chavez, Project Manager

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SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Engeo	Project: 11150 W. Valpico	
2213 Plaza Dr.	Project Number: [none]	**Reported:**
Rocklin CA, 95765	Project Manager: Richard Gandolfo	03/21/13 13:56

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

SunStar Laboratories, Inc.



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Daniel Chavez, Project Manager

SunStar Laboratories, Inc.
25712 Commercentre Dr
Lake Forest, CA 92630
949-297-5020

Chain of Custody Record

Client: ENGEO on file
Address:
Phone: Fax:
Project Manager: R. Gandolfo

Date: 3-13-13 Page: 1 Of 9
Project Name: 11150 W. Valpico
Collector: R. Gandolfo / D. Bhargava Client Project #:
Batch #: T130581 EDF #:

Sample ID	Date Sampled	Time	Sample Type	Container Type	8260	8260 + OXY	8260 BTEX, OXY only	8270	8021 BTEX	8015M (gasoline)	8015M (diesel)	8015M Ext./Carbon Chain	6010/7000 Title 22 Metals	OCP (8081)	Arsenic			Laboratory ID #	Comments/Preservative	Total # of containers
CS1-A	3-13-13	8:30	4 oz	50:1										/	/			01	STD. TAT 3.14.13	1
CS1-B		8:36																02		1
CS1-C		8:40																03		1
CS1-D		8:40																04		1
CS2-A		9:38												/	/			05		1
CS2-B		10:15																06		1
CS2-C		9:36																07		1
CS2-D		10:13																08		1
CS3-A		10:25												/	/			09		1
CS3-B		10:36																10		1
CS3-C		10:30																11		1
CS3-D		10:32																12		1

Relinquished by: (signature)	Date / Time	Received by: (signature)	Date / Time
	3-13-13 1:20		3/13/13 1:20
GSO	3.14.13 9:50		3.14.13 9:50
Relinquished by: (signature)	Date / Time	Received by: (signature)	Date / Time

Total # of containers: 96
Chain of Custody seals Y/N/NA
Seals intact? Y/N/NA
Received good condition/cold: 4.6

Notes: 4:1 comp (8081) Discrete "A" for As.

Turn around time: 5 day

Sample disposal Instructions: Disposal @ $2.00 each X Return to client ____ Pickup ____

COC 112111

SunStar Laboratories, Inc.
25712 Commercentre Dr
Lake Forest, CA 92630
949-297-5020

Chain of Custody Record

Client: ENGEO
Address: for post
Phone: Fax:
Project Manager:

Date: 3-13-13 Page: 2 Of 9
Project Name: 11150 W. Valpico
Collector: R. Gandy / D. Bhargave Client Project #:
Batch #: T130581 EDF #:

Sample ID	Date Sampled	Time	Sample Type	Container Type	8260	8260 + OXY	8260 BTEX, OXY only	8270	8021 BTEX	8015M (gasoline)	8015M (diesel)	8015M Ext./Carbon Chain	6010/7000 Title 22 Metals	OCP (8081) Aroclr			Laboratory ID #	Comments/Preservative	Total # of containers
CS4-A	3-13-13	11:19	Soil	4oz										/			13	STD. TAT 3.14.13	8
CS4-B		11:16															14		1
CS4-C		11:21															15		1
CS4-D		11:25															16		1
CS5-A		8:50												/	/		17		1
CS5-B		8:50															18		1
CS5-C		8:54															19		1
CS5-D		8:54															20		1
CS6-A		10:08												/	/		21		1
CS6-B		10:10															22		1
CS6-C		10:06															23		1
CS6-D		10:05															24		1

Relinquished by: (signature)	Date / Time	Received by: (signature)	Date / Time
	3-13-13 1:20		3/13/13 1:20
GSO	3.14.13 9:50		3.14.13 9:50

Total # of containers: 96
Chain of Custody seals: Y/N/NA
Seals intact? Y/N/NA
Received good condition/cold: 4.6

Turn around time: 5d

Notes: 4:1 Comp (OCP) Discrete "A" for As.

Sample disposal Instructions: Disposal @ $2.00 each X Return to client ____ Pickup ____

COC 112110

SunStar Laboratories, Inc.
25712 Commercentre Dr
Lake Forest, CA 92630
949-297-5020

Chain of Custody Record

Client: ENGEO
Address:
Phone: Fax:
Project Manager: see page 1

Date: 3-13-13 Page: 3 Of 9
Project Name: 1150 W. Valero
Collector: R. Sandelo / D. Bhargave Client Project #:
Batch #: T130581 EDF #:

Sample ID	Date Sampled	Time	Sample Type	Container Type	8260	8260 + OXY	8260 BTEX, OXY only	8270	8021 BTEX	8015M (gasoline)	8015M (diesel)	8015M Ext./Carbon Chain	6010/7000 Title 22 Metals	OCP (8021)	Arsenic		Laboratory ID #	Comments/Preservative	Total # of containers
CS7-A	3-13-13	10:33	Soil	4oz										/	/		25		1
CS7-B		10:30															26		1
CS7-C		10:36															27		1
CS7-D		10:35															28		1
CS8-A		11:11												/	/		29		1
CS8-B		11:13															30		1
CS8-C		11:15															31		1
CS8-D		11:10															32		1
CS9-A		8:55												/	/		33		1
CS9-B		9:00															34		1
CS9-C		9:00															35		1
CS9-D		9:05															36		1

STD. TAT
3.14.13
82

Relinquished by: (signature)	Date / Time	Received by: (signature)	Date / Time
	3-13-13 1:20		3/13/13 1:20
Relinquished by: (signature)	Date / Time	Received by: (signature)	Date / Time
GSO	3/14/13 9:50		3/14/13 9:50
Relinquished by: (signature)	Date / Time	Received by: (signature)	Date / Time

Total # of containers: 96
Chain of Custody seals Y/N/NA:
Seals intact? Y/N/NA:
Received good condition/cold: 4.6

Turn around time: 5d

Notes
4:1 comp (OCP)
Direct "A" for As.

Sample disposal Instructions: Disposal @ $2.00 each X Return to client ___ Pickup ___

COC 112109

SunStar Laboratories, Inc.
25712 Commercentre Dr
Lake Forest, CA 92630
949-297-5020

Chain of Custody Record

Client: ENGEO
Address:
Phone: Fax:
Project Manager: Sara Ross

Date: 3-13-13 Page: 4 Of 9
Project Name: 11150 W. Valpico
Collector: R. Gandolfo / D. Bhargava Client Project #:
Batch #: T130581 EDF #:

Sample ID	Date Sampled	Time	Sample Type	Container Type	8260	8260 + OXY	8260 BTEX, OXY only	8270	8021 BTEX	8015M (gasoline)	8015M (diesel)	8015M Ext./Carbon Chain	6010/7000 Title 22 Metals	OCP (8021)	Arsenic			Laboratory ID #	Comments/Preservative	Total # of containers
CS10-A	3-13-13	10:04	Sol	4oz										✓	✓			37	STD. TAT 3.14.13 SL	1
CS10-B		10:02																38		1
CS10-C		10:00																39		1
CS10-D		10:00																40		1
CS11-A		10:46												✓	✓			41		1
CS11-B		10:36																42		1
CS11-C		10:42																43		1
CS11-D		11:39																44		1
CS12-A		11:11												✓	✓			45		1
CS12-B		11:09																46		1
CS12-C		11:09																47		1
CS12-D		11:07																48		1

Relinquished by: (signature)	Date / Time	Received by: (signature)	Date / Time
	3-13-13 1:20		3/13/13 1:20
Relinquished by: (signature)	Date / Time	Received by: (signature)	Date / Time
ESO	3.14.13 9:50		3.14.13 9:50
Relinquished by: (signature)	Date / Time	Received by: (signature)	Date / Time

Total # of containers: 46
Chain of Custody seals Y/N/NA
Seals intact? Y/N/NA
Received good condition/cold: 4.6

Turn around time: 5d

Notes
4:1 comp (OCP)
Diuret All fr. As.

Sample disposal Instructions: Disposal @ $2.00 each X Return to client ___ Pickup ___

COC 112108

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

SAMPLE RECEIVING REVIEW SHEET

BATCH # T130581

Client Name: ENGEO Project: 11150 W. VALPICO

Received by: Sunny Date/Time Received: 3.14.13 / 9:50

Delivered by : ☐ Client ☐ SunStar Courier ☒ GSO ☐ FedEx ☐ Other _____

Total number of coolers received 1 **Temp criteria = 6°C > 0°C (no frozen containers)**

Temperature: cooler #1 4.8 °C +/- the CF (- 0.2°C) = 4.6 °C corrected temperature

cooler #2 _____ °C +/- the CF (- 0.2°C) = _____ °C corrected temperature

cooler #3 _____ °C +/- the CF (- 0.2°C) = _____ °C corrected temperature

Samples outside temp. but received on ice, w/in 6 hours of final sampling.	☒Yes	☐No*	☐N/A
Custody Seals Intact on Cooler/Sample	☒Yes	☐No*	☐N/A
Sample Containers Intact	☒Yes	☐No*	
Sample labels match COC ID's	☒Yes SL	☒No*	
Total number of containers received match COC	☒Yes	☐No*	
Proper containers received for analyses requested on COC	☒Yes	☐No*	
Proper preservative indicated on COC/containers for analyses requested	☐Yes	☐No*	☒N/A

Complete shipment received in good condition with correct temperatures, containers, labels, volumes preservatives and within method specified holding times. ☒ **Yes** ☒ **No*** SL

* Complete Non-Conformance Receiving Sheet if checked Cooler/Sample Review - Initials and date SL 3.14.13

Comments:

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

SAMPLE NON-CONFORMANCE SHEET

BATCH # T130581

- **COOLERS**
  - ☐ Not Received (received COC only)
  - ☐ Leaking/Damaged
  - ☐ Other:
- **CUSTODY SEALS**
  - ☐ None
  - ☐ Not Intact
- **TEMPERATURE (SPECS 6 > 0°C)**
  - ☐ Cooler/Sample Temp(s)
  - ☐ Temperature Blank(s)
- **CHAIN OF CUSTODY (COC)**
  - ☐ Not relinquished by client; No date/time relinquished
  - ☐ Incomplete information provide
  - ☐ COC not received – notify PM
- **CONTAINERS**
  - ☐ Leaking ☐ Broken
  - ☐ Extra ☐ Missing
- **LABELS**
  - ☒ Not the same sample ID / info as on the COC
  - ☐ Incomplete Information
  - ☐ Markings/Info illegible
- **SAMPLES**
  - ☐ Samples **NOT RECEIVED** but listed on COC
  - ☐ Samples received but **NOT LISTED** on COC
  - ☐ Logged based on Label Information and not COC
  - ☐ Logged according to Work Plan and not COC
  - ☐ Logged in, **ON HOLD** until further notice
  - ☐ Insufficient quantities for analysis
  - ☐ Improper container used
  - ☐ Mislabeled as to tests, preservatives, etc.
  - ☐ Holding time expired – list sample ID and test
  - ☐ Not preserved/Improper preservative used
  - ☐ Without Labels, no information on containers
  - ☐ Other

COMMENTS:

CONTAINERS FOR SAMPLES (CS2-A) & (CS2-C) DID NOT MATCH WITH SAMPLE ID ON COC. BUT THE TIMES DID MATCH. CONTAINERS SAID (CS22-A) & (CS22-C)

Sample fractioning only if broken container compromises other samples or if out of temp reading impacts more than one cooler

Fraction													Preser.
VOA													

H: HCL, S: H2SO4, N: HNO3, V: VOA, SL, Sleeve, E: Encore, T: Terracore, PB: Poly Bottle, CGB: Clear Glass Bottle, AGJ: Amber Glass Jar, AGB: Amber Glass Bottle, n/f/l:HNO3-Lab filtered, n/f:HNO3-Field filtered, znna: Zinc Acetate/Sodium Hydroxide, Na2s2o3: sodium thiosulfate

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

21 March 2013

Richard Gandolfo
Engeo
2213 Plaza Dr.
Rocklin, CA 95765

RE: 11150 W. Valpico

Enclosed are the results of analyses for samples received by the laboratory on 03/14/13 09:50. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Daniel Chavez
Project Manager

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Engeo	Project: 11150 W. Valpico	
2213 Plaza Dr.	Project Number: [none]	**Reported:**
Rocklin CA, 95765	Project Manager: Richard Gandolfo	03/21/13 13:59

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
CS13-A	T130583-01	Soil	03/13/13 09:05	03/14/13 09:50
CS14-A	T130583-05	Soil	03/13/13 09:49	03/14/13 09:50
CS15-A	T130583-09	Soil	03/13/13 10:44	03/14/13 09:50
CS16-A	T130583-13	Soil	03/13/13 11:07	03/14/13 09:50
CS17-A	T130583-17	Soil	03/13/13 09:12	03/14/13 09:50
CS18-A	T130583-21	Soil	03/13/13 09:42	03/14/13 09:50
CS19-A	T130583-25	Soil	03/13/13 10:45	03/14/13 09:50
CS21-A 2	T130583-37	Soil	03/13/13 09:17	03/14/13 09:50
CS22-A	T130583-41	Soil	03/13/13 09:35	03/14/13 09:50
CS23-A	T130583-45	Soil	03/13/13 10:51	03/14/13 09:50
CS24-A	T130583-49	Soil	03/13/13 11:00	03/14/13 09:50
COMP: CS13-ABCD	T130583-53	Soil	03/13/13 00:00	03/14/13 09:50
COMP: CS14-ABCD	T130583-54	Soil	03/13/13 00:00	03/14/13 09:50
COMP: CS15-ABCD	T130583-55	Soil	03/13/13 00:00	03/14/13 09:50
COMP: CS16-ABCD	T130583-56	Soil	03/13/13 00:00	03/14/13 09:50
COMP: CS17-ABCD	T130583-57	Soil	03/13/13 00:00	03/14/13 09:50
COMP: CS18-ABCD	T130583-58	Soil	03/13/13 00:00	03/14/13 09:50
COMP: CS19-ABCD	T130583-59	Soil	03/13/13 00:00	03/14/13 09:50
COMP: CS20-BD	T130583-60	Soil	03/13/13 00:00	03/14/13 09:50
COMP: CS21-BD	T130583-61	Soil	03/13/13 00:00	03/14/13 09:50
COMP: CS21-ABCD 2	T130583-62	Soil	03/13/13 00:00	03/14/13 09:50
COMP: CS22-ABCD	T130583-63	Soil	03/13/13 00:00	03/14/13 09:50
COMP: CS23-ABCD	T130583-64	Soil	03/13/13 00:00	03/14/13 09:50
COMP: CS24-ABCD	T130583-65	Soil	03/13/13 00:00	03/14/13 09:50

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Daniel J Chávez

Daniel Chavez, Project Manager

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Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Engeo	Project: 11150 W. Valpico	
2213 Plaza Dr.	Project Number: [none]	**Reported:**
Rocklin CA, 95765	Project Manager: Richard Gandolfo	03/21/13 13:59

CS13-A

T130583-01 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SunStar Laboratories, Inc.									
Metals by EPA 6010B									
Arsenic	ND	5.0	mg/kg	1	3031450	03/14/13	03/15/13	EPA 6010B	

SunStar Laboratories, Inc.

Daniel Chavez, Project Manager

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Providing Quality Analytical Services Nationwide

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Engeo	Project: 11150 W. Valpico	
2213 Plaza Dr.	Project Number: [none]	**Reported:**
Rocklin CA, 95765	Project Manager: Richard Gandolfo	03/21/13 13:59

CS14-A

T130583-05 (Soil)

SunStar Laboratories, Inc.

Metals by EPA 6010B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	5.0	mg/kg	1	3031450	03/14/13	03/15/13	EPA 6010B	

SunStar Laboratories, Inc.

Daniel Chavez, Project Manager

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Engeo	Project: 11150 W. Valpico	
2213 Plaza Dr.	Project Number: [none]	**Reported:**
Rocklin CA, 95765	Project Manager: Richard Gandolfo	03/21/13 13:59

CS15-A

T130583-09 (Soil)

SunStar Laboratories, Inc.

Metals by EPA 6010B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	5.0	mg/kg	1	3031450	03/14/13	03/15/13	EPA 6010B	

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Engeo	Project: 11150 W. Valpico	
2213 Plaza Dr.	Project Number: [none]	**Reported:**
Rocklin CA, 95765	Project Manager: Richard Gandolfo	03/21/13 13:59

CS16-A

T130583-13 (Soil)

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Metals by EPA 6010B									
Arsenic	ND	5.0	mg/kg	1	3031450	03/14/13	03/15/13	EPA 6010B	

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Engeo	Project: 11150 W. Valpico	
2213 Plaza Dr.	Project Number: [none]	**Reported:**
Rocklin CA, 95765	Project Manager: Richard Gandolfo	03/21/13 13:59

CS17-A

T130583-17 (Soil)

SunStar Laboratories, Inc.

Metals by EPA 6010B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	5.0	mg/kg	1	3031450	03/14/13	03/15/13	EPA 6010B	

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Engeo	Project: 11150 W. Valpico	
2213 Plaza Dr.	Project Number: [none]	**Reported:**
Rocklin CA, 95765	Project Manager: Richard Gandolfo	03/21/13 13:59

CS18-A

T130583-21 (Soil)

SunStar Laboratories, Inc.

Metals by EPA 6010B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	5.0	mg/kg	1	3031450	03/14/13	03/15/13	EPA 6010B	

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Engeo	Project: 11150 W. Valpico	
2213 Plaza Dr.	Project Number: [none]	**Reported:**
Rocklin CA, 95765	Project Manager: Richard Gandolfo	03/21/13 13:59

CS19-A

T130583-25 (Soil)

SunStar Laboratories, Inc.

Metals by EPA 6010B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	5.0	mg/kg	1	3031450	03/14/13	03/15/13	EPA 6010B	

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Engeo	Project: 11150 W. Valpico	
2213 Plaza Dr.	Project Number: [none]	**Reported:**
Rocklin CA, 95765	Project Manager: Richard Gandolfo	03/21/13 13:59

CS21-A 2

T130583-37 (Soil)

SunStar Laboratories, Inc.

Metals by EPA 6010B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	5.0	mg/kg	1	3031450	03/14/13	03/15/13	EPA 6010B	

SunStar Laboratories, Inc.

Daniel Chavez, Project Manager

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Engeo	Project: 11150 W. Valpico	
2213 Plaza Dr.	Project Number: [none]	**Reported:**
Rocklin CA, 95765	Project Manager: Richard Gandolfo	03/21/13 13:59

CS22-A

T130583-41 (Soil)

SunStar Laboratories, Inc.

Metals by EPA 6010B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	5.0	mg/kg	1	3031450	03/14/13	03/15/13	EPA 6010B	

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Engeo	Project: 11150 W. Valpico	
2213 Plaza Dr.	Project Number: [none]	**Reported:**
Rocklin CA, 95765	Project Manager: Richard Gandolfo	03/21/13 13:59

CS23-A

T130583-45 (Soil)

SunStar Laboratories, Inc.

Metals by EPA 6010B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	5.0	mg/kg	1	3031450	03/14/13	03/15/13	EPA 6010B	

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Engeo	Project: 11150 W. Valpico	
2213 Plaza Dr.	Project Number: [none]	**Reported:**
Rocklin CA, 95765	Project Manager: Richard Gandolfo	03/21/13 13:59

CS24-A

T130583-49 (Soil)

SunStar Laboratories, Inc.

Metals by EPA 6010B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	5.0	mg/kg	1	3031450	03/14/13	03/15/13	EPA 6010B	

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Engeo	Project: 11150 W. Valpico	
2213 Plaza Dr.	Project Number: [none]	**Reported:**
Rocklin CA, 95765	Project Manager: Richard Gandolfo	03/21/13 13:59

COMP: CS13-ABCD

T130583-53 (Soil)

SunStar Laboratories, Inc.

Organochlorine Pesticides by EPA Method 8081A

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
alpha-BHC	ND	5.0	ug/kg	1	3031531	03/15/13	03/21/13	EPA 8081A	
gamma-BHC (Lindane)	ND	5.0	"	"	"	"	"	"	
beta-BHC	ND	5.0	"	"	"	"	"	"	
delta-BHC	ND	5.0	"	"	"	"	"	"	
Heptachlor	ND	5.0	"	"	"	"	"	"	
Aldrin	ND	5.0	"	"	"	"	"	"	
Heptachlor epoxide	ND	5.0	"	"	"	"	"	"	
gamma-Chlordane	ND	5.0	"	"	"	"	"	"	
alpha-Chlordane	ND	5.0	"	"	"	"	"	"	
Endosulfan I	ND	5.0	"	"	"	"	"	"	
4,4´-DDE	**17**	5.0	"	"	"	"	"	"	
Dieldrin	ND	5.0	"	"	"	"	"	"	
Endrin	ND	5.0	"	"	"	"	"	"	
4,4´-DDD	ND	5.0	"	"	"	"	"	"	
Endosulfan II	ND	5.0	"	"	"	"	"	"	
4,4´-DDT	ND	5.0	"	"	"	"	"	"	
Endrin aldehyde	ND	5.0	"	"	"	"	"	"	
Endosulfan sulfate	ND	5.0	"	"	"	"	"	"	
Methoxychlor	ND	10	"	"	"	"	"	"	
Endrin ketone	ND	5.0	"	"	"	"	"	"	
Toxaphene	ND	200	"	"	"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		*56.0 %*	*35-140*		"	"	"	"	

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Engeo	Project: 11150 W. Valpico	
2213 Plaza Dr.	Project Number: [none]	**Reported:**
Rocklin CA, 95765	Project Manager: Richard Gandolfo	03/21/13 13:59

COMP: CS14-ABCD

T130583-54 (Soil)

SunStar Laboratories, Inc.

Organochlorine Pesticides by EPA Method 8081A

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
alpha-BHC	ND	5.0	ug/kg	1	3031531	03/15/13	03/21/13	EPA 8081A	
gamma-BHC (Lindane)	ND	5.0	"	"	"	"	"	"	
beta-BHC	ND	5.0	"	"	"	"	"	"	
delta-BHC	ND	5.0	"	"	"	"	"	"	
Heptachlor	ND	5.0	"	"	"	"	"	"	
Aldrin	ND	5.0	"	"	"	"	"	"	
Heptachlor epoxide	ND	5.0	"	"	"	"	"	"	
gamma-Chlordane	ND	5.0	"	"	"	"	"	"	
alpha-Chlordane	ND	5.0	"	"	"	"	"	"	
Endosulfan I	ND	5.0	"	"	"	"	"	"	
4,4´-DDE	**30**	5.0	"	"	"	"	"	"	
Dieldrin	ND	5.0	"	"	"	"	"	"	
Endrin	ND	5.0	"	"	"	"	"	"	
4,4´-DDD	ND	5.0	"	"	"	"	"	"	
Endosulfan II	ND	5.0	"	"	"	"	"	"	
4,4´-DDT	ND	5.0	"	"	"	"	"	"	
Endrin aldehyde	ND	5.0	"	"	"	"	"	"	
Endosulfan sulfate	ND	5.0	"	"	"	"	"	"	
Methoxychlor	ND	10	"	"	"	"	"	"	
Endrin ketone	ND	5.0	"	"	"	"	"	"	
Toxaphene	ND	200	"	"	"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		*45.5 %*	*35-140*		"	"	"	"	

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Engeo	Project: 11150 W. Valpico	
2213 Plaza Dr.	Project Number: [none]	**Reported:**
Rocklin CA, 95765	Project Manager: Richard Gandolfo	03/21/13 13:59

COMP: CS15-ABCD

T130583-55 (Soil)

SunStar Laboratories, Inc.

Organochlorine Pesticides by EPA Method 8081A

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
alpha-BHC	ND	5.0	ug/kg	1	3031531	03/15/13	03/21/13	EPA 8081A	
gamma-BHC (Lindane)	ND	5.0	"	"	"	"	"	"	
beta-BHC	ND	5.0	"	"	"	"	"	"	
delta-BHC	ND	5.0	"	"	"	"	"	"	
Heptachlor	ND	5.0	"	"	"	"	"	"	
Aldrin	ND	5.0	"	"	"	"	"	"	
Heptachlor epoxide	ND	5.0	"	"	"	"	"	"	
gamma-Chlordane	ND	5.0	"	"	"	"	"	"	
alpha-Chlordane	ND	5.0	"	"	"	"	"	"	
Endosulfan I	ND	5.0	"	"	"	"	"	"	
4,4´-DDE	**46**	5.0	"	"	"	"	"	"	
Dieldrin	ND	5.0	"	"	"	"	"	"	
Endrin	ND	5.0	"	"	"	"	"	"	
4,4´-DDD	ND	5.0	"	"	"	"	"	"	
Endosulfan II	ND	5.0	"	"	"	"	"	"	
4,4´-DDT	ND	5.0	"	"	"	"	"	"	
Endrin aldehyde	ND	5.0	"	"	"	"	"	"	
Endosulfan sulfate	ND	5.0	"	"	"	"	"	"	
Methoxychlor	ND	10	"	"	"	"	"	"	
Endrin ketone	ND	5.0	"	"	"	"	"	"	
Toxaphene	ND	200	"	"	"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		*52.7 %*	*35-140*		"	"	"	"	

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Engeo	Project: 11150 W. Valpico	
2213 Plaza Dr.	Project Number: [none]	**Reported:**
Rocklin CA, 95765	Project Manager: Richard Gandolfo	03/21/13 13:59

COMP: CS16-ABCD

T130583-56 (Soil)

SunStar Laboratories, Inc.

Organochlorine Pesticides by EPA Method 8081A

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
alpha-BHC	ND	5.0	ug/kg	1	3031531	03/15/13	03/21/13	EPA 8081A	
gamma-BHC (Lindane)	ND	5.0	"	"	"	"	"	"	
beta-BHC	ND	5.0	"	"	"	"	"	"	
delta-BHC	ND	5.0	"	"	"	"	"	"	
Heptachlor	ND	5.0	"	"	"	"	"	"	
Aldrin	ND	5.0	"	"	"	"	"	"	
Heptachlor epoxide	ND	5.0	"	"	"	"	"	"	
gamma-Chlordane	ND	5.0	"	"	"	"	"	"	
alpha-Chlordane	ND	5.0	"	"	"	"	"	"	
Endosulfan I	ND	5.0	"	"	"	"	"	"	
4,4´-DDE	**28**	5.0	"	"	"	"	"	"	
Dieldrin	ND	5.0	"	"	"	"	"	"	
Endrin	ND	5.0	"	"	"	"	"	"	
4,4´-DDD	ND	5.0	"	"	"	"	"	"	
Endosulfan II	ND	5.0	"	"	"	"	"	"	
4,4´-DDT	ND	5.0	"	"	"	"	"	"	
Endrin aldehyde	ND	5.0	"	"	"	"	"	"	
Endosulfan sulfate	ND	5.0	"	"	"	"	"	"	
Methoxychlor	ND	10	"	"	"	"	"	"	
Endrin ketone	ND	5.0	"	"	"	"	"	"	
Toxaphene	ND	200	"	"	"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		*45.5 %*	*35-140*		"	"	"	"	

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949.297.5027 Fax

Engeo	Project: 11150 W. Valpico	
2213 Plaza Dr.	Project Number: [none]	**Reported:**
Rocklin CA, 95765	Project Manager: Richard Gandolfo	03/21/13 13:59

COMP: CS17-ABCD

T130583-57 (Soil)

SunStar Laboratories, Inc.

Organochlorine Pesticides by EPA Method 8081A

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
alpha-BHC	ND	5.0	ug/kg	1	3031531	03/15/13	03/21/13	EPA 8081A	
gamma-BHC (Lindane)	ND	5.0	"	"	"	"	"	"	
beta-BHC	ND	5.0	"	"	"	"	"	"	
delta-BHC	ND	5.0	"	"	"	"	"	"	
Heptachlor	ND	5.0	"	"	"	"	"	"	
Aldrin	ND	5.0	"	"	"	"	"	"	
Heptachlor epoxide	ND	5.0	"	"	"	"	"	"	
gamma-Chlordane	ND	5.0	"	"	"	"	"	"	
alpha-Chlordane	ND	5.0	"	"	"	"	"	"	
Endosulfan I	ND	5.0	"	"	"	"	"	"	
4,4´-DDE	**28**	5.0	"	"	"	"	"	"	
Dieldrin	ND	5.0	"	"	"	"	"	"	
Endrin	ND	5.0	"	"	"	"	"	"	
4,4´-DDD	ND	5.0	"	"	"	"	"	"	
Endosulfan II	ND	5.0	"	"	"	"	"	"	
4,4´-DDT	ND	5.0	"	"	"	"	"	"	
Endrin aldehyde	ND	5.0	"	"	"	"	"	"	
Endosulfan sulfate	ND	5.0	"	"	"	"	"	"	
Methoxychlor	ND	10	"	"	"	"	"	"	
Endrin ketone	ND	5.0	"	"	"	"	"	"	
Toxaphene	ND	200	"	"	"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		*51.0 %*	*35-140*		"	"	"	"	

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Engeo	Project: 11150 W. Valpico	
2213 Plaza Dr.	Project Number: [none]	**Reported:**
Rocklin CA, 95765	Project Manager: Richard Gandolfo	03/21/13 13:59

COMP: CS18-ABCD

T130583-58 (Soil)

SunStar Laboratories, Inc.

Organochlorine Pesticides by EPA Method 8081A

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
alpha-BHC	ND	5.0	ug/kg	1	3031531	03/15/13	03/21/13	EPA 8081A	
gamma-BHC (Lindane)	ND	5.0	"	"	"	"	"	"	
beta-BHC	ND	5.0	"	"	"	"	"	"	
delta-BHC	ND	5.0	"	"	"	"	"	"	
Heptachlor	ND	5.0	"	"	"	"	"	"	
Aldrin	ND	5.0	"	"	"	"	"	"	
Heptachlor epoxide	ND	5.0	"	"	"	"	"	"	
gamma-Chlordane	ND	5.0	"	"	"	"	"	"	
alpha-Chlordane	ND	5.0	"	"	"	"	"	"	
Endosulfan I	ND	5.0	"	"	"	"	"	"	
4,4´-DDE	**36**	5.0	"	"	"	"	"	"	
Dieldrin	ND	5.0	"	"	"	"	"	"	
Endrin	ND	5.0	"	"	"	"	"	"	
4,4´-DDD	ND	5.0	"	"	"	"	"	"	
Endosulfan II	ND	5.0	"	"	"	"	"	"	
4,4´-DDT	ND	5.0	"	"	"	"	"	"	
Endrin aldehyde	ND	5.0	"	"	"	"	"	"	
Endosulfan sulfate	ND	5.0	"	"	"	"	"	"	
Methoxychlor	ND	10	"	"	"	"	"	"	
Endrin ketone	ND	5.0	"	"	"	"	"	"	
Toxaphene	ND	200	"	"	"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		*45.9 %*	*35-140*		"	"	"	"	

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949.297.5020 Phone
949.297.5027 Fax

Engeo	Project: 11150 W. Valpico	
2213 Plaza Dr.	Project Number: [none]	**Reported:**
Rocklin CA, 95765	Project Manager: Richard Gandolfo	03/21/13 13:59

COMP: CS19-ABCD

T130583-59 (Soil)

SunStar Laboratories, Inc.

Organochlorine Pesticides by EPA Method 8081A

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
alpha-BHC	ND	5.0	ug/kg	1	3031531	03/15/13	03/21/13	EPA 8081A	
gamma-BHC (Lindane)	ND	5.0	"	"	"	"	"	"	
beta-BHC	ND	5.0	"	"	"	"	"	"	
delta-BHC	ND	5.0	"	"	"	"	"	"	
Heptachlor	ND	5.0	"	"	"	"	"	"	
Aldrin	ND	5.0	"	"	"	"	"	"	
Heptachlor epoxide	ND	5.0	"	"	"	"	"	"	
gamma-Chlordane	ND	5.0	"	"	"	"	"	"	
alpha-Chlordane	ND	5.0	"	"	"	"	"	"	
Endosulfan I	ND	5.0	"	"	"	"	"	"	
4,4´-DDE	**44**	5.0	"	"	"	"	"	"	
Dieldrin	ND	5.0	"	"	"	"	"	"	
Endrin	ND	5.0	"	"	"	"	"	"	
4,4´-DDD	ND	5.0	"	"	"	"	"	"	
Endosulfan II	ND	5.0	"	"	"	"	"	"	
4,4´-DDT	ND	5.0	"	"	"	"	"	"	
Endrin aldehyde	ND	5.0	"	"	"	"	"	"	
Endosulfan sulfate	ND	5.0	"	"	"	"	"	"	
Methoxychlor	ND	10	"	"	"	"	"	"	
Endrin ketone	ND	5.0	"	"	"	"	"	"	
Toxaphene	ND	200	"	"	"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		*51.1 %*	*35-140*		"	"	"	"	

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949.297.5020 Phone
949.297.5027 Fax

Engeo	Project: 11150 W. Valpico	
2213 Plaza Dr.	Project Number: [none]	**Reported:**
Rocklin CA, 95765	Project Manager: Richard Gandolfo	03/21/13 13:59

COMP: CS20-BD

T130583-60 (Soil)

SunStar Laboratories, Inc.

Organochlorine Pesticides by EPA Method 8081A

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
alpha-BHC	ND	5.0	ug/kg	1	3031531	03/15/13	03/21/13	EPA 8081A	
gamma-BHC (Lindane)	ND	5.0	"	"	"	"	"	"	
beta-BHC	ND	5.0	"	"	"	"	"	"	
delta-BHC	ND	5.0	"	"	"	"	"	"	
Heptachlor	ND	5.0	"	"	"	"	"	"	
Aldrin	ND	5.0	"	"	"	"	"	"	
Heptachlor epoxide	ND	5.0	"	"	"	"	"	"	
gamma-Chlordane	ND	5.0	"	"	"	"	"	"	
alpha-Chlordane	ND	5.0	"	"	"	"	"	"	
Endosulfan I	ND	5.0	"	"	"	"	"	"	
4,4´-DDE	**24**	5.0	"	"	"	"	"	"	
Dieldrin	ND	5.0	"	"	"	"	"	"	
Endrin	ND	5.0	"	"	"	"	"	"	
4,4´-DDD	ND	5.0	"	"	"	"	"	"	
Endosulfan II	ND	5.0	"	"	"	"	"	"	
4,4´-DDT	ND	5.0	"	"	"	"	"	"	
Endrin aldehyde	ND	5.0	"	"	"	"	"	"	
Endosulfan sulfate	ND	5.0	"	"	"	"	"	"	
Methoxychlor	ND	10	"	"	"	"	"	"	
Endrin ketone	ND	5.0	"	"	"	"	"	"	
Toxaphene	ND	200	"	"	"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		*49.3 %*	*35-140*		"	"	"	"	

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949.297.5020 Phone
949.297.5027 Fax

Engeo	Project: 11150 W. Valpico	
2213 Plaza Dr.	Project Number: [none]	**Reported:**
Rocklin CA, 95765	Project Manager: Richard Gandolfo	03/21/13 13:59

COMP: CS21-BD

T130583-61 (Soil)

SunStar Laboratories, Inc.

Organochlorine Pesticides by EPA Method 8081A

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
alpha-BHC	ND	50	ug/kg	10	3031531	03/15/13	03/21/13	EPA 8081A	R-01
gamma-BHC (Lindane)	ND	50	"	"	"	"	"	"	R-01
beta-BHC	ND	50	"	"	"	"	"	"	R-01
delta-BHC	ND	50	"	"	"	"	"	"	R-01
Heptachlor	ND	50	"	"	"	"	"	"	R-01
Aldrin	ND	50	"	"	"	"	"	"	R-01
Heptachlor epoxide	ND	50	"	"	"	"	"	"	R-01
gamma-Chlordane	ND	50	"	"	"	"	"	"	R-01
alpha-Chlordane	ND	50	"	"	"	"	"	"	R-01
Endosulfan I	ND	50	"	"	"	"	"	"	R-01
4,4´-DDE	ND	50	"	"	"	"	"	"	R-01
Dieldrin	ND	50	"	"	"	"	"	"	R-01
Endrin	ND	50	"	"	"	"	"	"	R-01
4,4´-DDD	ND	50	"	"	"	"	"	"	R-01
Endosulfan II	ND	50	"	"	"	"	"	"	R-01
4,4´-DDT	ND	50	"	"	"	"	"	"	R-01
Endrin aldehyde	ND	50	"	"	"	"	"	"	R-01
Endosulfan sulfate	ND	50	"	"	"	"	"	"	R-01
Methoxychlor	ND	100	"	"	"	"	"	"	R-01
Endrin ketone	ND	50	"	"	"	"	"	"	R-01
Toxaphene	ND	2000	"	"	"	"	"	"	R-01
Surrogate: Tetrachloro-meta-xylene		*56.9 %*	*35-140*		"	"	"	"	

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949.297.5020 Phone
949.297.5027 Fax

Engeo	Project: 11150 W. Valpico	
2213 Plaza Dr.	Project Number: [none]	**Reported:**
Rocklin CA, 95765	Project Manager: Richard Gandolfo	03/21/13 13:59

COMP: CS21-ABCD 2

T130583-62 (Soil)

SunStar Laboratories, Inc.

Organochlorine Pesticides by EPA Method 8081A

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
alpha-BHC	ND	5.0	ug/kg	1	3031531	03/15/13	03/21/13	EPA 8081A	
gamma-BHC (Lindane)	ND	5.0	"	"	"	"	"	"	
beta-BHC	ND	5.0	"	"	"	"	"	"	
delta-BHC	ND	5.0	"	"	"	"	"	"	
Heptachlor	ND	5.0	"	"	"	"	"	"	
Aldrin	ND	5.0	"	"	"	"	"	"	
Heptachlor epoxide	ND	5.0	"	"	"	"	"	"	
gamma-Chlordane	ND	5.0	"	"	"	"	"	"	
alpha-Chlordane	ND	5.0	"	"	"	"	"	"	
Endosulfan I	ND	5.0	"	"	"	"	"	"	
4,4´-DDE	**31**	5.0	"	"	"	"	"	"	
Dieldrin	ND	5.0	"	"	"	"	"	"	
Endrin	ND	5.0	"	"	"	"	"	"	
4,4´-DDD	ND	5.0	"	"	"	"	"	"	
Endosulfan II	ND	5.0	"	"	"	"	"	"	
4,4´-DDT	ND	5.0	"	"	"	"	"	"	
Endrin aldehyde	ND	5.0	"	"	"	"	"	"	
Endosulfan sulfate	ND	5.0	"	"	"	"	"	"	
Methoxychlor	ND	10	"	"	"	"	"	"	
Endrin ketone	ND	5.0	"	"	"	"	"	"	
Toxaphene	ND	200	"	"	"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		*53.1 %*	*35-140*		"	"	"	"	

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949.297.5020 Phone
949.297.5027 Fax

Engeo	Project: 11150 W. Valpico	
2213 Plaza Dr.	Project Number: [none]	**Reported:**
Rocklin CA, 95765	Project Manager: Richard Gandolfo	03/21/13 13:59

COMP: CS22-ABCD

T130583-63 (Soil)

SunStar Laboratories, Inc.

Organochlorine Pesticides by EPA Method 8081A

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
alpha-BHC	ND	5.0	ug/kg	1	3031531	03/15/13	03/21/13	EPA 8081A	
gamma-BHC (Lindane)	ND	5.0	"	"	"	"	"	"	
beta-BHC	ND	5.0	"	"	"	"	"	"	
delta-BHC	ND	5.0	"	"	"	"	"	"	
Heptachlor	ND	5.0	"	"	"	"	"	"	
Aldrin	ND	5.0	"	"	"	"	"	"	
Heptachlor epoxide	ND	5.0	"	"	"	"	"	"	
gamma-Chlordane	ND	5.0	"	"	"	"	"	"	
alpha-Chlordane	ND	5.0	"	"	"	"	"	"	
Endosulfan I	ND	5.0	"	"	"	"	"	"	
4,4´-DDE	**39**	5.0	"	"	"	"	"	"	
Dieldrin	ND	5.0	"	"	"	"	"	"	
Endrin	ND	5.0	"	"	"	"	"	"	
4,4´-DDD	ND	5.0	"	"	"	"	"	"	
Endosulfan II	ND	5.0	"	"	"	"	"	"	
4,4´-DDT	ND	5.0	"	"	"	"	"	"	
Endrin aldehyde	ND	5.0	"	"	"	"	"	"	
Endosulfan sulfate	ND	5.0	"	"	"	"	"	"	
Methoxychlor	ND	10	"	"	"	"	"	"	
Endrin ketone	ND	5.0	"	"	"	"	"	"	
Toxaphene	ND	200	"	"	"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		*48.8 %*	*35-140*		"	"	"	"	

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Daniel J Chávez

Daniel Chavez, Project Manager

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949.297.5027 Fax

Engeo	Project: 11150 W. Valpico	
2213 Plaza Dr.	Project Number: [none]	**Reported:**
Rocklin CA, 95765	Project Manager: Richard Gandolfo	03/21/13 13:59

COMP: CS23-ABCD

T130583-64 (Soil)

SunStar Laboratories, Inc.

Organochlorine Pesticides by EPA Method 8081A

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
alpha-BHC	ND	5.0	ug/kg	1	3031531	03/15/13	03/21/13	EPA 8081A	
gamma-BHC (Lindane)	ND	5.0	"	"	"	"	"	"	
beta-BHC	ND	5.0	"	"	"	"	"	"	
delta-BHC	ND	5.0	"	"	"	"	"	"	
Heptachlor	ND	5.0	"	"	"	"	"	"	
Aldrin	ND	5.0	"	"	"	"	"	"	
Heptachlor epoxide	ND	5.0	"	"	"	"	"	"	
gamma-Chlordane	ND	5.0	"	"	"	"	"	"	
alpha-Chlordane	ND	5.0	"	"	"	"	"	"	
Endosulfan I	ND	5.0	"	"	"	"	"	"	
4,4´-DDE	**28**	5.0	"	"	"	"	"	"	
Dieldrin	ND	5.0	"	"	"	"	"	"	
Endrin	ND	5.0	"	"	"	"	"	"	
4,4´-DDD	ND	5.0	"	"	"	"	"	"	
Endosulfan II	ND	5.0	"	"	"	"	"	"	
4,4´-DDT	ND	5.0	"	"	"	"	"	"	
Endrin aldehyde	ND	5.0	"	"	"	"	"	"	
Endosulfan sulfate	ND	5.0	"	"	"	"	"	"	
Methoxychlor	ND	10	"	"	"	"	"	"	
Endrin ketone	ND	5.0	"	"	"	"	"	"	
Toxaphene	ND	200	"	"	"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		*44.8 %*	*35-140*		"	"	"	"	

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949.297.5027 Fax

Engeo	Project: 11150 W. Valpico	
2213 Plaza Dr.	Project Number: [none]	**Reported:**
Rocklin CA, 95765	Project Manager: Richard Gandolfo	03/21/13 13:59

COMP: CS24-ABCD

T130583-65 (Soil)

SunStar Laboratories, Inc.

Organochlorine Pesticides by EPA Method 8081A

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
alpha-BHC	ND	5.0	ug/kg	1	3031531	03/15/13	03/21/13	EPA 8081A	
gamma-BHC (Lindane)	ND	5.0	"	"	"	"	"	"	
beta-BHC	ND	5.0	"	"	"	"	"	"	
delta-BHC	ND	5.0	"	"	"	"	"	"	
Heptachlor	ND	5.0	"	"	"	"	"	"	
Aldrin	ND	5.0	"	"	"	"	"	"	
Heptachlor epoxide	ND	5.0	"	"	"	"	"	"	
gamma-Chlordane	ND	5.0	"	"	"	"	"	"	
alpha-Chlordane	ND	5.0	"	"	"	"	"	"	
Endosulfan I	ND	5.0	"	"	"	"	"	"	
4,4´-DDE	**40**	5.0	"	"	"	"	"	"	
Dieldrin	ND	5.0	"	"	"	"	"	"	
Endrin	ND	5.0	"	"	"	"	"	"	
4,4´-DDD	ND	5.0	"	"	"	"	"	"	
Endosulfan II	ND	5.0	"	"	"	"	"	"	
4,4´-DDT	ND	5.0	"	"	"	"	"	"	
Endrin aldehyde	ND	5.0	"	"	"	"	"	"	
Endosulfan sulfate	ND	5.0	"	"	"	"	"	"	
Methoxychlor	ND	10	"	"	"	"	"	"	
Endrin ketone	ND	5.0	"	"	"	"	"	"	
Toxaphene	ND	200	"	"	"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		*46.9 %*	*35-140*		"	"	"	"	

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Daniel J Chávez

Daniel Chavez, Project Manager

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Engeo	Project: 11150 W. Valpico	
2213 Plaza Dr.	Project Number: [none]	**Reported:**
Rocklin CA, 95765	Project Manager: Richard Gandolfo	03/21/13 13:59

Metals by EPA 6010B - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3031450 - EPA 3051										
Blank (3031450-BLK1)				Prepared: 03/14/13 Analyzed: 03/15/13						
Arsenic	ND	5.0	mg/kg							
LCS (3031450-BS1)				Prepared: 03/14/13 Analyzed: 03/15/13						
Arsenic	104	5.0	mg/kg	100		104	75-125			
Matrix Spike (3031450-MS1)	**Source: T130586-01**			Prepared: 03/14/13 Analyzed: 03/15/13						
Arsenic	109	5.0	mg/kg	100	1.59	107	75-125			
Matrix Spike Dup (3031450-MSD1)	**Source: T130586-01**			Prepared: 03/14/13 Analyzed: 03/15/13						
Arsenic	109	5.0	mg/kg	100	1.59	108	75-125	0.487	20	

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Daniel J Chavez

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949.297.5020 Phone
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Engeo	Project: 11150 W. Valpico	
2213 Plaza Dr.	Project Number: [none]	**Reported:**
Rocklin CA, 95765	Project Manager: Richard Gandolfo	03/21/13 13:59

Organochlorine Pesticides by EPA Method 8081A - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3031531 - EPA 3550 ECD/GCMS										
Blank (3031531-BLK1)				Prepared: 03/15/13 Analyzed: 03/21/13						
alpha-BHC	ND	5.0	ug/kg							
gamma-BHC (Lindane)	ND	5.0	"							
beta-BHC	ND	5.0	"							
delta-BHC	ND	5.0	"							
Heptachlor	ND	5.0	"							
Aldrin	ND	5.0	"							
Heptachlor epoxide	ND	5.0	"							
gamma-Chlordane	ND	5.0	"							
alpha-Chlordane	ND	5.0	"							
Endosulfan I	ND	5.0	"							
4,4´-DDE	ND	5.0	"							
Dieldrin	ND	5.0	"							
Endrin	ND	5.0	"							
4,4´-DDD	ND	5.0	"							
Endosulfan II	ND	5.0	"							
4,4´-DDT	ND	5.0	"							
Endrin aldehyde	ND	5.0	"							
Endosulfan sulfate	ND	5.0	"							
Methoxychlor	ND	10	"							
Endrin ketone	ND	5.0	"							
Toxaphene	ND	200	"							
Chlordane (tech)	ND	50	"							
Surrogate: Tetrachloro-meta-xylene	*52.6*		*"*	*100*		*52.6*	*35-140*			
LCS (3031531-BS1)				Prepared: 03/15/13 Analyzed: 03/21/13						
gamma-BHC (Lindane)	44.9	5.0	ug/kg	100		44.9	40-120			
Heptachlor	56.9	5.0	"	100		56.9	40-120			
Aldrin	44.5	5.0	"	100		44.5	40-120			
Dieldrin	47.3	5.0	"	100		47.3	40-120			
Endrin	59.7	5.0	"	100		59.7	40-120			
4,4´-DDT	56.8	5.0	"	100		56.8	33-147			
Surrogate: Tetrachloro-meta-xylene	*50.4*		*"*	*100*		*50.4*	*35-140*			

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Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Engeo	Project: 11150 W. Valpico	
2213 Plaza Dr.	Project Number: [none]	**Reported:**
Rocklin CA, 95765	Project Manager: Richard Gandolfo	03/21/13 13:59

Organochlorine Pesticides by EPA Method 8081A - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3031531 - EPA 3550 ECD/GCMS										
Matrix Spike (3031531-MS1)	**Source: T130617-04**			Prepared: 03/15/13	Analyzed: 03/21/13					
gamma-BHC (Lindane)	57.5	5.0	ug/kg	100	ND	57.5	30-120			
Heptachlor	51.8	5.0	"	100	ND	51.8	30-120			
Aldrin	46.1	5.0	"	100	ND	46.1	30-120			
Dieldrin	50.8	5.0	"	100	ND	50.8	30-120			
Endrin	58.3	5.0	"	100	ND	58.3	30-120			
4,4´-DDT	164	5.0	"	100	187	NR	30-120			QM-05
Surrogate: Tetrachloro-meta-xylene	*44.9*		*"*	*100*		*44.9*	*35-140*			
Matrix Spike Dup (3031531-MSD1)	**Source: T130617-04**			Prepared: 03/15/13	Analyzed: 03/21/13					
gamma-BHC (Lindane)	56.5	5.0	ug/kg	100	ND	56.5	30-120	1.81	30	
Heptachlor	53.3	5.0	"	100	ND	53.3	30-120	2.82	30	
Aldrin	45.6	5.0	"	100	ND	45.6	30-120	1.13	30	
Dieldrin	49.9	5.0	"	100	ND	49.9	30-120	1.75	30	
Endrin	55.7	5.0	"	100	ND	55.7	30-120	4.63	30	
4,4´-DDT	161	5.0	"	100	187	NR	30-120	NR	30	QM-05
Surrogate: Tetrachloro-meta-xylene	*47.2*		*"*	*100*		*47.2*	*35-140*			

SunStar Laboratories, Inc.

Daniel J Chávez

Daniel Chavez, Project Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Engeo	Project: 11150 W. Valpico	
2213 Plaza Dr.	Project Number: [none]	**Reported:**
Rocklin CA, 95765	Project Manager: Richard Gandolfo	03/21/13 13:59

Notes and Definitions

R-01	The Reporting Limit has been raised to account for dilution necessary due to matrix interference.
QM-05	The spike recovery was outside acceptance limits for the MS and/or MSD due to possible matrix interference. The LCS was within acceptance criteria. The data is acceptable as no negative impact on data is expected.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

SunStar Laboratories, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Daniel Chavez, Project Manager

SunStar Laboratories, Inc.
25712 Commercentre Dr
Lake Forest, CA 92630
949-297-5020

Chain of Custody Record

Client: ENGEO
Address:
Phone: Fax:
Project Manager: SEQUOIA

Date: 3-13-13 Page: 5 Of 9
Project Name: 11150 W. Valley
Collector: R. Gandolfo / D. Bhargava Client Project #:
Batch #: T130583 EDF #:

Sample ID	Date Sampled	Time	Sample Type	Container Type	8260	8260 + OXY	8260 BTEX, OXY only	8270	8021 BTEX	8015M (gasoline)	8015M (diesel)	8015M Ext./Carbon Chain	6010/7000 Title 22 Metals	OCP (8081) Arsenic			Laboratory ID #	Comments/Preservative	Total # of containers
CS13-A	3-13-13	9:05	Soil	4oz										✓			01	STD. TAT 3.14.13	1
CS13-B																	02		1
CS13-C		9:08															03		1
CS13-D																	04		1
CS14-A		9:49												✓			05		1
CS14-B		9:53															06		1
CS14-C		9:44															07		1
CS14-D		9:47															08		1
CS15-A		10:14												✓			09		1
CS15-B		10:41															10		1
CS15-C		10:46															11		1
CS15-D		10:43															12		1

Relinquished by: (signature)	Date / Time	Received by: (signature)	Date / Time
	3-13-13 1:20		3/13/13 1:20
Relinquished by: (signature)	Date / Time	Received by: (signature)	Date / Time
GSO	3.14.13 9:50		3.14.13 9:50
Relinquished by: (signature)	Date / Time	Received by: (signature)	Date / Time

Total # of containers: 96
Chain of Custody seals Y/N/NA: (6)
Seals intact? Y/N/NA:
Received good condition/cold: 4.6

Turn around time: 5D

Notes: 4:1 comp (OCP) Dissolved As.

Sample disposal Instructions: Disposal @ $2.00 each X Return to client ____ Pickup ____

COC 112004

SunStar Laboratories, Inc.
25712 Commercentre Dr
Lake Forest, CA 92630
949-297-5020

Chain of Custody Record

Client: ENGEO
Address:
Phone: Fax:
Project Manager: Scott's

Date: 3-13-13 Page: 6 Of 9
Project Name: 11150 W. Valpa
Collector: R Gandi / D. Bhargava Client Project #:
Batch #: T130583 EDF #:

Sample ID	Date Sampled	Time	Sample Type	Container Type	8260	8260 + OXY	8260 BTEX, OXY only	8270	8021 BTEX	8015M (gasoline)	8015M (diesel)	8015M Ext./Carbon Chain	6010/7000 Title 22 Metals	OCP (8081)	Arsenic			Laboratory ID #	Comments/Preservative	Total # of containers
CS16-A	3-13-13	11:07	Soil	4 oz										/	/			13	STD. TAT 3.14.13	1
CS16-B		11:05																14		1
CS16-C		11:05																15		1
CS16-D		11:03																16		1
CS17-A		9:12												/	/			17		1
CS17-B		9:12																18		1
CS17-C		9:15																19		1
CS17-D		9:14																20		1
CS18-A		9:42												/	/			21		1
CS18-B		9:44																22		1
CS18-C		9:40																23		1
CS18-D		9:40																24		1

Relinquished by: (signature)	Date / Time	Received by: (signature)	Date / Time
	3-13-13 1:20		3/13/13 1:20
Relinquished by: (signature)	Date / Time	Received by: (signature)	Date / Time
GSO	9:50 3.14.13		3.14.13 9:50
Relinquished by: (signature)	Date / Time	Received by: (signature)	Date / Time

Total # of containers: 96
Chain of Custody seals Y/N/NA: 8
Seals intact? Y/N/NA:
Received good condition/cold: 4.6

Turn around time: 5d

Notes: 4:1 comp (OCP) discrete All for As.

Sample disposal Instructions: Disposal @ $2.00 each X Return to client ____ Pickup ____

COC 112005

SunStar Laboratories, Inc.
25712 Commercentre Dr
Lake Forest, CA 92630
949-297-5020

Chain of Custody Record

Client: ENGEO
Address:
Phone: Fax:
Project Manager: Sue Pace

Date: 3-13-13 Page: 7 Of 4
Project Name: 11150 W. Valpico
Collector: R. Gonda / D. Bhargava Client Project #:
Batch #: T130583 EDF #:

Sample ID	Date Sampled	Time	Sample Type	Container Type	8260	8260 + OXY	8260 BTEX, OXY only	8270	8021 BTEX	8015M (gasoline)	8015M (diesel)	8015M Ext./Carbon Chain	6010/7000 Title 22 Metals	OCP (8081)	Arsenic			Laboratory ID #	STD. TAT 3.14.13 SE Comments/Preservative	Total # of containers
CS 19 - A	3-13-13	10:48	Soil	4 oz										/	/			25		1
CS 19 - B		10:45																26		1
CS 19 - C		10:50																27		1
CS 19 - D		10:47																28		1
CS 20 - A														/	/			29		1
CS 20 - B		11:01																30		1
CS 20 - C																		31		1
CS 20 - D		11:02																32		1
CS 21 - A														/	/			33		1
CS 21 - B		9:16																34		1
CS 21 - C																		35		1
CS 21 - D		9:20																36		1

Relinquished by: (signature)	Date / Time	Received by: (signature)	Date / Time
	3-13-13 1:20		3/13/13 1:20
Relinquished by: (signature)	Date / Time	Received by: (signature)	Date / Time
GSO	3.14.13 9:50		3.14.13 9:50
Relinquished by: (signature)	Date / Time	Received by: (signature)	Date / Time

Total # of containers: 96
Chain of Custody seals Y/N/NA:
Seals intact? Y/N/NA:
Received good condition/cold: 4.6

Turn around time: 5d

Notes
4:1 comp COC
discard "A" for As.

Sample disposal Instructions: Disposal @ $2.00 each ____ Return to client ____ Pickup ____

COC 112006

SunStar Laboratories, Inc.
25712 Commercentre Dr
Lake Forest, CA 92630
949-297-5020

Chain of Custody Record

Client: ENGEO
Address:
Phone: Fax:
Project Manager: Geo Probe A

Date: 3-13-13 Page: 8 Of 9
Project Name: 1115 W. Valpico
Collector: R. Gentile/D. Bhargav Client Project #:
Batch #: T130583 EDF #:

Sample ID	Date Sampled	Time	Sample Type	Container Type	8260	8260 +OXY	8260 BTEX, OXY only	8270	8021 BTEX	8015M (gasoline)	8015M (diesel)	8015M Ext./Carbon Chain	6010/7000 Title 22 Metals	OCP (3081)	Arsenic			Laboratory ID #	Comments/Preservative	Total # of containers
CS21-A	3-13-13	9:17	Soil	4oz										/	/			37	STD. TAT 3.14.13	1
CS21-B	↓	11:00	↓	↓														38		1
CS21-C		9:20																39		1
CS21-D		10:56																40		1
CS22-A		9:35												/	/			41		1
CS22-B		10:13																42		1
CS22-C		10:11																43		1
CS22-D		9:30																44		1
CS23-A		10:51												/	/			45		1
CS23-B		10:48																46		1
CS23-C		10:53																47		1
CS23-D		10:51																48		1

Relinquished by: (signature)	Date / Time	Received by: (signature)	Date / Time
	3-13-13 1:20		3/13/13 1:20
Relinquished by: (signature)	Date / Time	Received by: (signature)	Date / Time
GSO	3.14.13 9:50		3.14.13 / 9:50
Relinquished by: (signature)	Date / Time	Received by: (signature)	Date / Time

Total # of containers: 96
Chain of Custody seals Y/N/NA
Seals intact? Y/N/NA
Received good condition/cold: 4.6

Turn around time: 5 day

Notes
4:1 Comp (OCP)
discrete All for As.

Sample disposal Instructions: Disposal @ $2.00 each ✓ Return to client ____ Pickup ____

COC 112118

SunStar Laboratories, Inc.
25712 Commercentre Dr
Lake Forest, CA 92630
949-297-5020

Chain of Custody Record

Client: ENGEO
Address: see page 1
Phone: Fax:
Project Manager:

Date: 3-13-13 Page: 9 Of 9
Project Name: 11150 W. Valjean
Collector: R. Gandhi / D. Bhargava Client Project #:
Batch #: T130583 EDF #:

Sample ID	Date Sampled	Time	Sample Type	Container Type	8260	8260 + OXY	8260 BTEX, OXY only	8270	8021 BTEX	8015M (gasoline)	8015M (diesel)	8015M Ext./Carbon Chain	6010/7000 Title 22 Metals	OCP (8081) Arsenic			Laboratory ID #	Comments/Preservative	Total # of containers
CS24-A	3-13-13	11:00	Soil	4 oz										/			49	STD. TAT 3.14.13	1
CS24-B		11:03															50		1
CS24-C		10:50															51		1
CS24-D		11:01															52		1

Relinquished by: (signature) Date / Time: 3-13-13 1:20
Received by: (signature) Date / Time: 3/13/13 1:20
Relinquished by: (signature) Date / Time: GSO 3.14.13 9:50
Received by: (signature) Date / Time: 3.14.13 9:50
Relinquished by: (signature) Date / Time:
Received by: (signature) Date / Time:

Total # of containers: 96
Chain of Custody seals (Y)/N/NA:
Seals intact? (Y)/N/NA:
Received good condition/cold: 4.6

Turn around time: 5d

Notes: 4:1 comp (OCP) discrete All for As.

Sample disposal Instructions: Disposal @ $2.00 each ___ Return to client ___ Pickup ___

COC 112117

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

SAMPLE RECEIVING REVIEW SHEET

BATCH # T130583

Client Name: ENGEO Project: 11150 W. VALPICO

Received by: SUNNY Date/Time Received: 3.14.13 / 9:50

Delivered by : ☐ Client ☐ SunStar Courier ☒ GSO ☐ FedEx ☐ Other _____

Total number of coolers received 1 **Temp criteria = 6°C > 0°C (no frozen containers)**

Temperature: cooler #1 4.8 °C +/- the CF (- 0.2°C) = 4.6 °C corrected temperature

cooler #2 _____ °C +/- the CF (- 0.2°C) = _____ °C corrected temperature

cooler #3 _____ °C +/- the CF (- 0.2°C) = _____ °C corrected temperature

Samples outside temp. but received on ice, w/in 6 hours of final sampling.	☒ Yes	☐ No*	☐ N/A
Custody Seals Intact on Cooler/Sample	☒ Yes	☐ No*	☐ N/A
Sample Containers Intact	☒ Yes	☐ No*	
Sample labels match COC ID's	☒ Yes	☐ No*	
Total number of containers received match COC	☐ Yes	☒ No*	
Proper containers received for analyses requested on COC	☒ Yes	☐ No*	
Proper preservative indicated on COC/containers for analyses requested	☐ Yes	☐ No*	☒ N/A

Complete shipment received in good condition with correct temperatures, containers, labels, volumes preservatives and within method specified holding times. ☐ **Yes** ☒ **No***

* Complete Non-Conformance Receiving Sheet if checked Cooler/Sample Review - Initials and date SL 3.14.13

Comments:

_____

_____

_____

_____

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

SAMPLE NON-CONFORMANCE SHEET

BATCH # T130583

- **COOLERS**
  - ☐ Not Received (received COC only)
  - ☐ Leaking/Damaged
  - ☐ Other:
- **CUSTODY SEALS**
  - ☐ None
  - ☐ Not Intact
- **TEMPERATURE (SPECS 6 > 0°C)**
  - ☐ Cooler/Sample Temp(s)
  - ☐ Temperature Blank(s)
- **CHAIN OF CUSTODY (COC)**
  - ☐ Not relinquished by client; No date/time relinquished
  - ☐ Incomplete information provide
  - ☐ COC not received – notify PM
- **CONTAINERS**
  - ☐ Leaking ☐ Broken
  - ☐ Extra ☒ Missing
- **LABELS**
  - ☐ Not the same sample ID / info as on the COC
  - ☐ Incomplete Information
  - ☐ Markings/Info illegible
- **SAMPLES**
  - ☒ Samples **NOT RECEIVED** but listed on COC
  - ☐ Samples received but **NOT LISTED** on COC
  - ☐ Logged based on Label Information and not COC
  - ☐ Logged according to Work Plan and not COC
  - ☐ Logged in, **ON HOLD** until further notice
  - ☐ Insufficient quantities for analysis
  - ☐ Improper container used
  - ☐ Mislabeled as to tests, preservatives, etc.
  - ☐ Holding time expired – list sample ID and test
  - ☐ Not preserved/Improper preservative used
  - ☐ Without Labels, no information on containers
  - ☐ Other

COMMENTS:

WE DID NOT RECEIVE SAMPLES (CS20-A, CS20-C, CS21-A, AND CS21-C).

T130583-29, 31, 33, 35.

Sample fractioning only if broken container compromises other samples or if out of temp reading impacts more than one cooler

Fraction													Preser.
VOA													

H: HCL, S: H2SO4, N: HNO3, V: VOA, SL, Sleeve, E: Encore, T: Terracore, PB: Poly Bottle, CGB: Clear Glass Bottle, AGJ: Amber Glass Jar, AGB: Amber Glass Bottle, n/f/l:HNO3-Lab filtered, n/f:HNO3-Field filtered, znna: Zinc Acetate/Sodium Hydroxide, Na2s2o3: sodium thiosulfate

APPENDIX H

Environmental Data Site Assessment Questionnaires (2)

APPENDIX H



APPENDIX I

Qualification(s) of Environmental Professional(s)



SHAWN MUNGER, CHG
PRINCIPAL GEOLOGIST

EDUCATION

BS, Geology, U.C. Davis, 1985

EXPERIENCE

Years with ENGEO: 25
Years with Other Firms: 0

REGISTRATIONS & CERTIFICATIONS

Certified Hydrogeologist, CA, 413
40 Hour HAZWOPER Training, CA
Certified Environmental Manager, NV, 1332
Registered Environmental Assessor II, CA, 20201
Professional Geologist, CA, 5810

SPECIALIZATIONS

- Environmental Assessments and Remediation
- Environmental Restoration
- Water Quality Studies
- Water Wells/Hydrogeology

Since joining ENGEO in 1985, Mr. Munger has been managing groundwater supply evaluations, hydrogeologic studies, chemical assessments, phase I and II site assessment projects, UST site investigations, risk based corrective action (RBCA), VOC remediation, and agricultural impact evaluations. He serves as Principal-in-Charge or Project Manager for environmental and hazardous materials projects involving groundwater hydrology, contaminant fate and transport, and remediation. He is Principal-in-Charge of our on-call contract with DTSC and the environmental components of our on-call contracts with the City of Sacramento and the County of Sacramento.

Selected Project Experience

Seacliff Estates—Richmond, CA
Principal in Charge. Mr. Munger provided oversight, review, and consultation during preparation of phase I and II site assessments and soil remediation. The 12-acre site was formerly part of Kaiser Shipyard No. 3 and was used for ship repair and maintenance along with scrap metal and salvage yards. The property was developed as a single-family residential subdivision.

Renaissance Square—Concord, CA
Project Manager. Mr. Munger provided consultation, data analysis, and field observation. This former automotive dealership was redeveloped as a five-story multi-family residential structure supported on slab-on-grade foundations, with two levels of below-grade parking. Petroleum hydrocarbon-impacted soil was encountered during excavation of the parking structure, which required characterization and remediation. Soil impacts were attributed to former sumps, USTs and hydraulic lifts.

Pleasant Hill BART Station—Walnut Creek, CA
Principal in Charge. Mr. Munger provided oversight, data analysis and consultation during the preparation of a phase II environmental site assessment. The property is an existing BART station that encompasses 20 acres, including the platform/station area, electrical facilities, a parking garage and additional paved parking areas.

Mills Ranch—King City, CA
Principal in Charge. Mr. Munger provided principal oversight of phase I and II environmental site assessments and risk evaluations. The approximate 80-acre property is used for agricultural cultivation and commercial uses. The proposed mixed-use development includes over 400 single-family residential lots.

Select Foods Site/Cross Creek—Hayward, CA
Principal in Charge. Mr. Munger provided principal oversight, consultation, and data analysis. The property was a former processed food facility, a drum recycling business, battery manufacturing operation and a bus assembly plant. Following completion of soil remediation under RWQCB oversight, the property was developed into a single-family residential subdivision.

Southchase Property—West Sacramento, CA
Project Manager. Mr. Munger provided environmental consultation regarding soil contamination and site characterization work. The property is a former farm headquarters with storage structures and orchards.

Westshore—Richmond, CA
Project Manager. Mr. Munger conducted phase I and II site assessments, risk evaluations and prepared a soil management plan. The property was a former automotive manufacturing plant proposed for a multi-unit condominium development, including a 6-story podium structure to include five residential floors with 269 units and one parking floor.

Union Pacific Railroad Corridor—San Jose, CA.
Project Manager. Mr. Munger prepared a phase I and II environmental assessment. Work included a site reconnaissance, historical records research and recovery of soil samples with laboratory analysis. Lead impacted soil was identified which required risk evaluation. This former 1800 lineal foot section of the former Union Pacific Railroad Corridor was proposed for mixed-use development.

Sparklizing Cleaners and Laundry—Fremont, CA
Principal in Charge. Mr. Munger provided principal review and data analysis for this former dry cleaning facility which had released tetrachloroethylene (PCE) to site soil and groundwater. The project site consists of a drycleaning facility located within a commercial/retail center. Drycleaning operations have been conducted at the facility since 1974 and have resulted in chlorinated solvent impacts to soil and groundwater beneath the site. As a result, the CRWQCB opened a Spills, Leaks, Investigations, and Cleanups (SLIC) case and the site was referred to the Alameda County Water District (ACWD) for lead agency oversight. A series of soil and groundwater investigations identified a source area beneath the drycleaner suite and an adjoining retail suite. A CAP submitted to ACWD in 2009 involves using in-situ chemical oxidation (ISCO) to remediate groundwater and vadose zone soil impacts within the source area.

Mare Island, 3rd and Connelly Utility Corridor—Vallejo, CA
Principal in Charge. Mr. Munger provided principal oversight during demolition and soil excavation activities. The project consisted of utility demolition and soil excavation activities

required to prepare for construction of a 300 – foot water and sewer utility corridor along Connelly Street between 3rd Street and Azuar Drive.

Ivy Glen (Former Tredegar)—Fremont, CA
Principal in Charge. Mr. Munger provided oversight of site characterizations, risk evaluations and groundwater monitoring for this for this former industrial facility. The property was a former industrial facility with documented soil and groundwater contamination. Risk assessments allowed redevelopment of the site as a single-family residential subdivision. Groundwater monitoring continues to date as a result of residual docs beneath the property.

County Crossings Property—Antioch, CA
Principal in Charge. Mr. Munger provided environmental consultation and data review with regard to soil and groundwater contamination. Constituents of concern include petroleum hydrocarbons, nitrates and manganese. The approximately 264 acre site includes several former industrial facilities and petroleum pipelines. Soil and groundwater at the site has been impacted with petroleum hydrocarbons, nitrates and manganese. Planned uses include commercial, residential, retail, and a BART-oriented transit village. The center, which is currently in the entitlement phase, is estimated to break ground in 2011.

Arroyo Crossing—Livermore, CA
Principal in Charge. Mr. Munger provided oversight, data analysis and regulatory consultation while ENGEO provided geotechnical and environmental engineering services for this 34-acre site. This former corporation yard and quarry site was developed into a single-family residential subdivision.

620 North Ninth Street—San Jose, CA
Principal in Charge. Mr. Munger provided oversight of soil, groundwater and soil gad characterizations, risk evaluations and remedial action plan preparation. Mr. Munger also closely interacted with RWQCB staff to achieve approval for residential development. The property is a former fruit packing plant and food preparation facility. The proposed development consists of a single-family residential subdivision.

Former SFPP Alignment—Concord, CA
Project Manager. Mr. Munger prepared a Phase I and II environmental assessment for a ± 6,500-foot corridor formerly occupied by the Southern Pacific Railroad (SPRR). Kinder Morgan petroleum pipelines existed within an easement along the property. Work included the recovery of soil and groundwater samples along the SP right of way. The site was a former ± 6,500-foot corridor formerly occupied by the Southern Pacific Railroad. Kinder Morgan petroleum pipelines existed within an easement along the property. The southern portion of the site was crossed by East Bay Municipal Utilities District water distribution lines and a multi-lane highway overpass. The corridor was developed as a self-storage facility.

Gale Ranch Middle School—San Ramon, CA
Principal in Charge. Mr. Munger provided review and supervision of a Preliminary Endangerment Assessment prepared for this school site under the oversight of DTSC. This former site was developed into a public middle school.

Highlands Ranch—Antioch, CA
Principal in Charge. Mr. Munger provided oversight, data analysis, and collaboration with RWQCB personnel. The project site consists of a 140-acre portion of the former Chevron Los Medanos Tank Farm located in Pittsburg, California. The site was historically occupied by 24 crude oil tanks and four wax ponds. Remediation of the crude oil tank and wax pond locations was conducted according to a remedial action plan (RAP) and oversight was provided by the CRWQCB. Remediation was performed over a period of four months and consisted of excavating approximately 110,000 cubic yards of impacted soil and placing the material in windrows for ex-situ bioremediation.

Hercules Property—Hercules, CA
Project Manager. Mr. Munger provided oversight of a phase I environmental site assessment, site asbestos survey, site characterization, and demolition observation/contaminant assessment. The project area consists of ± 167 acres located near and along the southeastern shore of San Pablo Bay in Hercules. The property was once a portion of a 1300-acre manufacturing facility that was operated by DuPont from 1879 to 1913 and Hercules Incorporated from 1913 to 1979. The planned development includes single/multi family residential development with some commercial components.

Gold Rush Ranch and Golf Resort—Sutter creek, CA
Principal in Charge. Mr. Munger provided principal oversight during the preparation of a preliminary endangerment report, including soil, groundwater and surface water sampling. The project site consists of 945 acres of undeveloped land located near the City of Sutter Creek, California. The proposed development plan for the site involves the Gold Rush Ranch and Golf Resort, which includes an 18-hole championship golf course, 1,334 new homes, a commercial center, and open space. The client has entered into a VCA with the Department of Toxic Substances Control (DTSC) to address historic mine tailings at the site. A PEA was prepared to evaluate human health risks associated with elevated arsenic in tailings, soil, and surface water at the site. The PEA was approved by DTSC in 2009. Based on the findings of the PEA, a removal action workplan (RAW) will be prepared to address the human health risks associated with the arsenic impacts.

1000 Howe Road—Martinez, CA
Principal in Charge. Mr. Munger provided oversight and analysis for this soil remediation project. Mr. Munger worked closely with RWQCB personnel to develop a cost effective and timely closure for site closure and approval for residential development. The site is occupied by a general engineering contractor and was a former bus leasing company. Improvements at the property included an office/warehouse structure and an equipment yard. The proposed development consists of a single-family residential subdivision.

Appendix G:
Noise Supporting Information

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Project Number: 1726.0008 Sheet 1 of 4
Project Name: Tracy Lakes
Test Personnel: P Aluft

Noise Measurement Survey

Site Number: ST-1 Date: 4/1/15 Time: From 10:50 To 11:00

Site Location: _____

Primary Noise Sources: Traffic on Valpico Rd, lawn mower in distance, wind, birds

Measurement Results

	dBA
Leq	57.5
Lmax	69.1
Lmin	49.6
~~Lpeak~~	
L5	61.6
L10	60.4
L50	55.3
L90	51.7
SEL	

Observed Noise Sources/Events

Time	Noise Source/Event	dBA

Comments: _____

Equipment: LD LxT
Settings: A-Weighted☒ Other☐ _____

Calibration Offset: -0.04 dBA
Slow☒ Fast☐ Windscreen☒

Atmospheric Conditions:

Maximum Wind Velocity (mph)	Average Wind Velocity (mph)	Temperature (F)	~~Relative Humidity~~ (%)	
3.1	1.3	77.5		
Comments:	Sunny Skies -			

Project Number: 1726.0008 Sheet 2 of 4
Project Name: Tracy Lakes
Test Personnel: P Ault

Noise Measurement Survey

Site Number: ST-2 Date: 4/1/15 Time: From 11:10 To 11:20

Site Location: (9146)

Primary Noise Sources: Traffic on Valpico Rd, dog barking, wind, birds,

Measurement Results

	dBA
Leq	51.9
Lmax	61.9
Lmin	45.1
~~Lpeak~~	
L5	
L10	
L50	
L90	
SEL	

Observed Noise Sources/Events

Time	Noise Source/Event	dBA

Comments:

Equipment: LD 824
Settings: A-Weighted ☒ Other ☐

Calibration Offset: -0.04 dBA
Slow ☒ Fast ☐ Windscreen ☒

Atmospheric Conditions:

Maximum Wind Velocity (mph)	Average Wind Velocity (mph)	Temperature (F)	Relative Humidity (%)	
8.1	2.7	64		
Comments:				

Project Number: 1726.0008 Sheet 3 of 4
Project Name: Tracy Lakes
Test Personnel: PAust

Noise Measurement Survey

Site Number: ST-3 Date: 4/1/15 Time: From 11:30 To 11:40

Site Location: _____

Primary Noise Sources: distant traffic on Valpico Rd, wind, birds

Measurement Results

	dBA
Leq	47.6
Lmax	59.2
Lmin	38.1
~~Lpeak~~	
L5	
L10	
L50	
L90	
SEL	

Observed Noise Sources/Events

Time	Noise Source/Event	dBA

Comments: _____

Equipment: LD LxT Calibration Offset: -.04 dBA
Settings: A-Weighted☑ Other☐ _____ Slow☒ Fast☐ Windscreen☒

Atmospheric Conditions:

Maximum Wind Velocity (mph)	Average Wind Velocity (mph)	Temperature (F)	~~Relative~~ Humidity (%)	
5.6	1.9	70.7		
Comments:				

Project Number: 1726.0008 Sheet 4 of 4
Project Name: Tracy Lakes
Test Personnel: P Aust

Noise Measurement Survey

Site Number: ST-4 Date: 4/1/15 Time: From 11:50 To 12:00

Site Location: _____

Primary Noise Sources: Cars + Trucks on Coral Hollow Rd, birds, wind

Measurement Results

	dBA
Leq	53.1
Lmax	65.8
Lmin	41.1
Lpeak	
L5	
L10	
L50	
L90	
SEL	

Observed Noise Sources/Events

Time	Noise Source/Event	dBA

Comments: _____

Equipment: LD LXT
Settings: A-Weighted☒ Other☐

Calibration Offset: -0.04 dBA
Slow☒ Fast☐ Windscreen☒

Atmospheric Conditions:

Maximum Wind Velocity (mph)	Average Wind Velocity (mph)	Temperature (F)	Relative Humidity (%)	
4.0	1.8	71.4		
Comments:	Kestrel 2000 - sunny skies			

TABLE Existing -01
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 03/07/2017
ROADWAY SEGMENT: Lammers Rd. - W Schulte Rd to Valpico Rd.
NOTES: Tracy Village Project - Existing

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 6600 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	NIGHT
AUTOS	88.08	9.34
M-TRUCKS	1.65	0.19
H-TRUCKS	0.66	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

Ldn AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 61.94

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO Ldn

70 Ldn	65 Ldn	60 Ldn	55 Ldn
0.0	0.0	75.3	161.7

TABLE Existing -02
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 03/07/2017
ROADWAY SEGMENT: Corral Hollow Rd. - Peony Dr. to Middlefield Dr.
NOTES: Tracy Village Project - Existing

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 5800 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	NIGHT
AUTOS	88.08	9.34
M-TRUCKS	1.65	0.19
H-TRUCKS	0.66	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

Ldn AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.05

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO Ldn

70 Ldn	65 Ldn	60 Ldn	55 Ldn
0.0	0.0	103.8	223.2

TABLE Existing -03
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 03/07/2017
ROADWAY SEGMENT: Corral Hollow Rd. - Middlefield Dr. to W. Linne Rd.
NOTES: Tracy Village Project - Existing

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 5700 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	NIGHT
AUTOS	88.08	9.34
M-TRUCKS	1.65	0.19
H-TRUCKS	0.66	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

Ldn AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 63.97

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO Ldn			
70 Ldn	65 Ldn	60 Ldn	55 Ldn
0.0	0.0	102.6	220.7

TABLE Existing -04
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 03/07/2017
ROADWAY SEGMENT: Tracy Blvd. - W. Central Ave. to Valpico Rd.
NOTES: Tracy Village Project - Existing

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 14700 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	NIGHT
AUTOS	88.08	9.34
M-TRUCKS	1.65	0.19
H-TRUCKS	0.66	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

Ldn AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 65.75

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO Ldn

70 Ldn	65 Ldn	60 Ldn	55 Ldn
0.0	75.8	159.5	341.9

TABLE Existing -05
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 03/07/2017
ROADWAY SEGMENT: Valpico Rd. - Lammers Rd. to Corral Hollow Rd.
NOTES: Tracy Village Project - Existing

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 6000 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	NIGHT
AUTOS	88.08	9.34
M-TRUCKS	1.65	0.19
H-TRUCKS	0.66	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

Ldn AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 61.53

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO Ldn

70 Ldn	65 Ldn	60 Ldn	55 Ldn
0.0	0.0	70.7	151.8

TABLE Existing -06
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 03/07/2017
ROADWAY SEGMENT: Valpico Rd. - Corral Hollow Rd. to N. Project Driveway
NOTES: Tracy Village Project - Existing

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 8100 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	NIGHT
AUTOS	88.08	9.34
M-TRUCKS	1.65	0.19
H-TRUCKS	0.66	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

Ldn AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 62.83

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO Ldn

70 Ldn	65 Ldn	60 Ldn	55 Ldn
0.0	0.0	86.2	185.3

TABLE Existing -07
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 03/07/2017
ROADWAY SEGMENT: Valpico Rd. - N. Project Driveway to Cagney Way
NOTES: Tracy Village Project - Existing

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 8100 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	NIGHT
AUTOS	88.08	9.34
M-TRUCKS	1.65	0.19
H-TRUCKS	0.66	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

Ldn AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 62.83

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO Ldn

70 Ldn	65 Ldn	60 Ldn	55 Ldn
0.0	0.0	86.2	185.3

TABLE Existing -08
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 03/07/2017
ROADWAY SEGMENT: Valpico Rd. - Cagney Way to Tracy Blvd.
NOTES: Tracy Village Project - Existing

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 8400 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	NIGHT
AUTOS	88.08	9.34
M-TRUCKS	1.65	0.19
H-TRUCKS	0.66	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

Ldn AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 61.92

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO Ldn

70 Ldn	65 Ldn	60 Ldn	55 Ldn
0.0	0.0	89.8	190.4

TABLE Existing -09
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 03/07/2017
ROADWAY SEGMENT: Middlefield Dr. - Peony Dr. to Corral Hollow Rd.
NOTES: Tracy Village Project - Existing

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 1700 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	NIGHT
AUTOS	88.08	9.34
M-TRUCKS	1.65	0.19
H-TRUCKS	0.66	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

Ldn AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 56.05

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO Ldn

70 Ldn	65 Ldn	60 Ldn	55 Ldn
0.0	0.0	0.0	65.7

TABLE Existing -10
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 03/07/2017
ROADWAY SEGMENT: Peony Dr. - Corral Hollow Rd. to Middlefield Dr.
NOTES: Tracy Village Project - Existing

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 1300 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	NIGHT
AUTOS	88.08	9.34
M-TRUCKS	1.65	0.19
H-TRUCKS	0.66	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

Ldn AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 51.46

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO Ldn

70 Ldn	65 Ldn	60 Ldn	55 Ldn
0.0	0.0	0.0	0.0

TABLE Existing + Project-01
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 03/07/2017
ROADWAY SEGMENT: Lammers Rd. - W Schulte Rd to Valpico Rd.
NOTES: Tracy Village Project - Existing + Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 8400 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	NIGHT
AUTOS	88.08	9.34
M-TRUCKS	1.65	0.19
H-TRUCKS	0.66	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

Ldn AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 62.99

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO Ldn

70 Ldn	65 Ldn	60 Ldn	55 Ldn
0.0	0.0	88.3	189.9

TABLE Existing + Project-02
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 03/07/2017
ROADWAY SEGMENT: Corral Hollow Rd. - Peony Dr. to Middlefield Dr.
NOTES: Tracy Village Project - Existing + Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 6000 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	NIGHT
AUTOS	88.08	9.34
M-TRUCKS	1.65	0.19
H-TRUCKS	0.66	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

Ldn AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.19

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO Ldn

70 Ldn	65 Ldn	60 Ldn	55 Ldn
0.0	0.0	106.1	228.3

TABLE Existing + Project-03
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 03/07/2017
ROADWAY SEGMENT: Corral Hollow Rd. - Middlefield Dr. to W. Linne Rd.
NOTES: Tracy Village Project - Existing + Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 6100 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	NIGHT
AUTOS	88.08	9.34
M-TRUCKS	1.65	0.19
H-TRUCKS	0.66	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

Ldn AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.27

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO Ldn

70 Ldn	65 Ldn	60 Ldn	55 Ldn
0.0	0.0	107.3	230.9

TABLE Existing + Project-04
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 03/07/2017
ROADWAY SEGMENT: Tracy Blvd. - W. Central Ave. to Valpico Rd.
NOTES: Tracy Village Project - Existing + Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 16600 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	NIGHT
AUTOS	88.08	9.34
M-TRUCKS	1.65	0.19
H-TRUCKS	0.66	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

Ldn AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 66.28

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO Ldn

70 Ldn	65 Ldn	60 Ldn	55 Ldn
0.0	81.8	172.8	370.7

TABLE Existing + Project-05
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 03/07/2017
ROADWAY SEGMENT: Valpico Rd. - Lammers Rd. to Corral Hollow Rd.
NOTES: Tracy Village Project - Existing + Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 7800 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	NIGHT
AUTOS	88.08	9.34
M-TRUCKS	1.65	0.19
H-TRUCKS	0.66	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

Ldn AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 62.67

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO Ldn

70 Ldn	65 Ldn	60 Ldn	55 Ldn
0.0	0.0	84.1	180.7

TABLE Existing + Project-06
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 03/07/2017
ROADWAY SEGMENT: Valpico Rd. - Corral Hollow Rd. to N. Project Driveway
NOTES: Tracy Village Project - Existing + Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 11700 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	NIGHT
AUTOS	88.08	9.34
M-TRUCKS	1.65	0.19
H-TRUCKS	0.66	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

Ldn AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.43

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO Ldn

70 Ldn	65 Ldn	60 Ldn	55 Ldn
0.0	51.4	110.0	236.7

TABLE Existing + Project-07
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 03/07/2017
ROADWAY SEGMENT: Valpico Rd. - N. Project Driveway to Cagney Way
NOTES: Tracy Village Project - Existing + Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 10300 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	NIGHT
AUTOS	88.08	9.34
M-TRUCKS	1.65	0.19
H-TRUCKS	0.66	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

Ldn AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 63.88

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO Ldn			
70 Ldn	65 Ldn	60 Ldn	55 Ldn
0.0	0.0	101.1	217.5

TABLE Existing + Project-08
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 03/07/2017
ROADWAY SEGMENT: Valpico Rd. - Cagney Way to Tracy Blvd.
NOTES: Tracy Village Project - Existing + Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 10600 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	NIGHT
AUTOS	88.08	9.34
M-TRUCKS	1.65	0.19
H-TRUCKS	0.66	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

Ldn AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 62.93

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO Ldn

70 Ldn	65 Ldn	60 Ldn	55 Ldn
0.0	0.0	104.3	222.0

TABLE Existing + Project-09
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 03/07/2017
ROADWAY SEGMENT: Middlefield Dr. - Peony Dr. to Corral Hollow Rd.
NOTES: Tracy Village Project - Existing + Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 2000 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	NIGHT
AUTOS	88.08	9.34
M-TRUCKS	1.65	0.19
H-TRUCKS	0.66	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

Ldn AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 56.76

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO Ldn

70 Ldn	65 Ldn	60 Ldn	55 Ldn
0.0	0.0	0.0	73.2

TABLE Existing + Project-10
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 03/07/2017
ROADWAY SEGMENT: Peony Dr. - Corral Hollow Rd. to Middlefield Dr.
NOTES: Tracy Village Project - Existing + Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 1600 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	NIGHT
AUTOS	88.08	9.34
M-TRUCKS	1.65	0.19
H-TRUCKS	0.66	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

Ldn AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 52.36

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO Ldn

70 Ldn	65 Ldn	60 Ldn	55 Ldn
0.0	0.0	0.0	0.0

TABLE Background-01
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 03/07/2017
ROADWAY SEGMENT: Lammers Rd. - W Schulte Rd to Valpico Rd.
NOTES: Tracy Village Project - Background

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 20400 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	NIGHT
AUTOS	88.08	9.34
M-TRUCKS	1.65	0.19
H-TRUCKS	0.66	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

Ldn AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 66.84

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO Ldn

70 Ldn	65 Ldn	60 Ldn	55 Ldn
0.0	74.1	159.2	342.8

TABLE Background-02
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 03/07/2017
ROADWAY SEGMENT: Corral Hollow Rd. - Peony Dr. to Middlefield Dr.
NOTES: Tracy Village Project - Background

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 22100 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	NIGHT
AUTOS	88.08	9.34
M-TRUCKS	1.65	0.19
H-TRUCKS	0.66	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

Ldn AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.86

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO Ldn

70 Ldn	65 Ldn	60 Ldn	55 Ldn
54.8	117.4	252.7	544.2

TABLE Background-03
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 03/07/2017
ROADWAY SEGMENT: Corral Hollow Rd. - Middlefield Dr. to W. Linne Rd.
NOTES: Tracy Village Project - Background

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 26600 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	NIGHT
AUTOS	88.08	9.34
M-TRUCKS	1.65	0.19
H-TRUCKS	0.66	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

Ldn AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.66

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO Ldn

70 Ldn	65 Ldn	60 Ldn	55 Ldn
61.9	132.8	285.9	615.7

TABLE Background-04
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 03/07/2017
ROADWAY SEGMENT: Tracy Blvd. - W. Central Ave. to Valpico Rd.
NOTES: Tracy Village Project - Background

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 18000 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	NIGHT
AUTOS	88.08	9.34
M-TRUCKS	1.65	0.19
H-TRUCKS	0.66	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

Ldn AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 66.63

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO Ldn

70 Ldn	65 Ldn	60 Ldn	55 Ldn
0.0	86.1	182.3	391.2

TABLE Background-05
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 03/07/2017
ROADWAY SEGMENT: Valpico Rd. - Lammers Rd. to Corral Hollow Rd.
NOTES: Tracy Village Project - Background

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 10700 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	NIGHT
AUTOS	88.08	9.34
M-TRUCKS	1.65	0.19
H-TRUCKS	0.66	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

Ldn AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.04

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO Ldn			
70 Ldn	65 Ldn	60 Ldn	55 Ldn
0.0	0.0	103.7	223.1

TABLE Background-06
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 03/07/2017
ROADWAY SEGMENT: Valpico Rd. - Corral Hollow Rd. to N. Project Driveway
NOTES: Tracy Village Project - Background

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 9600 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	NIGHT
AUTOS	88.08	9.34
M-TRUCKS	1.65	0.19
H-TRUCKS	0.66	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

Ldn AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 63.57

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO Ldn

70 Ldn	65 Ldn	60 Ldn	55 Ldn
0.0	0.0	96.5	207.5

TABLE Background-07
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 03/07/2017
ROADWAY SEGMENT: Valpico Rd. - N. Project Driveway to Cagney Way
NOTES: Tracy Village Project - Background

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 8000 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	NIGHT
AUTOS	88.08	9.34
M-TRUCKS	1.65	0.19
H-TRUCKS	0.66	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

Ldn AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 62.78

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO Ldn

70 Ldn	65 Ldn	60 Ldn	55 Ldn
0.0	0.0	85.5	183.8

TABLE Background-08
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 03/07/2017
ROADWAY SEGMENT: Valpico Rd. - Cagney Way to Tracy Blvd.
NOTES: Tracy Village Project - Background

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 12000 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	NIGHT
AUTOS	88.08	9.34
M-TRUCKS	1.65	0.19
H-TRUCKS	0.66	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

Ldn AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 63.47

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO Ldn

70 Ldn	65 Ldn	60 Ldn	55 Ldn
0.0	54.8	113.0	241.0

TABLE Background-09
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 03/07/2017
ROADWAY SEGMENT: Middlefield Dr. - Peony Dr. to Corral Hollow Rd.
NOTES: Tracy Village Project - Background

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 3600 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	NIGHT
AUTOS	88.08	9.34
M-TRUCKS	1.65	0.19
H-TRUCKS	0.66	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

Ldn AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 59.31

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO Ldn

70 Ldn	65 Ldn	60 Ldn	55 Ldn
0.0	0.0	50.4	108.0

TABLE Background-10
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 03/07/2017
ROADWAY SEGMENT: Peony Dr. - Corral Hollow Rd. to Middlefield Dr.
NOTES: Tracy Village Project - Background

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 1800 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	NIGHT
AUTOS	88.08	9.34
M-TRUCKS	1.65	0.19
H-TRUCKS	0.66	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

Ldn AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 52.87

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO Ldn

70 Ldn	65 Ldn	60 Ldn	55 Ldn
0.0	0.0	0.0	0.0

TABLE Background + Project-01
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 03/07/2017
ROADWAY SEGMENT: Lammers Rd. - W Schulte Rd to Valpico Rd.
NOTES: Tracy Village Project - Background + Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 22200 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	NIGHT
AUTOS	88.08	9.34
M-TRUCKS	1.65	0.19
H-TRUCKS	0.66	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

Ldn AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.21

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO Ldn

70 Ldn	65 Ldn	60 Ldn	55 Ldn
0.0	78.4	168.5	362.7

TABLE Background + Project-02
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 03/07/2017
ROADWAY SEGMENT: Corral Hollow Rd. - Peony Dr. to Middlefield Dr.
NOTES: Tracy Village Project - Background + Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 22400 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	NIGHT
AUTOS	88.08	9.34
M-TRUCKS	1.65	0.19
H-TRUCKS	0.66	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

Ldn AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.91

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO Ldn

70 Ldn	65 Ldn	60 Ldn	55 Ldn
55.3	118.5	255.0	549.1

TABLE Background + Project-03
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 03/07/2017
ROADWAY SEGMENT: Corral Hollow Rd. - Middlefield Dr. to W. Linne Rd.
NOTES: Tracy Village Project - Background + Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 27000 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	NIGHT
AUTOS	88.08	9.34
M-TRUCKS	1.65	0.19
H-TRUCKS	0.66	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

Ldn AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.73

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO Ldn

70 Ldn	65 Ldn	60 Ldn	55 Ldn
62.5	134.2	288.8	621.9

TABLE Background + Project-04
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 03/07/2017
ROADWAY SEGMENT: Tracy Blvd. - W. Central Ave. to Valpico Rd.
NOTES: Tracy Village Project - Background + Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 19900 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	NIGHT
AUTOS	88.08	9.34
M-TRUCKS	1.65	0.19
H-TRUCKS	0.66	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

Ldn AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.07

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO Ldn

70 Ldn	65 Ldn	60 Ldn	55 Ldn
0.0	91.8	194.8	418.2

TABLE Background + Project-05
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 03/07/2017
ROADWAY SEGMENT: Valpico Rd. - Lammers Rd. to Corral Hollow Rd.
NOTES: Tracy Village Project - Background + Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 12500 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	NIGHT
AUTOS	88.08	9.34
M-TRUCKS	1.65	0.19
H-TRUCKS	0.66	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

Ldn AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.72

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO Ldn

70 Ldn	65 Ldn	60 Ldn	55 Ldn
0.0	53.6	115.0	247.4

TABLE Background + Project-06
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 03/07/2017
ROADWAY SEGMENT: Valpico Rd. - Corral Hollow Rd. to N. Project Driveway
NOTES: Tracy Village Project - Background + Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 13100 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	NIGHT
AUTOS	88.08	9.34
M-TRUCKS	1.65	0.19
H-TRUCKS	0.66	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

Ldn AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.92

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO Ldn

70 Ldn	65 Ldn	60 Ldn	55 Ldn
0.0	55.3	118.6	255.2

TABLE Background + Project-07
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 03/07/2017
ROADWAY SEGMENT: Valpico Rd. - N. Project Driveway to Cagney Way
NOTES: Tracy Village Project - Background + Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 10200 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	NIGHT
AUTOS	88.08	9.34
M-TRUCKS	1.65	0.19
H-TRUCKS	0.66	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

Ldn AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 63.83

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO Ldn

70 Ldn	65 Ldn	60 Ldn	55 Ldn
0.0	0.0	100.4	216.1

TABLE Background + Project-08
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 03/07/2017
ROADWAY SEGMENT: Valpico Rd. - Cagney Way to Tracy Blvd.
NOTES: Tracy Village Project - Background + Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 14200 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	NIGHT
AUTOS	88.08	9.34
M-TRUCKS	1.65	0.19
H-TRUCKS	0.66	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

Ldn AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.20

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO Ldn

70 Ldn	65 Ldn	60 Ldn	55 Ldn
0.0	60.7	126.1	269.5

TABLE Background + Project-09
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 03/07/2017
ROADWAY SEGMENT: Middlefield Dr. - Peony Dr. to Corral Hollow Rd.
NOTES: Tracy Village Project - Background + Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 3800 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	NIGHT
AUTOS	88.08	9.34
M-TRUCKS	1.65	0.19
H-TRUCKS	0.66	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

Ldn AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 59.55

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO Ldn

70 Ldn	65 Ldn	60 Ldn	55 Ldn
0.0	0.0	52.3	112.0

TABLE Background + Project-10
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 03/07/2017
ROADWAY SEGMENT: Peony Dr. - Corral Hollow Rd. to Middlefield Dr.
NOTES: Tracy Village Project - Background + Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 2100 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	NIGHT
AUTOS	88.08	9.34
M-TRUCKS	1.65	0.19
H-TRUCKS	0.66	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

Ldn AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 53.54

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO Ldn

70 Ldn	65 Ldn	60 Ldn	55 Ldn
0.0	0.0	0.0	0.0

TABLE Cumulative-01
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 03/07/2017
ROADWAY SEGMENT: Lammers Rd. - W Schulte Rd to Valpico Rd.
NOTES: Tracy Village Project - Cumulative

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 59400 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	NIGHT
AUTOS	88.08	9.34
M-TRUCKS	1.65	0.19
H-TRUCKS	0.66	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

Ldn AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 71.49

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO Ldn

70 Ldn	65 Ldn	60 Ldn	55 Ldn
70.2	150.7	324.5	698.8

TABLE Cumulative-02
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 03/07/2017
ROADWAY SEGMENT: Corral Hollow Rd. - Peony Dr. to Middlefield Dr.
NOTES: Tracy Village Project - Cumulative

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 19800 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	NIGHT
AUTOS	88.08	9.34
M-TRUCKS	1.65	0.19
H-TRUCKS	0.66	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

Ldn AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.38

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO Ldn

70 Ldn	65 Ldn	60 Ldn	55 Ldn
51.0	109.2	234.9	505.7

TABLE Cumulative-03
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 03/07/2017
ROADWAY SEGMENT: Corral Hollow Rd. - Middlefield Dr. to W. Linne Rd.
NOTES: Tracy Village Project - Cumulative

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 24600 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	NIGHT
AUTOS	88.08	9.34
M-TRUCKS	1.65	0.19
H-TRUCKS	0.66	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

Ldn AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.32

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO Ldn

70 Ldn	65 Ldn	60 Ldn	55 Ldn
58.8	126.1	271.4	584.5

TABLE Cumulative-04
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 03/07/2017
ROADWAY SEGMENT: Tracy Blvd. - W. Central Ave. to Valpico Rd.
NOTES: Tracy Village Project - Cumulative

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 30400 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	NIGHT
AUTOS	88.08	9.34
M-TRUCKS	1.65	0.19
H-TRUCKS	0.66	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

Ldn AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.91

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO Ldn

70 Ldn	65 Ldn	60 Ldn	55 Ldn
58.3	120.8	257.8	554.3

TABLE Cumulative-05
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 03/07/2017
ROADWAY SEGMENT: Valpico Rd. - Lammers Rd. to Corral Hollow Rd.
NOTES: Tracy Village Project - Cumulative

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 17400 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	NIGHT
AUTOS	88.08	9.34
M-TRUCKS	1.65	0.19
H-TRUCKS	0.66	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

Ldn AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 66.15

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO Ldn			
70 Ldn	65 Ldn	60 Ldn	55 Ldn
0.0	66.7	143.3	308.3

TABLE Cumulative-06
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 03/07/2017
ROADWAY SEGMENT: Valpico Rd. - Corral Hollow Rd. to N. Project Driveway
NOTES: Tracy Village Project - Cumulative

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 20900 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES	
DAY	NIGHT
AUTOS	
88.08	9.34
M-TRUCKS	
1.65	0.19
H-TRUCKS	
0.66	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

Ldn AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 66.95

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO Ldn			
70 Ldn	65 Ldn	60 Ldn	55 Ldn
0.0	75.3	161.8	348.4

TABLE Cumulative-07
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 03/07/2017
ROADWAY SEGMENT: Valpico Rd. - N. Project Driveway to Cagney Way
NOTES: Tracy Village Project - Cumulative

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 20900 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	NIGHT
AUTOS	88.08	9.34
M-TRUCKS	1.65	0.19
H-TRUCKS	0.66	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

Ldn AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 66.95

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO Ldn			
70 Ldn	65 Ldn	60 Ldn	55 Ldn
0.0	75.3	161.8	348.4

TABLE Cumulative-08
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 03/07/2017
ROADWAY SEGMENT: Valpico Rd. - Cagney Way to Tracy Blvd.
NOTES: Tracy Village Project - Cumulative

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 21400 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	NIGHT
AUTOS	88.08	9.34
M-TRUCKS	1.65	0.19
H-TRUCKS	0.66	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

Ldn AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 65.98

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO Ldn

70 Ldn	65 Ldn	60 Ldn	55 Ldn
0.0	78.3	165.1	353.9

TABLE Cumulative-09
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 03/07/2017
ROADWAY SEGMENT: Middlefield Dr. - Peony Dr. to Corral Hollow Rd.
NOTES: Tracy Village Project - Cumulative

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 3600 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	NIGHT
AUTOS	88.08	9.34
M-TRUCKS	1.65	0.19
H-TRUCKS	0.66	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

Ldn AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 59.31

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO Ldn			
70 Ldn	65 Ldn	60 Ldn	55 Ldn
0.0	0.0	50.4	108.0

TABLE Cumulative-10
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 03/07/2017
ROADWAY SEGMENT: Peony Dr. - Corral Hollow Rd. to Middlefield Dr.
NOTES: Tracy Village Project - Cumulative

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 1800 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	NIGHT
AUTOS	88.08	9.34
M-TRUCKS	1.65	0.19
H-TRUCKS	0.66	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

Ldn AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 52.87

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO Ldn

70 Ldn	65 Ldn	60 Ldn	55 Ldn
0.0	0.0	0.0	0.0

TABLE Cumulative + Project-01
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 03/07/2017
ROADWAY SEGMENT: Lammers Rd. - W Schulte Rd to Valpico Rd.
NOTES: Tracy Village Project - Cumulative + Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 60200 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	NIGHT
AUTOS	88.08	9.34
M-TRUCKS	1.65	0.19
H-TRUCKS	0.66	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

Ldn AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 71.54

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO Ldn

70 Ldn	65 Ldn	60 Ldn	55 Ldn
70.8	152.1	327.4	705.1

TABLE Cumulative + Project-02
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 03/07/2017
ROADWAY SEGMENT: Corral Hollow Rd. - Peony Dr. to Middlefield Dr.
NOTES: Tracy Village Project - Cumulative + Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 20100 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	NIGHT
AUTOS	88.08	9.34
M-TRUCKS	1.65	0.19
H-TRUCKS	0.66	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

Ldn AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.44

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO Ldn

70 Ldn	65 Ldn	60 Ldn	55 Ldn
51.5	110.3	237.2	510.8

TABLE Cumulative + Project-03
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 03/07/2017
ROADWAY SEGMENT: Corral Hollow Rd. - Middlefield Dr. to W. Linne Rd.
NOTES: Tracy Village Project - Cumulative + Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 25000 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	NIGHT
AUTOS	88.08	9.34
M-TRUCKS	1.65	0.19
H-TRUCKS	0.66	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

Ldn AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.39

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO Ldn

70 Ldn	65 Ldn	60 Ldn	55 Ldn
59.4	127.5	274.3	590.8

TABLE Cumulative + Project-04
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 03/07/2017
ROADWAY SEGMENT: Tracy Blvd. - W. Central Ave. to Valpico Rd.
NOTES: Tracy Village Project - Cumulative + Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 32300 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	NIGHT
AUTOS	88.08	9.34
M-TRUCKS	1.65	0.19
H-TRUCKS	0.66	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

Ldn AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.17

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO Ldn

70 Ldn	65 Ldn	60 Ldn	55 Ldn
60.5	125.6	268.4	577.2

TABLE Cumulative + Project-05
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 03/07/2017
ROADWAY SEGMENT: Valpico Rd. - Lammers Rd. to Corral Hollow Rd.
NOTES: Tracy Village Project - Cumulative + Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 19300 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	NIGHT
AUTOS	88.08	9.34
M-TRUCKS	1.65	0.19
H-TRUCKS	0.66	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

Ldn AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 66.60

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO Ldn

70 Ldn	65 Ldn	60 Ldn	55 Ldn
0.0	71.5	153.5	330.4

TABLE Cumulative + Project-06
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 03/07/2017
ROADWAY SEGMENT: Valpico Rd. - Corral Hollow Rd. to N. Project Driveway
NOTES: Tracy Village Project - Cumulative + Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 24500 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	NIGHT
AUTOS	88.08	9.34
M-TRUCKS	1.65	0.19
H-TRUCKS	0.66	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

Ldn AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.64

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO Ldn

70 Ldn	65 Ldn	60 Ldn	55 Ldn
0.0	83.7	179.9	387.3

TABLE Cumulative + Project-07
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 03/07/2017
ROADWAY SEGMENT: Valpico Rd. - N. Project Driveway to Cagney Way
NOTES: Tracy Village Project - Cumulative + Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 23100 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	NIGHT
AUTOS	88.08	9.34
M-TRUCKS	1.65	0.19
H-TRUCKS	0.66	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

Ldn AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.38

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO Ldn

70 Ldn	65 Ldn	60 Ldn	55 Ldn
0.0	80.5	173.0	372.4

TABLE Cumulative + Project-08
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 03/07/2017
ROADWAY SEGMENT: Valpico Rd. - Cagney Way to Tracy Blvd.
NOTES: Tracy Village Project - Cumulative + Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 23600 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	NIGHT
AUTOS	88.08	9.34
M-TRUCKS	1.65	0.19
H-TRUCKS	0.66	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

Ldn AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 66.40

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO Ldn

70 Ldn	65 Ldn	60 Ldn	55 Ldn
0.0	83.3	176.1	377.7

TABLE Cumulative + Project-09
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 03/07/2017
ROADWAY SEGMENT: Middlefield Dr. - Peony Dr. to Corral Hollow Rd.
NOTES: Tracy Village Project - Cumulative + Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 3800 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	NIGHT
AUTOS	88.08	9.34
M-TRUCKS	1.65	0.19
H-TRUCKS	0.66	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

Ldn AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 59.55

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO Ldn			
70 Ldn	65 Ldn	60 Ldn	55 Ldn
0.0	0.0	52.3	112.0

TABLE Cumulative + Project-10
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 03/07/2017
ROADWAY SEGMENT: Peony Dr. - Corral Hollow Rd. to Middlefield Dr.
NOTES: Tracy Village Project - Cumulative + Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 2600 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	NIGHT
AUTOS	88.08	9.34
M-TRUCKS	1.65	0.19
H-TRUCKS	0.66	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

Ldn AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 54.47

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO Ldn

70 Ldn	65 Ldn	60 Ldn	55 Ldn
0.0	0.0	0.0	51.7

Appendix H: Traffic Study

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Tracy Village – City of Tracy, CA

Transportation Impact Analysis

June 28, 2017 | Draft Report

Prepared For:

City of Tracy
333 Civic Center Plaza
Tracy, CA 95376

Prepared By:

Kimley»Horn

100 West San Fernando Street, Suite 250
San Jose, CA 95113

Contents

EXECUTIVE SUMMARY 1

Project Description 1

Analysis Overview 1

Study Intersections 2

Added Trip Estimates 3

Impacts and Mitigations 3

1. INTRODUCTION 8

Study Methodology 8

Study Intersections Included in Analysis 15

Study Roadway Segments Included in Analysis 15

Report Organization 15

2. EXISTING CONDITIONS 17

Existing Roadway Network 17

Existing Study Intersections 19

Existing Peak-Hour Turning Movement Volumes 20

Existing Pedestrian and Bicycle Facilities 23

Existing Transit Facilities 23

Existing Level of Service at Study Intersections 25

Existing Roadway Segment Level of Service 27

3. PROPOSED PROJECT 28

Project Transportation System Changes 28

Trip Generation Estimates 28

Trip Distribution and Assignment 30

4. EXISTING PLUS PROJECT CONDITIONS 36

Existing Plus Project Intersection Segment Level of Service 36

Existing Plus Project Roadway Segment Level of Service 42

5. BACKGROUND CONDITIONS 44

Background Traffic Volume and Improvements 44

Background Intersection Level of Service 45
Background Roadway Segment Level of Service 49
Background Plus Project Intersection Level of Service 51
Background Plus Project Roadway Segment Level of Service 58
6. CUMULATIVE CONDITIONS 61
Cumulative Intersection Level of Service 62
Cumulative Roadway Segment Level of Service 65
Cumulative Plus Project Intersection Level of Service 66
Cumulative Plus Project Roadway Segment Level of Service 71
7. POTENTIAL EFFECTS ON PEDESTRIAN, BICYCLE, AND TRANSIT MOBILITY 73
8. VEHICLE PARKING, ACCESS, AND CIRCULATION 73
Vehicle Parking 73
Vehicle Access and Circulation 73
Peony/ Middlefield Neighborhood Circulation 74
9. CITY OF TRACY PLANS 76
General Plan 76
Sustainability Action Plan 80
Roadway and Transportation Master Plan 80
Truck Traffic 81
10. TRAFFIC IMPACT FEES 83
11. CMP ROADWAY NETWORK 84
San Joaquin County Regional Congestion Management Program 2016 84
San Joaquin COG Capital Improvement Program 84
APPENDIX 85

Figures

Figure 1 – Project Location Map 10
Figure 2 – Specific Plan 11
Figure 3 – Annexation Area Map 12
Figure 4 – Existing Conditions Lane Geometry and Traffic Control 21
Figure 5 – Existing Conditions Peak Hour Turning Movement Volumes 22
Figure 6 – Project Trip Distribution: Existing and Background Conditions 32
Figure 7 – Project Trip Distribution: Cumulative Conditions 33
Figure 8 – Project Trip Assignment: Existing and Background Peak Hour Conditions 34
Figure 9 – Project Trip Assignment: Cumulative Peak Hour Conditions 35
Figure 10 – Existing Plus Project Conditions Lane Geometry and Traffic Control 38
Figure 11 – Existing Plus Project Conditions Peak Hour Traffic Volumes 39
Figure 12 – Background Conditions Lane Geometry and Traffic Control 47
Figure 13 – Background Conditions Peak Hour Traffic Volumes 48
Figure 14 – Background Plus Project Conditions Lane Geometry and Traffic Control 54
Figure 15 – Background Plus Project Conditions Peak Hour Traffic Volumes 55
Figure 16 – Cumulative Conditions Lane Geometry and Traffic Control 63
Figure 17 – Cumulative Conditions Peak Hour Traffic Volumes 64
Figure 18 – Cumulative Plus Project Conditions Lane Geometry and Traffic Control 67
Figure 19 – Cumulative Plus Project Conditions Peak Hour Traffic Volumes 68
Figure 20 – Internal Roadway Network 75

Tables

Table 1 – Intersection Level of Service Definitions 13
Table 2 – Parking Occupancy at ACE Tracy Station 25
Table 3 – Existing Conditions Intersection Level of Service 26
Table 4 – Existing Conditions Roadway Segment Level of Service 27
Table 5 – Project Trip Generation 29
Table 6 – Project Trip Generation – Senior Adult Housing 30
Table 7 – Existing Plus Project Conditions Intersection Level of Service 40
Table 8 – Mitigated Existing Plus Project Conditions Intersection Level of Service 41
Table 9 – Existing Plus Project Conditions Roadway Segment Level of Service 43
Table 10 – Background Conditions Intersection Level of Service 46
Table 11 – Background Conditions Roadway Segment Level of Service 50
Table 12 – Background Plus Project Conditions Intersection Level of Service 56
Table 13 – Mitigated Background Plus Project Conditions Intersection Level of Service 57
Table 14 – Background Plus Project Conditions Roadway Segment Level of Service 59
Table 15 – Mitigated Background Plus Project Conditions Roadway Segment Level of Service 60
Table 16 – Cumulative Conditions Intersection Level of Service 62
Table 17 – Cumulative Conditions Roadway Segment Level of Service 65
Table 18 – Cumulative Plus Project Conditions Intersection Level of Service 69
Table 19 – Mitigated Cumulative Plus Project Conditions Intersection Level of Service 70
Table 20 – Cumulative Plus Project Conditions Roadway Segment Level of Service 72

EXECUTIVE SUMMARY

This report presents the results of the Transportation Impact Analysis (TIA) for the proposed Tracy Village Residential Specific Plan (Project), and the annexation of land to the north and west of the Specific Plan area located in the City of Tracy, California. **Figure 1** shows the Project study area, Project location, and study intersections. The Project site plan is shown in **Figure 2**. The Annexation area is shown in **Figure 3.**

PROJECT DESCRIPTION

This TIA presents the findings of the traffic analysis for the proposed construction of 600 single-family dwelling units (Project). The report also evaluates the alternative implementation of 600 Active Adult homes for the Specific Plan, and the Annexation of land to the north and west of the Specific Plan area. Parks, recreation areas, lakes, and pedestrian connections will be constructed. The Specific Plan is generally located east of Corral Hollow Road and south of Valpico Road in the City of Tracy, California. The existing site is primarily undeveloped land and currently contains two single family homes and adjacent land south and east of the Project site consists of established residential communities. Large lot residential units are located immediately the west of the Specific Plan and immediately north of Valpico Road. The Specific Plan plus these two areas make up the Annexation area.

The site will construct a pedestrian pathway from the southwest corner of the site to Corral Hollow Road as well as to Bluegrass Lane in the east and will provide full access via two roadways/ intersections including:

- Project Driveway #1 / Valpico Road (Future Intersection)
- Middlefield Drive south of the Project site

The Project will make frontage improvements along Valpico Road and will construct Middlefield Drive to Valpico Road as well as an on-site street system within the Project per the City of Tracy Citywide Roadway and Transportation Master Plan (TMP) requirements for lanes.

ANALYSIS OVERVIEW

The potential impacts associated with the proposed Project were evaluated for the weekday AM and PM peak hours for the following analysis scenarios:

- **Scenario 1: Existing (2016) Conditions**
  Based on current traffic counts taken in 2016 and 2017 and existing roadway geometry and traffic control.
- **Scenario 2: Existing (2016) Plus Project Conditions**
  Based on current traffic counts and existing roadway geometry and traffic control plus the traffic generated by the Tracy Village Project.
- **Scenario 3: Background Conditions**
  Based on current traffic counts and adding approved project traffic volumes to the existing roadway geometry and traffic control. These projects would include Ellis, Cordes Ranch, Tracy Hills and Rocking Horse (Stringer).
- **Scenario 4: Background Plus Project Conditions**
  Based on current traffic counts and adding approved project traffic volumes to the existing roadway geometry and traffic control plus the traffic generated by the Tracy Village Project.

- **Scenario 5: Cumulative (2035) Conditions**
  Cumulative conditions land use assumptions in the City's 2035 Travel Demand Model were updated based on discussion with City staff and updated model results were used from the Tracy Hills project and updated to reflect Rocking Horse.
- **Scenario 6: Cumulative (2035) Plus Project Conditions**
  Cumulative Conditions plus traffic generated by the Tracy Village Project.

STUDY INTERSECTIONS

Study intersections were selected in consultation with City of Tracy staff and are technically selected based on trip generation estimates and trip distribution. Trip generation rates were developed based on the City of Tracy Travel Demand Model, City of Tracy trip generation rates, and knowledge of the study area. The City's criteria for studying intersections is the addition of 5% or more Project trips for Cumulative Conditions traffic and any new roadways that would be constructed and not previously analyzed. Corral Hollow Road / Linne Road is an SJCOG CMP intersection. The following intersections and Project driveways were identified for analysis:

1. Lammers Road / Old Schulte Road
2. Lammers Road / Valpico Road
3. Lammers Road / Linne Road (Future Intersection)
4. Corral Hollow Road / Valpico Road
5. Corral Hollow Road / Peony Drive
6. Corral Hollow Road / Middlefield Drive
7. Corral Hollow Road / Linne Road (CMP)
8. Project Driveway #1 / Valpico Road (Future Intersection)
9. Middlefield Drive / Peony Drive
10. Tracy Boulevard / Central Avenue
11. Tracy Boulevard / Valpico Road

The Project will generate new vehicular trips that will increase traffic volumes on the nearby street network. Lammers Road and Corral Hollow Road study roadway segments are part of the SJCOG CMP network. To assess changes in traffic conditions associated with the Project, the following roadway segments are selected for evaluation in this study:

A. Lammers Road – Old Schulte Road to Valpico Road (CMP)
B. Lammers Road – Valpico Road to Linne Road (CMP)
C. Corral Hollow Road – Valpico Road to Peony Drive (CMP)
D. Corral Hollow Road – Peony Drive to Middlefield Drive (CMP)
E. Corral Hollow Road – Middlefield Drive to Linne Road (CMP)
F. Tracy Boulevard – Central Avenue to Valpico Road
G. Valpico Road – Lammers Road to Corral Hollow Road
H. Valpico Road – Corral Hollow Road to Project Driveway #1
I. Valpico Road – Project Driveway #1 to Tracy Boulevard
J. Middlefield Drive – Peony Drive to Corral Hollow Road
K. Peony Drive – Corral Hollow Road to Middlefield Drive

ADDED TRIP ESTIMATES

The Project if built as a single-family development, will generate 330 AM peak hour trips and 630 PM peak hour trips on average weekdays based on the 2012 City of Tracy Trip Generation Rates. Credit was taken for the two single family units on the site. The Project land use will be residential; therefore, no reductions were calculated. In addition, the City of Tracy trip generation rates do include alternative mode reductions for residential uses.

As an Active Adult, residential project, the site will generate 132 AM peak hour trips and 162 PM peak hour trips on average weekdays based on 9th Edition ITE Trip Generation Rates.

IMPACTS AND MITIGATIONS

The Project will pay SJCOG, County of San Joaquin, and City of Tracy Traffic Impact Fees. The fees will be utilized to fund planned improvements on the local and regional roadway network and will mitigate incremental cumulative impacts not identified in the study.

Existing Conditions:

- Lammers Road / Old Schulte Road (Intersection #1) (AM & PM Peak)
    A. The addition of Project traffic causes the intersection to deteriorate from LOS D and C during the AM and PM peak hour to LOS F in the AM peak hour and LOS E in the PM peak hours, respectively. The intersection would operate at an acceptable LOS A in the AM and PM Peaks with the following improvement: Install a signal, add a separate northbound left turn pocket, add a separate right turn pocket, and add a separate eastbound left turn pocket. The City has recently approved the installation of this interim improvement at the intersection and the intersection would operate acceptable at LOS A in the AM peak hour and LOS A in the PM peak. Since the improvement is funded, the project would not contribute to it.
    B. The addition of the project traffic for an Active Adult land use type would result in the same mitigation requirement as A the Single -Family land use alternative.

- Corral Hollow Road / Valpico Road (Intersection #4) (AM & PM Peak)
    A. The addition of Project traffic causes the intersection to deteriorate in delay and continue to operate at LOS F in both the AM and PM peak hour. The City has recently approved the widening of Corral Hollow Road to four lanes from Parkside Drive to Linne Road, including the addition of turn lanes and signalization of the Corral Hollow / Valpico Road intersection. The improvements are identified in the City TMP. The Project would pay the City Traffic Impact Fees. With these improvements, the intersection would operate at an acceptable LOS A in the AM and in the PM peak hour. The improved intersection geometry will be as follows: 1 NBL, 1 NBT, 1 NBT/R, 1 SBL, 2 SBT, 1 SBR, 1 WBL, 2 WBT, 1 WBR, 1 EBL, 1 EBT, 1 EBT/R. The Project would pay the City Traffic Impact Fees.
    B. The addition of the project traffic for an Active Adult land use would result in the same mitigation requirement as A, the Single -Family land use alternative.

- Corral Hollow Road / Linne Road (Intersection #7) (AM Peak)

    A. The addition of Project traffic causes the intersection to deteriorate from LOS E and B during the AM and PM peak hour to LOS F in the AM peak hour and LOS B in the PM peak hours, respectively. The intersection would operate at an acceptable LOS A in the AM and PM Peaks with the following improvement. The City has recently, as part of the Tracy Hills Specific Plan, approved the installation of a signal at the intersection that will have interconnect with the railroad crossing controller. Improvements shall be constructed at the railroad crossing gates as well. This is a partial TMP improvement and shall be partially funded by the City TIF. The project would pay the City Traffic Impact Fees. With these improvements, the intersection would operate at an acceptable LOS A in the AM Peak Hour and LOS A in the PM Peak Hour. The improvements are a Public Utilities Commission requirement because vehicle queues will spill across the railroad tracks and will cause safety concerns for train traffic. This improvement is a partial TMP improvement and shall be partially funded by the City TIF. The City Engineer shall, at the time the tentative map is prepared, identify the non-TMP improvements. The costs of the non-TMP improvements are the responsibility of the Applicant. The Applicant shall, in collaboration with the City Engineer and UPRR/PUC, commence with an engineering design process to install the improvements identified. This design shall commence immediately following the approval of this Project Application by the City of Tracy. The City does not have control over the UPRR/PUC approval of this improvement and until the improvement is installed, the Project impact will remain significant and unavoidable.

    B. The addition of the project traffic for an Active Adult land use would not add 10% or more of the existing traffic and the Active Adult scenario traffic would not have a significant impact.

- Lammers Road: Old Schulte Road Valpico – Expand from two lanes to four lanes. The widening of this segment to four lanes will complement and overlap with the intersection improvements for background conditions. The intersections govern the capacity in this urban setting and thus the segment can be expected to also operate acceptably. The deficient segments on Lammers Road indicated in Table 15 does not accurately reflect the roadway network operations. The model is a planning level tool to determine the general number of lane required and ignores the intersection capacities. The project will pay a fair shar towards widening the roadway. The widening is included in the City TIF.

- Corral Hollow Road: Valpico Road to Linne Road – no addition of lanes. The widening of this segment to four lanes will complement and overlap with the intersection improvements for background conditions. The intersections govern the capacity in this urban setting and thus the segment can be expected to also operate acceptably. The deficient segments on Corral Hollow Road indicated in Table 15 does not accurately reflect the roadway network operations. The model is a planning level tool to determine the general number of lane required and ignores the intersection capacities.

Background Conditions:

For Background Base Line Conditions traffic analysis, it is assumed that improvements will be installed by approved, but not yet constructed development projects i.e. Tracy Hills, Ellis, and Cordes Ranch projects. Mitigations had previously been identified for these approved projects and are included in the

Background Base Line Conditions analysis for determining Tracy Village Project impacts. Background base line and the added Tracy Village Project mitigations may include ultimate City of Tracy TMP Program improvements, towards which the applicants will pay the City Traffic Impact Fees. TMP Program improvements constructed by a developer will be eligible to receive fee credits upon completion of construction and acceptance by the City. Any interim roadway mitigations and improvements not included in the City of Tracy TMP Program improvements, will be funded by the approved projects and the Tracy Village Project Applicant. However, if the approved projects do not develop or an application for a building permit is not submitted before the Tracy Village Project submits an application, the Tracy Village Project Applicant shall install the full Background Conditions Plus Project improvements, which will include the Background Base Line improvements. The Tracy Village Applicant will be reimbursed by the other approved projects through a Business Improvement District. The reimbursement from future projects to the Tracy Village Applicant shall constitute their share of the improvement.

- Lammers Road / Old Schulte Road (Intersection #1) (PM Peak)
    A. The addition of Project traffic causes the intersection to deteriorate from LOS A and D during the AM and PM peak hour to LOS B in the AM peak hour and LOS E in the PM peak hour, respectively. The intersection would operate at an acceptable LOS B and D with the following improvement: install an eastbound right turn overlap phase and retime the intersection to optimize cycle lengths and splits. The applicant shall improve the signal timing with issuance of the first building permit.
    B. The addition of the project traffic for an Active Adult land use would result in LOS D operating conditions in the PM peak period, which is acceptable, and the project would not cause an impact. The AM peak would also operate at acceptable LOS.
- Lammers Road / Valpico Road (Intersection #2) (AM & PM Peak)
    A. The addition of Project traffic causes the intersection to add delay and continue to deteriorate and operate at LOS F in both the AM and PM peak hours. The intersection would operate at acceptable LOS C and D with the following improvement: Add a separate westbound right turn lane, and a shared westbound left turn and through lane. The westbound right turn phase will be overlapped with the southbound left turn phase. The applicant shall install this improvement with the issuance of the first building permit.
    B. The addition of the project traffic for an Active Adult land use land use type would result in the same mitigation requirement as A the Single -Family land use alternative.
- Corral Hollow Road / Linne Road (Intersection #7) (AM and PM Peak)
    A. The addition of Project traffic causes the intersection to add delay and continue to deteriorate and operate at LOS F in both the AM and PM peak hours. The intersection would operate at acceptable LOS B and D with the following improvements: Add a southbound through lane, and add a northbound through lane, and add a separate westbound right turn lane. The applicant shall install these improvements at the issuance of the first building permit. Improvements shall be constructed at the railroad crossing gates. The improvements are a Public Utilities Commission requirement because vehicle queues will spill across the railroad tracks and will cause safety concerns for train traffic. This improvement is a partial TMP improvement and shall be partially funded by the City TIF. The City Engineer shall, at the time the tentative map is prepared, identify the non-TMP improvements. The costs of the non-TMP improvements are the responsibility of the

Applicant and other approved projects listed above. The Applicant shall, in collaboration with the City Engineer and UPRR/PUC, commence with an engineering design process to install the improvements identified. This design shall commence immediately following the approval of this Project Application by the City of Tracy. The City does not have control over the UPRR/PUC approval of this improvement and until the improvement is installed, the Project impact will remain significant and unavoidable.

B. The addition of the project traffic for an Active Adult land use land use type would result in the same mitigation requirement as A, the Single-Family land use alternative.

- Valpico Road / Tracy Boulevard (Intersection #11) (PM Peak)

  A. The addition of Project traffic causes the intersection to deteriorate from LOS E in the PM peak hour to LOS F. The intersection would operate at acceptable LOS D in the AM and PM peak hours with the following improvements: optimize the signal cycle length, splits, and phasing. The applicant shall install this improvement at the issuance of the first building permit.

  B. The addition of the project traffic for an Active Adult land use land use type would result in the same mitigation requirement as A.

- Lammers Road: Old Schulte Road to Valpico – Expand from two lanes to four lanes. The widening of this segment to four lanes will complement and overlap with the intersection improvements for background conditions. The intersections govern the capacity in this urban setting and thus the segment can be expected to also operate acceptably. The deficient segments on Lammers Road indicated in Table 15 does not accurately reflect the roadway network operations. The model is a planning level tool to determine the general number of lane required and ignores the intersection capacities. The project will pay a fair share towards widening the roadway. The widening is included in the City TIF.

- Corral Hollow Road: Valpico Road to Linne Road – no addition of lanes. The widening of this segment to four lanes will complement and overlap with the intersection improvements for background conditions. The intersections govern the capacity in this urban setting and thus the segment can be expected to also operate acceptably. The deficient segments on Corral Hollow Road indicated in Table 15 does not accurately reflect the roadway network operations. The model is a planning level tool to determine the general number of lane required and ignores the intersection capacities.

Cumulative Conditions:

- Lammers Road / Valpico Road (Intersection #2) (AM & PM Peak)

  A. The addition of Project traffic causes the intersection to add delay and continue to operate at deficient LOS F. The intersection would operate at acceptable LOS B and LOS D with the following improvement: install a channelized westbound right turn pocket, a second southbound left turn pocket, an eastbound right turn overlap phase and a northbound right turn overlap phase. These improvements are in addition to the TMP improvements. The Project causes a significant impact and should fund these improvements.

  B. The addition of the project traffic for an Active Adult land use causes a significant impact and the mitigation would be the same as for A, the Single-Family land use alternative.

- Corral Hollow Road / Valpico Road (Intersection #4) (AM & PM Peak)

    A. Corral Hollow Road / Valpico Road (Intersection #4) (PM Peak) The addition of Project traffic causes the intersection LOS to deteriorate from LOS D to LOS E in the PM peak hour. The intersection would operate at an acceptable LOS of B in the AM Peak and LOS D in the PM peak hour with the following improvement: a westbound right turn overlap phase and a southbound right turn overlap phase. These improvements are in addition to the TMP improvements.

    B. The addition of the project traffic for an Active Adult land use will result in LOS D at the intersection during the PM peak period and has no impact.

- Valpico Road / Tracy Boulevard (Intersection #11) (PM Peak)

    A. The addition of Project traffic causes the intersection LOS to deteriorate from LOS D to LOS E in the PM peak hour. The intersection would operate at an acceptable LOS of D in the AM and PM peak hours with the following improvement: change the phasing on Central Ave to permitted-protected and retime the intersection to optimize cycle lengths and splits. This is not a TMP improvement and shall be funded by the Tracy Village Project at the issuance of the final building permit for the project.

    B. The addition of the project traffic for an Active Adult land use will result in LOS D at the intersection during the PM peak period, and would not be considered an impact.

The Project has no significant Cumulative Conditions impacts on the study roadway network. The Project would pay the City TIF, which represents its fair share payment towards potential cumulative impacts for both intersections and roadway segments.

1. INTRODUCTION

The Project proposes to construct a community consisting of 600 single family residential units. Two alternative land uses are evaluated: Single Family homes and Active Adult detached homes. Parks, recreation areas, lakes, and pedestrian connections will also be constructed and accessible to community members. The community will be constructed east of Corral Hollow Road and south of Valpico Road in Tracy, California. The existing site is primarily undeveloped land and currently contains two single family homes. **Figure 1** shows the location of the Project site, study intersections, and surrounding study area in the City of Tracy. **Figure 2** illustrates the Specific Plan.

In addition to the proposed senior community development, the Project proposes to annex (1) the existing single family large lot parcels fronting Corral Hollow Road to the west and to the north of Valpico Road. Single family residential units currently exist on all the proposed annexation areas and no new land uses or redevelopment is proposed for the annexation parcels. Therefore, the annexation will not generate any new trips and the traffic for the annexation are is included in the existing counts. The proposed annexation area is shown in **Figure 3**.

The site will construct a pedestrian pathway from the southwest corner of the site to Corral Hollow Road and from the site to Bluegrass Lane and will provide full access via two roadways / intersections including:

- Project Driveway #1 / Valpico Road (Future Intersection)
- Middlefield Drive into the residential neighborhood south of the Project site

This study complies with traffic impact study guidelines and criteria set forth by the individual maintaining agencies.

STUDY METHODOLOGY

DEVELOPMENT CONDITIONS

This transportation impact analysis was based on the following development conditions:

- **Scenario 1: Existing (2016) Conditions**
  Based on current traffic counts taken in 2016 and 2017 as well as existing roadway geometry and traffic control.

- **Scenario 2: Existing (2016) Plus Project Conditions**
  Based on current traffic counts and existing roadway geometry and traffic control plus the traffic generated by the Tracy Village Project.

- **Scenario 3: Background Conditions**
  Based on current traffic counts and adding approved project traffic volumes to the existing roadway geometry and traffic control. These projects would include Ellis, Cordes Ranch, Tracy Hills and Rocking Horse (Stringer).

- **Scenario 4: Background Plus Project Conditions**
  Based on current traffic counts and adding approved project traffic volumes to the existing roadway geometry and traffic control plus the traffic generated by the Tracy Village Project.

- **Scenario 5: Cumulative (2035) Conditions**
  Cumulative Conditions land use assumptions in the City's Travel Demand Model will be used. Planned future land use assumptions will be provided by City Staff and Kimley-Horn will update the model accordingly.

- **Scenario 6: Cumulative (2035) Plus Project Conditions**
  Cumulative Conditions plus traffic generated by the Tracy Village Project.

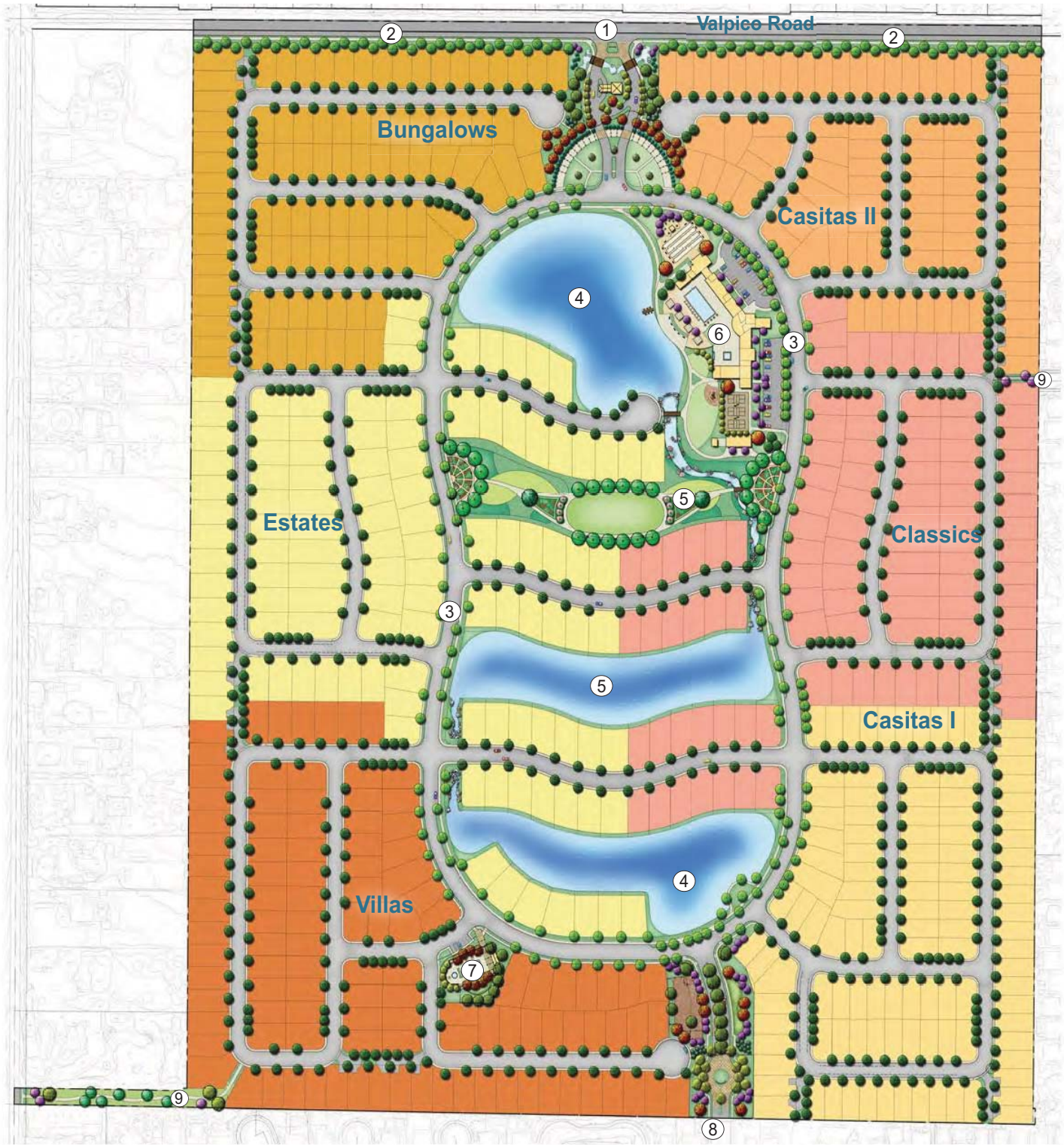


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Figure 1

Project Location and Study Intersections



LEGEND

1 MAIN ENTRANCE	4 LAKE	7 MINOR RECREATION
2 PUBLIC/ROW	5 PARKS	8 SECONDARY ENTRANCE
3 MAIN LOOP RD	6 MAIN RECREATION	9 PEDESTRIAN CONNECTIONS

Source: First Carbon Solutions, 2016

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Figure 2

Project Site Plan



Source: First Carbon Solutions, 2016

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Figure 3

Annexation Map

OPERATING CONDITIONS AND CRITERIA FOR INTERSECTIONS

Analysis of potential environmental impacts at intersections is based on the concept of Level of Service (LOS). The LOS of an intersection is a qualitative measure used to describe operational conditions. LOS ranges from A (best), which represents minimal delay, to F (worst), which represents heavy delay and a facility that is operating at or near its functional capacity. Levels of Service for this study were determined using methods defined in the *Highway Capacity Manual 2010 (HCM)* and *Synchro 9* traffic analysis software.

HCM methodologies include procedures for analyzing side-street stop-controlled (SSSC), all-way stop-controlled (AWSC), and signalized intersections. The SSSC procedure defines LOS as a function of average control delay for each minor street approach movement. Conversely, the AWSC and signalized intersection procedures define LOS as a function of average control delay for the overall intersection. **Table 1** relates the operational characteristics associated with each LOS category for signalized and unsignalized intersections.

Table 1 – Intersection Level of Service Definitions

Level of Service	Description	Signalized (Avg. control delay per vehicle sec/veh.)	Unsignalized (Avg. control delay per vehicle sec/veh.)
A	Free flow with no delays. Users are virtually unaffected by others in the traffic stream	Equal or Less than 10	Equal or Less than 10
B	Stable traffic. Traffic flows smoothly with few delays.	10 to less than 20	10 to less than 15
C	Stable flow but the operation of individual users becomes affected by other vehicles. Modest delays.	20 to less than 35	15 to less than 25
D	Approaching unstable flow. Operation of individual users becomes significantly affected by other vehicles. Delays may be more than one cycle during peak hours.	35 to less than 55	25 to less than 35
E	Unstable flow with operating conditions at or near the capacity level. Long delays and vehicle queuing.	55 to less than 80	35 to less than 50
F	Forced or breakdown flow that causes reduced capacity. Stop and go traffic conditions. Excessive long delays and vehicle queuing.	Equal or more than 80	Equal or more than 50
Sources: Transportation Research Board, *Highway Capacity Manual 2010*, National Research Council.			

Project impacts are determined by comparing conditions without the Project to those with the Project. Significant impacts for intersections are created when traffic from the Project causes the LOS to fall below the maintaining agency's LOS threshold or causes deficient intersections to deteriorate further per the criteria indicated below.

San Joaquin Council of Governments

Per the 2016 SJCOG CMP, roadway and intersection LOS thresholds are LOS D.

The CMP system for analysis includes Lammers Road, Corral Hollow Road, and Linne Road roadways; as well as the intersection of Corral Hollow Road / Linne Road (Intersection #7).

City of Tracy

The City has established LOS D, where feasible, as the minimum acceptable LOS for roadways and overall intersection operations (for roadways a v/c ratio of 0.80-0.89 = LOS D). However, there are certain locations where this standard does not apply. The following provides a list and description of exceptions to the LOS D standard:

- LOS E or lower shall be allowed on streets and at intersections within ¼ mile of any freeway, to discourage inter-regional traffic from using City streets.
- In the Downtown and Bowtie area of the City of Tracy, LOS E shall be allowed in order to create a pedestrian-friendly urban design character and densities necessary to support transit, bicycling, and walking.
- The City may allow individual locations to fall below the City's LOS D standard at intersections where construction of improvements is not feasible, prohibitively expensive, significantly impact adjacent properties or the environment, or have a significant adverse impact on the character of the community, including pedestrian mobility, crossing times, and comfort/convenience. Intersections may be permitted to fall below their adopted LOS standard on a temporary basis when the improvements necessary to preserve the LOS standard are in the process of construction or have been designed and funded but not yet constructed.

Significant Impact Criteria - Signalized Intersections

- Signalized intersections operating at an acceptable level (LOS D or better if located more than ¼ mile from a freeway) degrade to an unacceptable LOS E or F.
- Addition of Project trips causes a delay increase of more than four seconds to an intersection already operating at an unacceptable level.

Significant Impact Criteria - Unsignalized Intersections

- Un-signalized intersections operating at LOS D or better degrade to an unacceptable LOS E or under (outside ¼ mile of a freeway), and LOS E or better degrade to an unacceptable LOS F (within ¼ mile of a freeway), and a traffic signal warrant is met.
- Addition of Project trips causes a volume increase of more than 10 percent at an intersection operating at an unacceptable level and meeting a signal warrant.

STUDY INTERSECTIONS INCLUDED IN ANALYSIS

The Project will generate new vehicular trips that will increase traffic volumes on the nearby street network. To assess changes in traffic conditions associated with the Project, the following intersections were selected based on City of Tracy criteria (Project Trips 5% or more of Cumulative Condition intersection volumes), knowledge of the area, engineering judgement, and in consultation with City staff.

1. Lammers Road / Old Schulte Road
2. Lammers Road / Valpico Road
3. Lammers Road / Linne Road (Future Intersection)
4. Corral Hollow Road / Valpico Road
5. Corral Hollow Road / Peony Drive
6. Corral Hollow Road / Middlefield Drive
7. Corral Hollow Road / Linne Road (CMP)
8. Project Driveway #1 / Valpico Road (Future Intersection)
9. Middlefield Drive / Peony Drive
10. Tracy Boulevard / Central Avenue
11. Tracy Boulevard / Valpico Road

All study intersections are illustrated in **Figure 1**.

STUDY ROADWAY SEGMENTS INCLUDED IN ANALYSIS

The Project will generate new vehicular trips that will increase traffic volumes on the nearby street network. Lammers Road and Corral Hollow Road study roadway segments are part of the SJCOG CMP network. To assess changes in traffic conditions associated with the Project, the following roadway segments are selected for evaluation in this study:

A. Lammers Road – Old Schulte Road to Valpico Road (CMP)
B. Lammers Road – Valpico Road to Linne Road (CMP)
C. Corral Hollow Road – Valpico Road to Peony Drive (CMP)
D. Corral Hollow Road – Peony Drive to Middlefield Drive (CMP)
E. Corral Hollow Road – Middlefield Drive to Linne Road (CMP)
F. Tracy Boulevard – Central Avenue to Valpico Road
G. Valpico Road – Lammers Road to Corral Hollow Road
H. Valpico Road – Corral Hollow Road to Project Driveway #1
I. Valpico Road – Project Driveway #1 to Tracy Boulevard
J. Middlefield Drive – Peony Drive to Corral Hollow Road
K. Peony Drive – Corral Hollow Road to Middlefield Drive

REPORT ORGANIZATION

The analysis results are presented in the following chapters:

Chapter 2 describes the existing transportation system in the Project vicinity as well as current operating conditions at study intersections and roadway segments.

Chapter 3 discusses the Project's trip generation characteristics, methodologies used to estimate Project traffic, and assignment of Project traffic onto study intersections and roadway segments. Transportation system improvements provided by the Project are also presented.

Chapter 4 describes Existing Plus Project Conditions and LOS analysis.

Chapter 5 discusses Background Conditions and LOS analysis with and without the Project.

Chapter 6 discusses Cumulative Conditions and LOS analysis with and without the Project.

Chapter 7 presents the Project's potential effects on pedestrian, bicycle, and transit mobility.

Chapter 8 discusses on-site vehicle and bicycle parking, as well as site access and circulation.

Chapter 9 describes elements included in the City of Tracy General Plan, Sustainability Action Plan, and Roadway and Transportation Master Plan.

Chapter 10 presents the Transportation Impact Area fees and Project responsibilities based on net new daily trips.

Chapter 11 discusses the Congestion Management Program (CMP) and study roadway segments.

A technical appendix is also attached containing traffic count data, intersection LOS analysis output sheets, and Transit System Maps.

2. EXISTING CONDITIONS

EXISTING ROADWAY NETWORK

Below is a description of the principal roadways within the study area:

Interstate 580

Interstate 580 provides the most direct regional access to the Project site via full access interchanges at Mountain House Parkway/Patterson Pass Road and Corral Hollow Road. I-580 also provides access west to the Bay Area (via the Altamont Pass), and connects to I-5 south of the City of Tracy. I-580 currently has four lanes (two lanes in each direction) along the segments adjacent to the City of Tracy with a posted speed limit of 70 miles per hour. In the future, a new interchange will be constructed at Lammers Road.

Interstate 205

Interstate 205 provides direct access to the central portion of the City of Tracy. It extends between I-580 and I-5 and runs east-west through the northern portion of the City of Tracy. Interchanges are provided at West Eleventh Street, Grant Line Road, Tracy Boulevard, and MacArthur Drive. I-205 consists of six lanes (three lanes in each direction) and a posted speed limit of 70 miles per hour east of the City of Tracy and 65 miles per hour through the City of Tracy and to the west. A new Lammers Road Extension interchange will be constructed at I-205 and the 11th Street interchange will be removed in the future.

Lammers Road

Lammers Road is a major roadway originating one mile south of Valpico Road on the western boundary of the existing developed area of the City of Tracy. The City recently constructed a six-lane facility between the south end of John Kimball High School and 11th Street. The remainder of the street to the south is a two-lane undivided facility. The posted speed limit within the City is 45 miles per hour. Lammers Road is designated within the City of Tracy Roadway Master Plan (RMP) as an urban expressway and future freeway connection between I-205 and I-580. Lammers Road is not designated as a CMP route in the TMP.

Old Schulte Road

Old Schulte Road is a discontinuous roadway extending from Mountain House Parkway to Chrisman Road. For a short segment of the roadway (east of Mountain House Parkway and adjacent to the Safeway Warehouse Terminal), Schulte Road is a five-lane truck route. East of this segment, Schulte Road narrows to two travel lanes. Schulte Road terminates at the intersection with Lammers Road. The roadway commences again at Corral Hollow Road, approximately ¼ mile south of its westerly segment. From Lammers Road to Corral Hollow Road, it is a two-lane undivided roadway. East of Corral Hollow Road, the roadway has been widened to four travel lanes until MacArthur Drive. Between MacArthur Drive and Chrisman Road, Schulte Road is two lanes. Old Schulte Road is identified within the RMP as a major arterial. The posted speed limit on Old Schulte Road is 45 miles per hour and 55 miles per hour west of Lammers Road.

Valpico Road

Valpico Road is an approximately 4.5-mile continuous roadway extending from Lammers Road on the west side of the City to Chrisman Road on the east side of the City. The roadway is a two-lane undivided roadway from Lammers Road to Cagney Way, where it becomes a four-lane divided arterial up to Tracy Boulevard. The Valpico Road segment east of Tracy Boulevard is a two-lane undivided roadway and primarily provides access to residential neighborhoods, local farms in the west, and the Defense Distribution Depot in the east. The posted speed limit 35 miles per hour in the Project vicinity.

Corral Hollow Road

Corral Hollow Road is a north-south roadway that extends from Lammers Road in the north part of the City of Tracy to past the I-580 Ramps in the south. Corral Hollow Road continues west past the I-580 ramps to the City of Livermore, eventually becoming Tesla Road. It is a two-lane, undivided roadway from Lammers Road to Naglee Road, a four-lane, divided roadway from Naglee Road to West Schulte Road, and a two-lane, undivided roadway from Schulte Road to the I-580 Ramps. North of Valpico Road in the Project vicinity, Corral Hollow Road primarily provides access to residential uses with a 40 mph posted speed limit. South of Valpico Road, Corral Hollow Road primarily provides access to undeveloped farmland and some residential uses, with a 45 mph posted speed limit.

Tracy Boulevard

Tracy Boulevard is a north-south roadway continuing from Highway 4 north of the City to I-580 in the south. It is a route utilized by commuters and residents and provides access to farmland, commercial and residential uses, the Tracy Municipal Airport, Monte Vista Middle School, Highway 4, I-205, and I-580. It is a two-lane, undivided roadway from Highway 4 to I-205, a four-lane, divided roadway from I-205 to Vallerand Road, a four-lane undivided roadway with discontinuous two-way left-turn lanes from Vallerand Road to Sequoia Boulevard, a four-lane, divided roadway from Sequoia Boulevard to Linne Road, and a two-lane, undivided roadway from Linne Road to I-580. Tracy Boulevard has a posted speed limit of 40 mph in the Project Vicinity.

Middlefield Drive

Middlefield Drive is a local residential collector street that connects the residential area to the south of the project to Corral Hollow Drive. It will extend into the future Ellis project in the future via a signalized intersection with Corral Hollow Drive.

Peony Drive

Peony Drive is a local residential collector street that connects the residential area to the south of the project to Corral Hollow Drive. It will extend into the future Ellis project in the future via a signalized intersection with Corral Hollow Drive.

EXISTING STUDY INTERSECTIONS

Lammers Road / Old Schulte Road

This is a three-legged, all-way stop controlled (AWSC) intersection. No marked pedestrian crosswalks exist at this intersection.

Lammers Road / Valpico Road

This is a four-legged, side-street stop controlled (SSSC) intersection (the west leg is a driveway to private residence). No marked pedestrian crosswalks exist at this intersection.

Corral Hollow Road / Valpico Road

This is a four-legged, AWSC intersection. No marked pedestrian crosswalks exist at this intersection.

Corral Hollow Road / Peony Drive

This is a four-legged, SSSC intersection. Marked pedestrian crosswalks exist on the east and west legs at this intersection.

Corral Hollow Road / Middlefield Drive

This is a three-legged, signal controlled intersection. One marked pedestrian crosswalk exists crossing the east leg of this intersection.

Corral Hollow Road / Linne Road

This is a three-legged, SSSC intersection. No marked pedestrian crosswalks exist at this intersection.

Tracy Boulevard / Valpico Road

This is a four-legged, signal controlled intersection. Marked pedestrian crosswalks exist on all four legs.

Tracy Boulevard / Central Avenue

This is a four-legged, signal controlled intersection. Marked pedestrian crosswalks exist on all four legs of this intersection.

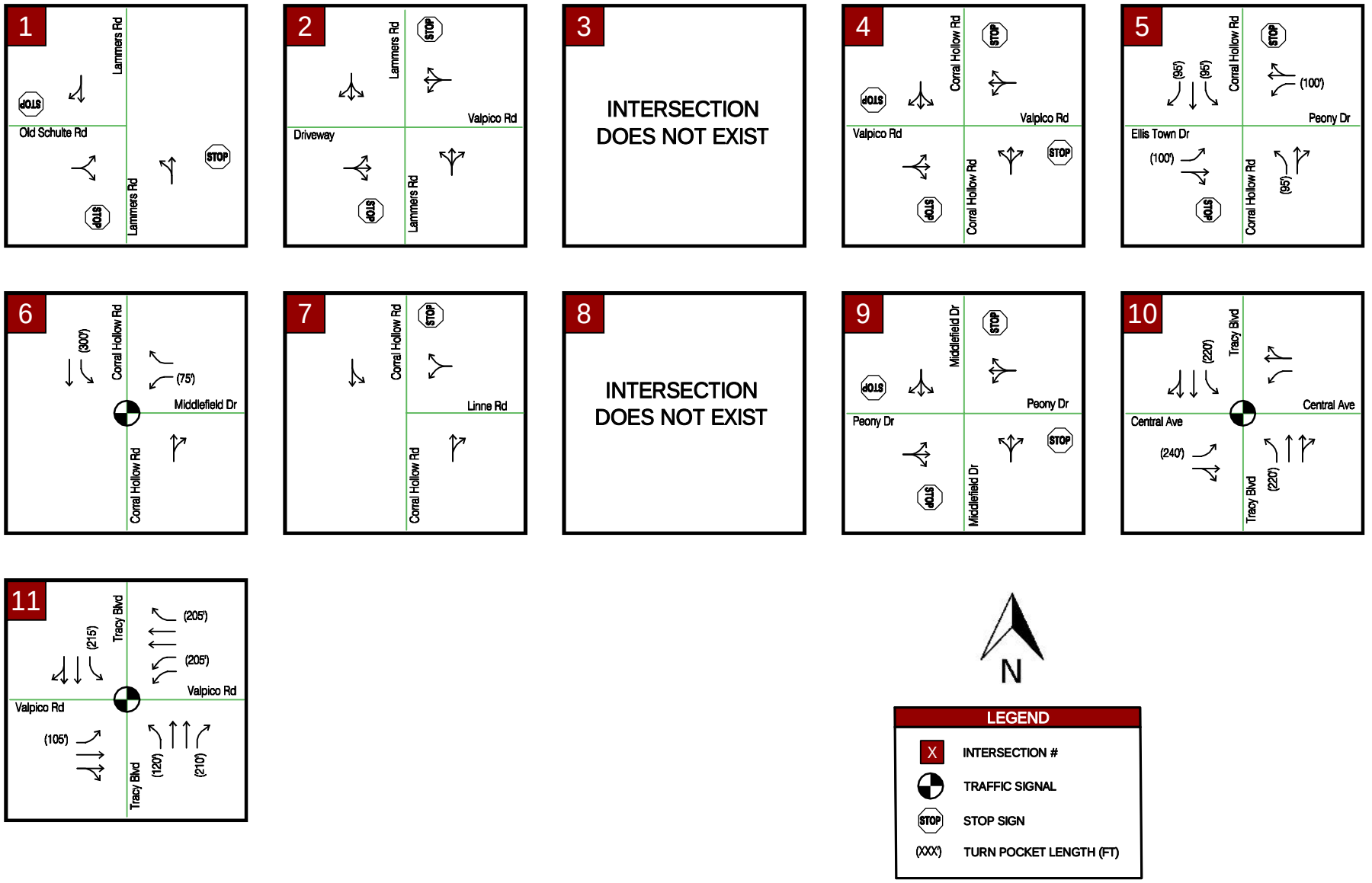
Middlefield Drive / Peony Drive

This is a four-legged, AWSC intersection. Marked pedestrian crosswalks exist on the east and west legs of this intersection.

Existing lane geometries and traffic control are illustrated in **Figure 4**.

EXISTING PEAK-HOUR TURNING MOVEMENT VOLUMES

Weekday intersection turning movement volumes for the nine existing study intersections, not including the future Project driveway, were collected on November 17th, 2016 (Thursday), November 30th, 2016 (Wednesday), December 6, 2016 (Tuesday), and January 19, 2017 (Thursday). These counts included vehicles, bicycles, and pedestrians. Volumes for intersections were collected during the AM and PM peak periods of 5:30-8:30 AM and 4:00-6:00 PM, respectively. These traffic counts were taken when local schools were in session and the weather was fair. Existing turning movements are shown in **Figure 5.** Intersection volume data sheets for all traffic counts are provided in the **Appendix**.

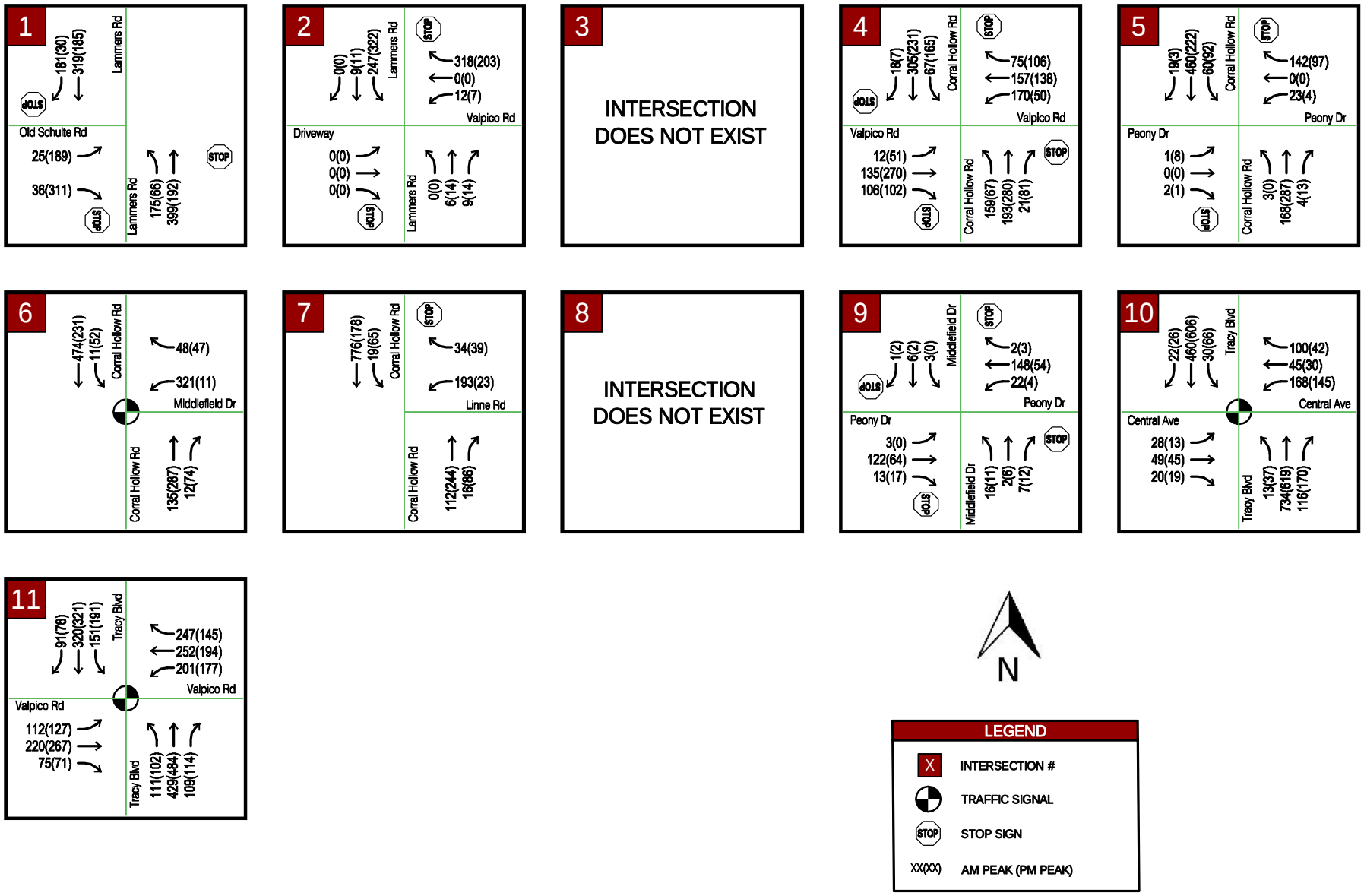


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Figure 4

Existing Conditions Lane Geometry and Traffic Control



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Figure 5

Existing Conditions Peak Hour Turning Movement Volumes

EXISTING PEDESTRIAN AND BICYCLE FACILITIES

PEDESTRIANS

The roadway network in the Project vicinity is rural and within ¼ mile of the Project, no sidewalks exist and there is no connectivity to the City's pedestrian network.

Existing pedestrian facilities closest to the Project site are approximately ¾ miles east on both north and south sides of Valpico Road. Sidewalks also exist on the east side of Corral Hollow Road south of the intersection of Corral Hollow Road / Peony Drive.

BICYCLES

The rural nature of much of the immediate area's roadways generally requires that bicycles share the roadways with motor vehicles. However, Class I, II, and III bikeway facilities do exist within ¼ miles from the Project site and the closest ones are discussed below:

Class I facilities are paved bicycle paths that are physically separated from the vehicular travel lane. A Class I path exists on Sycamore Parkway less than ¼ mile east of the Project. The path begins at Adams Park (just north of Linne Road, between Corral Hollow Road and Tracy Boulevard) and extends north onto Eleventh Street, Corral Hollow Road, and Lowell Avenue.

Class II facilities, which are striped bike lanes along the street, are generally found along the western portion of the existing urbanized area of the City. There are Class II bike lanes along portions of Valpico Road, Corral Hollow Road, Tracy Boulevard, Schulte Road, and within nearby neighborhoods. The nearest bike lanes are located less than ¼ mile west of the Project on the east side of Corral Hollow Road south of the Project and both (north and south) sides of Valpico Road east of the Project.

Class III bicycle facilities are bike routes denoted by signs that are shared with vehicles along the roadway. Class III bicycle facilities are located mainly in the Central Tracy area. A map of the existing City of Tracy bicycle network can be found in Figure 4.13-8, *Existing Bikeway Map* in the City of Tracy TMP.

EXISTING TRANSIT FACILITIES

The City's public transit system includes both bus and rail passenger components. The bus and rail system provides local and regional connectivity to residents of the City of Tracy. Since the Project vicinity is currently primarily undeveloped, no bus or rail services are currently provided.

LOCAL BUS SERVICE (TRACER)

TRACER is a bus service the City of Tracy offers to residents. It provides both Fixed Route and Paratransit services to major destinations throughout the City. It's hours of operation are Monday-Friday 7:00AM-8:00PM and Saturday 9:00AM-7:00PM, and does not operate on Sundays or holidays.

The closest bus stops are served by Route D and are located at the intersection of Valpico Road / Sycamore Parkway as well as Middlefield Drive / Peony Drive. Both stops are located less than ¼ miles from the Project. Route D is a commuter route, which provides service only on weekdays when school is in session. This route runs along 11th Street, Holly Drive, Tracy Boulevard, Corral Hollow Road, Sycamore Parkway, and Central Avenue. Major destinations served along these routes include the library, elementary, middle

and high schools in the City of Tracy, and the Tracy Sports Complex. It operates two services during the AM peak hour and four in the afternoon.

The TRACER bus route map is shown in the **Appendix**.

SJRTD COUNTY HOPPER SERVICE

The SJRTD County Hopper is a deviated fixed-route bus service connecting Stockton, Tracy, and Lathrop. The Hopper replaces SJRTD Countywide General Public Dial-A-Ride (DAR), Rural Elderly & Disabled DAR, and County Area Transit (CAT) fixed-route services during Hopper service hours in the areas covered by the Hopper service.

In the Project vicinity, Route 90 runs along Grant Line Road and Route 97 runs along East Street within Tracy. Route 90 stops at Walmart on Grant Line Road, west of I-205 (approximately 4 miles north of the Project). Route 97 stops at the Tracy Transit Center (approximately 3 miles northeast of the Project), East Street / 10th Street (approximately 3.5 miles northeast of the Project), and Grant Line / East Street (approximately 4.5 miles northeast of the Project). The routes operate 5:25AM-10:07PM (Route 90) and 6:05AM-7:01PM (Route 97) on weekdays.

The SJRTD Hopper Service route map is shown in the **Appendix**.

SJRTD WEEKEND SERVICE

SJRTD weekend service in the Project vicinity provides fixed-route service via Route 797 to Tracy, Lathrop, Stockton, and Manteca. Route 797 runs along Grant Line Road and East Street, operates 9:39AM-4:49PM, and stops at the Walmart on Grant Line Road, west of I-205 (approximately 4 miles north of the Project).

The SJRTD Weekend Service route map is shown in the **Appendix**.

ALTAMONT CORRIDOR EXPRESS

The Altamont Corridor Express (ACE) is a passenger rail service connecting Stockton to San Jose. ACE operates on weekdays, excluding holidays. The ACE station in the City of Tracy is located along Tracy Boulevard near Linne Road, which is approximately 1.5 miles from the Project Area. The station is the second most popular station along the route for passenger boarding. Four westbound trains pass through the City of Tracy with approximately one-hour headways at 4:51AM, 6:06AM, 7:11AM, and 7:36AM and four eastbound trains returning through the City of Tracy with approximately one-hour headways, at 5:11PM, 6:11PM, 7:11PM, and 8:14PM. Over a period of seven months (January 1 through July 30, 2014) on average, 553 passengers board ACE trains at the Tracy station each weekday.[1]

ACE does not charge a fee for parking at the Tracy Station, though ACE closely monitors and ensures that lots are occupied by ACE patrons only. The surface lot at the Tracy station can accommodate 491 vehicles including handicapped stalls. During a field survey conducted in July 2014 the surface lot was 73.5% occupied, as can be seen in **Table 2**.

[1] Computed from "Daily Summary Report – Altamont Corridor Express." Herzog Transit Services, Inc. 30 July 2014.

Table 2 – Parking Occupancy at ACE Tracy Station

Lot Type	Occupancy	Capacity	% Occupied
Surface lot, Tracy Boulevard	361	491	73.5%
Source: Kimley-Horn, 2014.			

PARK AND RIDE FACILITIES

Park and Ride facilities are areas where users of public transit or carpoolers may drive and park their vehicles, then use public transit or carpooling to commute. The vehicles are usually parked at the facility during the day and retrieved when the commuter returns. The Park and Ride facility closest to the Project is located approximately four miles north and is adjacent to I-205 at Naglee Road.

EXISTING LEVEL OF SERVICE AT STUDY INTERSECTIONS

Traffic operations were evaluated at the study intersections based on Existing Conditions lane geometry, traffic control, and peak hour traffic volumes. The following intersections operate at unacceptable LOS under Existing Conditions:

- Corral Hollow Road / Valpico Road (Intersection #4) (AM & PM Peak)
- Corral Hollow Road / Linne Road (Intersection #7) (AM Peak)

The traffic count data along Corral Hollow Road indicates that existing volumes have increased by more than 100% since 2013/14, when previous counts were conducted. This increase is evident despite not much new housing being developed since then. The increase in traffic volumes can be attributed to some increased economic activity, however, the new traffic is primarily due to rerouted traffic from I-205 to I-580 along Corral Hollow Road, due to congestion and the occurrence of incidents. Mountain House Parkway is also experiencing heavy congestion due to rerouting of traffic from I-205. Additional traffic counts were collected as part of this study and the diversion was found to be even higher by an additional 30-40%. The cut-through traffic occurs on a case by case basis, but seriously disrupts traffic operations in the City as well as the City's ability to efficiently plan roadway improvements and even more critical fund expansion of the roadway facilities.

Results of the analysis are presented in **Table 3** and Synchro output sheets are provided in the **Appendix**.

Table 3 – Existing Conditions Intersection Level of Service

#	Intersection	Agency	Control Type	Existing Conditions					
				AM Peak Hour			PM Peak Hour		
				Movement	Delay	LOS	Movement	Delay	LOS
1	Lammers Rd / Old Schulte Rd	Tracy	AWSC	Overall	34.0	D	Overall	20.1	C
2	Lammers Rd / Valpico Rd	Tracy	SSSC	Overall	9.7	A	Overall	8.3	A
				EB	17.2	C	WB	10.2	B
3	Lammers Rd / Linne Rd	Tracy	Does Not Exist						
4	Corral Hollow Rd / Valpico Rd	Tracy	AWSC	Overall	**71.7**	**F**	Overall	**84.6**	**F**
5	Corral Hollow Rd / Peony Dr	Tracy	SSSC	Overall	2.8	A	Overall	2.9	A
				EB	15.7	C	EB	20.4	C
6	Corral Hollow Rd / Middlefield Dr	Tracy	Signal	Overall	8.8	A	Overall	6.5	A
7	Corral Hollow Rd / Linne Rd	Tracy	SSSC	Overall	8.9	A	Overall	2.0	A
				WB	**43.6**	**E**	WB	12.2	B
8	Project Driveway #1 / Valpico Rd	Tracy	Does Not Exist						
9	Middlefield Dr / Peony Dr	Tracy	AWSC	Overall	9.1	A	Overall	7.4	A
10	Tracy Blvd / Central Ave	Tracy	Signal	Overall	19.3	B	Overall	18.1	B
11	Tracy Blvd / Valpico Rd	Tracy	Signal	Overall	25.2	C	Overall	26.8	C

Notes:

1. Analysis performed using HCM 2010 methodologies.

2. Delay indicated in seconds/vehicle.

3. Overall level of service (LOS) standard is D.

*4. Intersections that fall below City standard are highlighted and shown in **bold**.*

Source: Kimley Horn and Associates, 2017.

EXISTING ROADWAY SEGMENT LEVEL OF SERVICE

Traffic operations were evaluated at the study roadway segments under Existing Conditions. Results of Analysis results are presented in **Table 4**. As shown in **Table 4**, following study roadway segments function at an unacceptable level of service per City requirements.

Table 4 – Existing Conditions Roadway Segment Level of Service

Street	Segment	Direction	Capacity	*Existing*			
				Volume		*V/C*	
				AM	PM	AM	PM
Lammers Rd	Old Schulte Rd to Valpico Rd	NB	891	449	238	0.50	0.27
		SB	891	306	415	0.34	0.47
	Valpico Rd to Linne Rd	NB	891	8	14	0.01	0.02
		SB	891	11	9	0.01	0.01
Corral Hollow Rd	Valpico Rd to Peony Dr	NB	891	342	410	0.38	0.46
		SB	891	560	350	0.63	0.39
	Peony Dr to Middlefield Dr	NB	891	179	317	0.20	0.36
		SB	891	485	255	0.54	0.29
	Middlefield Dr to Linne Rd	NB	891	260	322	0.29	0.36
		SB	891	795	243	0.89	0.27
Tracy Blvd	Central Ave to Valpico Rd	NB	742	826	791	**1.11**	**1.07**
		SB	742	605	679	0.82	**0.92**
Valpico Rd	Lammers Rd to Corral Hollow Rd	WB	742	332	211	0.45	0.28
		EB	742	255	380	0.34	0.51
	Corral Hollow Rd to Project Dwy #1	WB	742	402	294	0.54	0.40
		EB	742	223	516	0.30	0.70
	Project Dwy #1 to Cagney Way	WB	742	402	294	0.54	0.40
		EB	742	223	516	0.30	0.70
	Cagney Way to Tracy Blvd	WB	1485	454	372	0.31	0.25
		EB	1485	407	465	0.27	0.31
Middlefield Dr	Peony Dr to Corral Hollow Rd	NB	742	267	63	0.36	0.08
		SB	742	81	104	0.11	0.14
Peony Dr	Corral Hollow Rd to Middlefield Dr	WB	742	103	62	0.14	0.08
		EB	742	45	67	0.06	0.09
Linne Rd	Lammers Rd to Corral Hollow Rd	WB	-	-	-	-	-
		EB	-	-	-	-	-

Notes: Volumes derived from Existing intersection counts. Capacities derived from the City of Tracy 2035 Travel Demand Model.
V/C ratios are correlated with LOS as follows: <0.60 = LOS A; 0.60 - 0.69 = LOS B; 0.70 - 0.79 = LOS C; 0.80 - 0.89 = LOS D; **0.90 - 0.99 = LOS E; ≥1.00 = LOS F.**

3. PROPOSED PROJECT

PROJECT TRANSPORTATION SYSTEM CHANGES

The Project will construct one full access driveway onto Valpico Road at the north end of the site (Intersection #8), internal Project roadways, and a connection to Middlefield Drive at the south end of the site. Project Driveway #1 / Valpico Road (Intersection #8) will be signalized.

The Project will also construct Americans with Disabilities Act (ADA) compliant sidewalk along Valpico Road and along all internal roadways within the Project site, as illustrated in the site plan shown in **Figure 2**.

TRIP GENERATION ESTIMATES

Trip generation for the Project was calculated using the Trip Generation Rates developed for the City of Tracy Travel Demand Model (2035) as cited in the City of Tracy Transportation Master Plan (November 2012). Trip generation for the Project was also calculated using the rates from the Institute of Transportation Engineer's publication *Trip Generation 9th Edition*[2], which is a standard reference used by jurisdictions throughout the county for the estimation of trip generation. Since the City of Tracy specifies its own rates, ITE rates are supplied for comparison purposes only. A trip is defined in *Trip Generation* as a single or one-directional vehicle movement with either the origin or destination at the project site. In other words, a trip can be either "to" or "from" the site. In addition, a single customer visit to a site is counted as two trips (i.e., one to and one from the site).

Trip generation calculations prepared are based on the number of residential dwelling units. Additionally, since the property is single use residential, no internal capture, linked trip, or pass-by trip reductions were applied. **Table 5** shows trips generated by the proposed development based on both previously discussed standards. As illustrated in **Table 5**, total Project trips generated during the AM Peak using the City's rates are lower than total Project trips generated using ITE's rates (329 vs. 450). During the PM Peak, total Project trips generated using the City's rates are higher than total Project trips generated using ITE's rates (628 vs. 600). Based on the City of Tracy rates, the Project will generate 329 net new trips in the AM peak hour and 628 net new trips in the PM peak hour. The PM peak hour trip generation indicates the highest travel demand and is sufficient for analysis purposes.

[2] *Trip Generation, 9th Edition*, Institute of Transportation Engineers, 2012.

Table 5 – Project Trip Generation

Land Uses	Project Size	AM PEAK HOUR				PM PEAK HOUR			
		Total Peak Hour	IN	/	OUT	Total Peak Hour	IN	/	OUT
Trip Generation Rates[1]									
Project Use									
Low/Mid Density Residential & Residential Real Estate		0.55	25%	/	75%	1.05	63%	/	37%
Trips Generated									
Project Use									
Low/Mid Density Residential & Residential Real Estate	600 DUs	330	82	/	248	630	397	/	233
Trips Reduction[2]									
Project Use									
Low/Mid Density Residential & Residential Real Estate	2 DUs	1	0	/	1	2	1	/	1
Total Project Trips		**329**	**82**	**/**	**247**	**628**	**396**	**/**	**232**
Total Project Trips Per ITE[3]		*450*	*113*	*/*	*337*	*600*	*378*	*/*	*222*
Comparison		*(120)*	*(31)*	*/*	*(89)*	*30*	*19*	*/*	*11*

Notes:

1. Trip Generation Rates developed for the City of Tracy travel demand model as cited in the City of Tracy Transportation Master Plan (November, 2012) were used in this study.
2. Project Trip reduction as a result of two existing single family homes.
2. Trip Generation using ITE rates provided for comparison purposes only.
Source: Kimley-Horn and Associates, Inc., 2017

Additionally, trip generation was prepared for Senior Adult Housing – Detached, to represent the project's Active Adult community. The property is single use residential, no internal capture, linked trip, or pass-by trip reductions were applied. **Table 6** shows trips generated by the proposed development based on both previously discussed standards. As illustrated in **Table 6**, total Project trips generated during the AM Peak for Senior Adult housing are lower than the rates for Single Family – Detached (131 vs. 329). During the PM Peak, for Senior Adult housing are lower than the rates for Single Family – Detached (170 vs. 628). Per ITE, the Project will generate 131 net new trips in the AM peak hour and 170 net new trips in the PM peak hour.

Table 6 – Project Trip Generation – Senior Adult Housing

Land Uses	ITE Land Use code	Project Size	AM PEAK HOUR				PM PEAK HOUR			
			Total Peak Hour	IN	/	OUT	Total Peak Hour	IN	/	OUT
Trip Generation Rates[1]										
Project Use										
Senior Adult Housing - Detached	251		0.22	35%	/	65%	0.29	61%	/	39%
Trips Generated										
Project Use										
Senior Adult Housing - Detached	251	600 DUs	132	46	/	86	172	105	/	67
Trips Reduction[2]										
Project Use										
Low/Mid Density Residential & Residential Real Estate		2 DUs	1	0	/	1	2	1	/	1
Total Project Trips			**131**	**46**	**/**	**85**	**170**	**104**	**/**	**66**

Notes:

1. Trip generation rates published by Institute of Transportation Engineers (ITE), "Trip Generation," 9th Edition, 2012.
2. Trip reduction as a result of existing single family homes on project site.
3. 2014 Tracy Hills EIR Project Buildout Trip Generation rates used.
4. ITE equation used to determine results.

Source: Kimley-Horn and Associates, Inc., 2017

TRIP DISTRIBUTION AND ASSIGNMENT

Due to the nature of the proposed development, most residents living at the proposed site are expected to travel predominantly to the north, where they will have access to the nearest retail land uses, schools, downtown, regional roadways (I-205), and major arterials (11th Street, Tracy Boulevard, and Grant Line Road). Some will also distribute south to I-580 and for cumulative conditions, to local retail as well.

Significant improvements to the City's transportation system are identified in the TMP to be completed by 2035. Therefore, separate trip distribution and assignments were calculated for Existing/Background and Cumulative conditions. The City of Tracy Travel Demand Model, as well as knowledge of the study area were used to determine the trip distribution and Project trip assignment.

Major destinations and access for Project trips are located north, south, east, and west of the site. They include:

- North of the Project – Retail, businesses, and schools in the north/northeast part of the City. East-west arterials including 11th Street, Grant Line Road, and New Schulte Road. Freeway access via Interstate 205 on/off ramps.

- South of the Project – Future Ellis Project mixed use area. Future Tracy Hills mixed use area. Freeway access via Interstate 580 on/off ramps.

- East of the Project – Retail, businesses, and schools in the east part of the City. North-south arterials including Corral Hollow Road, Tracy Boulevard, and McArthur Drive. Freeway access to Interstate 5 on/off ramps via 11th Street.

- West of the Project – Warehouse distribution centers (Cordes Ranch) in the west part of the City. Freeway access to Interstate 580 on/off ramps via Mountain House Parkway and I-205.

Distribution assumptions for each study scenarios are discussed in the following sections.

EXISTING/BACKGROUND PLUS PROJECT CONDITIONS

The Project driveway (Project Driveway #1 / Valpico Road) and Middlefield Road connection south of the Project will be constructed for Existing and Background Conditions. Therefore, all Project trips will enter and exit the Project site via these two access points. From the Project driveway at Valpico Road and Middlefield roadway connection, trips will be distributed throughout the roadway network with approximately 87% (AM and Peak) traveling to/from the north via Lammers Road, Corral Hollow Road, Tracy Boulevard, and Central Avenue. Approximately 9% (AM and PM Peak) will travel to the south via Corral Hollow Road and Tracy Boulevard. Approximately 3% (AM and PM Peak) will travel to/from the east via Valpico Road.

The distribution estimates for Existing and Background Conditions are illustrated in **Figure 6**. **Figure 8** shows the Project trip assignment for AM and PM peak hour periods at study intersections.

CUMULATIVE (2035) PLUS PROJECT CONDITIONS

The Project driveway (Project Driveway #1 / Valpico Road) and Middlefield Road connection south of the Project will be constructed for Cumulative Conditions. The City 2035 Cumulative Conditions includes development on the Project site and the analysis was conducted using the 2035 Cumulative traffic from the City's travel demand model.

In the Project vicinity, trips will be distributed throughout the roadway network with approximately a total of 73% (AM and PM Peak) traveling to/from the north via Lammers Road, Corral Hollow Road, Tracy Boulevard, and Central Avenue. Of the trips that travel north from the Project, approximately 3% (AM and PM Peak) will disperse west on Old Schulte Road from Lammers Road. Approximately 3% (AM and PM Peak) will travel to/from the east via Valpico Road, east of Tracy Boulevard. Roughly 7% (AM and PM Peak) will travel to/from the south via Lammers Road and Corral Hollow Road.

The distribution estimates for Cumulative Conditions are illustrated in **Figure 7**. **Figure 9** shows the Project trip assignment for Cumulative Conditions AM and PM peak hour periods at study intersections.



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Figure 6

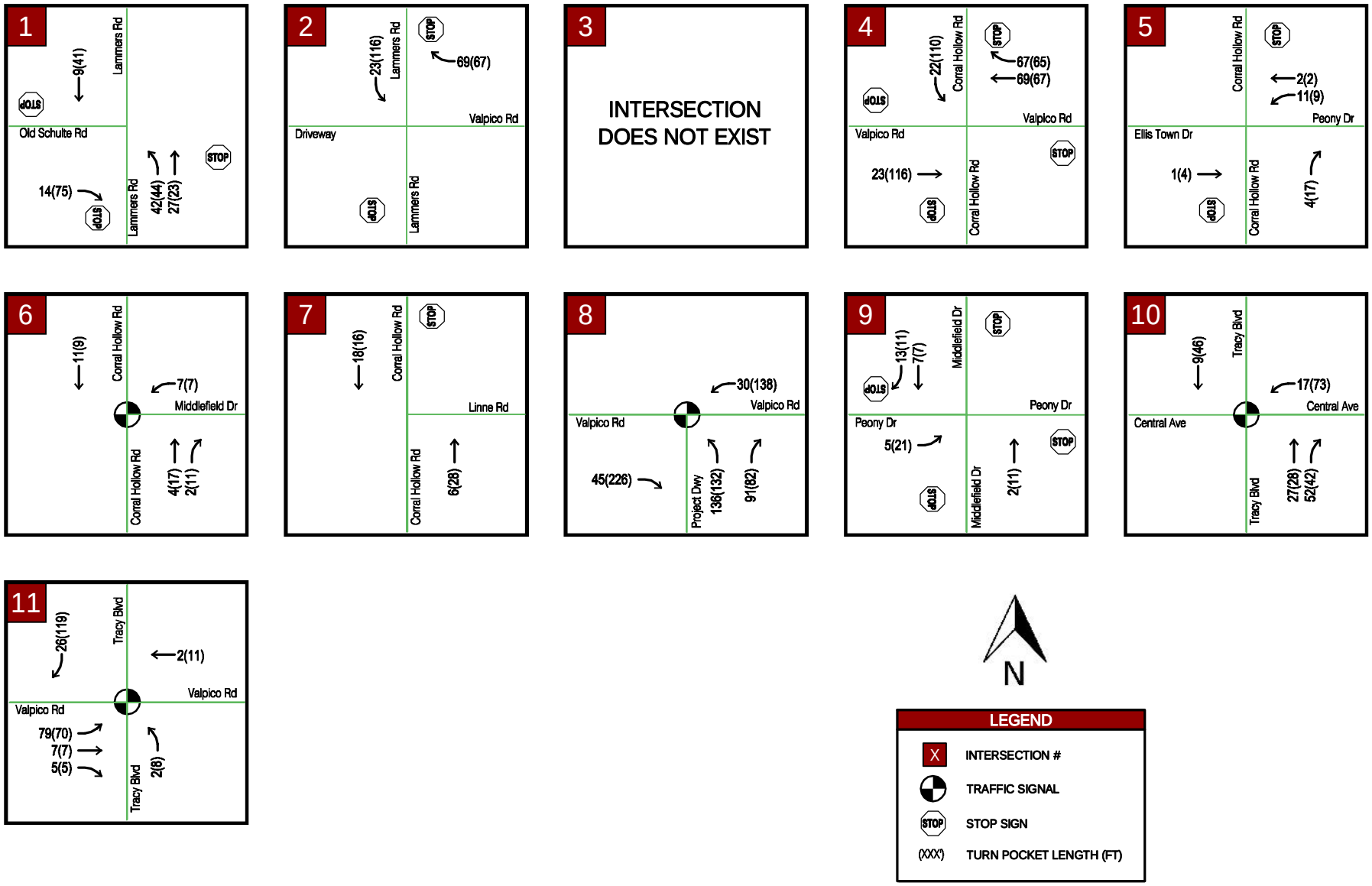
Project Trip Distribution: Existing and Background Conditions



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Figure 7

Project Trip Distribution: Cumulative Conditions

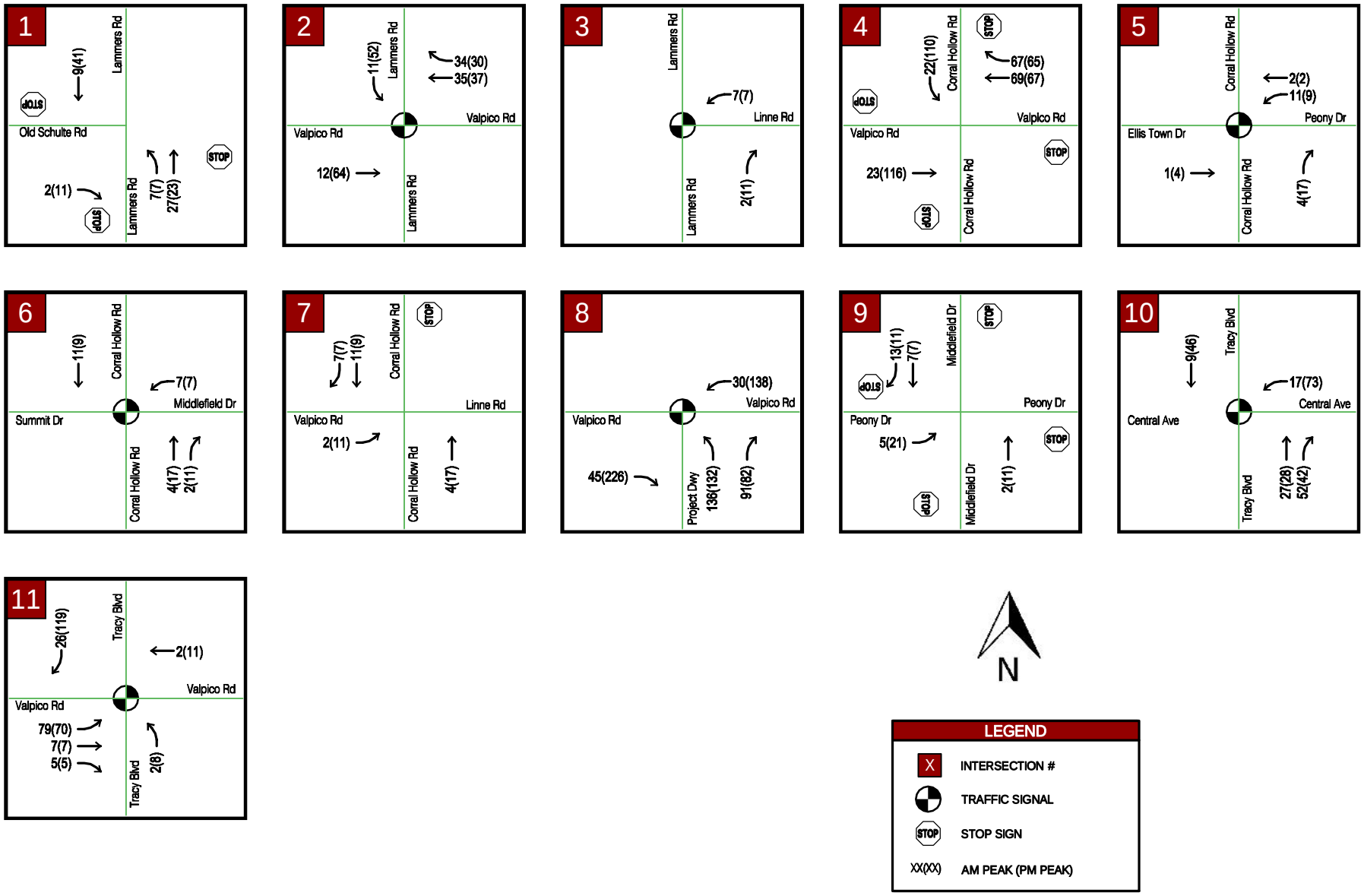


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Figure 8

Project Trip Assignment: Existing and Background Peak Hour Conditons



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Figure 9

Project Trip Assignment: Cumulative Peak Hour Conditions

4. EXISTING PLUS PROJECT CONDITIONS

Traffic operations were evaluated at the study intersections under Existing Plus Project Conditions.

Figure 10 shows the Existing Plus Project lane geometry and traffic control and **Figure 11** shows the Existing Plus Project peak hour traffic volumes.

EXISTING PLUS PROJECT INTERSECTION SEGMENT LEVEL OF SERVICE

The following intersections operate at unacceptable LOS under Existing Plus Project Conditions. The single-family home land use scenario presents a worst case and thus all non-impacted intersections would operate at conditions better than the conditions analyzed for single family use. Impacted intersections were analyzed separately for Active Adult uses, either quantitively or qualitatively based on the impact, the significance criteria and engineering judgement:

- Lammers Road / Old Schulte Road (Intersection #1) (AM & PM Peak)
- Corral Hollow Road / Valpico Road (Intersection #4) (AM & PM Peak)
- Corral Hollow Road / Linne Road (Intersection #7) (AM Peak)

Results of the analysis are presented in **Table 7** and Synchro output sheets are provided in the **Appendix**.

- Lammers Road / Old Schulte Road (Intersection #1) (AM & PM Peak)

    A. The addition of Project traffic causes the intersection to deteriorate from LOS D and C during the AM and PM peak hour to LOS F in the AM peak hour and LOS E in the PM peak hours, respectively. The intersection would operate at an acceptable LOS A in the AM and PM Peaks with the following improvement: Install a signal, add a separate northbound left turn pocket, add a separate right turn pocket, and add a separate eastbound left turn pocket. The City has recently approved the installation of this interim improvement at the intersection and the intersection would operate acceptable at LOS A in the AM peak hour and LOS A in the PM peak. Since the improvement is funded, the project would not contribute to it.

    B. The addition of the project traffic for an Active Adult land use type would result in the same mitigation requirement as A the Single -Family land use alternative.

- Corral Hollow Road / Valpico Road (Intersection #4) (AM & PM Peak)

    A. The addition of Project traffic causes the intersection to deteriorate in delay and continue to operate at LOS F in both the AM and PM peak hour. The City has recently approved the widening of Corral Hollow Road to four lanes from Parkside Drive to Linne Road, including the addition of turn lanes and signalization of the Corral Hollow / Valpico Road intersection. The improvements are identified in the City TMP. The Project would pay the City Traffic Impact Fees. With these improvements, the intersection would operate at an acceptable LOS A in the AM and in the PM peak hour. The improved intersection geometry will be as follows: 1 NBL, 1 NBT, 1 NBT/R, 1 SBL, 2 SBT, 1 SBR, 1 WBL, 2 WBT, 1 WBR, 1 EBL, 1 EBT, 1 EBT/R. The Project would pay the City Traffic Impact Fees.

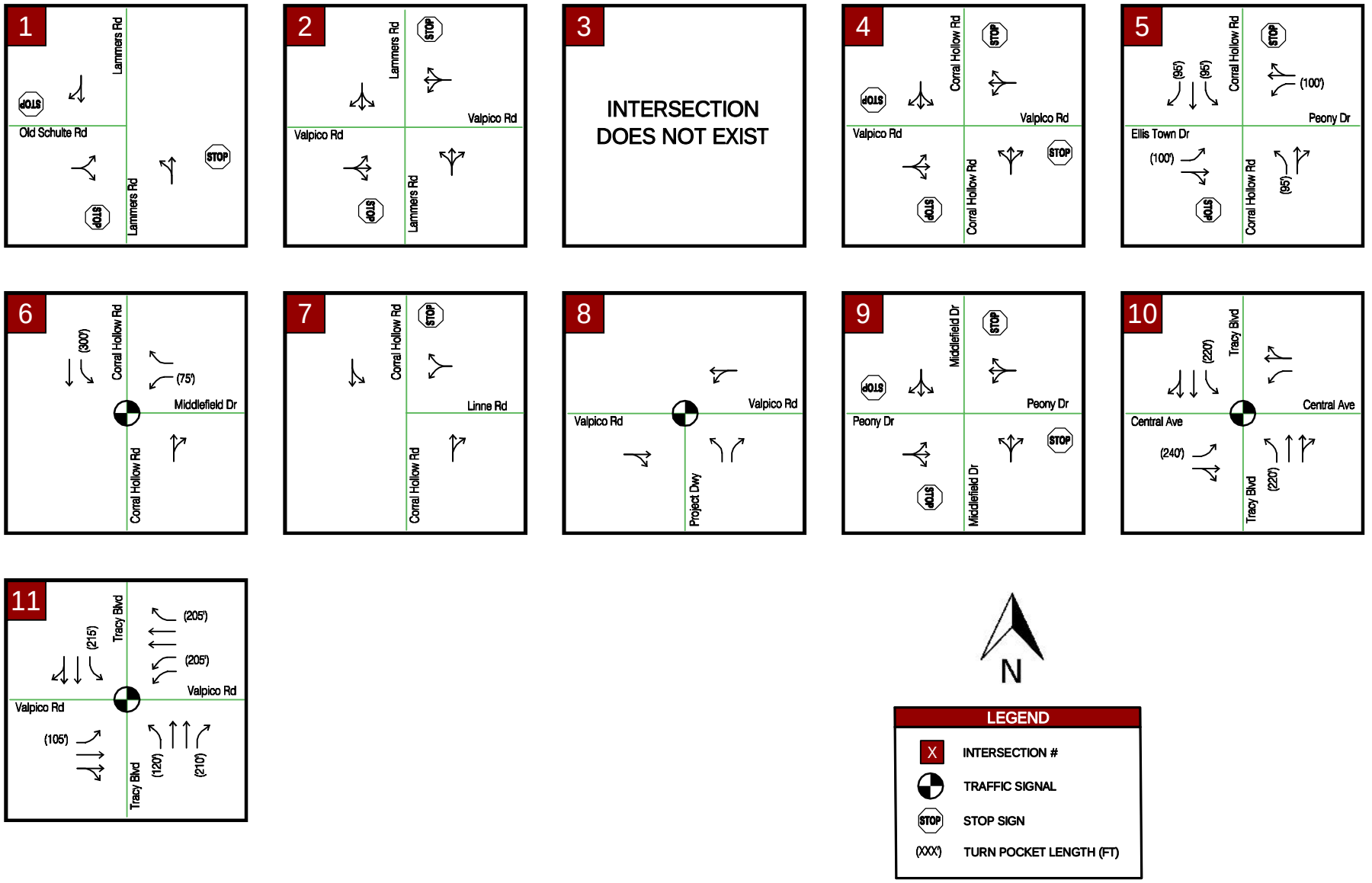
B. The addition of the project traffic for an Active Adult land use would result in the same mitigation requirement as A, the Single -Family land use alternative.

- Corral Hollow Road / Linne Road (Intersection #7) (AM Peak)

A. The addition of Project traffic causes the intersection to deteriorate from LOS E and B during the AM and PM peak hour to LOS F in the AM peak hour and LOS B in the PM peak hours, respectively. The intersection would operate at an acceptable LOS A in the AM and PM Peaks with the following improvement. The City has recently, as part of the Tracy Hills Specific Plan, approved the installation of a signal at the intersection that will have interconnect with the railroad crossing controller. Improvements shall be constructed at the railroad crossing gates as well. This is a partial TMP improvement and shall be partially funded by the City TIF. The project would pay the City Traffic Impact Fees. With these improvements, the intersection would operate at an acceptable LOS A in the AM Peak Hour and LOS A in the PM Peak Hour.

B. The addition of the project traffic for an Active Adult land use would not add 10% or more of the existing traffic and the Active Adult scenario traffic would not have a significant impact.

Table 8 shows LOS for improved intersections and Synchro output sheets are provided in the **Appendix**.

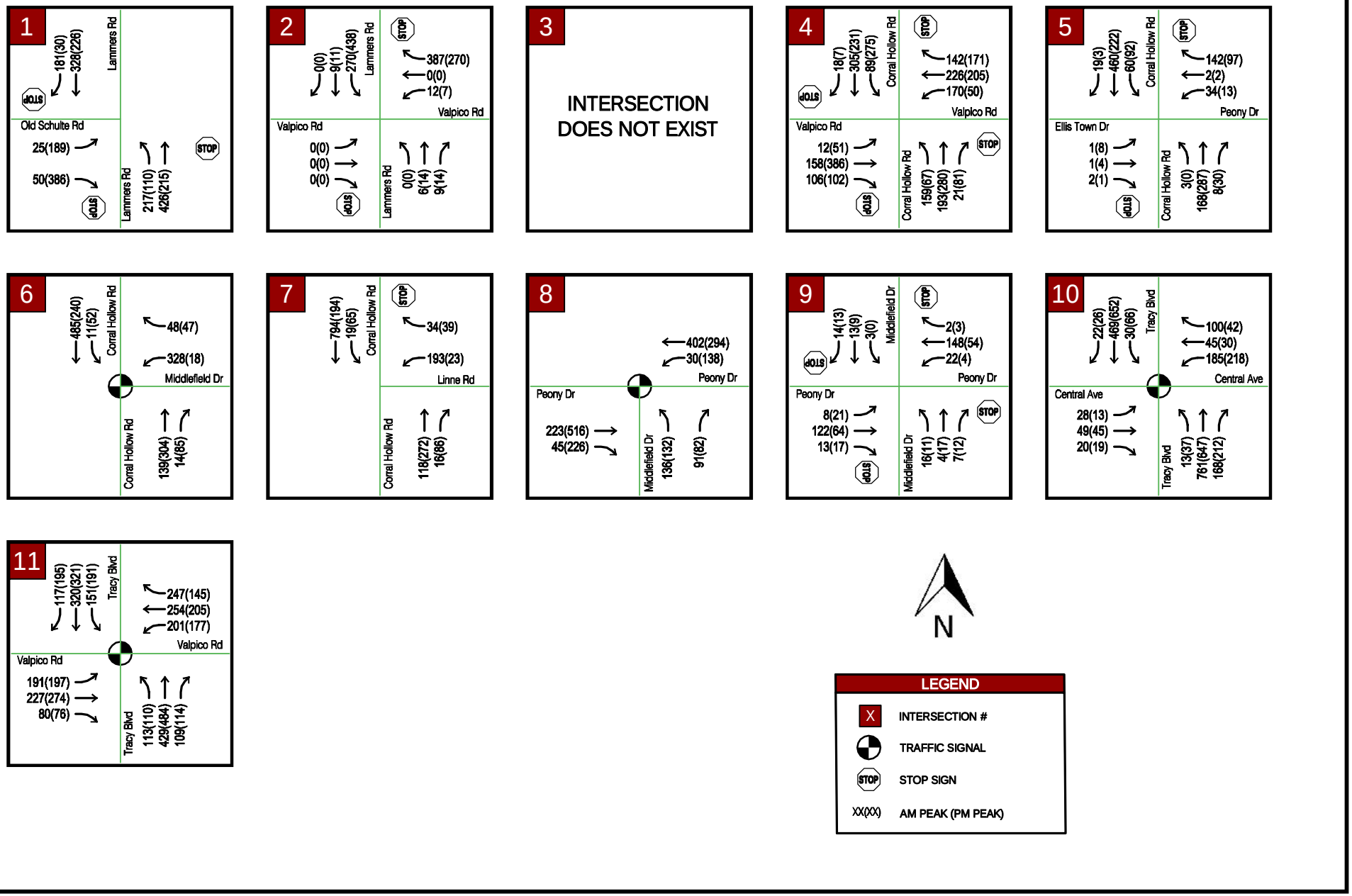


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Figure 10

Existing Plus Project Conditions Lane Geometry and Traffic Control



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Figure 11

Existing Plus Project Conditions Peak Hour Turning Movement Volumes

Table 7 – Existing Plus Project Conditions Intersection Level of Service

#	Intersection	Maintaining Agency	Control Type	Existing Conditions						Existing Plus Project Conditions						Existing Plus Project Conditions (Active Adult)					
				AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour		
				Movement	Delay	LOS	Movement	Delay	LOS	Movement	Delay	LOS	Movement	Delay	LOS	Movement	Delay	LOS	Movement	Delay	LOS
1	Lammers Rd / Old Schulte Rd	Tracy	AWSC	Overall	34.0	D	Overall	20.1	C	Overall	**54.8**	**F**	Overall	**42.0**	**E**	Overall	**40.3**	**E**	Overall	23.2	C
2	Lammers Rd / Valpico Rd	Tracy	SSSC	Overall	9.7	A	Overall	8.3	A	Overall	10.6	B	Overall	9.1	A	LOS & Delay Improved as Active Adult Community					
				EB	17.2	C	WB	10.2	B	EB	13.1	B	WB	11.4	B						
3	Lammers Rd / Linne Rd	Tracy		Does Not Exist																	
4	Corral Hollow Rd / Valpico Rd	Tracy	AWSC	Overall	**71.7**	**F**	Overall	**84.6**	**F**	Overall	**133.6**	**F**	Overall	**195.0**	**F**	Overall	**91.2**	**F**	Overall	**114.2**	**F**
5	Corral Hollow Rd / Peony Dr	Tracy	SSSC	Overall	2.8	A	Overall	2.9	A	Overall	3.1	A	Overall	3.1	A	LOS & Delay Improved as Active Adult Community					
				EB	15.7	C	EB	20.4	C	EB	16.3	C	EB	19.9	C						
6	Corral Hollow Rd / Middlefield Dr	Tracy	Signal	Overall	8.8	A	Overall	6.5	A	Overall	9.2	A	Overall	6.5	A	LOS & Delay Improved as Active Adult Community					
7	Corral Hollow Rd / Linne Rd	Tracy	SSSC	Overall	8.9	A	Overall	2.0	A	Overall	10.0	A	Overall	2.0	A	Overall	9.5	A	LOS & Delay Improved as Active Adult Community		
				WB	**43.6**	**E**	WB	12.2	B	WB	**51.0**	**F**	WB	12.7	B	WB	**47.8**	**E**			
8	Project Driveway #1 / Valpico Rd	Tracy	Signal	Does Not Exist						Overall	5.7	A	Overall	6.9	A	LOS & Delay Improved as Active Adult Community					
9	Middlefield Dr / Peony Dr	Tracy	AWSC	Overall	9.1	A	Overall	7.4	A	Overall	9.3	A	Overall	7.6	A	LOS & Delay Improved as Active Adult Community					
10	Tracy Blvd / Central Ave	Tracy	Signal	Overall	19.3	B	Overall	18.1	B	Overall	21.8	C	Overall	23.2	C	LOS & Delay Improved as Active Adult Community					
11	Tracy Blvd / Valpico Rd	Tracy	Signal	Overall	25.2	C	Overall	26.8	C	Overall	32.3	C	Overall	36.1	D	LOS & Delay Improved as Active Adult Community					

Notes:

1. Analysis performed using HCM 2010 methodologies.

2. Delay indicated in seconds/vehicle.

3. Overall level of service (LOS) standard is D.

*4. Intersections that fall below City standard are highlighted and shown in **bold**.*

Source: Kimley Horn and Associates, 2017.

Table 8 – Mitigated Existing Plus Project Conditions Intersection Level of Service

#	Intersection	Maintaining Agency	Existing Plus Project Conditions						Mitigated Existing Plus Project Conditions					
			AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour		
			Movement	Delay	LOS	Movement	Delay	LOS	Movement	Delay	LOS	Movement	Delay	LOS
1	Lammers Rd / Old Schulte Rd	Tracy	Overall	**54.8**	**F**	Overall	**42.0**	**E**	Overall	3.7	A	Overall	8.2	A
4	Corral Hollow Rd / Valpico Rd	Tracy	Overall	**133.6**	**F**	Overall	**195.0**	**F**	Overall	6.7	A	Overall	7.7	A
7	Corral Hollow Rd / Linne Rd	Tracy	Overall	10.0	A	Overall	2.0	A	Overall	7.9	A	Overall	4.3	A
			WB	**51.0**	**F**	WB	13.3	B						

Notes:

1. Analysis performed using HCM 2010 methodologies.

2. Delay indicated in seconds/vehicle.

3. Overall level of service (LOS) standard is D.

*4. Intersections that fall below City standard are highlighted and shown in **bold**.*

Source: Kimley Horn and Associates, 2017.

EXISTING PLUS PROJECT ROADWAY SEGMENT LEVEL OF SERVICE

Traffic operations were evaluated at the study roadway segments under Existing Plus Project traffic conditions. Results of the analysis are presented in **Table 9**. As shown in **Table 9**, with the addition of project traffic the following segments function at an unacceptable level of service per City requirements:

- Southbound Corral Hollow Road – Middlefield Drive to Linne Road (AM Peak)
- Eastbound Valpico Road – Corral Hollow Road to Project Driveway (PM Peak)

It should be noted that the broader road network, as analyzed in the TMP is not implemented for Background Conditions and as such existing roads would reflect higher volumes than when the city grid road network is installed.

Improvements for all the deficient road segments are as follows:

- **Lammers Road:** Old Schulte Road to Valpico – Expand from two lanes to four lanes. The widening of this segment to four lanes will complement and overlap with the intersection improvements for background conditions. The intersections govern the capacity in this urban setting and thus the segment can be expected to also operate acceptably. The deficient segments on Lammers Road indicated in Table 15 does not accurately reflect the roadway network operations. The model is a planning level tool to determine the general number of lane required and ignores the intersection capacities. The project will pay a fair shar towards widening the roadway. The widening is included in the City TIF.

- **Corral Hollow Road:** Valpico Road to Linne Road – no addition of lanes. The widening of this segment to four lanes will complement and overlap with the intersection improvements for background conditions. The intersections govern the capacity in this urban setting and thus the segment can be expected to also operate acceptably. The deficient segments on Corral Hollow Road indicated in Table 15 does not accurately reflect the roadway network operations. The model is a planning level tool to determine the general number of lane required and ignores the intersection capacities.

Table 9 – Existing Plus Project Conditions Roadway Segment Level of Service

Street	Segment	Direction	Capacity	Existing				Existing Plus Project			
				Volume		V/C		Volume		V/C	
				AM	PM	AM	PM	AM	PM	AM	PM
Lammers Rd	Old Schulte Rd to Valpico Rd	NB	891	449	238	0.50	0.27	518	305	0.58	0.34
		SB	891	306	415	0.34	0.47	329	531	0.37	0.60
	Valpico Rd to Linne Rd	NB	891	8	14	0.01	0.02	8	14	0.01	0.02
		SB	891	11	9	0.01	0.01	11	9	0.01	0.01
Corral Hollow Rd	Valpico Rd to Peony Dr	NB	891	342	410	0.38	0.46	342	410	0.38	0.46
		SB	891	560	350	0.63	0.39	560	350	0.63	0.39
	Peony Dr to Middlefield Dr	NB	891	179	317	0.20	0.36	183	334	0.21	0.37
		SB	891	485	255	0.54	0.29	496	264	0.56	0.30
	Middlefield Dr to Linne Rd	NB	891	260	322	0.29	0.36	153	350	0.17	0.39
		SB	891	795	243	0.89	0.27	813	259	**0.91**	0.29
Tracy Blvd	Central Ave to Valpico Rd	NB	1485	826	791	0.56	0.53	905	861	0.61	0.58
		SB	1485	605	679	0.82	0.46	631	798	0.42	0.54
Valpico Rd	Lammers Rd to Corral Hollow Rd	WB	742	332	211	0.45	0.28	401	278	0.54	0.37
		EB	742	255	380	0.34	0.51	278	496	0.37	0.67
	Corral Hollow Rd Project Dwy #1	WB	742	402	294	0.54	0.40	538	426	0.73	0.57
		EB	742	223	516	0.30	0.70	268	742	0.36	**1.00**
	Project Dwy #1 to Cagney Way	WB	742	402	294	0.54	0.40	432	432	0.58	0.58
		EB	742	223	516	0.30	0.70	314	598	0.42	0.81
	Cagney Way to Tracy Blvd	WB	1485	454	372	0.31	0.25	484	510	0.33	0.34
		EB	1485	407	465	0.27	0.31	498	547	0.34	0.37
Middlefield Dr	Peony Dr to Corral Hollow Rd	NB	742	267	63	0.36	0.08	277	72	0.37	0.10
		SB	742	81	104	0.11	0.14	84	120	0.11	0.16
Peony Dr	Corral Hollow Rd to Middlefield Dr	WB	742	103	62	0.14	0.08	113	71	0.15	0.10
		EB	742	45	67	0.06	0.09	48	83	0.06	0.11
Linne Rd	Lammers Rd to Corral Hollow Rd	WB	-	-	-	-	-	-	-	-	-
		EB	-	-	-	-	-	-	-	-	-

Notes: Volumes derived from existing intersection counts and Project trip assignment. Capacities derived from the City of Tracy 2035 Travel Demand Model.
V/C ratios are correlated with LOS as follows: <0.60 = LOS A; 0.60 - 0.69 = LOS B; 0.70 - 0.79 = LOS C; 0.80 - 0.89 = LOS D; **0.90 - 0.99 = LOS E; ≥1.00 = LOS F.**

5. BACKGROUND CONDITIONS

Background Conditions describes when the Project would open its doors to the public and were evaluated by assuming approved, but not yet constructed, projects would add traffic to the road network in the near term. Roadway improvements identified and scheduled to be implemented as the approved projects are constructed were also included in this analysis.

Kimley-Horn coordinated with County staff to determine the approved projects in the Project vicinity that were approved at the Notice of Preparation (NOP). Four approved projects have been identified to be included in Background Conditions and include:

- Stringer/Rocking Horse (residential)
- Ellis (residential/mixed use)
- Cordes Ranch Phase 1 (high-cube/warehousing)
- Tracy Hills Phase 1A (residential)

BACKGROUND TRAFFIC VOLUME AND IMPROVEMENTS

VOLUME DEVELOPMENT

Background volumes were developed by reviewing the transportation impact analysis (TIA) studies for each approved project, discussed above and identifying where approved project trips would travel. For the Tracy Villages Project study roadway segments and intersections where approved project trips would travel, the trips were added to Existing Conditions volumes shown in **Figure 5** and **Table 4**.

Background volumes developed as discussed above are shown in **Figure 13** and **Figure 15**.

ROADWAY/INTERSECTION IMPROVEMENTS

TIAs for approved projects were reviewed and improvements to be implemented by each project were evaluated to determine if it is applicable to the Tracy Village Project study intersections and/or roadway segments. Where applicable, approved project roadway and/or intersection improvements were incorporated into the Background and Background Plus Project Conditions analysis illustrated in the following sections.

Roadway and/or intersection improvements are summarized by approved project in the following sections below. **Figure 12** and **Figure 14** illustrate the intersection geometry and traffic control assumed in the Background and Background Plus Project analysis.

Ellis

Corral Hollow Road / Valpico Road (Intersection #5) - Signalize the intersection and add a southbound left turn lane. The City has approved implementation of a project that would improve the intersection to its TMP geometry, which will be implemented by the time the various approved projects are built out.

Corral Hollow Road / Linne Road (Intersection #7) - Install a signal at the intersection for project conditions.

Lammers Road / Old Schulte Road (Intersection #1) - Signalize the intersection, optimize cycle lengths and splits.

Cordes Ranch

Lammers Road / Old Schulte Road (Intersection #1) - An interim improvement has been identified at the intersection of Lammers Road and Old Schulte Road. This improvement is funded.

Lammers Road / Valpico Road (Intersection #2) - Cordes Ranch will install a signal and a southbound left turn lane at the intersection of Lammers Road and Valpico Road.

Tracy Hills

Corral Hollow Road / Valpico Road (Intersection #5) - The City is planning to implement widening of Corral Hollow Road and the intersection. This improvement is funded.

Corral Hollow Road / Linne Road (Intersection #7) - Tracy Hills Phase 1A will install a signal at the intersection. For Tracy Hills buildout, the following improvements have been approved: add one northbound channelized right turn lane and add one southbound left turn.

BACKGROUND INTERSECTION LEVEL OF SERVICE

Background Conditions were evaluated at the study intersections based on lane geometry and traffic control illustrated in **Figure 12** and peak hour volumes presented in **Figure 13**. All study intersections operate at an acceptable LOS except for the following:

- Lammers Road / Valpico Road (Intersection #2) (AM & PM Peak)
- Corral Hollow Road / Linne Road (Intersection #7) (AM & PM Peak)
- Valpico Road / Tracy Boulevard (Intersection #11) (PM Peak)

Results of the analysis are presented in **Table 10** and Synchro output sheets are provided in the **Appendix**.

Table 10 – Background Conditions Intersection Level of Service

	Intersection	Agency	Control Type	Background Conditions					
				AM Peak Hour			PM Peak Hour		
				Movement	Delay	LOS	Movement	Delay	LOS
1	Lammers Rd / Old Schulte Rd	Tracy	AWSC	Overall	9.8	A	Overall	43.5	D
2	Lammers Rd / Valpico Rd	Tracy	Signal	Overall	**127.4**	**F**	Overall	**82.9**	**F**
3	Lammers Rd / Linne Rd	Tracy	Does Not Exist						
4	Corral Hollow Rd / Valpico Rd	Tracy	AWSC	Overall	11.3	B	Overall	12.0	B
5	Corral Hollow Rd / Peony Dr	Tracy	SSSC	Overall	16.7	B	Overall	20.7	C
6	Corral Hollow Rd / Middlefield Dr	Tracy	Signal	Overall	43.0	D	Overall	42.9	D
7	Corral Hollow Rd / Linne Rd	Tracy	Signal	Overall	**99.3**	**F**	Overall	**151.0**	**F**
8	Project Driveway #1 / Valpico Rd	Tracy	Does Not Exist						
9	Middlefield Dr / Peony Dr	Tracy	AWSC	Overall	9.6	A	Overall	7.9	A
10	Tracy Blvd / Central Ave	Tracy	Signal	Overall	27.4	C	Overall	29.8	C
11	Tracy Blvd / Valpico Rd	Tracy	Signal	Overall	31.5	C	Overall	**55.0**	**E**

Notes:

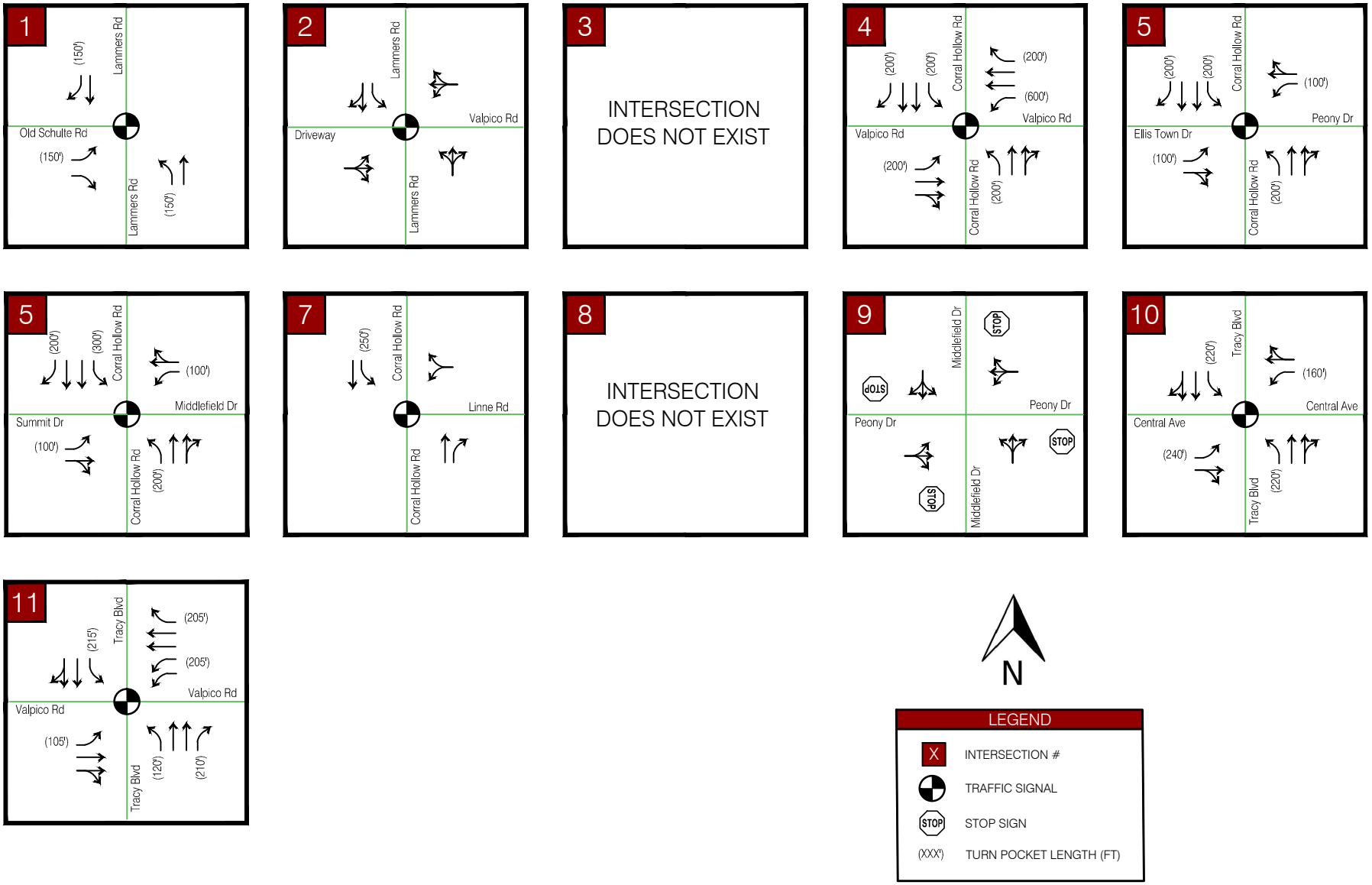
1. Analysis performed using HCM 2010 methodologies.

2. Delay indicated in seconds/vehicle.

3. Overall level of service (LOS) standard is D.

*4. Intersections that fall below City standard are highlighted and shown in **bold**.*

Source: Kimley Horn and Associates, 2017.

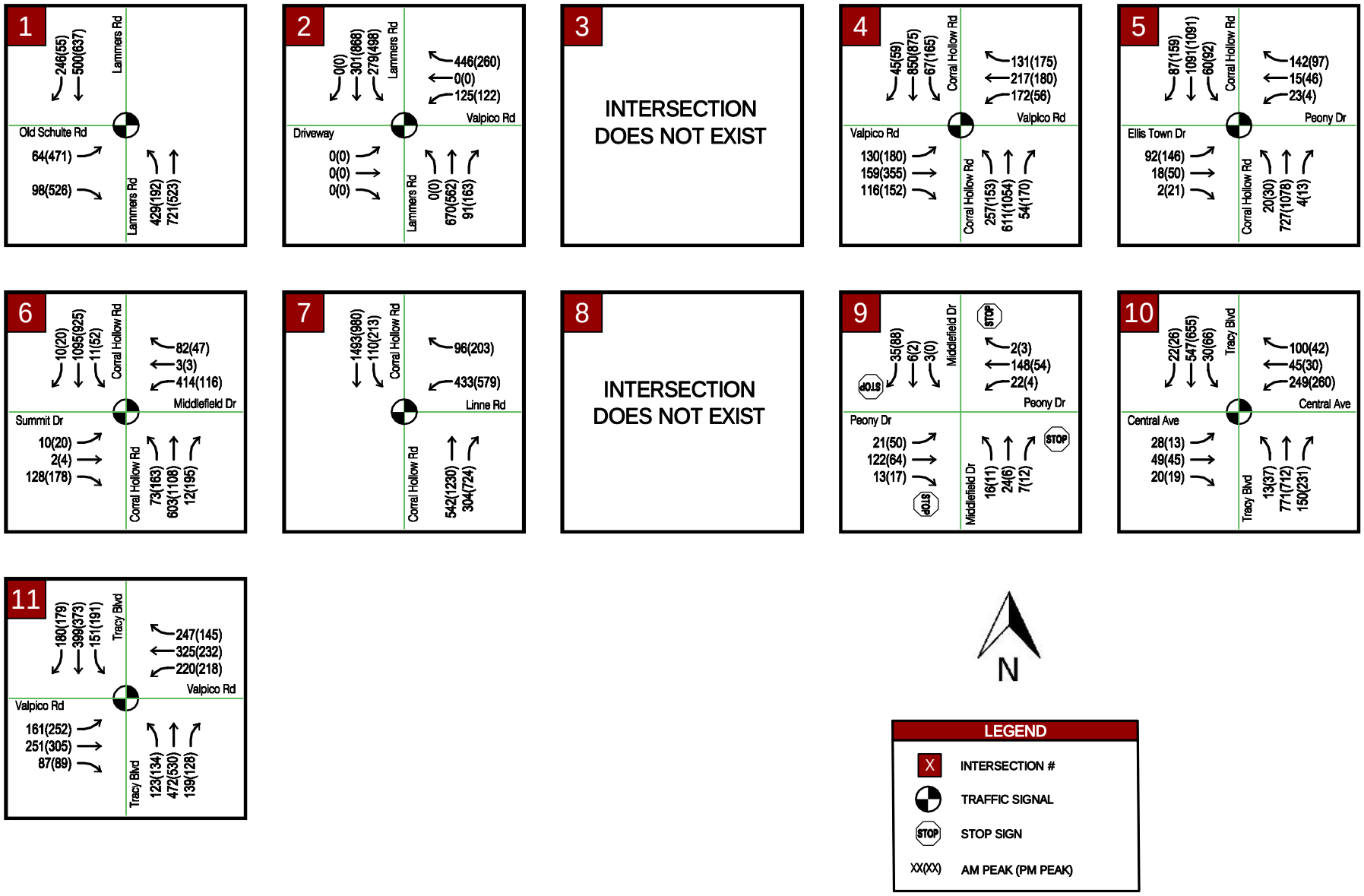


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Figure 12

Background Conditions Lane Geometry and Traffic Control



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Figure 13

Background Conditions Peak Hour Turning Movement Volumes

BACKGROUND ROADWAY SEGMENT LEVEL OF SERVICE

Traffic operations were evaluated at the study roadway segments under Background Conditions. Results of the analysis are presented in **Table 11**. As shown in **Table 11**, the following study roadway segments function at unacceptable level of service per City requirements:

- Northbound Lammers Road - Old Schulte Road to Valpico Road (AM Peak)
- Southbound Lammers Road - Old Schulte Road to Valpico Road (PM Peak)
- Northbound Corral Hollow Road - Valpico Road to Peony Drive (PM Peak)
- Northbound Corral Hollow Road – Middlefield Drive to Linne Road (PM Peak)
- Southbound Corral Hollow Road – Middlefield Drive to Linne Road (AM Peak)

Table 11 – Background Conditions Roadway Segment Level of Service

Street	Segment	Direction	Capacity	Background			
				Volume		V/C	
				AM	PM	AM	PM
Lammers Rd	Old Schulte Rd to Valpico Rd	NB	891	1133	769	**1.27**	0.86
		SB	891	589	1265	0.66	**1.42**
	Valpico Rd to Linne Rd	NB	891	381	363	0.43	0.41
		SB	891	213	495	0.24	0.56
Corral Hollow Rd	Valpico Rd to Peony Dr	NB	1485	942	1349	0.63	**0.91**
		SB	1485	1188	1213	0.80	0.82
	Peony Dr to Middlefield Dr	NB	1485	723	1148	0.49	0.77
		SB	1485	1116	1057	0.75	0.71
	Middlefield Dr to Linne Rd	NB	1485	663	1450	0.45	**0.98**
		SB	1485	1620	1206	**1.09**	0.81
Tracy Blvd	Central Ave to Valpico Rd	NB	1485	907	954	0.61	0.64
		SB	1485	773	839	0.52	0.56
Valpico Rd	Lammers Rd to Corral Hollow Rd	WB	1485	545	387	0.37	0.26
		EB	1485	388	674	0.26	0.45
	Corral Hollow Rd to Project Dwy #1	WB	1485	520	466	0.35	0.31
		EB	1485	280	485	0.19	0.33
	Project Dwy #1 to Cagney Way	WB	1485	520	520	0.35	0.35
		EB	1485	280	280	0.19	0.19
	Cagney Way to Tracy Blvd	WB	1485	628	545	0.42	0.37
		EB	1485	499	646	0.34	0.44
Middlefield Dr	Peony Dr to Corral Hollow Rd	NB	742	349	160	0.47	0.21
		SB	742	91	191	0.12	0.26
Peony Dr	Corral Hollow Rd to Middlefield Dr	WB	742	111	85	0.15	0.11
		EB	742	65	92	0.09	0.12
Linne Rd	Lammers Rd to Corral Hollow Rd	WB	-	-	-	-	-
		EB	-	-	-	-	-

Notes: Volumes derived from Existing intersection counts. Capacities derived from the City of Tracy 2035 Travel Demand Model.
V/C ratios are correlated with LOS as follows: <0.60 = LOS A; 0.60 - 0.69 = LOS B; 0.70 - 0.79 = LOS C; 0.80 - 0.89 = LOS D; **0.90 - 0.99 = LOS E; ≥1.00 = LOS F.**

BACKGROUND PLUS PROJECT INTERSECTION LEVEL OF SERVICE

Traffic operations were evaluated at the study intersections based on Background Plus Project Conditions. Background Plus Project lane geometry and traffic control is shown in **Figure 14** and Background Plus Project peak hour traffic volumes are shown in **Figure 15**.

The following intersections operate at unacceptable LOS under Background Plus Project Conditions. Mitigations labelled as **A** refer to the Single-Family land use and mitigations labelled as **B** to the Active Adult alternative land use:

For Background Base Line Conditions traffic analysis, it is assumed that improvements will be installed by approved, but not yet constructed development projects i.e. Tracy Hills, Ellis, and Cordes Ranch projects. Mitigations had previously been identified for these approved projects and are included in the Background Base Line Conditions analysis for determining Tracy Village Project impacts. Background base line and the added Tracy Village Project mitigations may include ultimate City of Tracy TMP Program improvements, towards which the applicants will pay the City Traffic Impact Fees. TMP Program improvements constructed by a developer will be eligible to receive fee credits upon completion of construction and acceptance by the City. Any interim roadway mitigations and improvements not included in the City of Tracy TMP Program improvements, will be funded by the approved projects and the Tracy Village Project Applicant. However, if the approved projects do not develop or an application for a building permit is not submitted before the Tracy Village Project submits an application, the Tracy Village Project Applicant shall install the full Background Conditions Plus Project improvements, which will include the Background Base Line improvements. The Tracy Village Applicant will be reimbursed by the other approved projects through a Business Improvement District. The reimbursement from future projects to the Tracy Village Applicant shall constitute their share of the improvement.

The approved project mitigations for Ellis, Cordes Ranch, and Tracy Hills, at which the Tracy Village Project will also have an impact are as follows:

Ellis

Lammers Road / Old Schulte Road (Intersection #1) - Signalize the intersection, optimize cycle lengths and splits.

Corral Hollow Road / Linne Road (Intersection #7) - Install a signal at the intersection for project conditions.

Cordes Ranch

Lammers Road / Old Schulte Road (Intersection #1) - An interim improvement has been identified at the intersection of Lammers Road and Old Schulte Road. This improvement is funded.

Lammers Road / Valpico Road (Intersection #2) - Cordes Ranch will install a signal and a southbound left turn lane at the intersection of Lammers Road and Valpico Road.

Tracy Hills

Corral Hollow Road / Linne Road (Intersection #7) - Tracy Hills Phase 1A will install a signal at the intersection. For Tracy Hills buildout, the following improvements have been approved: add one northbound channelized right turn lane and add one southbound left turn.

Following is a discussion of the Background plus project impacts and mitigations:

- Lammers Road / Old Schulte Road (Intersection #1) (PM Peak)

    A. The addition of Project traffic causes the intersection to deteriorate from LOS A and D during the AM and PM peak hour to LOS B in the AM peak hour and LOS E in the PM peak hour, respectively. The intersection would operate at an acceptable LOS B and D with the following improvement: install an eastbound right turn overlap phase and retime the intersection to optimize cycle lengths and splits. The applicant shall improve the signal timing with issuance of the first building permit.

    B. The addition of the project traffic for an Active Adult land use would result in LOS D operating conditions in the PM peak period, which is acceptable, and the project would not cause an impact. The AM peak would also operate at acceptable LOS.

- Lammers Road / Valpico Road (Intersection #2) (AM & PM Peak)

    A. The addition of Project traffic causes the intersection to add delay and continue to deteriorate and operate at LOS F in both the AM and PM peak hours. The intersection would operate at acceptable LOS C and D with the following improvement: Add a separate westbound right turn lane, and a shared westbound left turn and through lane. The westbound right turn phase will be overlapped with the southbound left turn phase. The applicant shall install this improvement with the issuance of the first building permit.

    B. The addition of the project traffic for an Active Adult land use land use type would result in the same mitigation requirement as A the Single -Family land use alternative.

- Corral Hollow Road / Linne Road (Intersection #7) (AM and PM Peak)

    A. The addition of Project traffic causes the intersection to add delay and continue to deteriorate and operate at LOS F in both the AM and PM peak hours. The intersection would operate at acceptable LOS B and D with the following improvements: Add a southbound through lane, and add a northbound through lane, and add a separate westbound right turn lane. The applicant shall install these improvements at the issuance of the first building permit. Improvements shall be constructed at the railroad crossing gates. The improvements are Public Utilities Commission requirement because vehicle queues will spill across the railroad tracks and will cause safety concerns for train traffic. This improvement is a partial TMP improvement and shall be partially funded by the City TIF. The City Engineer shall, at the time the tentative map is prepared, identify the non-TMP improvements. The costs of the non-TMP improvements are the responsibility of the Applicant and other approved projects listed above. The Applicant shall, in collaboration with the City Engineer and UPRR/PUC, commence with an engineering design process to install the improvements identified. This design shall commence immediately following the approval of this Project Application by the City of Tracy. The City does not have control over the UPRR/PUC approval of this improvement and until the improvement is installed, the Project impact will remain significant and unavoidable.

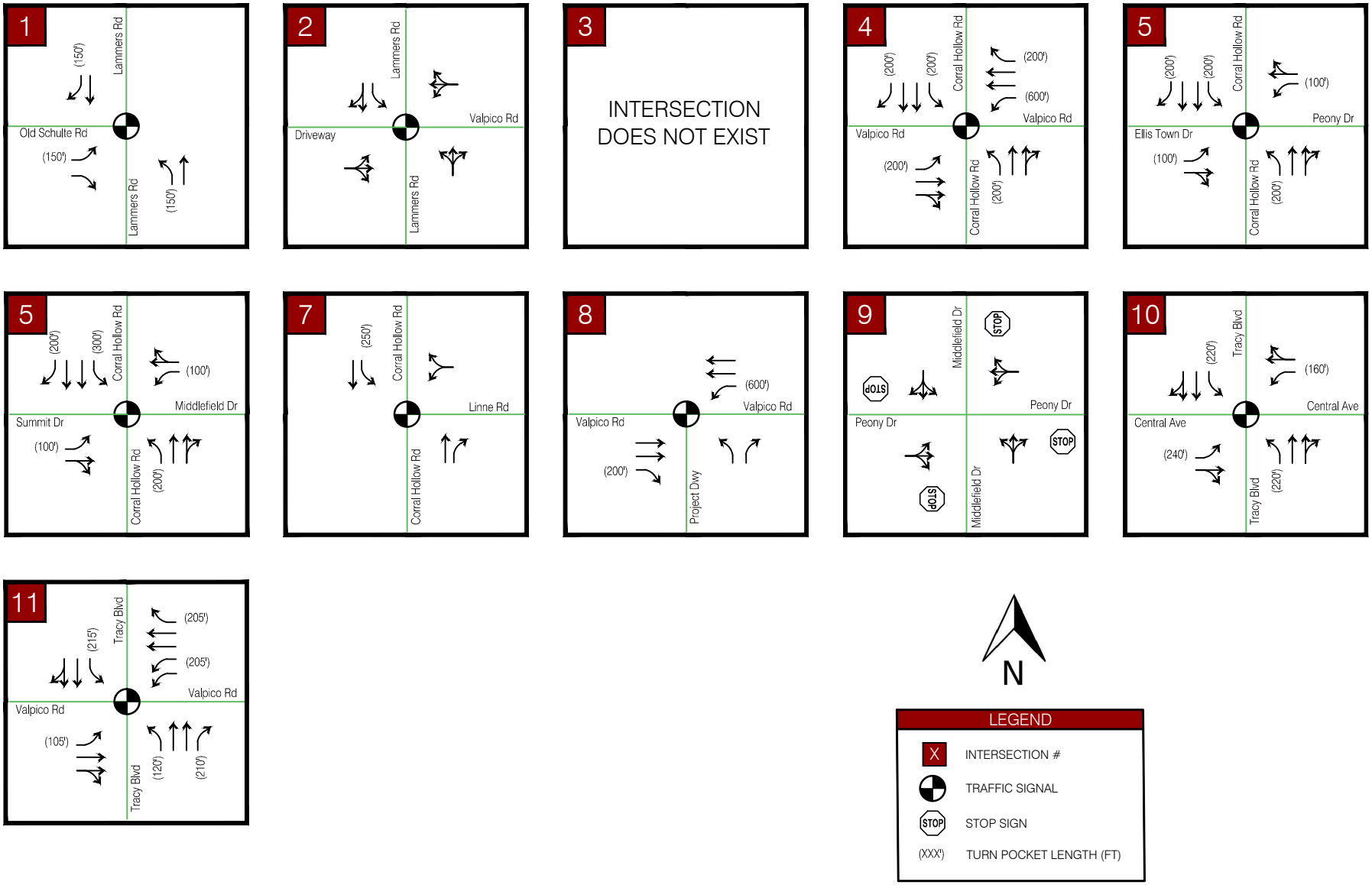
B. The addition of the project traffic for an Active Adult land use land use type would result in the same mitigation requirement as A, the Single-Family land use alternative.

- Valpico Road / Tracy Boulevard (Intersection #11) (PM Peak)

    A. The addition of Project traffic causes the intersection to deteriorate from LOS E in the PM peak hour to LOS F. The intersection would operate at acceptable LOS D in the AM and PM peak hours with the following improvements: optimize the signal cycle length, splits, and phasing. The applicant shall install this improvement at the issuance of the first building permit.

    B. The addition of the project traffic for an Active Adult land use land use type would result in the same mitigation requirement as A.

Results of the analysis are presented in **Table 12** and Synchro output sheets are provided in the **Appendix**. Results of mitigated intersections are shown in **Table 13**.

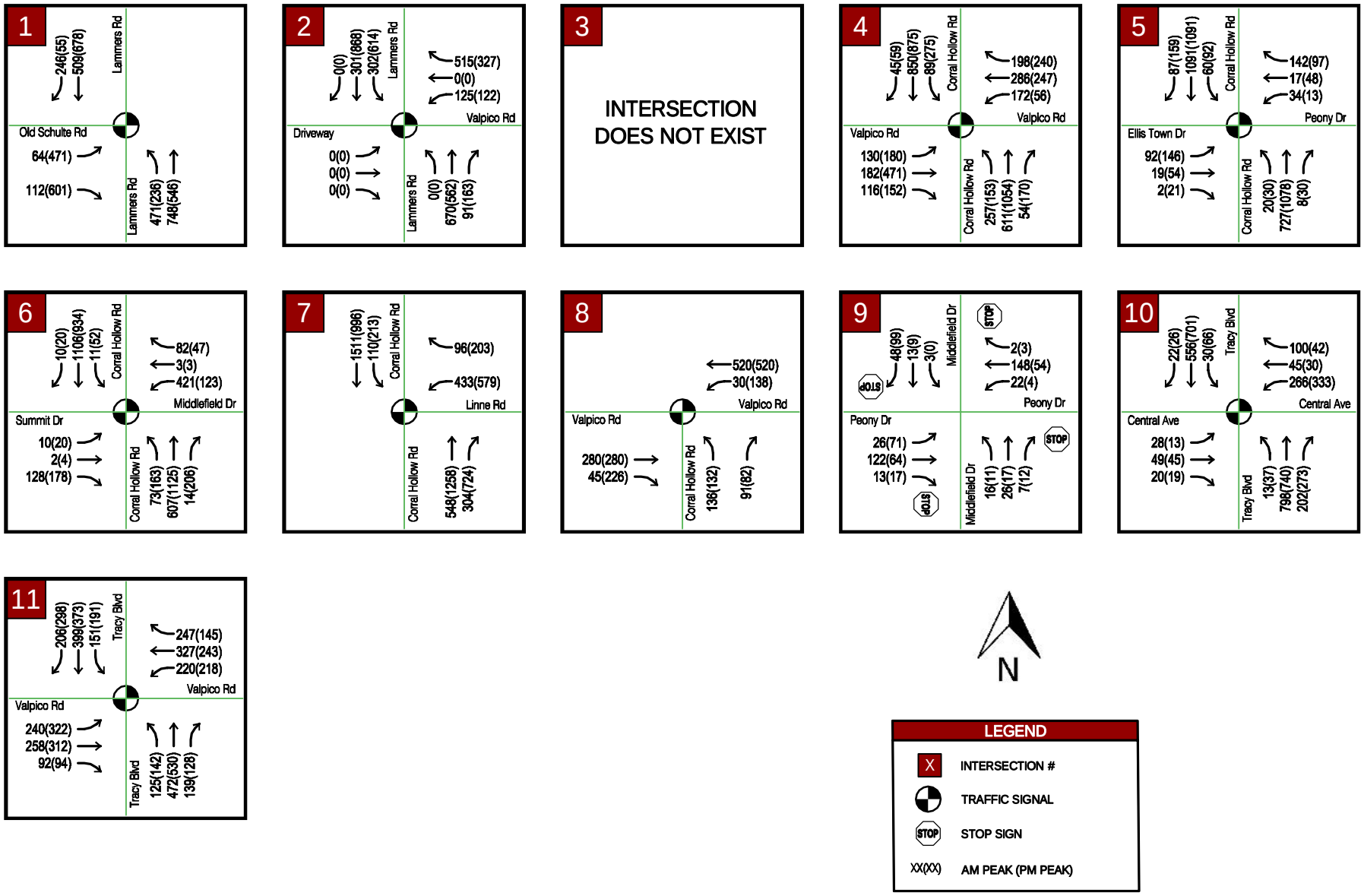


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Figure 14

Background Plus Project Conditions Lane Geometry and Traffic Control



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Figure 15

Background Plus Project Conditions Peak Hour Turning Movement Volumes

Table 12 – Background Plus Project Conditions Intersection Level of Service

#	Intersection	Maintaining Agency	Control Type	Background Conditions						Background Plus Project Conditions						Background Plus Project Conditions (Active Adult)					
				AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour		
				Movement	Delay	LOS	Movement	Delay	LOS	Movement	Delay	LOS	Movement	Delay	LOS	Movement	Delay	LOS	Movement	Delay	LOS
1	Lammers Rd / Old Schulte Rd	Tracy	AWSC	Overall	9.8	A	Overall	43.5	D	Overall	14.5	B	Overall	**64.0**	**E**	LOS & Delay Improved as Active Adult Community			Overall	48.2	D
2	Lammers Rd / Valpico Rd	Tracy	Signal	Overall	**127.4**	**F**	Overall	**82.9**	**F**	Overall	**159.3**	**F**	Overall	**124.1**	**F**	Overall	**138.9**	**F**	Overall	**93.0**	**F**
3	Lammers Rd / Linne Rd	Tracy	Does Not Exist																		
4	Corral Hollow Rd / Valpico Rd	Tracy	AWSC	Overall	11.3	B	Overall	12.0	B	Overall	11.1	B	Overall	17.0	B	LOS & Delay Improved as Active Adult Community					
5	Corral Hollow Rd / Peony Dr	Tracy	Signal	Overall	16.7	B	Overall	20.7	C	Overall	18.2	B	Overall	21.0	C	LOS & Delay Improved as Active Adult Community					
6	Corral Hollow Rd / Middlefield Dr	Tracy	Signal	Overall	43.0	D	Overall	42.9	D	Overall	44.4	D	Overall	41.4	D	LOS & Delay Improved as Active Adult Community					
7	Corral Hollow Rd / Linne Rd	Tracy	Signal	Overall	**99.3**	**F**	Overall	**151.0**	**F**	Overall	**102.4**	**F**	Overall	**155.7**	**F**	Overall	**100.3**	**F**	Overall	**152.3**	**F**
8	Project Driveway #1 / Valpico Rd	Tracy	Signal	Does Not Exist						Overall	5.0	A	Overall	4.8	A	LOS & Delay Improved as Active Adult Community					
9	Middlefield Dr / Peony Dr	Tracy	AWSC	Overall	9.6	A	Overall	7.9	A	Overall	9.9	A	Overall	8.2	A	LOS & Delay Improved as Active Adult Community					
10	Tracy Blvd / Central Ave	Tracy	Signal	Overall	27.4	C	Overall	29.8	C	Overall	32.7	C	Overall	48.1	D	LOS & Delay Improved as Active Adult Community					
11	Tracy Blvd / Valpico Rd	Tracy	Signal	Overall	31.5	C	Overall	**55.0**	**E**	Overall	47.6	D	Overall	**85.4**	**F**	LOS & Delay Improved as Active Adult Community			Overall	**62.6**	**E**

Notes:

1. Analysis performed using HCM 2010 methodologies.

2. Delay indicated in seconds/vehicle.

3. Overall level of service (LOS) standard is D.

*4. Intersections that fall below City standard are highlighted and shown in **bold**.*

Source: Kimley Horn and Associates, 2017.

Table 13 – Mitigated Background Plus Project Conditions Intersection Level of Service

#	Intersection	Maintaining Agency	Background Plus Project Conditions						Mitigated Background Plus Project Conditions					
			AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour		
			Movement	Delay	LOS	Movement	Delay	LOS	Movement	Delay	LOS	Movement	Delay	LOS
1	Lammers Rd / Old Schulte Rd	Tracy	Overall	14.5	B	Overall	**64.0**	**E**	Overall	15.4	B	Overall	47.5	D
2	Lammers Rd / Valpico Rd	Tracy	Overall	**159.3**	**F**	Overall	**124.1**	**F**	Overall	32.6	C	Overall	38.0	D
7	Corral Hollow Rd / Linne Rd	Tracy	Overall	**102.4**	**F**	Overall	**155.7**	**F**	Overall	14.2	B	Overall	54.7	D
11	Tracy Blvd / Valpico Rd	Tracy	Overall	47.6	D	Overall	**85.4**	**F**	Overall	47.6	D	Overall	41.8	D

Notes:

1. Analysis performed using HCM 2010 methodologies.

2. Delay indicated in seconds/vehicle.

3. Overall level of service (LOS) standard is D.

*4. Intersections that fall below City standard are highlighted and shown in **bold**.*

Source: Kimley Horn and Associates, 2017.

BACKGROUND PLUS PROJECT ROADWAY SEGMENT LEVEL OF SERVICE

Traffic operations were evaluated at the study roadway segments under Background Plus Project traffic conditions. Results of the analysis are presented in **Table 14**. As shown in **Table 14**, the following study roadway segments function at unacceptable level of service per City requirements:

- Northbound Lammers Road - Old Schulte Road to Valpico Road (AM Peak & PM Peak)
- Southbound Lammers Road - Old Schulte Road to Valpico Road (PM Peak)
- Northbound Corral Hollow Road - Valpico Road to Peony Dr (PM Peak)
- Northbound Corral Hollow Road – Middlefield Dr to Linne Road (PM Peak)
- Southbound Corral Hollow Road – Middlefield Dr to Linne Road (AM Peak)

It should be noted that the broader road network, as analyzed in the TMP is not implemented for Background Conditions and as such existing roads would reflect higher volumes than when the city grid road network is installed.

Improvements for all the deficient road segments are as follows:

- **Lammers Road:** Old Schulte Road to Valpico – Expand from two lanes to four lanes. The widening of this segment to four lanes will complement and overlap with the intersection improvements for background conditions. The intersections govern the capacity in this urban setting and thus the segment can be expected to also operate acceptably. The deficient segments on Lammers Road indicated in Table 15 does not accurately reflect the roadway network operations. The model is a planning level tool to determine the general number of lane required and ignores the intersection capacities. The project will pay a fair share towards widening the roadway. The widening is included in the City TIF.

- **Corral Hollow Road:** Valpico Road to Linne Road – no addition of lanes. The widening of this segment to four lanes will complement and overlap with the intersection improvements for background conditions. The intersections govern the capacity in this urban setting and thus the segment can be expected to also operate acceptably. The deficient segments on Corral Hollow Road indicated in Table 15 does not accurately reflect the roadway network operations. The model is a planning level tool to determine the general number of lane required and ignores the intersection capacities.

Mitigated v/c ratios are shown in **Table 15**.

Table 14 – Background Plus Project Conditions Roadway Segment Level of Service

Street	Segment	Direction	Capacity	Background				Background Plus Project			
				Volume		V/C		Volume		V/C	
				AM	PM	AM	PM	AM	PM	AM	PM
Lammers Rd	Old Schulte Rd to Valpico Rd	NB	891	1133	769	**1.27**	0.86	1202	836	**1.35**	**0.94**
		SB	891	589	1265	0.66	**1.42**	612	1381	0.69	**1.55**
	Valpico Rd to Linne Rd	NB	891	381	363	0.43	0.41	381	363	0.43	0.41
		SB	891	213	495	0.24	0.56	213	495	0.24	0.56
Corral Hollow Rd	Valpico Rd to Peony Dr	NB	1485	942	1349	0.63	**0.91**	942	1349	0.63	**0.91**
		SB	1485	1188	1213	0.80	0.82	1188	1213	0.80	0.82
	Peony Dr to Middlefield Dr	NB	1485	723	1148	0.49	0.77	727	1165	0.49	0.78
		SB	1485	1116	1057	0.75	0.71	1127	1066	0.76	0.72
	Middlefield Dr to Linne Rd	NB	1485	663	1450	0.45	**0.98**	669	1478	0.45	**0.99**
		SB	1485	1620	1206	**1.09**	0.81	1638	1222	**1.10**	0.82
Tracy Blvd	Central Ave to Valpico Rd	NB	1485	907	954	0.61	0.64	986	1024	0.66	0.69
		SB	1485	773	839	0.52	0.56	799	958	0.54	0.64
Valpico Rd	Lammers Rd to Corral Hollow Rd	WB	1485	545	387	0.37	0.26	614	454	0.41	0.31
		EB	1485	388	674	0.26	0.45	411	790	0.28	0.53
	Corral Hollow Rd Project Dwy #1	WB	1485	520	466	0.35	0.31	656	598	0.44	0.40
		EB	1485	280	485	0.19	0.33	325	711	0.22	0.48
	Project Dwy #1 to Cagney Way	WB	1485	520	520	0.35	0.35	550	658	0.37	0.44
		EB	1485	280	280	0.19	0.19	371	362	0.25	0.24
	Cagney Way to Tracy Blvd	WB	1485	628	545	0.42	0.37	658	683	0.44	0.46
		EB	1485	499	646	0.34	0.44	590	728	0.40	0.49
Middlefield Dr	Peony Dr to Corral Hollow Rd	NB	742	349	160	0.47	0.21	359	169	0.48	0.23
		SB	742	91	191	0.12	0.26	94	207	0.13	0.28
Peony Dr	Corral Hollow Rd to Middlefield Dr	WB	742	111	85	0.15	0.11	121	94	0.16	0.13
		EB	742	65	92	0.09	0.12	68	108	0.09	0.15
Linne Rd	Lammers Rd to Corral Hollow Rd	WB	-	-	-	-	-	-	-	-	-
		EB	-	-	-	-	-	-	-	-	-

Notes: Volumes derived from existing intersection counts and Project trip assignment. Capacities derived from the City of Tracy 2035 Travel Demand Model.
V/C ratios are correlated with LOS as follows: <0.60 = LOS A; 0.60 - 0.69 = LOS B; 0.70 - 0.79 = LOS C; 0.80 - 0.89 = LOS D; **0.90 - 0.99 = LOS E; ≥1.00 = LOS F.**

Table 15 – Mitigated Background Plus Project Conditions Roadway Segment Level of Service

Street	Segment	Direction	Capacity	Background Plus Project				New Capacity	Background Plus Project with Mitigations			
				Volume		V/C			Volume		V/C	
				AM	PM	AM	PM		AM	PM	AM	PM
Lammers Rd	Old Schulte Rd to Valpico Rd	NB	891	1202	836	**1.35**	**0.94**	1485	1202	836	0.81	0.56
		SB	891	612	1381	0.69	**1.55**	1485	612	1381	0.41	**0.92**
	Valpico Rd to Linne Rd	NB	891	381	363	0.43	0.41	1485	381	363	0.26	0.24
		SB	891	213	495	0.24	0.56	1485	213	495	0.14	0.33

Notes: Volumes derived from existing intersection counts and Project trip assignment. Capacities derived from the City of Tracy 2035 Travel Demand Model.
V/C ratios are correlated with LOS as follows: <0.60 = LOS A; 0.60 - 0.69 = LOS B; 0.70 - 0.79 = LOS C; 0.80 - 0.89 = LOS D; **0.90 - 0.99 = LOS E; ≥1.00 = LOS F.**

6. CUMULATIVE CONDITIONS

Cumulative Conditions describes the conditions anticipated in 2035. The Tracy TMP, Tracy Travel Demand Model, and approved projects identified in previous sections were evaluated to determine Cumulative volumes and roadway network.

VOLUME DEVELOPMENT

Cumulative volumes were developed by Furnessing Tracy TDM Baseline (2009) and Horizon Year (2035) data, as well as Existing traffic counts. Roadway and intersection improvements were identified using the Tracy TMP and approved project TIAs. Volumes were also taken from Tracy Hills and adjusted to reflect increased current volumes. Cumulative Conditions volumes are shown in **Figure 17** and **Figure 19**.

ROADWAY/INTERSECTION IMPROVEMENTS

The Tracy TMP was evaluated to determine applicable roadway and/or intersection improvements planned by the City of Tracy. TIAs for approved projects were also reviewed and improvements to be implemented by each project in Cumulative Conditions were evaluated to determine if it is applicable to the Tracy Village Project study intersections and/or roadway segments. Where applicable, approved project and/or roadway/intersection improvements were incorporated into the Cumulative and Cumulative Plus Project Conditions analysis illustrated in the following sections.

Roadway and/or intersection improvements are summarized by the TMP and approved projects in the following sections below. **Figure 16** and **Figure 18** illustrate the intersection geometry and traffic control assumed in the Cumulative and Cumulative Plus Project analysis, respectively.

Tracy TMP

Lammers Road: Old Schulte to Linne Road – Widen to six-lane road.

Corral Hollow Road: Valpico Road to Linne Road – Widen to four-lane road.

Valpico Road: Lammers Road to Tracy Boulevard – Widen to four-lane road.

TMP Intersections – All intersections included in the TMP will also be improved in Cumulative Conditions. Additional intersections could be included updates on the TMP and the developers would pay proportional fair share payments. For Cumulative Conditions analysis for the Tracy Village Project, the following intersections are included in the TMP:

- **Lammers Road / Old Schulte Road (Intersection #1)**
- **Lammers Road / Valpico Road (Intersection #2)**
- **Corral Hollow Road / Valpico Road (Intersection #6)**
- **Corral Hollow Road / Linne Road (Intersection #7)**
- **Tracy Boulevard / Valpico Road (Intersection #8)**

CUMULATIVE INTERSECTION LEVEL OF SERVICE

Traffic operations were evaluated at the study intersections based on Cumulative lane geometry and traffic control as shown in **Figure 16** and Cumulative peak hour traffic volumes as shown in **Figure 17**.

The following intersections operate at unacceptable LOS under Cumulative conditions:

- Lammers Road / Valpico Road (Intersection #2) (AM & PM Peak)
- Corral Hollow Road / Linne Road (Intersection #7) (PM Peak)

Results of the analysis are presented in **Table 16** and Synchro output sheets are provided in the **Appendix**.

Table 16 – Cumulative Conditions Intersection Level of Service

	Intersection	Agency	Control Type	Cumulative Conditions					
				AM Peak Hour			PM Peak Hour		
				Movement	Delay	LOS	Movement	Delay	LOS
1	Lammers Rd / Old Schulte Rd	Tracy	Signal	Overall	14.1	B	Overall	21.3	C
2	Lammers Rd / Valpico Rd	Tracy	Signal	Overall	**123.9**	**F**	Overall	**110.0**	**F**
3	Lammers Rd / Linne Rd	Tracy	Signal	Overall	15.7	B	Overall	42.1	D
4	Corral Hollow Rd / Valpico Rd	Tracy	Signal	Overall	18.6	C	Overall	41.4	D
5	Corral Hollow Rd / Peony Dr	Tracy	Signal	Overall	15.7	B	Overall	17.3	B
6	Corral Hollow Rd / Middlefield Dr	Tracy	Signal	Overall	18.7	B	Overall	24.5	C
7	Corral Hollow Rd / Linne Rd	Tracy	Signal	Overall	20.4	C	Overall	43.2	D
8	Project Driveway #1 / Valpico Rd	Tracy	Does Not Exist						
9	Middlefield Dr / Peony Dr	Tracy	AWSC	Overall	8.3	A	Overall	7.6	A
10	Tracy Blvd / Central Ave	Tracy	Signal	Overall	36.9	D	Overall	47.0	D
11	Tracy Blvd / Valpico Rd	Tracy	Signal	Overall	33.9	C	Overall	50.6	D

Notes:

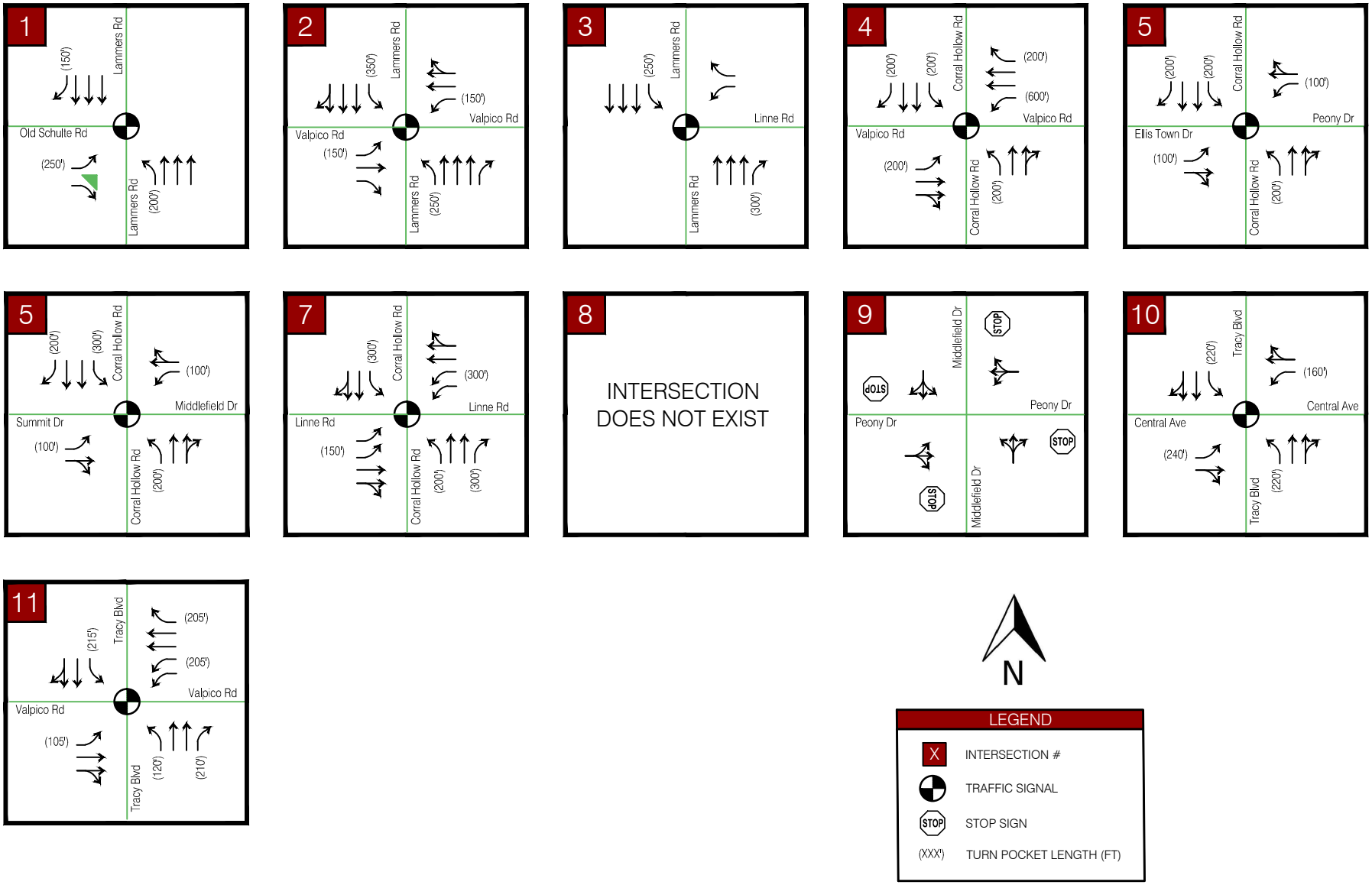
1. Analysis performed using HCM 2010 methodologies.

2. Delay indicated in seconds/vehicle.

3. Overall level of service (LOS) standard is D.

*4. Intersections that fall below City standard are highlighted and shown in **bold**.*

Source: Kimley Horn and Associates, 2017.

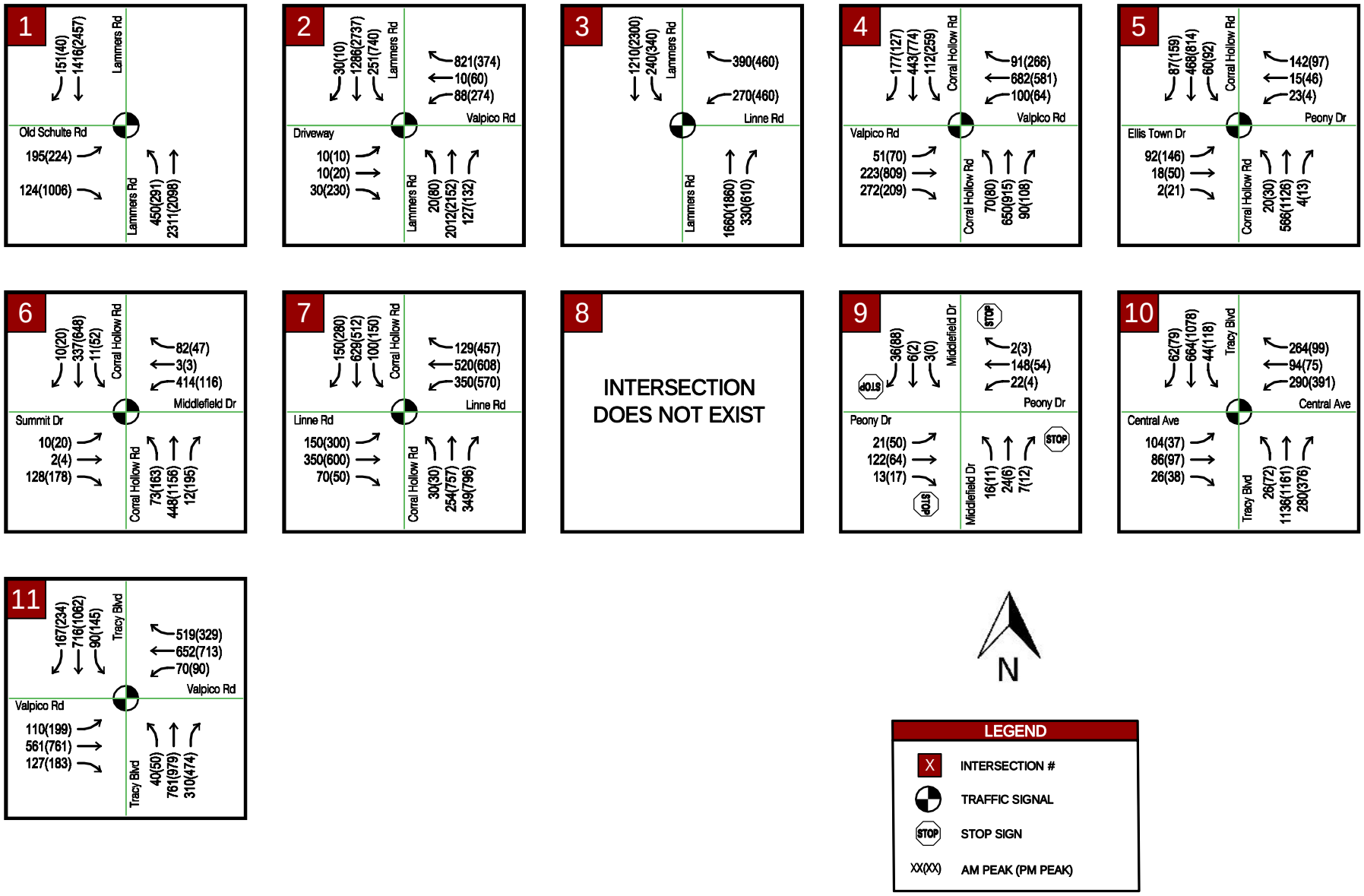


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Figure 16

Cumulative Conditions Lane Geometry and Traffic Control



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Figure 17

Cumulative Conditions Peak Hour Turning Movement Volumes

CUMULATIVE ROADWAY SEGMENT LEVEL OF SERVICE

Traffic operations were evaluated at the study roadway segments under Cumulative Conditions. Results of the analysis are presented in **Table 17**. As shown in **Table 17**, the following study roadway segments function at an unacceptable LOS per City requirements:

- Northbound Lammers Road - Old Schulte Road to Valpico Road (AM & PM Peak)
- Southbound Lammers Road - Old Schulte Road to Valpico Road (PM Peak)
- Northbound Lammers Road - Valpico to Linne Road (PM Peak)
- Northbound Corral Hollow Road – Middlefield Dr to Linne Road (PM Peak)
- Northbound Tracy Boulevard – Central Ave to Valpico Road (AM & PM Peak)
- Southbound Tracy Boulevard – Central Ave to Valpico Road (PM Peak)

Table 17 – Cumulative Conditions Roadway Segment Level of Service

Street	Segment	Direction	Capacity	*Cumulative*			
				Volume		*V/C*	
				AM	PM	AM	PM
Lammers Rd	Old Schulte Rd to Valpico Rd	NB	2673	2802	2463	**1.05**	**0.92**
		SB	2673	1554	3475	0.58	**1.30**
	Valpico Rd to Linne Rd	NB	2673	2105	2342	0.79	0.88
		SB	2673	1427	2941	0.53	**1.10**
Corral Hollow Rd	Valpico Rd to Peony Dr	NB	1485	805	1236	0.54	0.83
		SB	1485	715	1056	0.48	0.71
	Peony Dr to Middlefield Dr	NB	1485	565	1196	0.38	0.81
		SB	1485	426	780	0.29	0.52
	Middlefield Dr to Linne Rd	NB	1485	533	1514	0.36	**1.02**
		SB	1485	879	942	0.59	0.63
Tracy Blvd	Central Ave to Valpico Rd	NB	1485	1416	1558	**0.95**	**1.05**
		SB	1485	977	1474	0.66	**0.99**
Valpico Rd	Lammers Rd to Corral Hollow Rd	WB	1485	924	748	0.62	0.50
		EB	1485	467	990	0.31	0.67
	Corral Hollow Rd to Project Dwy #1	WB	1485	873	911	0.59	0.61
		EB	1485	425	1176	0.29	0.79
	Project Dwy #1 to Cagney Way	WB	1485	873	911	0.59	0.61
		EB	1485	425	1176	0.29	0.79
	Cagney Way to Tracy Blvd	WB	1485	859	997	0.58	0.67
		EB	1485	798	1143	0.54	0.77
Middlefield Dr	Peony Dr to Corral Hollow Rd	NB	742	350	160	0.47	0.21
		SB	742	91	191	0.12	0.26
Peony Dr	Corral Hollow Rd to Middlefield Dr	WB	742	111	85	0.15	0.11
		EB	742	65	92	0.09	0.12
Linne Rd	Lammers Rd to Corral Hollow Rd	WB	1485	680	919	0.46	0.62
		EB	1485	570	950	0.38	0.64

Notes: Volumes derived from Existing intersection counts. Capacities derived from the City of Tracy 2035 Travel Demand Model.
V/C ratios are correlated with LOS as follows: <0.60 = LOS A; 0.60 - 0.69 = LOS B; 0.70 - 0.79 = LOS C; 0.80 - 0.89 = LOS D; **0.90 - 0.99 = LOS E; ≥1.00 = LOS F.**

CUMULATIVE PLUS PROJECT INTERSECTION LEVEL OF SERVICE

Traffic operations were evaluated at the study intersections based on Cumulative Plus Project Conditions. Cumulative Plus Project lane geometry and traffic control is shown in **Figure 18** and Cumulative peak hour traffic volumes are shown in **Figure 19**.

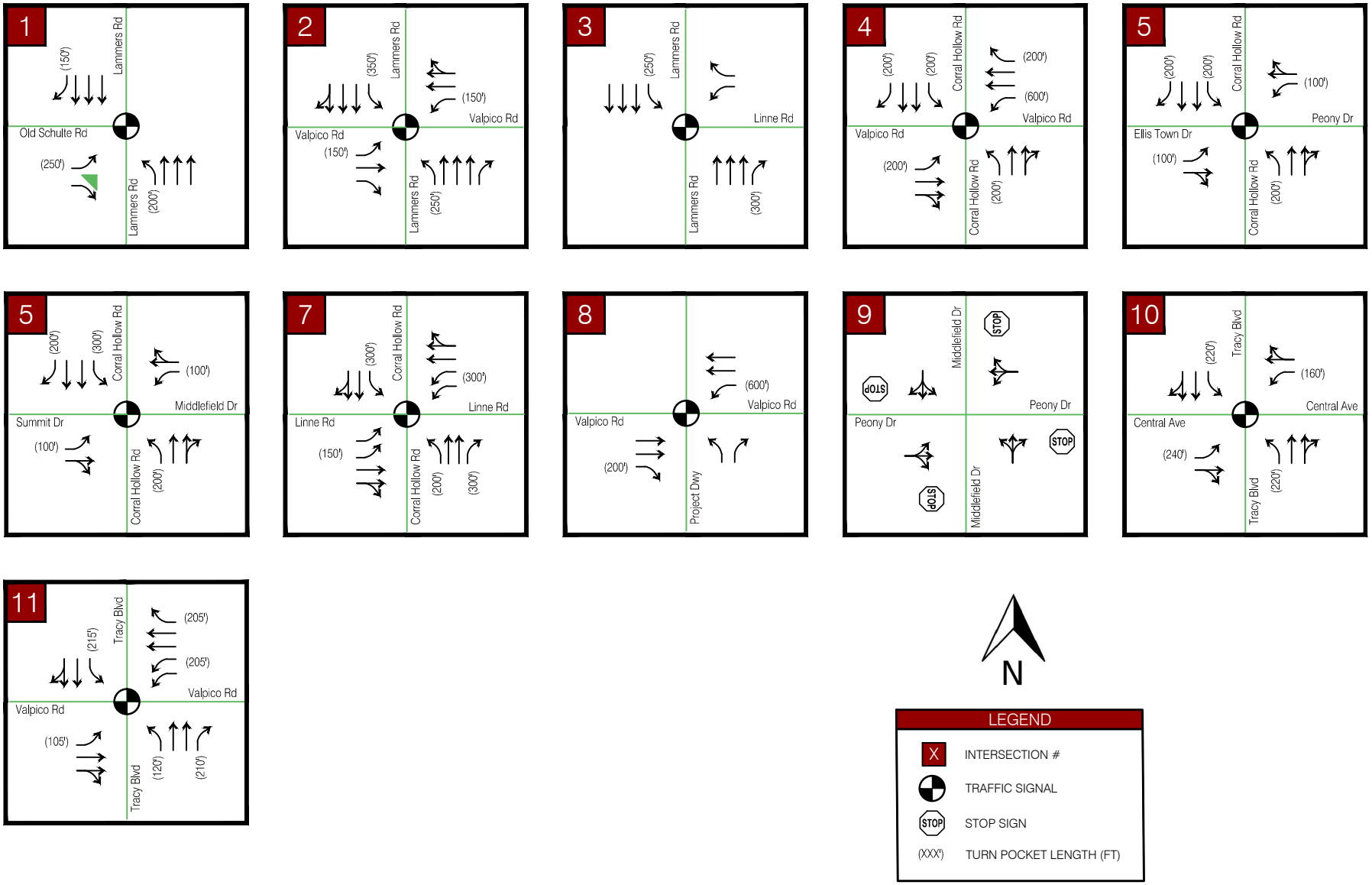
The following intersections operate at unacceptable LOS under Cumulative Plus Project Conditions:

- Lammers Road / Valpico Road (Intersection #2) (AM & PM Peak)
    A. The addition of Project traffic causes the intersection to add delay and continue to operate at deficient LOS F. The intersection would operate at acceptable LOS B and LOS D with the following improvement: install a channelized westbound right turn pocket, a second southbound left turn pocket, an eastbound right turn overlap phase and a northbound right turn overlap phase. These improvements are in addition to the TMP improvements. The Project causes a significant impact and should fund these improvements.
    B. The addition of the project traffic for an Active Adult land use causes a significant impact and the mitigation would be the same as for A, the Single-Family land use alternative.

- Corral Hollow Road / Valpico Road (Intersection #4) (PM Peak)
    A. The addition of Project traffic causes the intersection LOS to deteriorate from LOS D to LOS E in the PM peak hour. The intersection would operate at an acceptable LOS of B in the AM Peak and LOS D in the PM peak hour with the following improvement: a westbound right turn overlap phase and a southbound right turn overlap phase. These improvements are in addition to the TMP improvements.
    B. The addition of the project traffic for an Active Adult land use will result in LOS D at the intersection during the PM peak period and has no impact.

- Valpico Road / Tracy Boulevard (Intersection #11) (PM Peak)
    A. The addition of Project traffic causes the intersection LOS to deteriorate from LOS D to LOS E in the PM peak hour. The intersection would operate at an acceptable LOS of D in the AM and PM peak hours with the following improvement: change the phasing on Central Ave to permitted-protected and retime the intersection to optimize cycle lengths and splits. This is not a TMP improvement and shall be funded by the Tracy Village Project at the issuance of the final building permit for the project.
    B. The addition of the project traffic for an Active Adult land use will result in LOS D at the intersection during the PM peak period, and would not be considered an impact.

Results of the analysis are presented in **Table 18** and Synchro output sheets are provided in the **Appendix**.

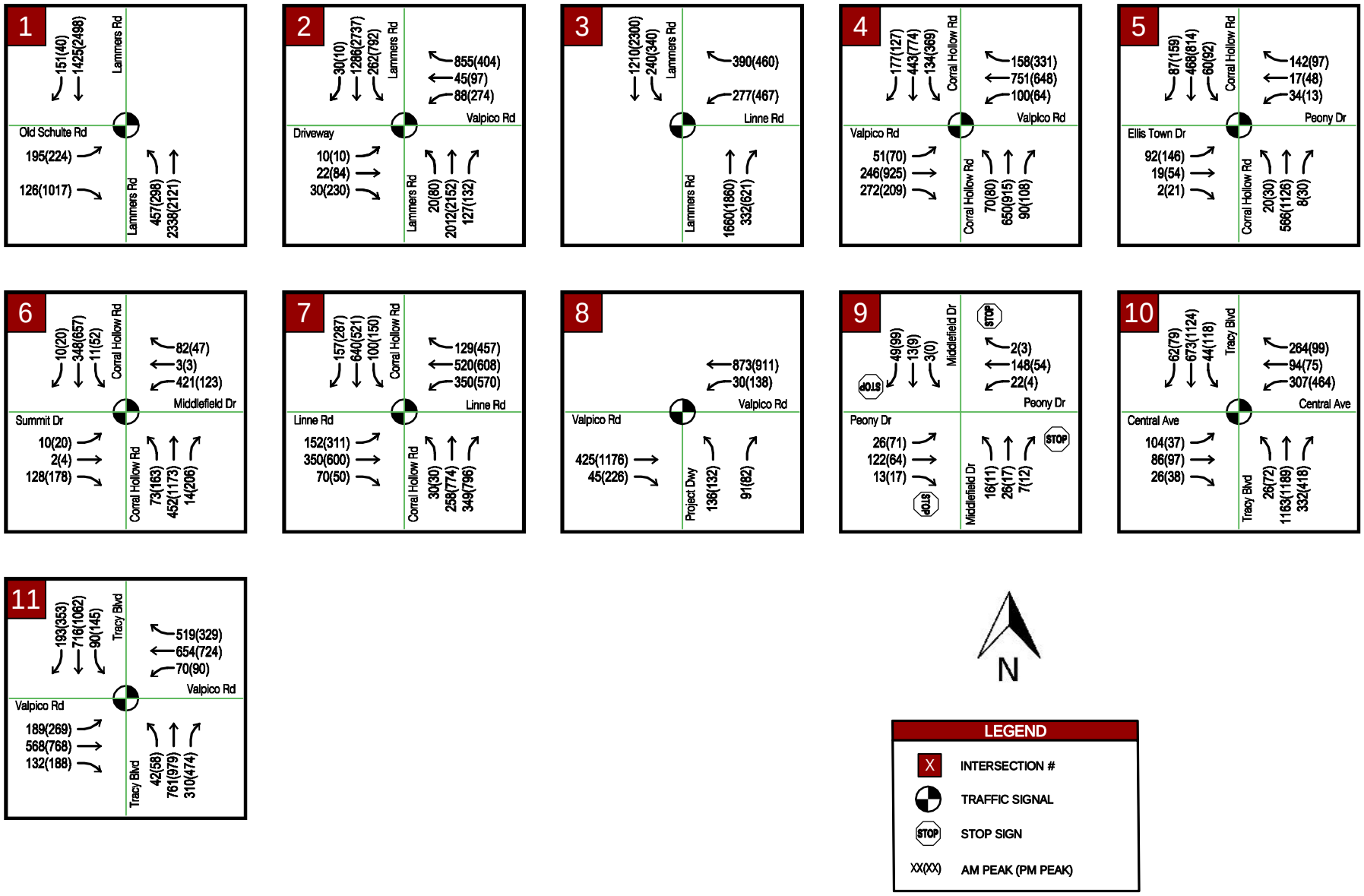


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Figure 18

Cumulative Plus Project Conditions Lane Geometry and Traffic Control



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Figure 19

Cumulative Plus Project Conditions Peak Hour Turning Movement Volumes

Table 18 – Cumulative Plus Project Conditions Intersection Level of Service

#	Intersection	Maintaining Agency	Control Type	Cumulative Conditions						Cumulative Plus Project Conditions						Cumulative Plus Project Conditions (Active Adult)					
				AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour		
				Movement	Delay	LOS	Movement	Delay	LOS	Movement	Delay	LOS	Movement	Delay	LOS	Movement	Delay	LOS	Movement	Delay	LOS
1	Lammers Rd / Old Schulte Rd	Tracy	Signal	Overall	14.1	B	Overall	21.3	C	Overall	14.3	B	Overall	24.0	C	LOS & Delay Improved as Active Adult Community					
2	Lammers Rd / Valpico Rd	Tracy	Signal	Overall	**123.9**	**F**	Overall	**110.0**	**F**	Overall	**135.1**	**F**	Overall	**116.3**	**F**	Overall	**128.1**	**F**	Overall	**111.8**	**F**
3	Lammers Rd / Linne Rd	Tracy	Signal	Overall	15.7	B	Overall	24.3	C	Overall	15.7	B	Overall	24.9	C	LOS & Delay Improved as Active Adult Community					
4	Corral Hollow Rd / Valpico Rd	Tracy	Signal	Overall	18.6	C	Overall	41.4	D	Overall	20.0	C	Overall	**62.9**	**E**	LOS & Delay Improved as Active Adult Community			Overall	45.9	D
5	Corral Hollow Rd / Peony Dr	Tracy	Signal	Overall	15.7	B	Overall	17.3	B	Overall	15.9	B	Overall	17.6	B	LOS & Delay Improved as Active Adult Community					
6	Corral Hollow Rd / Middlefield Dr	Tracy	Signal	Overall	18.7	B	Overall	24.5	C	Overall	18.9	B	Overall	25.4	C	LOS & Delay Improved as Active Adult Community					
7	Corral Hollow Rd / Linne Rd	Tracy	Signal	Overall	20.4	C	Overall	43.2	D	Overall	20.6	C	Overall	44.5	D	LOS & Delay Improved as Active Adult Community					
8	Project Driveway #1 / Valpico Rd	Tracy	Signal	Does Not Exist						Overall	4.8	A	Overall	4.9	A	LOS & Delay Improved as Active Adult Community					
9	Middlefield Dr / Peony Dr	Tracy	AWSC	Overall	8.3	A	Overall	7.6	A	Overall	8.3	A	Overall	7.9	A	LOS & Delay Improved as Active Adult Community					
10	Tracy Blvd / Central Ave	Tracy	Signal	Overall	36.9	D	Overall	47.0	D	Overall	39.8	D	Overall	**51.6**	**D**	LOS & Delay Improved as Active Adult Community					
11	Tracy Blvd / Valpico Rd	Tracy	Signal	Overall	33.9	C	Overall	50.6	D	Overall	39.7	D	Overall	**69.2**	**E**	LOS & Delay Improved as Active Adult Community			Overall	54.9	D

Notes:

1. Analysis performed using HCM 2010 methodologies.

2. Delay indicated in seconds/vehicle.

3. Overall level of service (LOS) standard is D.

*4. Intersections that fall below City standard are highlighted and shown in **bold**.*

Source: Kimley Horn and Associates, 2017.

Table 19 – Mitigated Cumulative Plus Project Conditions Intersection Level of Service

#	Intersection	Maintaining Agency	Control Type	Cumulative Plus Project Conditions						Mitigated Cumulative Plus Project Conditions					
				AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour		
				Movement	Delay	LOS	Movement	Delay	LOS	Movement	Delay	LOS	Movement	Delay	LOS
2	Lammers Rd / Valpico Rd	Tracy	Signal	Overall	**135.1**	**F**	Overall	**116.3**	**F**	Overall	36.0	D	Overall	51.7	D
4	Corral Hollow Rd / Valpico Rd	Tracy	Signal	Overall	23.4	C	Overall	**72.4**	**E**	Overall	20.0	B	Overall	53.8	D
11	Tracy Blvd / Valpico Rd	Tracy	Signal	Overall	39.7	D	Overall	**69.2**	**E**	Overall	36.0	D	Overall	55.0	D

Notes:

1. Analysis performed using HCM 2010 methodologies.

2. Delay indicated in seconds/vehicle.

3. Overall level of service (LOS) standard is D.

*4. Intersections that fall below City standard are highlighted and shown in **bold**.*

Source: Kimley Horn and Associates, 2017.

CUMULATIVE PLUS PROJECT ROADWAY SEGMENT LEVEL OF SERVICE

Traffic operations were evaluated at the study roadway segments under Cumulative Plus Project traffic conditions. Results of the analysis are presented in **Table 20**. As shown in **Table 20**, the following study roadway segments function at an unacceptable level of service per City requirements:

- Northbound Lammers Road - Old Schulte Road to Valpico Road (AM & PM Peak)
- Southbound Lammers Road - Old Schulte Road to Linne Road (PM Peak)
- Southbound Lammers Road - Valpico Road to Linne Road (PM Peak)
- Northbound Corral Hollow Road – Middlefield Dr to Linne Road (PM Peak)
- Northbound Tracy Boulevard – Central Ave to Valpico Road (AM & PM Peak)
- Southbound Tracy Boulevard – Central Ave to Valpico Road (AM & PM Peak)
- Eastbound Valpico Road – Corral Hollow to Project Driveway (PM Peak)

For Cumulative Conditions, when the full road network is built out, the intersection would govern capacity on the City urban street network, and not the segments. All the intersections analyzed would operate at or better than the City LOS standards and as such the segments can be expected to also operate at acceptable conditions. The project will pay the City TIF as its fair share contribution towards the potential incremental cumulative roadway impacts.

Table 20 – Cumulative Plus Project Conditions Roadway Segment Level of Service

Street	Segment	Direction	Capacity	Cumulative				Cumulative Plus Project			
				Volume		V/C		Volume		V/C	
				AM	PM	AM	PM	AM	PM	AM	PM
Lammers Rd	Old Schulte Rd to Valpico Rd	NB	2673	2802	2463	**1.05**	**0.92**	2836	2493	**1.06**	**0.93**
		SB	2673	1554	3475	0.58	**1.30**	1565	3527	0.59	**1.32**
	Valpico Rd to Linne Rd	NB	2673	2105	2342	0.79	0.88	2105	2342	0.79	0.88
		SB	2673	1427	2941	0.53	**1.10**	1427	2941	0.53	**1.10**
Corral Hollow Rd	Valpico Rd to Peony Dr	NB	1485	805	1236	0.54	0.83	805	1236	0.54	0.83
		SB	1485	715	1056	0.48	0.71	715	1056	0.48	0.71
	Peony Dr to Middlefield Dr	NB	1485	565	1196	0.38	0.81	569	1213	0.38	0.82
		SB	1485	426	780	0.29	0.52	437	789	0.29	0.53
	Middlefield Dr to Linne Rd	NB	1485	533	1514	0.36	**1.02**	539	1542	0.36	**1.04**
		SB	1485	879	942	0.59	0.63	897	958	0.60	0.65
Tracy Blvd	Central Ave to Valpico Rd	NB	1485	1416	1558	**0.95**	**1.05**	1495	1628	**1.01**	**1.10**
		SB	1485	977	1474	0.66	**0.99**	1003	1593	0.68	**1.07**
Valpico Rd	Lammers Rd to Corral Hollow Rd	WB	1485	924	748	0.62	0.50	993	815	0.67	0.55
		EB	1485	467	990	0.31	0.67	490	1106	0.33	0.74
	Corral Hollow Rd Project Dwy #1	WB	1485	873	911	0.59	0.61	1009	1043	0.68	0.70
		EB	1485	425	1176	0.29	0.79	470	1402	0.32	**0.94**
	Project Dwy #1 to Cagney Way	WB	1485	873	911	0.59	0.61	903	1049	0.61	0.71
		EB	1485	425	1176	0.29	0.79	516	1258	0.35	0.85
	Cagney Way to Tracy Blvd	WB	1485	859	997	0.58	0.67	889	1135	0.60	0.76
		EB	1485	798	1143	0.54	0.77	889	1225	0.60	0.82
Middlefield Dr	Peony Dr to Corral Hollow Rd	NB	742	350	160	0.47	0.21	360	169	0.48	0.23
		SB	742	91	191	0.12	0.26	94	207	0.13	0.28
Peony Dr	Corral Hollow Rd to Middlefield Dr	WB	742	111	85	0.15	0.11	121	94	0.16	0.13
		EB	742	65	92	0.09	0.12	124	164	0.17	0.22
Linne Rd	Lammers Rd to Corral Hollow Rd	WB	1485	680	919	0.46	0.62	687	926	0.46	0.62
		EB	1485	570	950	0.38	0.64	572	961	0.39	0.65

Notes: Volumes derived from existing intersection counts and Project trip assignment. Capacities derived from the City of Tracy 2035 Travel Demand Model.
V/C ratios are correlated with LOS as follows: <0.60 = LOS A; 0.60 - 0.69 = LOS B; 0.70 - 0.79 = LOS C; 0.80 - 0.89 = LOS D; **0.90 - 0.99 = LOS E; ≥1.00 = LOS F.**

7. POTENTIAL EFFECTS ON PEDESTRIAN, BICYCLE, AND TRANSIT MOBILITY

The Project will provide sidewalks on all on-site streets and along the south side of Valpico Road (Project frontage) as shown in **Figure 2**. Bike lanes will be provided along the south side of Valpico Road (Project frontage) and along Middlefield Drive and Project Driveway #1 within the Project site.

Transit stops do not currently exist within ¼ mile of the Project (walking distance), therefore, the Project will not cause any adverse effects. Future transit stops and routes are identified in the TMP and provide mode choice opportunities to Project residents once implemented.

8. VEHICLE PARKING, ACCESS, AND CIRCULATION

VEHICLE PARKING

Each residential unit will provide two enclosed parking spaces as specified in the City of Tracy Municipal Code (10.08.3480).

VEHICLE ACCESS AND CIRCULATION

The Project will have access to the City of Tracy roadway network via Project Driveway #1 / Valpico Road (in the north) and Middlefield Drive at the south end of the Project site once the Project is constructed.

PEAK HOUR ALL-WAY STOP WARRANT

An All-Way Stop Warrant Analysis was performed the intersection of N. Project Driveway and A Street, A Street and W. B Street, A Street and E. B Street, and S. Project Driveway and A Street. **Figure 20** provides the location of the internal network study intersection.

Criteria for Multi-Way Stop Warrants can be found in the CAMUTCD Section 2B.07 Multi-Way Stop Applications, 2014 Edition. The minimum volume criteria are listed below:

04-C. *Minimum Volumes –*

(1) The vehicular volumes entering the intersection from the major street approaches (total of both approaches) averages at least 300 vehicles per hour for any 8 hours of an average day; and

(2) the combined vehicular, pedestrian, and bicycle volume entering the intersection from the minor street approaches (total of both approaches) averages at least 200 units per hour for the same 8 hours, with an average delay to minor-street vehicular traffic of at least 30 seconds per vehicle during the highest hour; but

(3) if the 85th-percentile approach speed of the major-street traffic exceeds 40mph, the minimum vehicular warrants are 70 percent of the values provided in Items 1 and 2.

It is recommended that all internal intersections be side-street stop control except for the following:

- Intersection of N. Project Driveway and A Street.

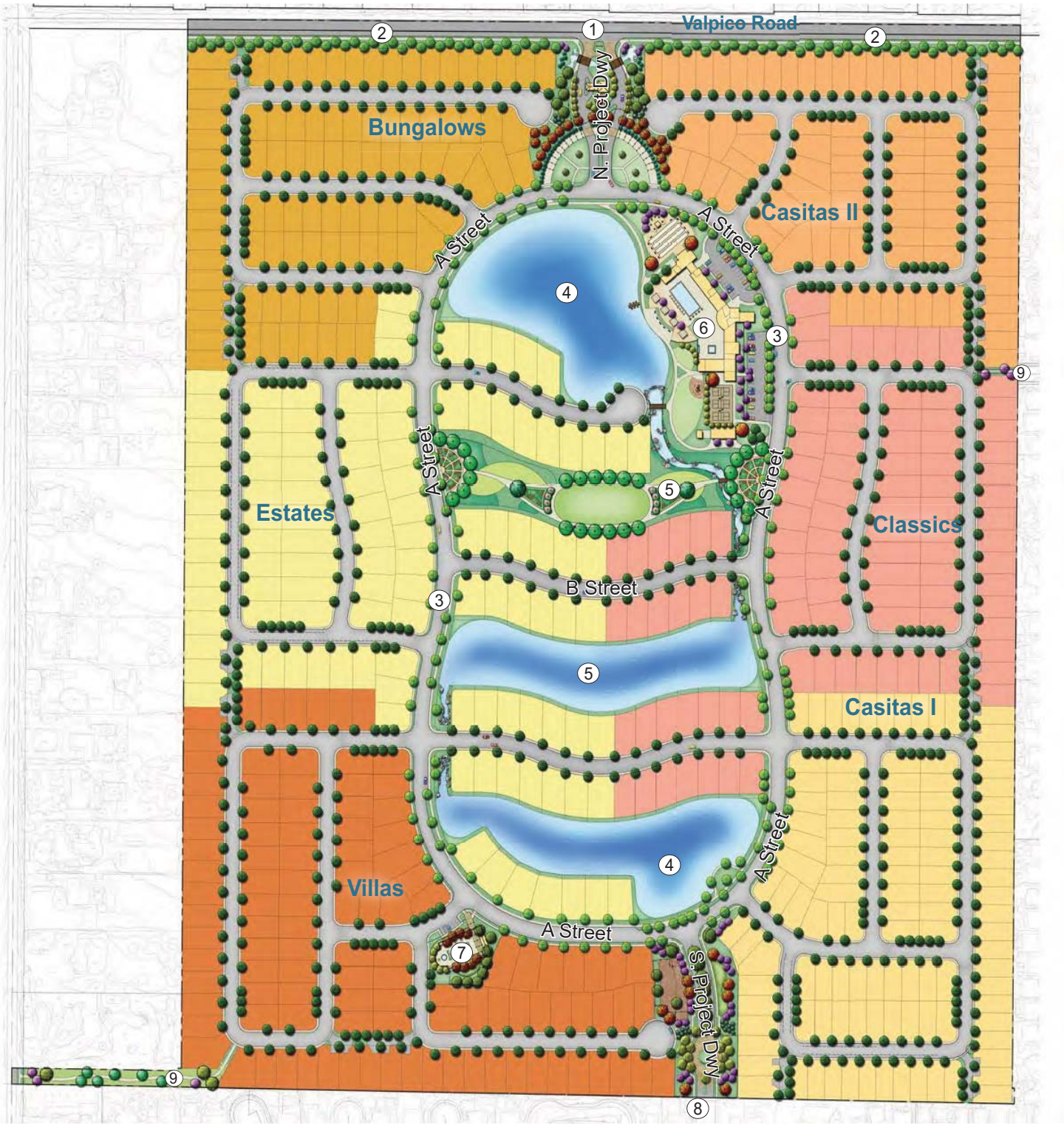
For the intersection of N. Project Driveway and A Street, the total of the major and minor street approaches exceeds 300 vehicles per hour in the AM and PM peak hour. The intersection also exceeds 200 vehicles per hour on the minor street in the PM peak hour. Since the volumes exceed CAMUTCD threshold during the AM and PM peak hours (2 of 8 hours of an average day) it is recommended that this intersection becomes an all-way stop controlled intersection. It is also recommended that A Street and W. B Street, A Street and E. B Street, and S. Project Driveway and A Street be reviewed upon completion of Tentative Map to ensure adequate sight distance.

Analysis sheets can be found in the **Appendix**.

PEONY/ MIDDLEFIELD NEIGHBORHOOD CIRCULATION

The project site has a southerly driveway which provides site access to the Peony/Middlefield Neighborhood via Middlefield Drive. Approximately 8% of project traffic is estimated to access the site to and from this driveway through the southern driveway. The intersection of Middlefield Dr and Peony Dr, Study Intersection #9, located in the center of the neighborhood remains at LOS A in with the addition of project traffic in Existing, Background, and Cumulative Conditions. Two Roadway segments Peony Dr from Middlefield Dr to Corral Hollow Rd and Middlefield Dr from Peony Dr to Corral Hollow Rd are within the Peony/ Middlefield Neighborhood. The roadway segments remain at LOS A with the addition of project traffic in Existing, Background, and Cumulative Conditions.

The addition of project traffic does not lower the LOS of the roadway segments or study intersection in the Peony/ Middlefield neighborhood and based on city standards, Tracy Village traffic would not impact the Peony/ Middlefield Neighborhood south of the project site.



LEGEND

1 MAIN ENTRANCE	4 LAKE	7 MINOR RECREATION
2 PUBLIC/ROW	5 PARKS	8 SECONDARY ENTRANCE
3 MAIN LOOP RD	6 MAIN RECREATION	9 PEDESTRIAN CONNECTIONS

Source: First Carbon Solutions, 2016

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Figure 20

Internal Roadway Network

9. CITY OF TRACY PLANS

GENERAL PLAN

The General Plan Circulation Element identifies the location and extent of existing and planned circulation and transportation facilities, consistent with the existing and planned land uses described in the Land Use Element. Relevant objectives and policies related to roadways and circulation are listed below.

Objective CIR-1.1: Implement a hierarchical street system in which each street serves a specific, primary function and is sensitive to the context of the land uses served.

P1. The City should develop context-based street designs that allow for variations based on the expected function and location of the facility, and the surrounding land use context. These context-sensitive designs should have the following aims:

- Create aesthetically attractive streetscapes.
- Enhance multi-modal transportation by increasing mobility and improving safety for autos, trucks, transit, pedestrians and bicyclists.

P2. The City shall preserve rights-of-way needed for future roadway and freeway interchange improvements through dedication or acquisition as adjacent properties develop or redevelop.

P3. The City shall continue to apply traffic mitigation fee programs to fund transportation infrastructure, based on a fair share of facility use.

Objective CIR-1.2: Provide a high level of street connectivity.

P1. The City shall ensure that the street system results in a high level of connectivity, especially between residences and common local destinations, such as schools, Village Centers, retail areas and parks. The standard for roadway (vehicular) connectivity is defined as appropriate spacing of arterials and collectors and local roads as detailed above in Section B of this Element “Roadway Classifications and Standards.”

P2. The City shall implement a connected street pattern with multiple route options for vehicles, bikes and pedestrians.

P3. New development shall be designed to provide vehicular, bicycle and pedestrian connections with adjacent developments.

P4. The City should develop residential street alignments and designs that provide connectivity while discouraging high speed cut-through traffic.

P5. New development shall be designed with a grid or modified grid pattern to facilitate traffic flows and to provide multiple connections to arterial streets.

Objective CIR-1.3 Adopt and enforce LOS standards that provide a high level of mobility and accessibility, for all modes, for residents and workers.

P1. To the extent feasible, the City shall strive for LOS D on all streets and intersections, with the LOS standard for each facility to be defined in the Transportation Master Plan in accordance with the

opportunities and constraints identified through the traffic projections and analysis performed for that Plan. The following exceptions to the LOS D standard may be allowed:

- LOS E or lower shall be allowed on streets and at intersections within one-quarter (1/4) mile of any freeway. This lower standard is intended to discourage inter-regional traffic from using Tracy streets.
- LOS E or lower shall be allowed in the Downtown and Bowtie area of Tracy, in order to create a pedestrian-friendly urban design character and densities necessary to support transit, bicycling and walking.

P2. The City may allow individual locations to fall below the City's LOS standards in instances where the construction of physical improvements would be infeasible, prohibitively expensive, significantly impact adjacent properties or the environment, or have a significant adverse effect on the character of the community, including pedestrian mobility, crossing times, and comfort/convenience.

P6. For project-specific development approvals, the LOS at major street intersections shall be determined based on the direct estimation of peak-hour conditions and should reflect the average condition prevailing throughout the peak hour of a typical weekday for all traffic using the intersection.

P7. Traffic studies for new developments within the City may be prepared if necessary and appropriate to determine the impacts of the projects traffic on the transportation system.

Objective CIR-1.5 Protect residential areas from through traffic and high travel speeds by facilitating free flow of traffic on major streets.

P1. Use of local residential streets by non-local and commercial traffic shall be discouraged. The City may consider techniques such as route signs and route maps. This policy should not restrict the ability of local vehicle and non-motorized transportation to utilize residential collectors as an effort to encourage higher levels of roadway connectivity.

P2. The City shall coordinate the timing of traffic signals on arterials to facilitate traffic movement.

Objective CIR-1.6 Maximize traffic safety for automobile, transit, bicycle users, and pedestrians.

P1. The City shall design streets using context-sensitive design principles that enhance safety for all modes of travel.

P2. New development shall implement traffic calming measures where necessary so long as connectivity is not diminished.

Objective CIR-1.7 Minimize traffic-related impacts such as noise and emissions on adjacent land uses.

P1. Appropriate buffering and screening mechanisms shall be incorporated in development projects to limit the impacts associated with traffic. These buffering and screening mechanisms may include setbacks, landscaping, berms, sound walls or other methods as appropriate.

P2. Sound walls shall only be used next to major arterials, and other high-speed, high-volume facilities in accordance with the policies in the Community Character Element.

Objective CIR-1.8 Minimize transportation-related energy use and impacts on the environment.

P1. Transportation projects shall avoid disrupting sensitive environmental resources.

P2. When possible, road construction and repair project shall use sustainable materials.

P3. The City shall encourage the use of non-motorized transportation and low-emission vehicles.

Objective CIR-2.1 Support regional planning and implementation efforts to improve interregional highways and interregional travel efficiency.

P1. The City shall continue to cooperate with regional and State agencies, including Caltrans and San Joaquin Council of Governments (SJCOG) to study, plan and fund improvements to the regional transportation system. These regional transportation improvements may include freeway widening, the construction of regional roadways, regional passenger rail expansions, additions to the existing commuter bus system and provision of the park-and-ride lots near facilities heavily used by commuters.

P2. The City should ensure that land needed for park-and-ride facilities is conserved in new development areas.

P3. The City shall work with other local jurisdictions, SJCOG, and Caltrans, to identify and develop alternative routes to allow locally generated traffic to bypass congestion on I-205 and I-580 without impacting City streets.

P4. The City shall work with the City of Lathrop and San Joaquin County to preserve a right-of-way along the existing alignment of Middle Road / Arbor Avenue north of I-205 (a.k.a. Golden Valley Parkway) for the future construction of a regional parallel to I-205. This process should determine appropriate funding mechanisms and the design of an interchange with I-205 at Chrisman Road.

Objective CIR-2.2 Discourage inter-regional travel from diverting from freeways onto Tracy streets.

P1. The City shall consider techniques, such as freeway ramp metering or traffic signal timing changes, to discourage the diversion of inter-regional travel from the freeways onto Tracy streets.

Objective CIR-3.1 Achieve a comprehensive system of citywide bikeways and pedestrian facilities.

P1. The City shall incorporate appropriate bicycle and pedestrian facilities on all roadways constructed by the City, Class I to the extent feasible.

P2. To the extent possible, the city shall separate vehicular from bicycle and pedestrian traffic on higher-speed and higher-volume roadways through the use of off-street bicycle and pedestrian facilities.

P3. The City may separate bicycle from pedestrian users on high usage bicycle and pedestrian paths

P4. The City's bicycle and pedestrian system shall have a high level of connectivity, especially between residences and common local destinations, such as schools, shopping, and parks. A higher level of bicycle and pedestrian connectivity is defined as a shorter or similar distance to common destinations for bicycles and pedestrians compared to distances for vehicles.

P5. The City shall establish a ½-mile walkability standard for residents to access goods, services, and recreational facilities.

P6. New development shall include pedestrian and bicycle facilities internal to the development and that connect to city-wide facilities, such as parks, schools and recreational corridors, as well as adjacent development and other services.

P7. New development sites for commercial, employment, educational, recreational, and park and ride land uses shall provide bicycle parking and/or storage facilities.

Objective CIR-4.1 Promote public transit as an alternative to the automobile.

P1. The City shall promote efficient and affordable public transportation that serves all users.

P2. The City shall continue to partner with SJCOG, SJRTD, and Caltrans in efforts to locate park-and-ride lots and other transit-related facilities in the City of Tracy.

P3. The City shall continue to operate the Tracer fixed-route and paratransit transit service and expand service to new residential and non-residential areas if funding for additional service is available and is warranted by ridership demand.

P4. The City shall seek funding from regional and State and federal agencies to fund additional transit service expansions and improvements.

P5. The City shall require development to provide for transit and transit-related increased modal opportunities, such as adequate street widths and curb radii, bus turnouts, bus shelters, park-and-ride lots and multi-modal transit centers through the development and environmental review processes, if appropriate.

P6. The City shall encourage efforts for additional regional transit service, including expansion of the existing commuter bus service, and new commuter rail serve from Tracy to other areas in the region.

Objective CIR-421

P1. The City shall complete the Multi Modal Transit Center at Central Avenue and 6th Street.

P2. The City shall preserve the necessary rights-of-way by continuing the implementation of current arterial street standards and ensuring the preservation of existing rail corridors to facilitate the development of an expanded transit program in the future.

P3. The City shall encourage the expansion of transit services through consultation and cooperation with the Bay Area Rapid Transit District (BART), San Joaquin Regional Rail Commission, San Joaquin Regional Transit District, the Altamont Commuter Express (ACE), on services that expand the mobility and accessibility of transporting people, goods and services in and through Tracy and the region.

P4. The City shall develop a fully integrated multi-modal transportation system that takes into account access to employment, education, shops, medical services and that facilitates participation in social and recreational opportunities.

P5. The City shall provide efficient, effective, and coordinated transit system that maximizes use of regional, state, and federal funds.

P6. The City shall pursue economical, long term solutions to transportation problems by encouraging community designs which encourage transit use and walking, bicycling, and other non-motorized forms of transportation.

SUSTAINABILITY ACTION PLAN

The City's Sustainability Action Plan (SAP) responds to recent state legislation on climate change and greenhouse gas reduction, and integration of transportation and land use planning. The SAP includes policies and programs designed to reduce greenhouse gas emissions generated by a range of activities, including transportation. The transportation targets include:

- Target #5a: 20 percent increase in the percentage of non-City employees who participate in travel demand management programs from 2006 baseline levels
- Target #5b: 20 percent increase in the percentage of City employees who participate in travel demand management programs from 2006 baseline levels
- Target #6a: 20 percent reduction in the community vehicle miles travelled (VMT) per capita from current (2006) levels
- Target #6b: 20 percent reduction in the municipal VMT from 2006 baseline levels

The SAP presents 21 sustainability measures within the Transportation and Land Use category, which have quantifiable effects, based on available research, on greenhouse gas production – mostly through VMT reduction, including the following measures:

- Measure T-2: Reduced parking requirements.
- Measure T-3: Support for bicycling.
- Measure T-4: Support for transit.
- Measure T-5: Smart growth, urban design, and planning.
- Measure T-13: Reduce commute trips.
- Measure T-14: Parking cash-out for employees.
- Measure T-16: Transit passes for residents and employees of new developments.

ROADWAY AND TRANSPORTATION MASTER PLAN

The purpose of the TMP is to implement the transportation policies of the General Plan. The TMP identifies roadway improvements required at the citywide level to support the long-range buildout of the City. Roadway improvements identified include, but are not limited to alignments, cross-sections, roadway and intersection design, and access controls for expressways, arterials, collectors, and industrial streets. In addition, the TMP allocates widths for bike lanes, sidewalks, landscaped setbacks, and median widths. As development takes place, project-specific traffic analyses are utilized to determine the degree of roadway improvements required, as TMP roadway improvements are generally a subset of the ultimate roadway network required to support the buildout of the General Plan.

TRUCK TRAFFIC

TRACY TRUCK ROUTES

The Project will not add any truck traffic, except during construction, onto the City road network.

All freeway interchanges, by nature, serve as truck route access locations to the City of Tracy road network. From the interchanges and freeways, regional routes continue throughout the City road network. In the Project vicinity, trucks can access the road network from the interchange at Interstate-580 onto Corral Hollow Road. From Corral Hollow Road the truck route follows Linne Road eastwards.

Section 3.08.290 of the City's Municipal Code establishes truck routes throughout the City restricting vehicles routes within the City with a gross vehicle weight of five tons or more, licensed commercially as a truck in the state of origin, and used for carrying goods for pickup and delivery. Vehicles meeting this requirement shall drive only on truck route designated streets except when necessary for egress and ingress by direct route to and from restricted street for the purpose of loading or unloading.

Currently there are three types of truck routes within the City of Tracy: "Through Truck Routes," "Local Truck Routes" and "STAA truck routes." These routes are indicated throughout the City with the appropriate signage specific to each route type per requirements in the Manual on Uniform Traffic Control Devices (MUTCD).

Through truck routes are defined as a route that allows any vehicle entering the City of Tracy from any point outside the City and destined for any other point located outside the City to proceed entirely through without unloading or loading freight within the City of Tracy. Existing through truck routes within the City of Tracy include:

- Byron Road (west City limits to Lammers Road)

Local truck routes are defined as a route that may not be used by any truck to move from any point outside of the City of Tracy continuously to any other point located outside the City of Tracy without unloading or loading within the City of Tracy. All local truck traffic trips must use the shortest local truck traffic route between connecting or through truck traffic routes and the origin and destination within the City. Existing local truck routes within the City of Tracy include

- Lammers Road (Eleventh Street to 0.5 miles south of Eleventh Street) City portion

Surface Transportation Assistance Act (STAA) truck routes are assigned by Caltrans and/or the City, and include oversized trucks and require special geometric design considerations, and pavement design. The Surface Transportation Assistance Act (STAA) of 1982 authorized the establishment of a national network of highways designated for use by large trucks. On these highways, Federal width and length limits apply. The STAA allows large trucks to operate on the Interstate and certain primary routes called collectively the National Network (NN). These trucks, referred to as STAA trucks, are longer than California legal trucks. As a result, STAA trucks have a larger turning radius than most local roads can accommodate. The law allows for "reasonable access" to and from the NN for terminals, deliveries, trucks stops, repairs, and other reasons. The NN is recommended for through truck traffic (e.g. traffic that is passing through the area), and trucks are allowed to operate on truck-restricted roads if they have no other means of access to their destination.

Through the City of Tracy, I-205 is a STAA route. I-580 to the south of the City limits is also a designated STAA route. Both routes are designated as National Network STAA routes.

The City also approved the Cordes Ranch Specific Plan EIR, subsequent to the TMP adoption, and additional truck routes have been designated, which include the existing Old Schulte Road and the existing Mountain House Parkway. The City of Tracy TMP designates truck routes as indicated in Figure 2 of the TMP: City of Tracy Existing Truck Routes. The routes shown on the figure are consistent with those specified in Section 3.08.310 of the Tracy Municipal Code.

10. TRAFFIC IMPACT FEES

CITY OF TRACY CITY WIDE TRAFFIC IMPACT FEE (TIF) PROGRAM AND FINANCE AND IMPLEMENTATION PLANS (FIP)

The adopted City of Tracy Traffic Impact Fee Program (TIF), (November 2013) presents probable cost estimates for the proposed Horizon Year (2035) roadway network improvements as presented in the TMP. It includes the following facilities:

- Overpasses/Underpasses/Bridges/Culverts
- Intersections
- Roadway Segments
- Intelligent Transportation Systems
- Railroad Crossings

The TMP projects would be funded through the TIF by future developments and future grants as growth occurs in the City through General Plan Buildout. The TIF would be updated as the City General Plan is updated or major changes occur to the funding program, i.e. grant funding becomes available. If the City has not collected enough of the Citywide traffic impact fees to fund an improvement at the time an impact is caused, the Project Applicant would be required to fund the required improvement upfront and enter into a reimbursement agreement with the City for their portion of fair share payments that are attributed to other cumulative traffic growth. Improvements triggered by implementation of the proposed Project but not included in the TIF would be funded by the Project Applicant.

SAN JOAQUIN COG REGIONAL TRANSPORTATION IMPACT FEE (RTIF)

The City is a member agency of the San Joaquin Council of Governments (SJCOG), a joint powers agency consisting of the County of San Joaquin and the seven cities situated in San Joaquin County. Acting in concert, the member agencies of SJCOG developed the regional transportation impact fee (RTIF) Program whereby the shortfall in funds needed to expand the capacity of the Regional Transportation Network could be made up in part by a RTIF Program Fee on future residential and non-residential development. The RTIF Program Fee would augment other funding sources and help ensure that needed improvements to the Regional Transportation Network are completed.

SAN JOAQUIN COUNTY TRAFFIC FEE PROGRAM

San Joaquin County has adopted a traffic mitigation fee program TO collect fees to finance transportation facilities needed to accommodate new development within unincorporated San Joaquin County. The program includes a fee schedule for projects that occur in the unincorporated areas around Tracy. The following is the County traffic impact mitigation fee schedule, in dwelling unit equivalents (DUE) and by use type:

- Single Family (DUE) - $1,044.30
- Multi-Family (DUE) - $647.14
- Office (1KSF) - $1,555.93
- Retail Service (1KSF) - $3,916.68
- Warehouse (1KSF) - $615.60
- Service Commercial (1KSF) - $2,825.66
- Manufacturing (1KSF) - $783.81

11. CMP ROADWAY NETWORK

SAN JOAQUIN COUNTY REGIONAL CONGESTION MANAGEMENT PROGRAM 2016

The San Joaquin County Regional Congestion Management Program (RCMP) is state-mandated and is a mechanism employing growth management techniques, including traffic level of service requirements, development mitigation programs, transportation systems management, and capital improvement programming, for the purpose of controlling and/or reducing the cumulative regional impacts of development. Caltrans utilizes the SJCOG LOS standards on the freeway segments within San Joaquin County. The following provisions of the CMP are relevant to the THSP:

- The CMP system includes Lammers Road. The LOS thresholds for intersections are set at “D”.
- A proposed development would have a significant impact to the network if for any RCMP roadway currently operating at LOS D or better under No Project conditions operates at LOS E or F under project-added conditions.

The CMP requires a deficiency plan if a roadway segment LOS falls below LOS “D” after calculating required exemptions for a particular project. A deficiency plan identifies mitigations to alleviate a roadway segment of its deficiency through capital improvements or implementation of system-wide improvements to benefit circulation quality. The two primary purposes of a deficiency plan are to ensure a jurisdiction would not be found noncompliant with the RCMP by exceeding its LOS standard and secondly, to increase the funding priority of any improvement identified through the deficiency planning process.

SAN JOAQUIN COG CAPITAL IMPROVEMENT PROGRAM

The SJCOG RCMP details the Capital Improvement Program (CIP) which is the action plan for the RCMP which provides a framework for the funding and implementation of projects that maintain or improve the transportation performance standards of the RCMP. SJCOG is required to adopt a seven-year CIP every odd numbered year which is intended to maintain or mitigate transportation impacts to the region in addition to conforming to transportation-related vehicle emission air quality mitigation measures. All projects in the Regional Transportation Improvement Program (RTIP) must first be listed in the CIP (this applies to most state-funded projects).

APPENDIX

EXISTING CONDITIONS TRAFFIC COUNTS

EXISTING CONDITIONS SYNCHRO OUTPUT SHEETS

EXISTING PLUS PROJECT CONDITIONS SYNCHRO OUTPUT SHEETS

BACKGROUND CONDITIONS SYNCHRO OUTPUT SHEETS

BACKGROUND PLUS PROJECT CONDITIONS SYNCHRO OUTPUT SHEETS

CUMULATIVE CONDITIONS SYNCHRO OUTPUT SHEETS

CUMULATIVE PLUS PROJECT CONDITIONS SYNCHRO OUTPUT SHEETS

MITIGATED EXISTING PLUS PROJECT CONDITIONS SYNCHRO OUTPUT SHEETS

MITIGATED BACKGROUND PLUS PROJECT CONDITIONS SYNCHRO OUTPUT SHEETS

MITIGATED CUMULATIVE PLUS PROJECT CONDITIONS SYNCHRO OUTPUT SHEETS

TRANSIT SYSTEM MAPS

PEAK HOUR ALL WAY STOP CONTROL WARRANT

EXISTING CONDITIONS

TRAFFIC COUNTS

Type of peak hour being reported: Intersection Peak

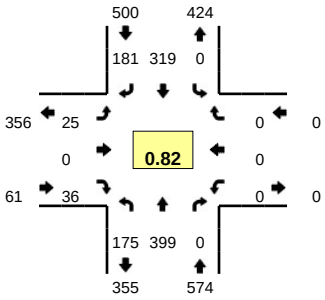
Method for determining peak hour: Total Entering Volume

LOCATION: 4 - Lammers Rd -- Old Schulte Rd

QC JOB #: 13962401

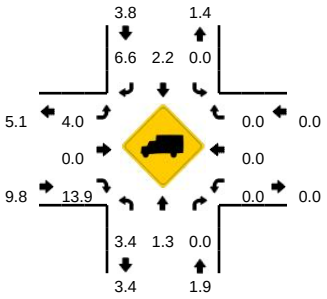
CITY/STATE: Tracy, CA

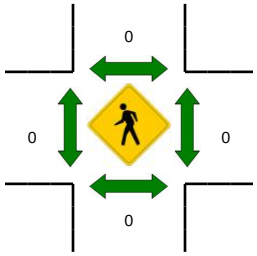
DATE: Thu, Nov 17 2016



Peak-Hour: 7:20 AM -- 8:20 AM

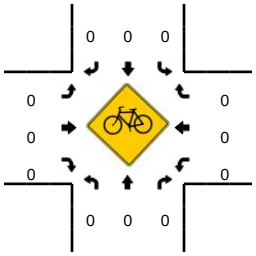
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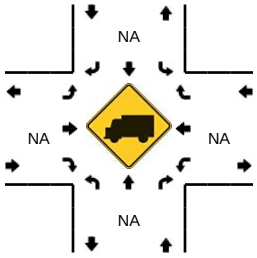


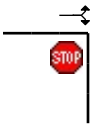


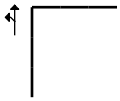


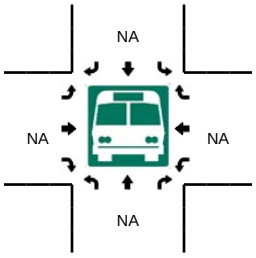












5-Min Count Period Beginning At	4 - Lammers Rd (Northbound)				4 - Lammers Rd (Southbound)				Old Schulte Rd (Eastbound)				Old Schulte Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:30 AM	28	3	0	0	0	5	36	0	2	0	0	0	0	0	0	0	74	921
6:35 AM	24	6	0	0	0	9	41	0	6	0	2	0	0	0	0	0	88	935
6:40 AM	26	2	0	0	0	4	40	0	9	0	6	0	0	0	0	0	87	935
6:45 AM	21	2	0	0	0	9	44	0	4	0	2	0	0	0	0	0	82	917
6:50 AM	39	3	0	0	0	18	39	0	3	0	4	0	0	0	0	0	106	946
6:55 AM	26	4	0	0	0	10	26	0	2	0	7	0	0	0	0	0	75	954
7:00 AM	25	12	0	0	0	7	27	0	3	0	5	0	0	0	0	0	79	956
7:05 AM	18	16	0	0	0	8	18	0	11	0	4	0	0	0	0	0	75	955
7:10 AM	23	8	0	0	0	17	19	0	5	0	5	0	0	0	0	0	77	944
7:15 AM	18	14	0	0	0	10	18	0	5	0	3	0	0	0	0	0	68	949
7:20 AM	21	10	0	0	0	17	22	0	0	0	6	0	0	0	0	0	76	967
7:25 AM	16	13	0	0	0	8	16	0	2	0	1	0	0	0	0	0	56	943
7:30 AM	18	13	0	0	0	12	17	0	2	0	0	0	0	0	0	0	62	931
7:35 AM	17	35	0	0	0	19	16	0	6	0	3	0	0	0	0	0	96	939
7:40 AM	13	46	0	0	0	24	20	0	0	0	3	0	0	0	0	0	106	958
7:45 AM	17	44	0	0	0	31	22	0	6	0	4	0	0	0	0	0	124	1000
7:50 AM	20	38	0	0	0	32	16	0	1	0	4	0	0	0	0	0	111	1005
7:55 AM	12	51	0	0	0	37	7	0	2	0	1	0	0	0	0	0	110	1040
8:00 AM	5	59	0	0	0	36	6	0	0	0	5	0	0	0	0	0	111	1072
8:05 AM	9	50	0	0	0	26	13	0	1	0	3	0	0	0	0	0	102	1099
8:10 AM	14	29	0	0	0	46	13	0	5	0	4	0	0	0	0	0	111	1133
8:15 AM	13	11	0	0	0	31	13	0	0	0	2	0	0	0	0	0	70	1135
8:20 AM	9	12	0	0	0	9	18	0	0	0	3	0	0	0	0	0	51	1110
8:25 AM	12	5	0	0	0	8	3	0	1	0	3	0	0	0	0	0	32	1086

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	196	532	0	0	0	400	180	0	36	0	36	0	0	0	0	0	1380
Heavy Trucks	4	0	0		0	8	8		0	0	0		0	0	0		20
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 12/6/2016 11:43 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

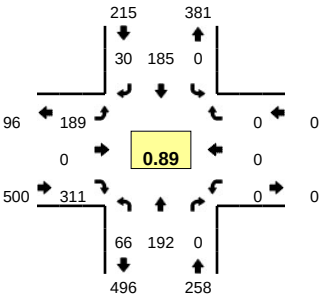
LOCATION: 4 - Lammers Rd -- Old Schulte Rd

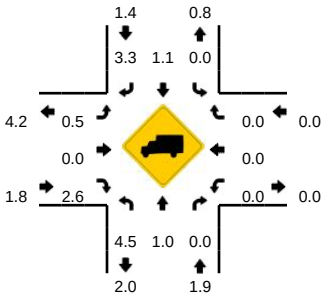
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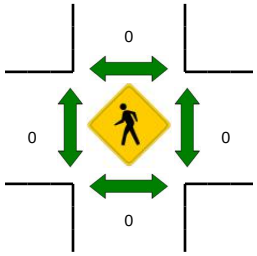
CITY/STATE: Tracy, CA

DATE: Thu, Nov 17 2016

Peak-Hour: 4:35 PM -- 5:35 PM
Peak 15-Min: 5:05 PM -- 5:20 PM

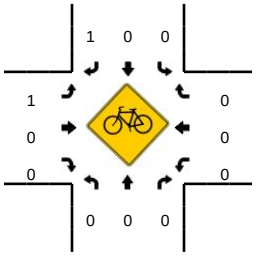


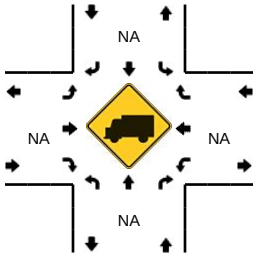


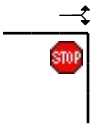


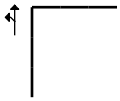


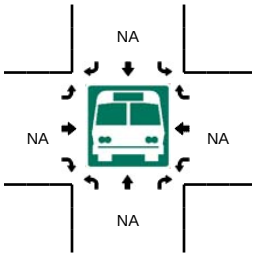












5-Min Count Period Beginning At	4 - Lammers Rd (Northbound)				4 - Lammers Rd (Southbound)				Old Schulte Rd (Eastbound)				Old Schulte Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	7	16	0	0	0	31	1	0	9	0	20	0	0	0	0	0	84	
4:05 PM	4	11	0	0	0	17	6	0	15	0	13	0	0	0	0	0	66	
4:10 PM	4	11	0	0	0	19	1	0	9	0	18	0	0	0	0	0	62	
4:15 PM	5	12	0	0	0	16	5	0	13	0	13	0	0	0	0	0	64	
4:20 PM	10	17	0	0	0	16	2	0	9	0	17	0	0	0	0	0	71	
4:25 PM	5	12	0	0	0	22	3	0	7	0	22	0	0	0	0	0	71	
4:30 PM	8	10	0	0	0	20	2	0	10	0	18	0	0	0	0	0	68	
4:35 PM	5	10	0	0	0	16	3	0	25	0	25	0	0	0	0	0	84	
4:40 PM	5	22	0	0	0	14	2	0	13	0	30	0	0	0	0	0	86	
4:45 PM	6	14	0	0	0	23	2	0	8	0	36	0	0	0	0	0	89	
4:50 PM	5	13	0	0	0	23	2	0	12	0	23	0	0	0	0	0	78	
4:55 PM	5	12	0	0	0	14	2	0	13	0	22	0	0	0	0	0	68	891
5:00 PM	1	17	0	0	0	18	2	0	11	0	33	0	0	0	0	0	82	889
5:05 PM	7	13	0	0	0	10	2	0	23	0	27	0	0	0	0	0	82	905
5:10 PM	7	19	0	0	0	10	5	0	31	0	21	0	0	0	0	0	93	936
5:15 PM	9	19	0	0	0	19	3	0	19	0	29	0	0	0	0	0	98	970
5:20 PM	5	18	0	0	0	9	3	0	13	0	24	0	0	0	0	0	72	971
5:25 PM	6	20	0	0	0	14	3	0	6	0	16	0	0	0	0	0	65	965
5:30 PM	5	15	0	0	0	15	1	0	15	0	25	0	0	0	0	0	76	973
5:35 PM	8	10	0	0	0	15	3	0	19	0	25	0	0	0	0	0	80	969
5:40 PM	6	6	0	0	0	18	4	0	15	0	21	0	0	0	0	0	70	953
5:45 PM	6	12	0	0	0	22	2	0	12	0	26	0	0	0	0	0	80	944
5:50 PM	5	13	0	0	0	17	2	0	11	0	16	0	0	0	0	0	64	930
5:55 PM	10	6	0	0	0	19	2	0	12	0	11	0	0	0	0	0	60	922

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	92	204	0	0	0	156	40	0	292	0	308	0	0	0	0	0	1092
Heavy Trucks	4	4	0		0	0	0		4	0	4		0	0	0		16
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 12/6/2016 11:43 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

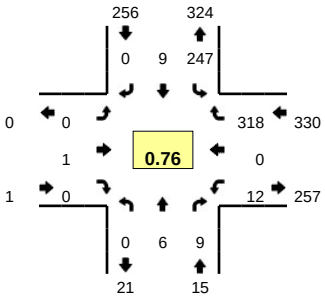
LOCATION: 5 - Lammers Rd -- Valpico Rd

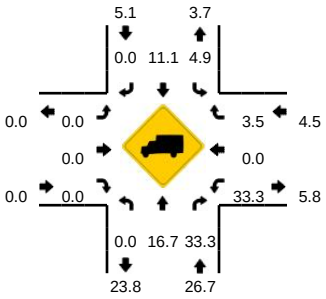
QC JOB #: 13962403

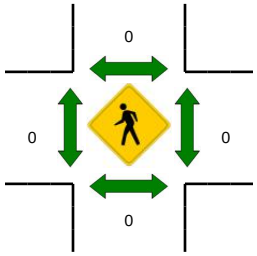
CITY/STATE: Tracy, CA

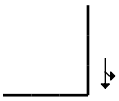
DATE: Thu, Nov 17 2016

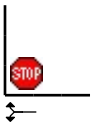
Peak-Hour: 7:20 AM -- 8:20 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

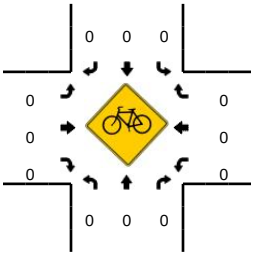


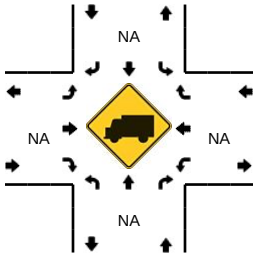




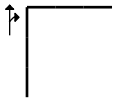


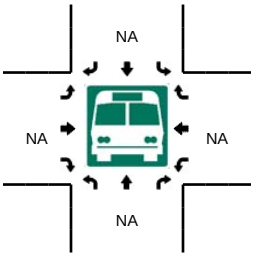












5-Min Count Period Beginning At	5 - Lammers Rd (Northbound)				5 - Lammers Rd (Southbound)				Valpico Rd (Eastbound)				Valpico Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:30 AM	0	0	0	0	4	0	0	0	0	0	0	0	0	0	19	0	23	304
6:35 AM	0	0	0	0	9	0	0	0	0	0	0	0	0	0	18	0	27	310
6:40 AM	0	0	0	0	12	0	0	0	0	0	0	0	1	0	10	0	23	301
6:45 AM	0	0	0	0	12	0	0	0	0	0	0	0	0	0	15	0	27	296
6:50 AM	0	0	1	0	14	2	0	0	0	0	0	0	2	0	26	0	45	316
6:55 AM	0	2	0	0	20	0	0	0	0	0	0	0	1	0	15	0	38	328
7:00 AM	0	2	1	0	12	0	0	0	0	0	0	0	0	0	20	0	35	341
7:05 AM	0	1	2	0	9	0	0	0	0	0	0	0	1	0	19	0	32	349
7:10 AM	0	0	1	0	16	1	0	0	0	0	0	0	2	0	17	0	37	355
7:15 AM	0	1	1	0	12	0	0	0	0	0	0	0	0	0	20	0	34	370
7:20 AM	0	0	0	0	18	1	0	0	0	0	0	0	0	0	20	0	39	391
7:25 AM	0	0	2	0	13	0	0	0	0	0	0	0	1	0	15	0	31	391
7:30 AM	0	0	2	0	10	0	0	0	0	0	0	0	1	0	18	0	31	399
7:35 AM	0	0	0	0	14	1	0	0	0	0	0	0	0	0	35	0	50	422
7:40 AM	0	0	1	0	17	0	0	0	0	0	0	0	0	0	43	0	61	460
7:45 AM	0	0	0	0	26	0	0	0	0	0	0	0	1	0	34	0	61	494
7:50 AM	0	0	0	0	25	2	0	0	0	1	0	0	3	0	42	0	73	522
7:55 AM	0	2	0	0	27	3	0	0	0	0	0	0	2	0	29	0	63	547
8:00 AM	0	2	3	0	21	2	0	0	0	0	0	0	1	0	31	0	60	572
8:05 AM	0	1	0	0	19	0	0	0	0	0	0	0	2	0	21	0	43	583
8:10 AM	0	1	1	0	32	0	0	0	0	0	0	0	0	0	16	0	50	596
8:15 AM	0	0	0	0	25	0	0	0	0	0	0	0	1	0	14	0	40	602
8:20 AM	0	1	1	0	8	0	0	0	0	0	0	0	0	0	21	0	31	594
8:25 AM	0	0	0	0	7	1	0	0	0	0	0	0	1	0	9	0	18	581

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	8	0	0	312	20	0	0	0	4	0	0	24	0	420	0	788
Heavy Trucks	0	4	0		8	0	0		0	0	0		12	0	8		32
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 12/6/2016 11:44 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: 5 - Lammers Rd -- Valpico Rd

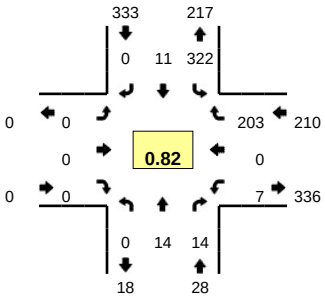
CITY/STATE: Tracy, CA

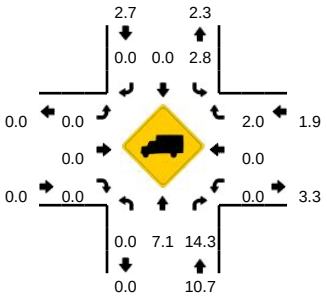
QC JOB #: 13962404

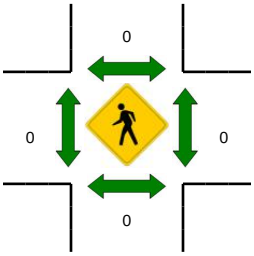
DATE: Thu, Nov 17 2016

Peak-Hour: 4:30 PM -- 5:30 PM

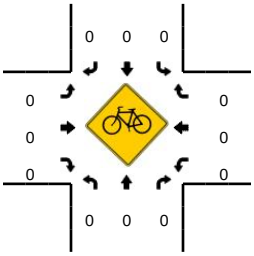
Peak 15-Min: 4:40 PM -- 4:55 PM

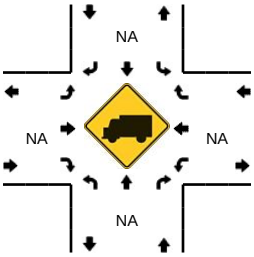




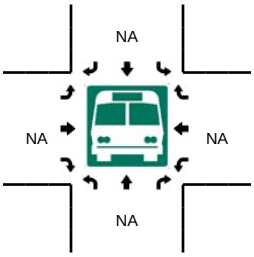












5-Min Count Period Beginning At	5 - Lammers Rd (Northbound)				5 - Lammers Rd (Southbound)				Valpico Rd (Eastbound)				Valpico Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	2	1	0	29	2	0	0	0	0	0	0	0	0	15	0	49	
4:05 PM	0	0	0	0	30	1	0	0	0	0	0	0	3	0	13	0	47	
4:10 PM	0	1	0	0	23	0	0	0	0	0	0	0	0	0	10	0	34	
4:15 PM	0	0	1	0	19	0	0	0	0	0	0	0	0	0	16	0	36	
4:20 PM	0	0	1	0	19	1	0	0	0	0	0	0	0	0	16	0	37	
4:25 PM	0	0	3	0	22	2	0	0	0	0	0	0	1	0	12	0	40	
4:30 PM	0	2	3	0	26	3	0	0	0	0	0	0	0	0	13	0	47	
4:35 PM	0	0	0	0	28	0	0	0	0	0	0	0	1	0	17	0	46	
4:40 PM	0	2	2	0	31	1	0	0	0	0	0	0	1	0	20	0	57	
4:45 PM	0	4	0	0	38	2	0	0	0	0	0	0	1	0	17	0	62	
4:50 PM	0	0	5	0	33	0	0	0	0	0	0	0	2	0	15	0	55	
4:55 PM	0	0	2	0	23	0	0	0	0	0	0	0	0	0	10	0	35	545
5:00 PM	0	0	0	0	25	0	0	0	0	0	0	0	0	0	16	0	41	537
5:05 PM	0	2	1	0	17	1	0	0	0	0	0	0	0	0	14	0	35	525
5:10 PM	0	0	1	0	24	0	0	0	0	0	0	0	0	0	23	0	48	539
5:15 PM	0	1	0	0	25	1	0	0	0	0	0	0	0	0	21	0	48	551
5:20 PM	0	3	0	0	30	2	0	0	0	0	0	0	2	0	16	0	53	567
5:25 PM	0	0	0	0	22	1	0	0	0	0	0	0	0	0	21	0	44	571
5:30 PM	0	1	1	0	18	1	0	0	0	0	0	0	0	0	14	0	35	559
5:35 PM	0	0	1	0	32	0	0	0	0	0	0	0	0	0	14	0	47	560
5:40 PM	0	0	1	0	29	0	0	0	0	0	0	0	0	0	11	0	41	544
5:45 PM	0	0	0	0	33	0	0	0	0	0	0	0	0	0	12	0	45	527
5:50 PM	0	0	0	0	24	0	0	0	0	0	0	0	0	0	15	0	39	511
5:55 PM	0	1	1	0	24	2	0	0	0	0	0	0	0	0	12	0	40	516

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	24	28	0	408	12	0	0	0	0	0	0	16	0	208	0	696
Heavy Trucks	0	4	4		8	0	0		0	0	0		0	0	0		16
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 12/6/2016 11:44 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: 6 - Corral Hollow Rd -- Valpico Rd

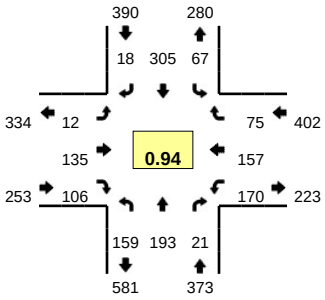
QC JOB #: 13962405

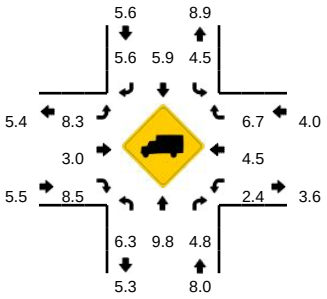
CITY/STATE: Tracy, CA

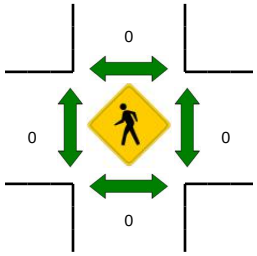
DATE: Thu, Nov 17 2016

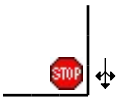
Peak-Hour: 7:20 AM -- 8:20 AM

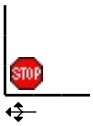
Peak 15-Min: 7:45 AM -- 8:00 AM

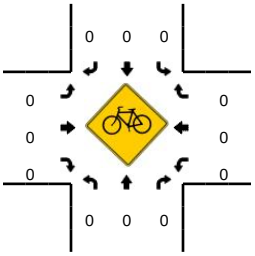


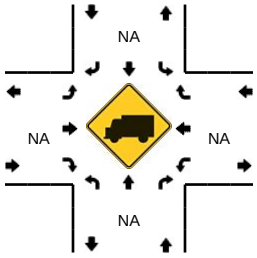


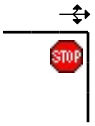


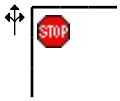


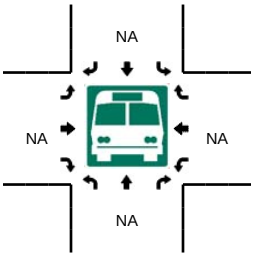












5-Min Count Period Beginning At	6 - Corral Hollow Rd (Northbound)				6 - Corral Hollow Rd (Southbound)				Valpico Rd (Eastbound)				Valpico Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:30 AM	4	8	0	0	0	46	0	0	0	3	8	0	26	17	2	0	114	1236
6:35 AM	5	5	0	0	3	38	2	0	0	5	4	0	34	9	3	0	108	1261
6:40 AM	5	12	2	0	2	46	0	0	0	3	4	0	27	7	5	0	113	1272
6:45 AM	5	10	2	0	6	37	1	0	0	5	6	0	22	14	5	0	113	1290
6:50 AM	6	6	1	0	1	38	3	0	0	7	8	0	31	11	2	0	114	1303
6:55 AM	6	7	3	0	3	31	1	0	0	15	9	0	23	9	4	0	111	1314
7:00 AM	8	9	1	0	6	34	1	0	0	8	6	0	28	12	4	0	117	1329
7:05 AM	5	5	0	0	4	46	0	0	0	3	3	0	28	18	4	0	116	1336
7:10 AM	6	8	1	0	2	32	2	0	1	9	9	0	26	12	5	0	113	1340
7:15 AM	8	8	4	0	4	33	0	0	1	9	8	0	25	11	2	0	113	1342
7:20 AM	9	10	0	0	3	34	2	0	0	7	6	0	22	9	2	0	104	1341
7:25 AM	7	23	1	0	5	29	1	0	2	12	5	0	23	8	3	0	119	1355
7:30 AM	12	16	3	0	5	33	0	0	0	6	4	0	19	13	5	0	116	1357
7:35 AM	19	9	0	0	4	28	4	0	0	9	9	0	11	22	2	0	117	1366
7:40 AM	19	14	0	0	8	25	2	0	0	5	5	0	15	16	4	0	113	1366
7:45 AM	17	13	3	0	5	26	3	0	3	13	10	0	9	20	5	0	127	1380
7:50 AM	22	11	1	0	7	16	4	0	2	12	9	0	14	15	8	0	121	1387
7:55 AM	17	17	1	0	7	27	1	0	0	20	10	0	6	11	11	0	128	1404
8:00 AM	20	12	2	0	1	22	0	0	2	15	9	0	9	12	9	0	113	1400
8:05 AM	11	24	5	0	6	21	1	0	0	10	11	0	13	8	8	0	118	1402
8:10 AM	4	17	1	0	7	24	0	0	1	12	11	0	15	14	11	0	117	1406
8:15 AM	2	27	4	0	9	20	0	0	2	14	17	0	14	9	7	0	125	1418
8:20 AM	3	24	3	0	7	19	0	0	0	7	8	0	6	15	7	0	99	1413
8:25 AM	1	15	1	0	4	13	0	0	1	5	2	0	10	9	19	0	80	1374

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	224	164	20	0	76	276	32	0	20	180	116	0	116	184	96	0	1504
Heavy Trucks	8	8	0		8	0	0		0	4	8		8	12	12		68
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 12/6/2016 11:44 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: 6 - Corral Hollow Rd -- Valpico Rd

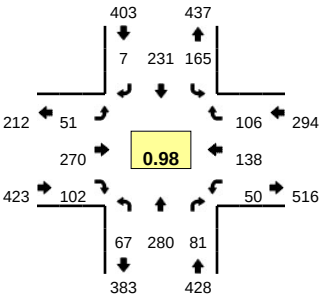
CITY/STATE: Tracy, CA

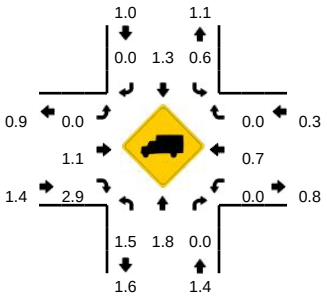
QC JOB #: 13962406

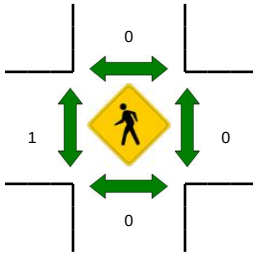
DATE: Thu, Nov 17 2016

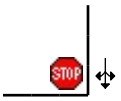
Peak-Hour: 4:45 PM -- 5:45 PM

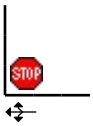
Peak 15-Min: 5:00 PM -- 5:15 PM

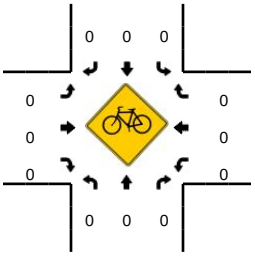


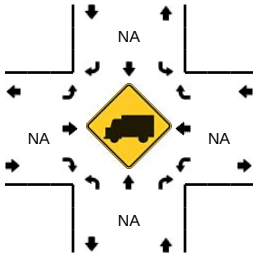


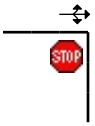


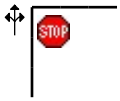


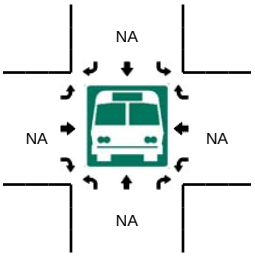












5-Min Count Period Beginning At	6 - Corral Hollow Rd (Northbound)				6 - Corral Hollow Rd (Southbound)				Valpico Rd (Eastbound)				Valpico Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	7	11	6	0	17	16	1	0	0	9	10	0	5	12	6	0	100	
4:05 PM	2	25	5	0	12	16	2	0	0	24	15	0	0	8	10	0	119	
4:10 PM	3	20	6	0	10	17	1	0	1	19	5	0	6	5	11	0	104	
4:15 PM	2	31	6	0	23	14	0	0	0	13	6	0	5	14	6	0	120	
4:20 PM	5	12	7	0	12	15	1	0	1	19	5	0	6	12	13	0	108	
4:25 PM	3	18	7	0	11	21	0	0	1	16	5	0	1	8	9	0	100	
4:30 PM	2	16	4	0	14	18	1	0	3	19	4	0	4	9	7	0	101	
4:35 PM	6	19	8	0	10	25	1	0	2	20	6	0	5	16	8	0	126	
4:40 PM	4	21	7	0	4	16	2	0	2	10	16	0	6	16	7	0	111	
4:45 PM	2	18	5	0	13	20	0	0	0	29	11	0	5	16	14	0	133	
4:50 PM	4	18	9	0	19	18	0	0	9	24	10	0	5	7	6	0	129	
4:55 PM	5	20	5	0	12	19	0	0	10	20	4	0	11	7	14	0	127	1378
5:00 PM	5	21	5	0	13	18	1	0	10	17	12	0	9	10	13	0	134	1412
5:05 PM	5	21	8	0	10	26	2	0	9	25	8	0	1	8	5	0	128	1421
5:10 PM	12	19	7	0	16	20	0	0	5	27	9	0	1	12	5	0	133	1450
5:15 PM	4	24	7	0	15	18	0	0	3	26	6	0	5	16	4	0	128	1458
5:20 PM	5	23	8	0	18	15	0	0	1	27	6	0	2	13	12	0	130	1480
5:25 PM	8	27	2	0	14	21	0	0	2	24	9	0	3	15	10	0	135	1515
5:30 PM	9	32	6	0	14	23	3	0	0	11	8	0	3	8	4	0	121	1535
5:35 PM	4	31	11	0	8	15	0	0	1	17	12	0	2	15	9	0	125	1534
5:40 PM	4	26	8	0	13	18	1	0	1	23	7	0	3	11	10	0	125	1548
5:45 PM	4	31	2	0	10	12	1	0	1	21	8	0	2	11	9	0	112	1527
5:50 PM	6	20	8	0	15	14	1	0	0	27	7	0	6	11	12	0	127	1525
5:55 PM	6	25	10	0	11	18	1	0	0	22	9	0	1	9	8	0	120	1518

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	88	244	80	0	156	256	12	0	96	276	116	0	44	120	92	0	1580
Heavy Trucks	0	4	0		0	0	0		0	4	8		0	4	0		20
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 12/6/2016 11:44 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Corral Hollow Rd -- Peony Dr

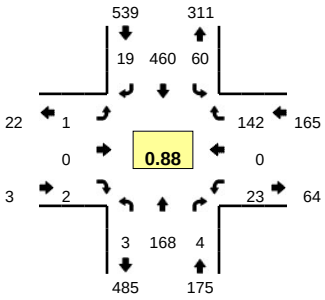
CITY/STATE: Tracy, CA

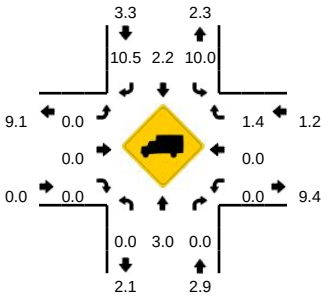
QC JOB #: 14072401

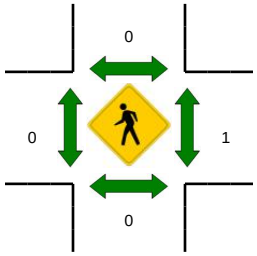
DATE: Thu, Jan 19 2017

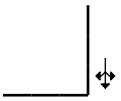
Peak-Hour: 7:00 AM -- 8:00 AM

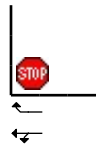
Peak 15-Min: 7:40 AM -- 7:55 AM

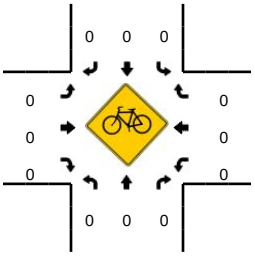


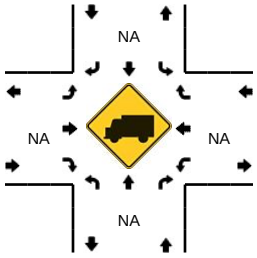


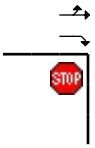


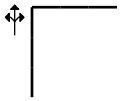


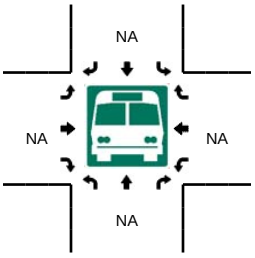












5-Min Count Period Beginning At	Corral Hollow Rd (Northbound)				Corral Hollow Rd (Southbound)				Peony Dr (Eastbound)				Peony Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:30 AM	0	7	0	0	2	50	0	0	0	0	0	0	1	0	2	0	62	654
6:35 AM	0	9	0	0	0	32	0	0	0	0	0	0	1	0	2	0	44	645
6:40 AM	1	5	1	0	1	46	1	0	0	0	0	0	1	0	2	0	58	664
6:45 AM	1	8	1	0	1	50	0	0	0	0	0	0	1	0	1	0	63	676
6:50 AM	0	3	0	0	1	47	0	0	0	0	0	0	2	0	6	0	59	693
6:55 AM	0	8	0	0	1	53	0	0	0	0	0	0	2	0	4	0	68	708
7:00 AM	0	8	0	0	5	43	2	0	0	0	0	0	1	0	9	0	68	737
7:05 AM	0	10	0	0	3	41	2	0	0	0	0	0	3	0	10	0	69	744
7:10 AM	1	8	0	0	3	51	4	0	0	0	0	0	2	0	4	0	73	753
7:15 AM	0	12	0	0	5	48	1	0	0	0	1	0	1	0	2	0	70	763
7:20 AM	1	6	0	0	5	48	2	0	0	0	0	0	2	0	7	0	71	769
7:25 AM	0	6	0	0	4	48	1	0	0	0	1	0	2	0	9	0	71	776
7:30 AM	0	20	0	0	3	34	2	0	0	0	0	0	2	0	15	0	76	790
7:35 AM	0	18	1	0	5	27	0	0	0	0	0	0	1	0	12	0	64	810
7:40 AM	0	24	0	0	3	30	3	0	0	0	0	0	0	0	30	0	90	842
7:45 AM	0	27	0	0	7	33	0	0	0	0	0	0	3	0	17	0	87	866
7:50 AM	1	16	1	0	5	28	2	0	1	0	0	0	2	0	18	0	74	881
7:55 AM	0	13	2	0	12	29	0	0	0	0	0	0	4	0	9	0	69	882
8:00 AM	1	8	1	0	10	29	2	0	0	0	0	0	1	0	5	1	58	872
8:05 AM	0	8	0	0	7	30	2	0	1	0	0	0	1	0	11	0	60	863
8:10 AM	0	14	1	0	15	26	2	0	0	0	0	0	2	0	11	0	71	861
8:15 AM	1	9	1	0	4	32	1	0	2	0	0	0	3	0	13	0	66	857
8:20 AM	0	6	0	0	12	23	2	0	1	0	1	0	0	0	8	0	53	839
8:25 AM	0	12	1	0	5	19	2	0	0	0	0	0	2	0	4	0	45	813

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	4	268	4	0	60	364	20	0	4	0	0	0	20	0	260	0	1004
Heavy Trucks	0	4	0		8	4	0		0	0	0		0	0	0		16
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 1/26/2017 9:16 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Corral Hollow Rd -- Peony Dr

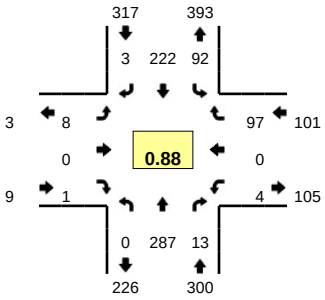
CITY/STATE: Tracy, CA

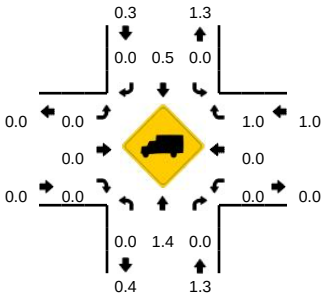
QC JOB #: 14072402

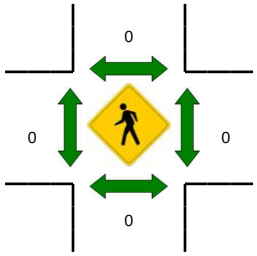
DATE: Thu, Jan 19 2017

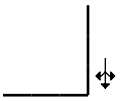
Peak-Hour: 4:55 PM -- 5:55 PM

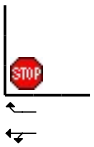
Peak 15-Min: 5:40 PM -- 5:55 PM

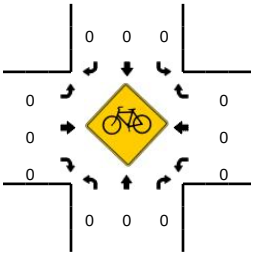


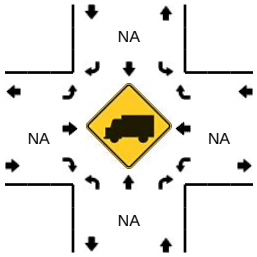


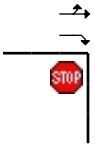


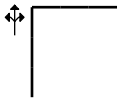


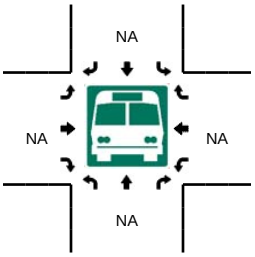












5-Min Count Period Beginning At	Corral Hollow Rd (Northbound)				Corral Hollow Rd (Southbound)				Peony Dr (Eastbound)				Peony Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	20	2	0	9	10	1	0	2	0	0	0	1	0	8	0	53	
4:05 PM	0	26	2	0	8	13	0	0	2	0	2	0	1	0	7	0	61	
4:10 PM	0	14	1	0	11	19	0	0	0	1	0	0	0	1	4	0	51	
4:15 PM	0	19	2	0	9	22	0	0	0	0	0	0	2	0	8	0	62	
4:20 PM	0	17	0	0	5	22	1	0	0	0	0	0	1	0	3	0	49	
4:25 PM	0	22	1	0	3	14	0	0	1	0	1	0	1	0	10	0	53	
4:30 PM	0	25	1	0	6	8	0	0	0	0	0	0	0	0	4	0	44	
4:35 PM	1	21	1	0	14	20	0	0	1	0	0	0	1	0	5	0	64	
4:40 PM	0	18	0	0	9	19	0	0	0	0	0	0	0	0	8	0	54	
4:45 PM	0	28	0	0	11	20	0	0	0	0	1	0	2	0	4	0	66	
4:50 PM	0	18	3	0	13	20	0	0	1	0	0	0	0	0	6	0	61	
4:55 PM	0	20	2	0	8	16	1	0	0	0	0	0	2	0	6	0	55	673
5:00 PM	0	30	1	0	5	13	0	1	0	0	1	0	0	0	11	0	62	682
5:05 PM	0	21	1	0	6	22	0	0	0	0	0	0	0	0	8	0	58	679
5:10 PM	0	26	0	0	7	28	0	0	0	0	0	0	0	0	4	0	65	693
5:15 PM	0	22	2	0	7	18	1	0	2	0	0	0	0	0	9	0	61	692
5:20 PM	0	22	1	0	7	11	0	0	0	0	0	0	0	0	8	0	49	692
5:25 PM	0	26	3	0	9	10	0	0	2	0	0	0	0	0	7	0	57	696
5:30 PM	0	28	0	0	10	20	0	0	0	0	0	0	0	0	8	0	66	718
5:35 PM	0	21	1	0	4	14	0	0	1	0	0	0	0	0	7	0	48	702
5:40 PM	0	26	1	0	11	22	1	0	0	0	0	0	0	0	7	1	69	717
5:45 PM	0	22	0	0	9	28	0	0	3	0	0	0	0	0	12	0	74	725
5:50 PM	0	23	1	0	8	20	0	0	0	0	0	0	1	0	10	0	63	727
5:55 PM	0	23	0	0	8	10	1	0	1	0	0	0	1	0	8	0	52	724

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	284	8	0	112	280	4	0	12	0	0	0	4	0	116	4	824
Heavy Trucks	0	4	0		0	4	0		0	0	0		0	0	0		8
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 1/26/2017 9:16 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Corral Hollow Rd -- Middlefield Dr

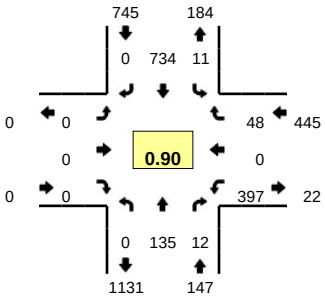
CITY/STATE: Tracy, CA

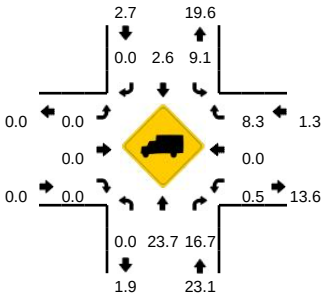
QC JOB #: 14072403

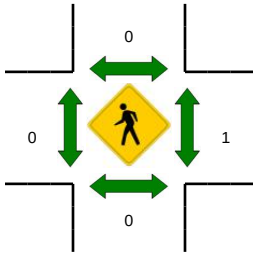
DATE: Tue, Dec 06 2016

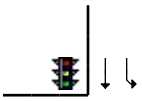
Peak-Hour: 6:35 AM -- 7:35 AM

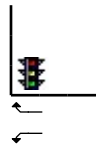
Peak 15-Min: 7:20 AM -- 7:35 AM

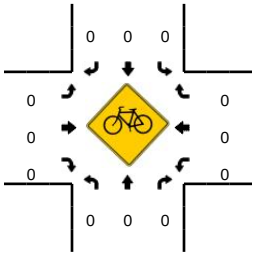


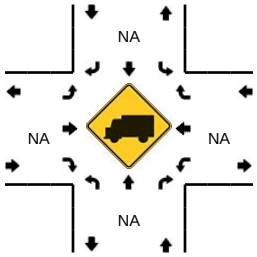






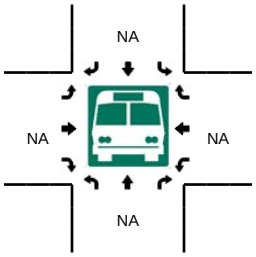












5-Min Count Period Beginning At	Corral Hollow Rd (Northbound)				Corral Hollow Rd (Southbound)				Middlefield Dr (Eastbound)				Middlefield Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:05 AM	0	10	0	0	1	80	0	0	0	0	0	0	15	0	2	0	108	
6:10 AM	0	6	0	0	1	79	0	0	0	0	0	0	14	0	1	0	101	
6:15 AM	0	11	0	0	0	74	0	0	0	0	0	0	21	0	2	0	108	
6:20 AM	0	8	0	0	1	81	0	0	0	0	0	0	13	0	1	0	104	
6:25 AM	0	2	1	0	2	84	0	0	0	0	0	0	14	0	3	0	106	1143
6:30 AM	0	4	1	0	1	77	0	0	0	0	0	0	18	0	2	0	103	1171
6:35 AM	0	13	0	0	0	82	0	0	0	0	0	0	31	0	0	0	126	1205
6:40 AM	0	7	0	0	0	72	0	1	0	0	0	0	31	0	1	0	112	1243
6:45 AM	0	9	2	0	0	53	0	0	0	0	0	0	30	0	3	0	97	1247
6:50 AM	0	11	3	0	0	60	0	0	0	0	0	0	40	0	3	0	117	1284
6:55 AM	0	13	0	0	0	57	0	0	0	0	0	0	41	0	5	0	116	1303
7:00 AM	0	17	0	0	0	58	0	0	0	0	0	0	32	0	3	0	110	1308
7:05 AM	0	11	1	0	0	37	0	0	0	0	0	0	41	0	5	0	95	1295
7:10 AM	0	10	0	0	1	43	0	0	0	0	0	0	31	0	8	0	93	1287
7:15 AM	0	12	0	0	2	52	0	0	0	0	0	0	31	0	3	0	100	1279
7:20 AM	0	13	3	0	0	84	0	0	0	0	0	0	33	0	2	0	135	1310
7:25 AM	0	6	2	0	3	79	0	0	0	0	0	0	22	0	5	0	117	1321
7:30 AM	0	13	1	0	4	57	0	0	0	0	0	0	34	0	10	0	119	1337
7:35 AM	0	10	2	0	3	54	0	0	0	0	0	0	26	0	13	0	108	1319
7:40 AM	0	17	1	0	4	50	0	0	0	0	0	0	15	0	6	0	93	1300
7:45 AM	0	7	4	0	3	40	0	0	0	0	0	0	15	0	13	0	82	1285
7:50 AM	0	7	2	0	3	41	0	0	0	0	0	0	13	0	15	0	81	1249
7:55 AM	0	12	1	0	1	47	0	0	0	0	0	0	15	0	10	0	86	1219
8:00 AM	0	9	1	0	3	40	0	0	0	0	0	0	17	0	2	0	72	1181

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	128	24	0	28	880	0	0	0	0	0	0	356	0	68	0	1484
Heavy Trucks	0	28	4		4	16	0		0	0	0		4	0	12		68
Pedestrians		0				0				0				4			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 12/13/2016 8:59 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Corral Hollow Rd -- Middlefield Dr

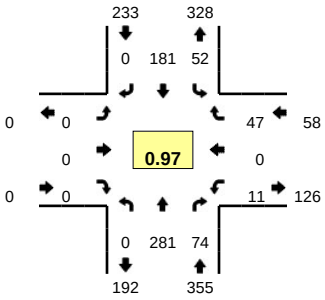
CITY/STATE: Tracy, CA

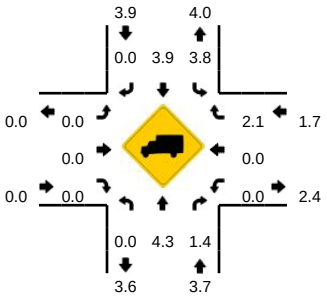
QC JOB #: 14072404

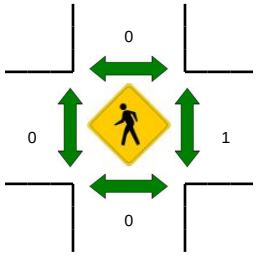
DATE: Tue, Dec 06 2016

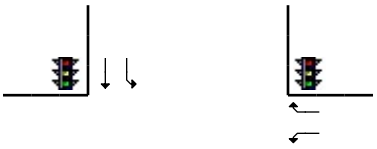
Peak-Hour: 4:40 PM -- 5:40 PM

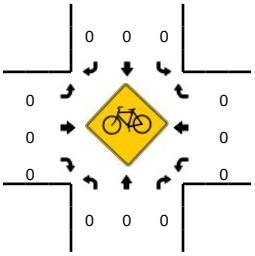
Peak 15-Min: 5:25 PM -- 5:40 PM

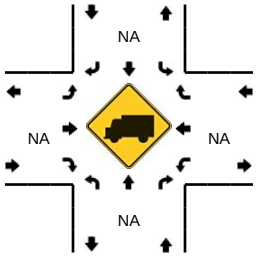




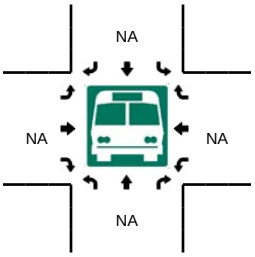












5-Min Count Period Beginning At	Corral Hollow Rd (Northbound)				Corral Hollow Rd (Southbound)				Middlefield Dr (Eastbound)				Middlefield Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	9	2	0	10	11	0	0	0	0	0	0	2	0	5	0	39	
4:05 PM	0	20	5	0	7	15	0	0	0	0	0	0	2	0	7	0	56	
4:10 PM	0	21	8	0	6	16	0	0	0	0	0	0	3	0	2	0	56	
4:15 PM	0	20	8	0	6	11	0	0	0	0	0	0	0	0	4	0	49	
4:20 PM	0	13	10	0	9	12	0	0	0	0	0	0	0	0	3	0	47	
4:25 PM	0	15	6	0	8	8	0	0	0	0	0	0	3	0	3	0	43	
4:30 PM	0	10	5	0	5	17	0	0	0	0	0	0	3	0	7	0	47	
4:35 PM	0	28	6	0	5	17	0	0	0	0	0	0	0	0	1	0	57	
4:40 PM	0	17	7	0	2	29	0	0	0	0	0	0	0	0	1	0	56	
4:45 PM	0	26	8	0	6	10	0	0	0	0	0	0	0	0	8	0	58	
4:50 PM	0	13	6	0	2	13	0	0	0	0	0	0	1	0	1	0	36	
4:55 PM	0	33	3	0	2	18	0	0	0	0	0	0	0	0	4	0	60	604
5:00 PM	0	20	6	0	9	8	0	0	0	0	0	0	1	0	2	0	46	611
5:05 PM	0	32	5	0	2	16	0	0	0	0	0	0	0	0	3	0	58	613
5:10 PM	0	21	4	0	8	17	0	0	0	0	0	0	3	0	3	0	56	613
5:15 PM	0	15	3	0	2	18	0	0	0	0	0	0	3	0	8	0	49	613
5:20 PM	0	35	5	0	4	8	0	0	0	0	0	0	1	0	7	0	60	626
5:25 PM	0	20	7	0	3	10	0	0	0	0	0	0	1	0	4	0	45	628
5:30 PM	0	22	7	0	6	21	0	0	0	0	0	0	1	0	2	0	59	640
5:35 PM	0	27	13	0	6	13	0	0	0	0	0	0	0	0	4	0	63	646
5:40 PM	0	29	7	0	4	12	0	0	0	0	0	0	0	0	3	0	55	645
5:45 PM	0	15	10	0	4	5	0	0	0	0	0	0	1	0	7	0	42	629
5:50 PM	0	20	2	0	2	12	0	0	0	0	0	0	1	0	7	0	44	637
5:55 PM	0	24	6	0	6	13	0	0	0	0	0	0	0	0	5	0	54	631

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	276	108	0	60	176	0	0	0	0	0	0	8	0	40	0	668
Heavy Trucks	0	4	0		4	8	0		0	0	0		0	0	0		16
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 12/13/2016 8:59 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

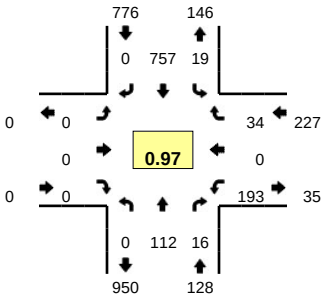
Type of peak hour being reported: Intersection Peak

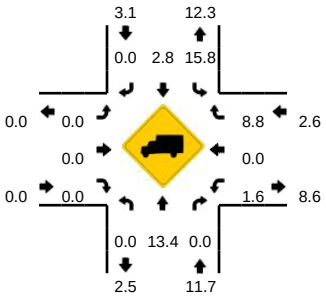
Method for determining peak hour: Total Entering Volume

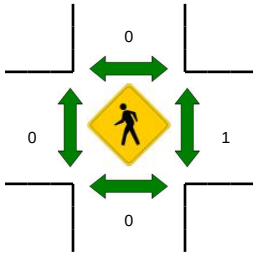
LOCATION: 8 - Corral Hollow Rd -- Linne Rd
CITY/STATE: Tracy, CA

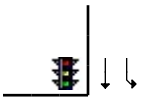
QC JOB #: 13962407
DATE: Wed, Nov 30 2016

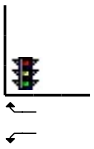
Peak-Hour: 6:25 AM -- 7:25 AM
Peak 15-Min: 7:10 AM -- 7:25 AM

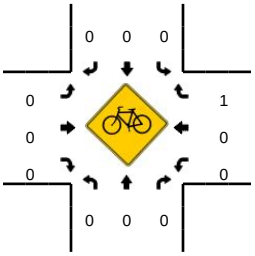


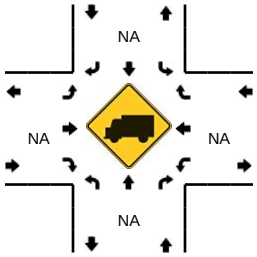






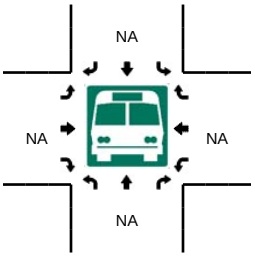












5-Min Count Period Beginning At	8 - Corral Hollow Rd (Northbound)				8 - Corral Hollow Rd (Southbound)				Linne Rd (Eastbound)				Linne Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
5:55 AM	0	4	0	0	0	56	0	0	0	0	0	0	16	0	1	0	77	
6:00 AM	0	8	0	0	0	63	0	0	0	0	0	0	8	0	1	0	80	
6:05 AM	0	6	1	0	0	64	0	0	0	0	0	0	14	0	2	0	87	
6:10 AM	0	4	1	0	0	68	0	0	0	0	0	0	14	0	2	0	89	
6:15 AM	0	5	0	0	1	72	0	0	0	0	0	0	11	0	2	0	91	
6:20 AM	0	4	0	0	0	57	0	0	0	0	0	0	13	0	2	0	76	
6:25 AM	0	7	3	0	0	73	0	0	0	0	0	0	10	0	1	0	94	957
6:30 AM	0	8	0	0	0	72	0	0	0	0	0	0	13	0	0	0	93	987
6:35 AM	0	13	2	0	2	54	0	0	0	0	0	0	20	0	2	0	93	994
6:40 AM	0	7	0	0	0	65	0	0	0	0	0	0	14	0	5	0	91	1011
6:45 AM	0	10	1	0	1	70	0	0	0	0	0	0	19	0	2	0	103	1051
6:50 AM	0	11	0	0	2	73	0	0	0	0	0	0	10	0	1	0	97	1071
6:55 AM	0	4	0	0	2	61	0	0	0	0	0	0	18	0	1	0	86	1080
7:00 AM	0	11	1	0	3	64	0	0	0	0	0	0	19	0	4	0	102	1102
7:05 AM	0	12	2	0	1	47	0	0	0	0	0	0	13	0	4	0	79	1094
7:10 AM	0	6	0	0	2	60	0	0	0	0	0	0	21	0	6	0	95	1100
7:15 AM	0	7	4	0	0	59	0	0	0	0	0	0	16	0	3	0	89	1098
7:20 AM	0	16	3	0	6	59	0	0	0	0	0	0	20	0	5	0	109	1131
7:25 AM	0	11	2	0	2	55	0	0	0	0	0	0	16	0	6	0	92	1129
7:30 AM	0	8	3	0	1	54	0	0	0	0	0	0	17	0	7	0	90	1126
7:35 AM	0	11	1	0	1	45	0	0	0	0	0	0	10	0	12	0	80	1113
7:40 AM	0	9	1	0	1	35	0	0	0	0	0	0	13	0	12	0	71	1093
7:45 AM	0	8	1	0	4	41	0	0	0	0	0	0	13	0	17	0	84	1074
7:50 AM	0	3	0	0	3	42	0	0	0	0	0	0	13	0	7	0	68	1045

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	116	28	0	32	712	0	0	0	0	0	0	228	0	56	0	1172
Heavy Trucks	0	12	0		12	28	0		0	0	0		4	0	4		60
Pedestrians		0				0				0				4			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	1		1
Railroad																	
Stopped Buses																	

Comments:

Report generated on 12/6/2016 11:44 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: 8 - Corral Hollow Rd -- Linne Rd

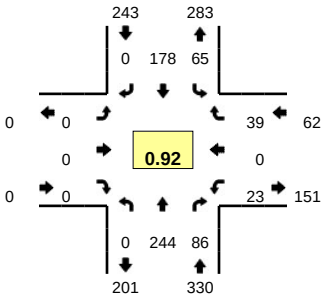
CITY/STATE: Tracy, CA

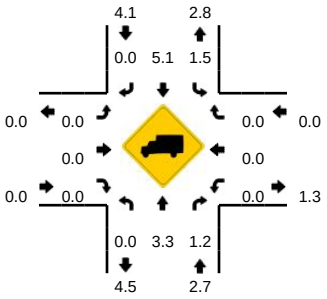
QC JOB #: 13962408

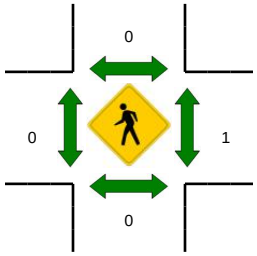
DATE: Wed, Nov 30 2016

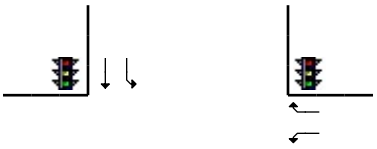
Peak-Hour: 4:35 PM -- 5:35 PM

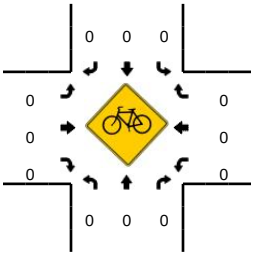
Peak 15-Min: 5:20 PM -- 5:35 PM

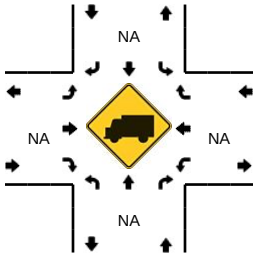




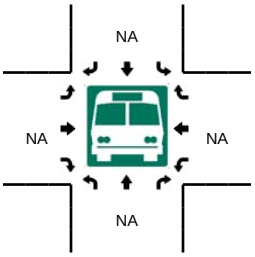












5-Min Count Period Beginning At	8 - Corral Hollow Rd (Northbound)				8 - Corral Hollow Rd (Southbound)				Linne Rd (Eastbound)				Linne Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	19	3	0	9	16	0	1	0	0	0	0	1	0	7	0	56	
4:05 PM	0	16	5	0	5	19	0	0	0	0	0	0	3	0	5	0	53	
4:10 PM	0	14	4	0	5	13	0	0	0	0	0	0	4	0	5	0	45	
4:15 PM	0	15	3	0	9	11	0	0	0	0	0	0	0	0	1	0	39	
4:20 PM	0	16	5	0	6	11	0	0	0	0	0	0	3	0	3	0	44	
4:25 PM	0	12	5	0	5	13	0	0	0	0	0	0	2	0	3	0	40	
4:30 PM	0	23	8	0	5	9	0	0	0	0	0	0	2	0	4	0	51	
4:35 PM	0	21	5	0	7	15	0	0	0	0	0	0	2	0	2	0	52	
4:40 PM	0	21	6	0	6	23	0	0	0	0	0	0	4	0	3	0	63	
4:45 PM	0	19	6	0	3	17	0	0	0	0	0	0	1	0	4	0	50	
4:50 PM	0	16	5	0	5	11	0	0	0	0	0	0	0	0	6	0	43	
4:55 PM	0	22	6	0	2	11	0	0	0	0	0	0	1	0	1	0	43	579
5:00 PM	0	31	5	0	5	10	0	0	0	0	0	0	2	0	7	0	60	583
5:05 PM	0	24	5	0	9	10	0	0	0	0	0	0	2	0	5	0	55	585
5:10 PM	0	15	12	0	4	17	0	0	0	0	0	0	4	0	2	0	54	594
5:15 PM	0	11	7	0	3	16	0	0	0	0	0	0	2	0	4	0	43	598
5:20 PM	0	14	14	0	6	17	0	0	0	0	0	0	2	0	3	0	56	610
5:25 PM	0	25	9	0	11	14	0	0	0	0	0	0	0	0	1	0	60	630
5:30 PM	0	25	6	0	4	17	0	0	0	0	0	0	3	0	1	0	56	635
5:35 PM	0	27	3	0	5	8	0	0	0	0	0	0	1	0	2	0	46	629
5:40 PM	0	20	6	0	11	6	0	0	0	0	0	0	0	0	4	0	47	613
5:45 PM	0	24	12	0	5	11	0	0	0	0	0	0	4	0	2	0	58	621
5:50 PM	0	13	5	0	2	12	0	0	0	0	0	0	4	0	2	0	38	616
5:55 PM	0	25	4	0	5	13	0	0	0	0	0	0	0	0	3	0	50	623

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	256	116	0	84	192	0	0	0	0	0	0	20	0	20	0	688
Heavy Trucks	0	4	0		0	16	0		0	0	0		0	0	0		20
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 12/6/2016 11:44 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

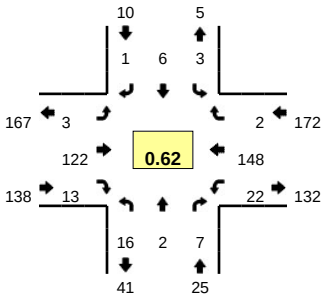
Type of peak hour being reported: Intersection Peak

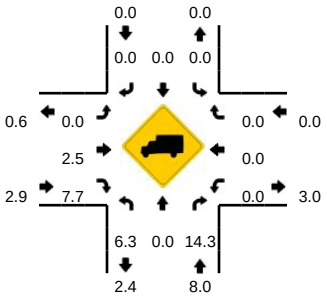
Method for determining peak hour: Total Entering Volume

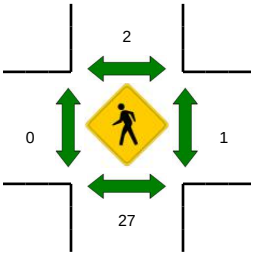
LOCATION: Middlefield Dr -- Peony Dr
CITY/STATE: Tracy, CA

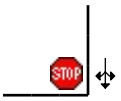
QC JOB #: 14072405
DATE: Tue, Dec 06 2016

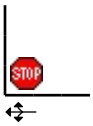
Peak-Hour: 7:25 AM -- 8:25 AM
Peak 15-Min: 8:00 AM -- 8:15 AM

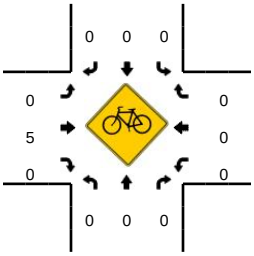


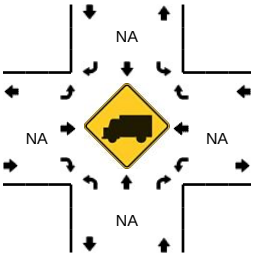


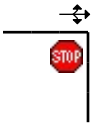


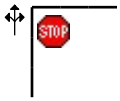


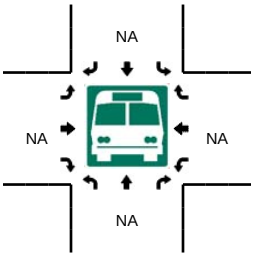












5-Min Count Period Beginning At	Middlefield Dr (Northbound)				Middlefield Dr (Southbound)				Peony Dr (Eastbound)				Peony Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:30 AM	0	1	1	0	0	0	0	0	0	1	0	0	1	1	0	0	5	44
6:35 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	1	0	0	3	44
6:40 AM	2	0	0	0	0	0	0	0	0	0	0	0	1	3	0	0	6	49
6:45 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	2	45
6:50 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	3	46
6:55 AM	2	0	1	0	0	0	0	0	0	0	1	0	2	0	0	0	6	46
7:00 AM	3	0	0	0	0	0	0	0	0	1	2	0	1	4	0	0	11	53
7:05 AM	1	0	0	0	0	0	0	0	0	6	2	1	2	1	0	0	13	62
7:10 AM	3	0	0	0	0	0	1	0	0	6	3	0	0	4	0	0	17	75
7:15 AM	0	0	0	0	0	0	0	0	0	4	0	0	1	3	0	0	8	79
7:20 AM	1	0	1	0	0	0	0	0	0	3	1	0	1	5	0	0	12	86
7:25 AM	3	0	0	0	0	0	1	0	0	8	2	0	1	3	0	0	18	104
7:30 AM	0	0	3	0	0	1	0	0	0	4	1	1	2	9	0	0	21	120
7:35 AM	1	0	0	0	0	1	0	0	0	4	2	0	0	13	0	0	21	138
7:40 AM	0	0	0	0	0	0	0	0	0	5	1	0	1	13	0	0	20	152
7:45 AM	1	0	0	0	0	0	0	0	0	11	2	0	2	9	0	0	25	175
7:50 AM	3	0	0	0	1	1	0	0	0	9	0	0	0	16	0	0	30	202
7:55 AM	2	0	1	0	0	0	0	0	0	15	0	1	0	10	0	0	29	225
8:00 AM	0	0	1	0	0	0	0	0	0	12	2	0	2	19	0	0	36	250
8:05 AM	3	2	0	0	0	0	0	0	1	24	2	0	3	14	1	0	50	287
8:10 AM	2	0	1	0	2	1	0	0	0	20	1	0	8	18	0	0	53	323
8:15 AM	1	0	1	0	0	1	0	0	0	8	0	0	2	16	0	0	29	344
8:20 AM	0	0	0	0	0	1	0	0	0	2	0	0	1	8	1	0	13	345
8:25 AM	1	0	0	0	0	0	0	0	0	4	0	0	0	2	0	0	7	334

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	20	8	8	0	8	4	0	0	4	224	20	0	52	204	4	0	556
Heavy Trucks	4	0	0		0	0	0		0	0	0		0	0	0		4
Pedestrians		40				0				0				0			40
Bicycles	0	0	0		0	0	0		0	4	0		0	0	0		4
Railroad																	
Stopped Buses																	

Comments:

Report generated on 12/13/2016 8:59 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Middlefield Dr -- Peony Dr

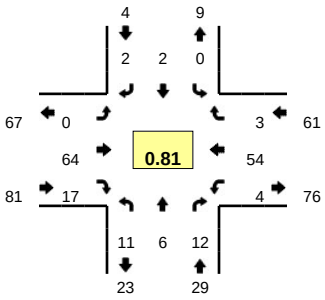
CITY/STATE: Tracy, CA

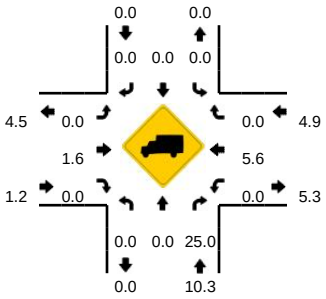
QC JOB #: 14072406

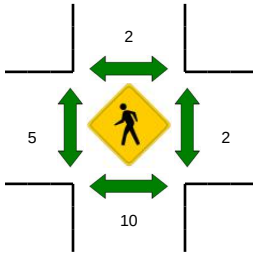
DATE: Tue, Dec 06 2016

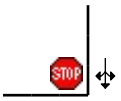
Peak-Hour: 4:10 PM -- 5:10 PM

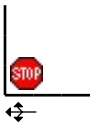
Peak 15-Min: 4:10 PM -- 4:25 PM

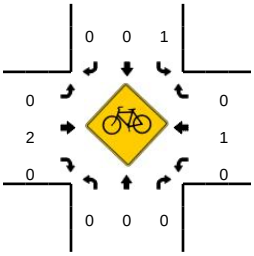


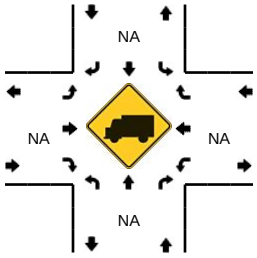


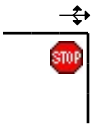


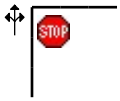


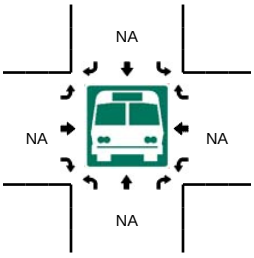












5-Min Count Period Beginning At	Middlefield Dr (Northbound)				Middlefield Dr (Southbound)				Peony Dr (Eastbound)				Peony Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	0	0	0	0	0	4	1	0	0	5	0	0	10	
4:05 PM	0	0	0	0	0	0	0	0	0	5	2	0	1	3	0	0	11	
4:10 PM	1	0	3	0	0	0	0	0	0	10	0	0	0	3	0	0	17	
4:15 PM	1	1	1	0	0	0	0	0	0	3	4	0	0	1	1	0	12	
4:20 PM	1	2	1	0	0	2	0	0	0	7	0	0	1	11	0	0	25	
4:25 PM	0	0	3	0	0	0	0	0	0	3	1	0	0	4	0	0	11	
4:30 PM	0	0	1	0	0	0	0	0	0	5	3	0	0	6	0	0	15	
4:35 PM	2	0	0	0	0	0	0	0	0	6	1	0	2	5	0	0	16	
4:40 PM	3	1	0	0	0	0	0	0	0	2	1	0	0	2	0	0	9	
4:45 PM	0	0	0	0	0	0	1	0	0	5	1	0	0	3	1	0	11	
4:50 PM	2	1	2	0	0	0	0	0	0	4	0	0	1	8	0	0	18	
4:55 PM	0	1	0	0	0	0	1	0	0	4	0	0	0	3	1	0	10	165
5:00 PM	0	0	1	0	0	0	0	0	0	10	2	0	0	6	0	0	19	174
5:05 PM	1	0	0	0	0	0	0	0	0	5	4	0	0	2	0	0	12	175
5:10 PM	1	0	1	0	0	1	0	0	0	2	0	0	0	5	0	0	10	168
5:15 PM	2	0	1	0	1	0	0	0	0	9	0	0	0	6	0	0	19	175
5:20 PM	0	0	0	0	0	0	0	0	0	5	0	0	0	5	0	0	10	160
5:25 PM	1	0	1	0	0	0	0	0	1	9	2	0	0	6	0	0	20	169
5:30 PM	1	0	3	0	0	0	0	0	0	2	1	0	1	3	0	0	11	165
5:35 PM	0	0	0	0	0	0	1	0	0	2	0	0	1	4	0	0	8	157
5:40 PM	1	0	2	0	0	0	0	0	0	6	0	0	0	1	0	0	10	158
5:45 PM	1	0	0	0	0	0	0	0	0	3	1	0	0	5	0	0	10	157
5:50 PM	1	0	0	0	0	1	0	0	0	6	1	0	0	5	0	0	14	153
5:55 PM	1	0	1	0	0	0	0	0	1	5	0	0	0	4	0	0	12	155

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	12	12	20	0	0	8	0	0	0	80	16	0	4	60	4	0	216
Heavy Trucks	0	0	8		0	0	0		0	0	0		0	4	0		12
Pedestrians		16				4				20				8			48
Bicycles	0	0	0		1	0	0		0	0	0		0	0	0		1
Railroad																	
Stopped Buses																	

Comments:

Report generated on 12/13/2016 8:59 AM

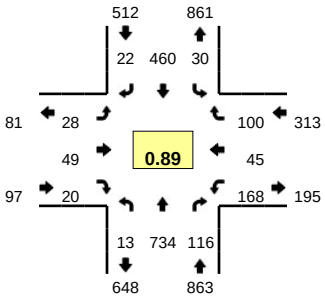
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

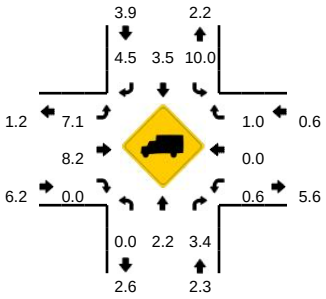
Method for determining peak hour: Total Entering Volume

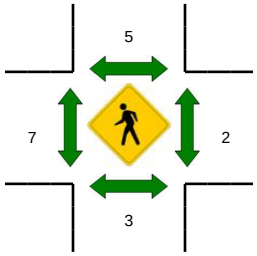
LOCATION: Tracy Blvd -- Central Ave
CITY/STATE: Tracy, CA

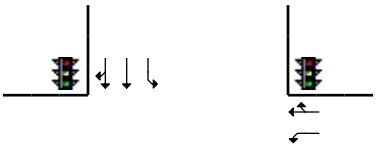
QC JOB #: 14072409
DATE: Tue, Dec 06 2016

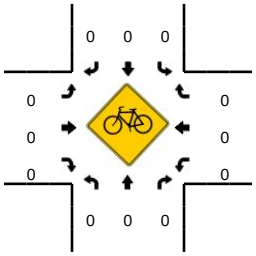


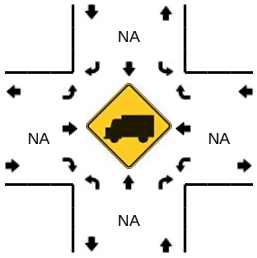
Peak-Hour: 7:25 AM -- 8:25 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

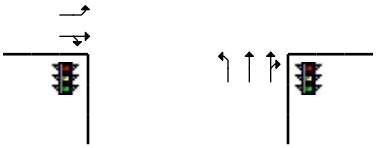


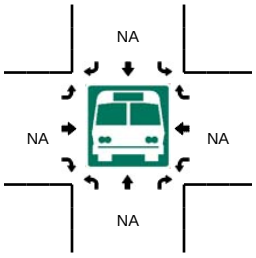












5-Min Count Period Beginning At	Tracy Blvd (Northbound)				Tracy Blvd (Southbound)				Central Ave (Eastbound)				Central Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:30 AM	0	12	1	0	0	11	0	0	1	0	1	0	10	1	3	0	40	558
6:35 AM	0	13	1	0	1	29	1	0	0	1	1	0	9	1	5	0	62	594
6:40 AM	0	24	2	0	2	21	2	0	1	2	1	0	8	1	1	0	65	620
6:45 AM	2	17	3	0	1	30	0	0	1	1	0	0	6	1	3	0	65	648
6:50 AM	0	14	4	0	2	21	2	0	3	5	1	0	11	3	4	0	70	663
6:55 AM	1	33	7	0	2	29	0	0	0	3	1	0	11	2	5	0	94	679
7:00 AM	0	24	5	0	4	36	3	0	1	1	4	0	12	3	3	0	96	719
7:05 AM	0	32	4	0	2	23	0	0	0	2	2	0	11	2	2	0	80	752
7:10 AM	2	19	2	0	0	20	1	0	2	4	0	0	12	4	2	0	68	772
7:15 AM	1	29	8	0	2	26	0	0	1	1	2	0	8	1	4	0	83	818
7:20 AM	1	33	5	0	0	35	1	0	1	1	0	0	15	3	2	0	97	876
7:25 AM	0	43	11	0	4	36	2	0	3	5	3	0	14	2	9	0	132	952
7:30 AM	1	58	13	0	0	29	3	0	3	1	2	0	10	1	8	0	129	1041
7:35 AM	0	81	14	0	1	27	3	0	3	3	2	0	12	3	2	0	151	1130
7:40 AM	1	64	9	0	4	26	0	0	3	2	1	0	14	2	8	0	134	1199
7:45 AM	1	67	7	0	2	56	1	0	2	4	0	0	12	3	11	0	166	1300
7:50 AM	1	75	8	0	1	55	4	0	3	5	0	0	14	11	9	0	186	1416
7:55 AM	1	61	7	0	2	31	1	0	3	4	2	0	24	5	7	0	148	1470
8:00 AM	0	56	4	0	3	59	2	0	2	6	2	0	8	5	4	0	151	1525
8:05 AM	0	54	11	0	5	37	0	0	0	5	3	0	18	4	4	0	141	1586
8:10 AM	3	58	10	0	4	47	3	0	2	3	1	1	11	4	9	0	156	1674
8:15 AM	3	43	9	0	3	18	2	0	2	9	2	0	17	3	12	0	123	1714
8:20 AM	2	74	13	0	1	39	1	0	1	2	2	0	14	2	17	0	168	1785
8:25 AM	1	30	6	0	2	25	1	0	3	2	1	0	19	4	18	0	112	1765

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	12	812	88	0	20	568	24	0	32	52	8	0	200	76	108	0	2000
Heavy Trucks	0	24	8		0	16	0		4	4	0		0	0	0		56
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 12/13/2016 8:59 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

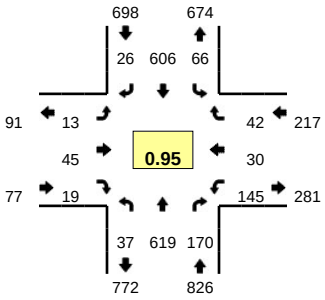
Type of peak hour being reported: Intersection Peak

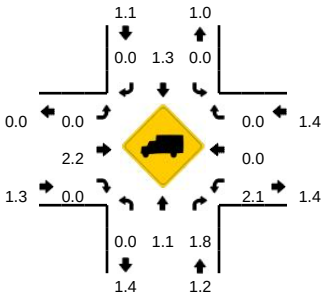
Method for determining peak hour: Total Entering Volume

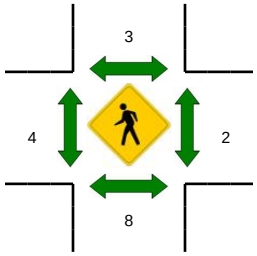
LOCATION: Tracy Blvd -- Central Ave
CITY/STATE: Tracy, CA

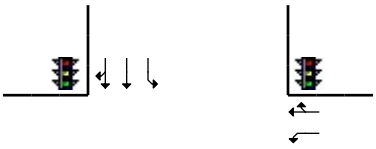
QC JOB #: 14072410
DATE: Tue, Dec 06 2016

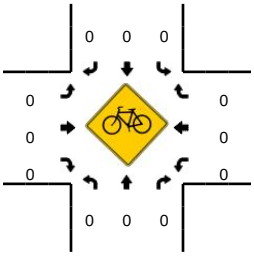
Peak-Hour: 4:40 PM -- 5:40 PM
Peak 15-Min: 4:40 PM -- 4:55 PM

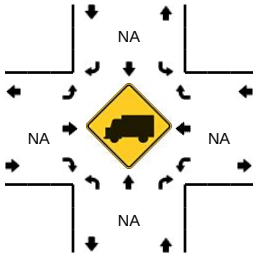


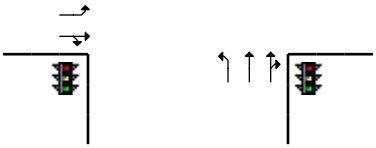


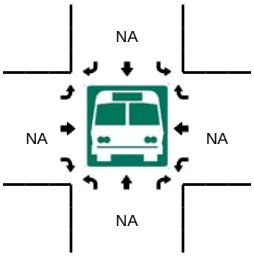












5-Min Count Period Beginning At	Tracy Blvd (Northbound)				Tracy Blvd (Southbound)				Central Ave (Eastbound)				Central Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	1	52	11	0	4	53	1	0	1	3	1	1	16	2	4	0	150	
4:05 PM	3	62	9	0	3	55	4	0	1	5	1	0	13	2	4	0	162	
4:10 PM	2	42	13	0	2	43	2	0	0	3	1	0	20	4	1	0	133	
4:15 PM	1	50	11	0	4	45	2	0	0	2	2	0	14	1	6	0	138	
4:20 PM	1	53	12	0	3	44	0	0	0	2	2	0	11	5	5	0	138	
4:25 PM	3	53	11	0	4	34	2	1	0	3	1	0	13	2	3	0	130	
4:30 PM	2	43	17	0	4	39	2	0	2	1	0	0	9	0	4	0	123	
4:35 PM	3	43	11	0	8	40	2	0	1	2	1	0	11	3	4	0	129	
4:40 PM	4	59	20	0	13	54	1	0	0	4	1	0	12	1	4	0	173	
4:45 PM	2	44	11	0	2	60	3	0	1	4	3	0	19	3	4	0	156	
4:50 PM	3	44	7	0	4	67	1	0	0	7	1	0	6	5	5	0	150	
4:55 PM	4	41	11	0	10	39	2	0	0	3	3	0	14	4	4	0	135	1717
5:00 PM	3	64	14	0	6	49	3	0	0	2	0	0	7	3	2	0	153	1720
5:05 PM	1	40	21	1	6	49	7	0	2	7	4	0	16	2	9	0	165	1723
5:10 PM	4	53	14	0	3	54	2	0	1	4	0	0	17	1	1	0	154	1744
5:15 PM	1	47	9	0	5	47	0	0	2	4	1	0	1	1	2	0	120	1726
5:20 PM	6	65	18	0	3	45	1	0	1	2	1	0	16	3	1	0	162	1750
5:25 PM	0	76	20	1	7	44	0	0	0	1	0	0	15	4	0	0	168	1788
5:30 PM	5	37	10	0	1	43	4	0	4	5	3	0	6	2	5	0	125	1790
5:35 PM	2	49	15	0	6	55	2	0	2	2	2	0	16	1	5	0	157	1818
5:40 PM	2	56	16	0	2	39	2	0	3	5	5	0	5	2	4	0	141	1786
5:45 PM	6	37	12	0	5	37	2	0	0	0	2	0	10	5	5	0	121	1751
5:50 PM	2	46	13	0	3	46	3	0	1	4	1	0	12	3	3	0	137	1738
5:55 PM	1	49	13	0	4	32	4	0	3	5	1	0	8	3	4	0	127	1730

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	36	588	152	0	76	724	20	0	4	60	20	0	148	36	52	0	1916
Heavy Trucks	0	8	0		0	12	0		0	4	0		4	0	0		28
Pedestrians		0				8				0				4			12
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 12/13/2016 8:59 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

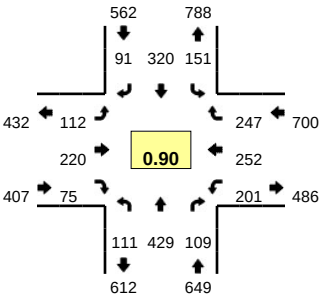
Method for determining peak hour: Total Entering Volume

LOCATION: 7 - Tracy Blvd -- Valpico Rd

QC JOB #: 13962409

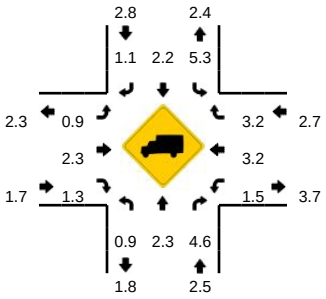
CITY/STATE: Tracy, CA

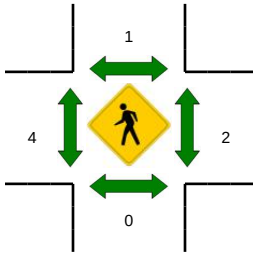
DATE: Wed, Nov 30 2016

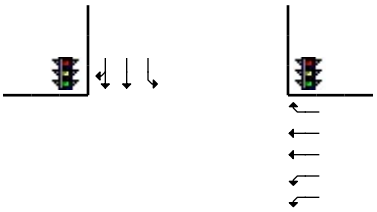


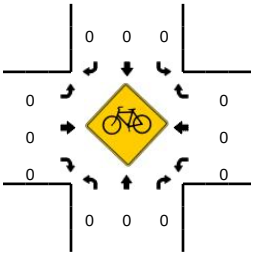
Peak-Hour: 7:25 AM -- 8:25 AM

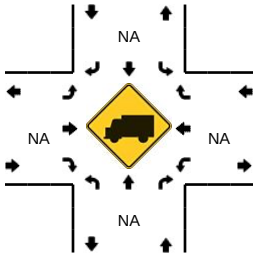
Peak 15-Min: 7:45 AM -- 8:00 AM

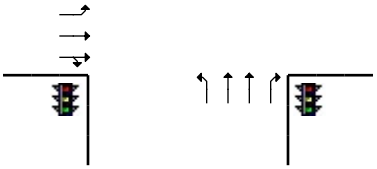


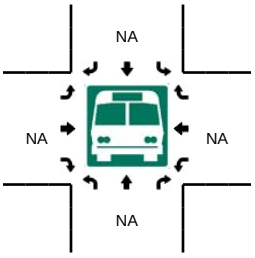












5-Min Count Period Beginning At	7 - Tracy Blvd (Northbound)				7 - Tracy Blvd (Southbound)				Valpico Rd (Eastbound)				Valpico Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:30 AM	3	11	4	0	9	16	5	0	2	7	0	0	7	13	4	0	81	1058
6:35 AM	5	8	3	2	12	7	7	0	3	8	1	0	8	24	2	0	90	1078
6:40 AM	5	8	4	3	8	18	7	0	2	10	4	0	13	24	9	1	116	1122
6:45 AM	1	17	5	3	6	13	9	0	5	11	6	0	15	14	5	0	110	1132
6:50 AM	6	23	9	2	7	27	4	0	5	9	7	0	11	23	7	0	140	1153
6:55 AM	4	14	4	3	7	19	5	0	3	11	13	0	20	19	7	0	129	1168
7:00 AM	5	12	5	4	9	32	9	0	4	5	7	0	15	23	4	0	134	1200
7:05 AM	12	23	8	1	8	8	7	0	3	12	5	0	9	26	3	1	126	1232
7:10 AM	9	26	7	2	8	16	9	0	5	17	3	0	8	19	8	0	137	1308
7:15 AM	7	21	7	2	6	27	7	0	7	10	4	0	15	18	9	0	140	1366
7:20 AM	3	29	10	2	6	28	6	0	8	18	6	0	10	23	12	0	161	1452
7:25 AM	5	41	7	3	12	22	10	0	8	10	6	0	11	18	19	0	172	1536
7:30 AM	5	39	14	0	6	20	6	0	6	16	4	0	4	27	23	0	170	1625
7:35 AM	7	43	11	0	13	27	6	0	9	14	2	0	18	24	25	1	200	1735
7:40 AM	14	28	4	2	13	20	7	0	13	14	13	0	12	24	29	1	194	1813
7:45 AM	4	28	8	4	6	22	8	0	13	13	8	0	31	27	20	1	193	1896
7:50 AM	10	48	11	3	14	50	5	0	3	19	14	0	20	25	19	1	242	1998
7:55 AM	7	34	5	0	18	31	9	0	13	18	7	0	37	13	17	0	209	2078
8:00 AM	16	29	10	1	14	31	10	0	6	25	3	0	15	17	15	0	192	2136
8:05 AM	2	35	14	0	9	34	6	0	9	26	3	0	18	19	16	1	192	2202
8:10 AM	8	35	9	1	10	32	10	0	11	24	3	0	15	18	22	0	198	2263
8:15 AM	4	35	8	4	15	11	7	0	16	22	4	0	7	22	24	1	180	2303
8:20 AM	7	34	8	4	21	20	7	0	5	19	8	0	7	18	18	0	176	2318
8:25 AM	9	32	4	3	12	16	7	0	17	12	7	0	9	17	11	2	158	2304

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	84	440	96	28	152	412	88	0	116	200	116	0	352	260	224	8	2576
Heavy Trucks	0	8	8		0	12	4		4	4	0		4	12	4		60
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad Stopped Buses																	

Comments:

Report generated on 12/6/2016 11:44 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

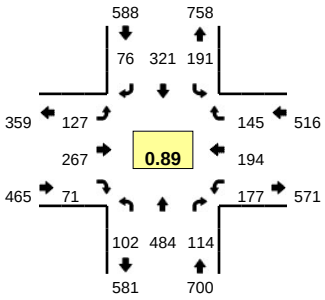
Method for determining peak hour: Total Entering Volume

LOCATION: 7 - Tracy Blvd -- Valpico Rd

QC JOB #: 13962410

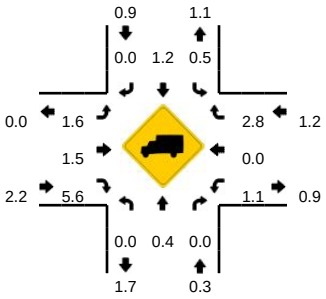
CITY/STATE: Tracy, CA

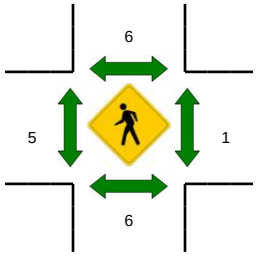
DATE: Wed, Nov 30 2016

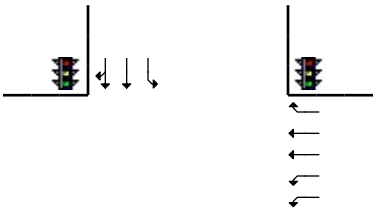


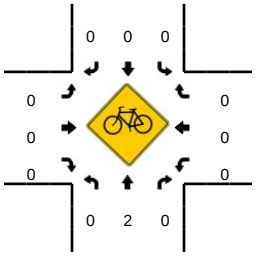
Peak-Hour: 5:00 PM -- 6:00 PM

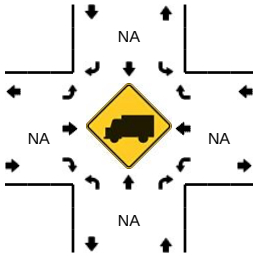
Peak 15-Min: 5:30 PM -- 5:45 PM

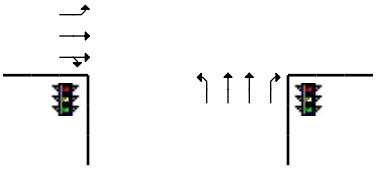


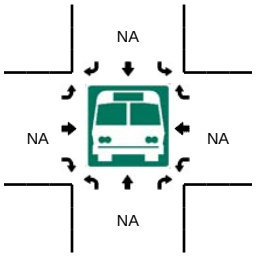












5-Min Count Period Beginning At	7 - Tracy Blvd (Northbound)				7 - Tracy Blvd (Southbound)				Valpico Rd (Eastbound)				Valpico Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	9	38	17	2	14	25	3	0	11	19	8	0	10	19	10	0	185	
4:05 PM	9	34	13	0	26	24	7	0	5	21	6	1	14	16	15	0	191	
4:10 PM	11	37	11	0	19	36	4	0	12	19	6	0	12	16	9	0	192	
4:15 PM	7	33	13	5	11	32	4	0	10	15	5	0	16	17	13	0	181	
4:20 PM	8	29	8	0	12	28	4	0	11	19	5	0	12	20	12	1	169	
4:25 PM	1	33	8	0	15	28	3	0	5	26	8	0	11	22	17	1	178	
4:30 PM	8	32	14	3	17	14	7	0	7	25	3	0	14	22	12	2	180	
4:35 PM	6	46	8	0	7	30	6	0	9	22	6	0	21	13	12	0	186	
4:40 PM	11	34	7	0	15	30	7	0	6	22	3	0	19	23	7	0	184	
4:45 PM	10	20	6	0	13	26	13	0	11	28	5	0	11	10	4	0	157	
4:50 PM	10	35	10	0	19	27	6	1	10	18	4	0	10	18	13	0	181	
4:55 PM	4	48	7	0	11	21	11	0	11	20	3	0	10	13	12	0	171	2155
5:00 PM	10	31	11	0	14	40	9	0	9	17	4	0	4	12	11	0	172	2142
5:05 PM	7	38	8	0	24	35	9	0	9	12	3	0	13	6	16	0	180	2131
5:10 PM	4	46	13	0	14	25	8	0	26	21	7	0	17	16	8	0	205	2144
5:15 PM	6	16	7	0	7	22	5	0	15	27	3	0	16	19	9	0	152	2115
5:20 PM	8	31	7	0	27	27	7	0	4	28	6	0	12	22	10	0	189	2135
5:25 PM	8	56	10	0	11	22	7	0	10	21	10	0	17	16	6	0	194	2151
5:30 PM	14	85	18	0	21	25	7	1	10	20	3	0	14	14	7	0	239	2210
5:35 PM	6	53	11	4	9	19	7	0	6	27	9	0	14	14	12	0	191	2215
5:40 PM	7	41	9	0	15	34	7	0	8	23	7	0	20	21	14	0	206	2237
5:45 PM	11	31	7	0	13	23	5	0	6	17	5	0	15	16	23	1	173	2253
5:50 PM	4	27	11	4	17	19	4	0	13	29	9	0	17	19	16	0	189	2261
5:55 PM	4	29	2	5	17	30	1	1	11	25	5	0	17	19	13	0	179	2269

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	108	716	152	16	180	312	84	4	96	280	76	0	192	196	132	0	2544
Heavy Trucks	0	4	0		0	0	0		4	8	4		0	0	4		24
Pedestrians		12				0				4				0			16
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 12/6/2016 11:44 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

EXISTING CONDITIONS SYNCHRO OUTPUT SHEETS

Intersection	
Intersection Delay, s/veh	34
Intersection LOS	D

Movement	EBU	EBL	EBR	NBU	NBL	NBT	SBU	SBT	SBR
Lane Configurations									
Traffic Vol, veh/h	0	25	36	0	175	399	0	319	181
Future Vol, veh/h	0	25	36	0	175	399	0	319	181
Peak Hour Factor	1.00	0.82	0.82	1.00	0.82	0.82	1.00	0.82	0.82
Heavy Vehicles, %	2	4	14	2	3	1	2	2	7
Mvmt Flow	0	30	44	0	213	487	0	389	221
Number of Lanes	0	1	0	0	0	1	0	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	10.6	44.9	24.4
HCM LOS	B	E	C

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	30%	41%	0%
Vol Thru, %	70%	0%	64%
Vol Right, %	0%	59%	36%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	574	61	500
LT Vol	175	25	0
Through Vol	399	0	319
RT Vol	0	36	181
Lane Flow Rate	700	74	610
Geometry Grp	1	1	1
Degree of Util (X)	0.953	0.136	0.803
Departure Headway (Hd)	4.903	6.597	4.741
Convergence, Y/N	Yes	Yes	Yes
Cap	728	547	756
Service Time	2.996	4.597	2.831
HCM Lane V/C Ratio	0.962	0.135	0.807
HCM Control Delay	44.9	10.6	24.4
HCM Lane LOS	E	B	C
HCM 95th-tile Q	14.1	0.5	8.4

Intersection	
Int Delay, s/veh	9.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	1	0	12	0	318	0	6	9	247	9	0
Future Vol, veh/h	0	1	0	12	0	318	0	6	9	247	9	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	76	100	76	100	76	76	76	76	100
Heavy Vehicles, %	2	2	2	33	2	4	2	17	33	5	11	2
Mvmt Flow	0	1	0	16	0	418	0	8	12	325	12	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	885	682	12	676	676	14	12	0	0	20	0	0
Stage 1	662	662	-	14	14	-	-	-	-	-	-	-
Stage 2	223	20	-	662	662	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.43	6.52	6.24	4.12	-	-	4.15	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.43	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.43	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.797	4.018	3.336	2.218	-	-	2.245	-	-
Pot Cap-1 Maneuver	266	372	1069	329	375	1060	1607	-	-	1577	-	-
Stage 1	451	459	-	932	884	-	-	-	-	-	-	-
Stage 2	780	879	-	404	459	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	135	295	1069	276	297	1060	1607	-	-	1577	-	-
Mov Cap-2 Maneuver	135	295	-	276	297	-	-	-	-	-	-	-
Stage 1	451	364	-	932	884	-	-	-	-	-	-	-
Stage 2	472	879	-	319	364	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	17.2	11.8	0	7.6
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1607	-	-	295	961	1577	-	-
HCM Lane V/C Ratio	-	-	-	0.003	0.452	0.206	-	-
HCM Control Delay (s)	0	-	-	17.2	11.8	7.9	0	-
HCM Lane LOS	A	-	-	C	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	2.4	0.8	-	-

Intersection	
Intersection Delay, s/veh	71.7
Intersection LOS	F

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Vol, veh/h	0	12	135	106	0	170	157	75	0	159	193	21
Future Vol, veh/h	0	12	135	106	0	170	157	75	0	159	193	21
Peak Hour Factor	1.00	0.94	0.94	0.94	1.00	0.94	0.94	0.94	1.00	0.94	0.94	0.94
Heavy Vehicles, %	2	8	3	9	2	2	5	7	2	6	10	5
Mvmt Flow	0	13	144	113	0	181	167	80	0	169	205	22
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	32.6	87.6	72.7
HCM LOS	D	F	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	43%	5%	42%	17%
Vol Thru, %	52%	53%	39%	78%
Vol Right, %	6%	42%	19%	5%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	373	253	402	390
LT Vol	159	12	170	67
Through Vol	193	135	157	305
RT Vol	21	106	75	18
Lane Flow Rate	397	269	428	415
Geometry Grp	1	1	1	1
Degree of Util (X)	0.983	0.699	1.044	1.013
Departure Headway (Hd)	9.294	9.787	8.988	9.161
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	393	371	406	398
Service Time	7.294	7.787	6.988	7.161
HCM Lane V/C Ratio	1.01	0.725	1.054	1.043
HCM Control Delay	72.7	32.6	87.6	79.8
HCM Lane LOS	F	D	F	F
HCM 95th-tile Q	11.5	5.1	13.7	12.5

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Lane Configurations			↕	
Traffic Vol, veh/h	0	67	305	18
Future Vol, veh/h	0	67	305	18
Peak Hour Factor	1.00	0.94	0.94	0.94
Heavy Vehicles, %	2	5	6	6
Mvmt Flow	0	71	324	19
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	79.8
HCM LOS	F

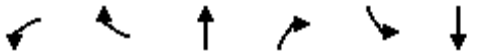
Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	0	2	23	0	142	3	168	4	60	460	19
Future Vol, veh/h	1	0	2	23	0	142	3	168	4	60	460	19
Conflicting Peds, #/hr	0	0	0	1	0	1	0	0	1	1	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	-	135	-	-	200	-	-	95	-	95
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	0	0	0	0	0	1	0	3	0	11	2	10
Mvmt Flow	1	0	2	26	0	161	3	191	5	68	523	22

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	941	862	524	862	860	195	523	0	0	196	0	0
Stage 1	659	659	-	201	201	-	-	-	-	-	-	-
Stage 2	282	203	-	661	659	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.21	4.1	-	-	4.21	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.309	2.2	-	-	2.299	-	-
Pot Cap-1 Maneuver	245	295	557	277	296	849	1054	-	-	1325	-	-
Stage 1	456	464	-	805	739	-	-	-	-	-	-	-
Stage 2	729	737	-	455	464	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	190	279	557	264	280	848	1053	-	-	1324	-	-
Mov Cap-2 Maneuver	190	279	-	264	280	-	-	-	-	-	-	-
Stage 1	455	440	-	802	736	-	-	-	-	-	-	-
Stage 2	588	734	-	430	440	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15.7	11.6	0.1	0.9
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1053	-	-	190	557	264	848	1324	-	-
HCM Lane V/C Ratio	0.003	-	-	0.006	0.004	0.099	0.19	0.051	-	-
HCM Control Delay (s)	8.4	-	-	24.1	11.5	20.1	10.2	7.9	-	-
HCM Lane LOS	A	-	-	C	B	C	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0.3	0.7	0.2	-	-



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	302	48	135	12	11	474
Future Volume (veh/h)	302	48	135	12	11	474
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1759	1539	1900	1743	1845
Adj Flow Rate, veh/h	336	53	150	13	12	527
Adj No. of Lanes	1	1	1	0	1	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	1	8	24	24	9	3
Cap, veh/h	474	396	431	37	21	848
Arrive On Green	0.26	0.26	0.31	0.31	0.01	0.46
Sat Flow, veh/h	1792	1495	1397	121	1660	1845
Grp Volume(v), veh/h	336	53	0	163	12	527
Grp Sat Flow(s),veh/h/ln	1792	1495	0	1518	1660	1845
Q Serve(g_s), s	4.9	0.8	0.0	2.4	0.2	6.3
Cycle Q Clear(g_c), s	4.9	0.8	0.0	2.4	0.2	6.3
Prop In Lane	1.00	1.00		0.08	1.00	
Lane Grp Cap(c), veh/h	474	396	0	469	21	848
V/C Ratio(X)	0.71	0.13	0.00	0.35	0.57	0.62
Avail Cap(c_a), veh/h	1544	1289	0	2250	859	3944
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	9.7	8.1	0.0	7.8	14.2	5.9
Incr Delay (d2), s/veh	2.0	0.2	0.0	0.4	21.9	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	0.3	0.0	1.1	0.2	3.3
LnGrp Delay(d),s/veh	11.6	8.3	0.0	8.2	36.1	6.7
LnGrp LOS	B	A		A	D	A
Approach Vol, veh/h	389		163			539
Approach Delay, s/veh	11.2		8.2			7.3
Approach LOS	B		A			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	4.4	13.0				17.3		11.7
Change Period (Y+Rc), s	4.0	4.0				4.0		4.0
Max Green Setting (Gmax), s	15.0	43.0				62.0		25.0
Max Q Clear Time (g_c+I1), s	2.2	4.4				8.3		6.9
Green Ext Time (p_c), s	0.0	4.4				4.5		1.1

Intersection Summary	
HCM 2010 Ctrl Delay	8.8
HCM 2010 LOS	A

Intersection	
Int Delay, s/veh	8.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	193	34	112	16	19	757
Future Vol, veh/h	193	34	112	16	19	757
Conflicting Peds, #/hr	1	1	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	2	9	13	0	16	3
Mvmt Flow	199	35	115	16	20	780

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	946	126	0	0	133	0
Stage 1	125	-	-	-	-	-
Stage 2	821	-	-	-	-	-
Critical Hdwy	6.42	6.29	-	-	4.26	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.381	-	-	2.344	-
Pot Cap-1 Maneuver	290	906	-	-	1370	-
Stage 1	901	-	-	-	-	-
Stage 2	432	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	282	904	-	-	1369	-
Mov Cap-2 Maneuver	282	-	-	-	-	-
Stage 1	900	-	-	-	-	-
Stage 2	420	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	43.6	0	0.2
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	314	1369	-
HCM Lane V/C Ratio	-	-	0.745	0.014	-
HCM Control Delay (s)	-	-	43.6	7.7	0
HCM Lane LOS	-	-	E	A	A
HCM 95th %tile Q(veh)	-	-	5.6	0	-

Intersection	
Intersection Delay, s/veh	9.1
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Vol, veh/h	0	3	122	13	0	22	148	2	0	16	2	7
Future Vol, veh/h	0	3	122	13	0	22	148	2	0	16	2	7
Peak Hour Factor	1.00	0.62	0.62	0.62	1.00	0.62	0.62	0.62	1.00	0.62	0.62	0.62
Heavy Vehicles, %	2	0	3	8	2	0	0	0	2	6	0	14
Mvmt Flow	0	5	197	21	0	35	239	3	0	26	3	11
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	8.8	9.4	8.4
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	64%	2%	13%	30%
Vol Thru, %	8%	88%	86%	60%
Vol Right, %	28%	9%	1%	10%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	25	138	172	10
LT Vol	16	3	22	3
Through Vol	2	122	148	6
RT Vol	7	13	2	1
Lane Flow Rate	40	223	277	16
Geometry Grp	1	1	1	1
Degree of Util (X)	0.057	0.264	0.33	0.023
Departure Headway (Hd)	5.067	4.274	4.287	5.042
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	707	844	841	710
Service Time	3.094	2.29	2.304	3.071
HCM Lane V/C Ratio	0.057	0.264	0.329	0.023
HCM Control Delay	8.4	8.8	9.4	8.2
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.2	1.1	1.4	0.1

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Vol, veh/h	0	3	6	1
Future Vol, veh/h	0	3	6	1
Peak Hour Factor	1.00	0.62	0.62	0.62
Heavy Vehicles, %	2	0	0	0
Mvmt Flow	0	5	10	2
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	8.2
HCM LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	49	20	168	45	100	13	734	116	30	460	22
Future Volume (veh/h)	28	49	20	168	45	100	13	734	116	30	460	22
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1776	1797	1900	1881	1887	1900	1900	1860	1900	1727	1826	1900
Adj Flow Rate, veh/h	31	55	22	189	51	112	15	825	130	34	517	25
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	7	8	8	1	0	0	0	2	2	10	4	4
Cap, veh/h	69	163	65	235	117	258	40	1150	181	72	1340	65
Arrive On Green	0.04	0.13	0.13	0.13	0.22	0.22	0.02	0.38	0.38	0.04	0.40	0.40
Sat Flow, veh/h	1691	1218	487	1792	524	1151	1810	3056	482	1645	3368	163
Grp Volume(v), veh/h	31	0	77	189	0	163	15	477	478	34	266	276
Grp Sat Flow(s),veh/h/ln	1691	0	1705	1792	0	1675	1810	1767	1770	1645	1735	1796
Q Serve(g_s), s	1.0	0.0	2.3	5.9	0.0	4.8	0.5	13.2	13.2	1.2	6.2	6.2
Cycle Q Clear(g_c), s	1.0	0.0	2.3	5.9	0.0	4.8	0.5	13.2	13.2	1.2	6.2	6.2
Prop In Lane	1.00		0.29	1.00		0.69	1.00		0.27	1.00		0.09
Lane Grp Cap(c), veh/h	69	0	228	235	0	375	40	665	666	72	690	714
V/C Ratio(X)	0.45	0.00	0.34	0.81	0.00	0.43	0.37	0.72	0.72	0.47	0.39	0.39
Avail Cap(c_a), veh/h	193	0	836	298	0	909	206	712	713	187	699	723
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.8	0.0	22.4	24.1	0.0	19.1	27.5	15.2	15.2	26.7	12.2	12.2
Incr Delay (d2), s/veh	1.7	0.0	0.3	9.4	0.0	0.3	2.1	3.9	3.9	1.8	0.6	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	1.1	3.5	0.0	2.2	0.3	7.1	7.1	0.6	3.1	3.2
LnGrp Delay(d),s/veh	28.4	0.0	22.8	33.5	0.0	19.3	29.6	19.1	19.1	28.4	12.8	12.8
LnGrp LOS	C		C	C		B	C	B	B	C	B	B
Approach Vol, veh/h		108			352			970			576	
Approach Delay, s/veh		24.4			26.9			19.3			13.7	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.0	26.0	12.0	12.1	5.8	27.2	6.8	17.3
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	6.5	23.0	9.5	28.0	6.5	23.0	6.5	31.0
Max Q Clear Time (g_c+I1), s	3.2	15.2	7.9	4.3	2.5	8.2	3.0	6.8
Green Ext Time (p_c), s	0.0	6.2	0.0	0.5	0.0	10.7	0.0	0.5

Intersection Summary	
HCM 2010 Ctrl Delay	19.3
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	112	220	75	201	252	247	111	429	109	151	320	91
Future Volume (veh/h)	112	220	75	201	252	247	111	429	109	151	320	91
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1867	1900	1863	1845	1845	1881	1863	1810	1810	1867	1900
Adj Flow Rate, veh/h	124	244	83	223	280	274	123	477	121	168	356	101
Adj No. of Lanes	1	2	0	2	2	1	1	2	1	1	2	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	1	2	2	2	3	3	1	2	5	5	2	2
Cap, veh/h	158	680	226	315	922	412	157	898	387	206	782	219
Arrive On Green	0.09	0.26	0.26	0.09	0.26	0.26	0.09	0.25	0.25	0.12	0.29	0.29
Sat Flow, veh/h	1792	2618	869	3442	3505	1566	1792	3539	1526	1723	2736	766
Grp Volume(v), veh/h	124	163	164	223	280	274	123	477	121	168	229	228
Grp Sat Flow(s),veh/h/ln	1792	1774	1713	1721	1752	1566	1792	1770	1526	1723	1773	1728
Q Serve(g_s), s	4.7	5.2	5.4	4.3	4.4	10.8	4.6	8.0	4.4	6.6	7.3	7.5
Cycle Q Clear(g_c), s	4.7	5.2	5.4	4.3	4.4	10.8	4.6	8.0	4.4	6.6	7.3	7.5
Prop In Lane	1.00		0.51	1.00		1.00	1.00		1.00	1.00		0.44
Lane Grp Cap(c), veh/h	158	461	445	315	922	412	157	898	387	206	507	494
V/C Ratio(X)	0.79	0.35	0.37	0.71	0.30	0.66	0.78	0.53	0.31	0.81	0.45	0.46
Avail Cap(c_a), veh/h	221	982	949	414	1931	863	299	1898	818	312	977	952
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.8	20.8	20.9	30.4	20.4	22.7	30.8	22.2	20.9	29.6	20.2	20.3
Incr Delay (d2), s/veh	7.5	0.6	0.6	2.1	0.2	2.2	3.2	0.6	0.6	5.4	0.8	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	2.6	2.6	2.1	2.2	4.9	2.4	4.0	1.9	3.4	3.7	3.7
LnGrp Delay(d),s/veh	38.4	21.4	21.5	32.5	20.6	24.9	34.1	22.8	21.4	35.0	21.0	21.1
LnGrp LOS	D	C	C	C	C	C	C	C	C	C	C	C
Approach Vol, veh/h		451			777			721			625	
Approach Delay, s/veh		26.1			25.5			24.5			24.8	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.8	22.9	10.5	24.7	10.6	23.2	12.8	22.5
Change Period (Y+Rc), s	4.5	5.0	4.5	5.0	4.5	5.0	4.5	5.0
Max Green Setting (Gmax), s	8.3	38.2	11.5	38.0	8.5	38.0	12.5	37.0
Max Q Clear Time (g_c+I1), s	6.3	7.4	6.6	9.5	6.7	12.8	8.6	10.0
Green Ext Time (p_c), s	0.1	5.2	0.0	6.0	0.0	5.0	0.0	5.9

Intersection Summary	
HCM 2010 Ctrl Delay	25.2
HCM 2010 LOS	C

Intersection	
Intersection Delay, s/veh	20.1
Intersection LOS	C

Movement	EBU	EBL	EBR	NBU	NBL	NBT	SBU	SBT	SBR
Lane Configurations									
Traffic Vol, veh/h	0	189	311	0	66	192	0	185	30
Future Vol, veh/h	0	189	311	0	66	192	0	185	30
Peak Hour Factor	1.00	0.89	0.89	1.00	0.89	0.89	1.00	0.89	0.89
Heavy Vehicles, %	2	1	3	2	5	1	2	1	3
Mvmt Flow	0	212	349	0	74	216	0	208	34
Number of Lanes	0	1	0	0	0	1	0	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	26	14.7	12.9
HCM LOS	D	B	B

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	26%	38%	0%
Vol Thru, %	74%	0%	86%
Vol Right, %	0%	62%	14%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	258	500	215
LT Vol	66	189	0
Through Vol	192	0	185
RT Vol	0	311	30
Lane Flow Rate	290	562	242
Geometry Grp	1	1	1
Degree of Util (X)	0.485	0.804	0.397
Departure Headway (Hd)	6.027	5.154	5.92
Convergence, Y/N	Yes	Yes	Yes
Cap	594	702	604
Service Time	4.091	3.207	3.988
HCM Lane V/C Ratio	0.488	0.801	0.401
HCM Control Delay	14.7	26	12.9
HCM Lane LOS	B	D	B
HCM 95th-tile Q	2.6	8.3	1.9

Intersection	
Int Delay, s/veh	8.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	0	7	0	203	0	14	14	322	11	0
Future Vol, veh/h	0	0	0	7	0	203	0	14	14	322	11	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	82	100	82	100	82	82	82	82	100
Heavy Vehicles, %	2	2	2	0	2	2	2	7	14	3	0	2
Mvmt Flow	0	0	0	9	0	248	0	17	17	393	13	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	948	833	13	825	825	26	13	0	0	34	0	0
Stage 1	799	799	-	26	26	-	-	-	-	-	-	-
Stage 2	149	34	-	799	799	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.1	6.52	6.22	4.12	-	-	4.13	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.1	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.1	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.5	4.018	3.318	2.218	-	-	2.227	-	-
Pot Cap-1 Maneuver	241	304	1067	294	308	1050	1606	-	-	1571	-	-
Stage 1	379	398	-	997	874	-	-	-	-	-	-	-
Stage 2	854	867	-	382	398	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	148	227	1067	237	230	1050	1606	-	-	1571	-	-
Mov Cap-2 Maneuver	148	227	-	237	230	-	-	-	-	-	-	-
Stage 1	379	298	-	997	874	-	-	-	-	-	-	-
Stage 2	653	867	-	286	298	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	10.2	0	7.8
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1606	-	-	-	942	1571	-	-
HCM Lane V/C Ratio	-	-	-	-	0.272	0.25	-	-
HCM Control Delay (s)	0	-	-	0	10.2	8.1	0	-
HCM Lane LOS	A	-	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	-	1.1	1	-	-

Intersection	
Intersection Delay, s/veh	84.6
Intersection LOS	F

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Vol, veh/h	0	51	270	102	0	50	138	106	0	67	280	81
Future Vol, veh/h	0	51	270	102	0	50	138	106	0	67	280	81
Peak Hour Factor	1.00	0.98	0.98	0.98	1.00	0.98	0.98	0.98	1.00	0.98	0.98	0.98
Heavy Vehicles, %	2	0	1	3	2	0	1	0	2	2	2	0
Mvmt Flow	0	52	276	104	0	51	141	108	0	68	286	83
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	94.4	41.5	101.3
HCM LOS	F	E	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	16%	12%	17%	41%
Vol Thru, %	65%	64%	47%	57%
Vol Right, %	19%	24%	36%	2%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	428	423	294	403
LT Vol	67	51	50	165
Through Vol	280	270	138	231
RT Vol	81	102	106	7
Lane Flow Rate	437	432	300	411
Geometry Grp	1	1	1	1
Degree of Util (X)	1.083	1.061	0.785	1.035
Departure Headway (Hd)	9.413	9.372	10.087	9.673
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	389	388	360	378
Service Time	7.413	7.372	8.087	7.673
HCM Lane V/C Ratio	1.123	1.113	0.833	1.087
HCM Control Delay	101.3	94.4	41.5	88.1
HCM Lane LOS	F	F	E	F
HCM 95th-tile Q	14.6	13.9	6.5	12.9

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Lane Configurations			↕	
Traffic Vol, veh/h	0	165	231	7
Future Vol, veh/h	0	165	231	7
Peak Hour Factor	1.00	0.98	0.98	0.98
Heavy Vehicles, %	2	1	1	0
Mvmt Flow	0	168	236	7
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	88.1
HCM LOS	F

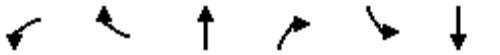
Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	0	1	4	0	97	0	287	13	92	222	3
Future Vol, veh/h	8	0	1	4	0	97	0	287	13	92	222	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	-	135	-	-	200	-	-	95	-	95
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	0	0	0	0	0	1	0	1	0	0	1	0
Mvmt Flow	9	0	1	5	0	110	0	326	15	105	252	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	850	802	252	796	795	334	252	0	0	341	0	0
Stage 1	461	461	-	334	334	-	-	-	-	-	-	-
Stage 2	389	341	-	462	461	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.21	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.309	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	283	320	792	307	323	710	1325	-	-	1229	-	-
Stage 1	584	569	-	684	647	-	-	-	-	-	-	-
Stage 2	639	642	-	584	569	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	223	293	792	287	295	710	1325	-	-	1229	-	-
Mov Cap-2 Maneuver	223	293	-	287	295	-	-	-	-	-	-	-
Stage 1	584	520	-	684	647	-	-	-	-	-	-	-
Stage 2	540	642	-	533	520	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	20.4	11.3	0	2.4
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1325	-	-	223	792	287	710	1229	-	-
HCM Lane V/C Ratio	-	-	-	0.041	0.001	0.016	0.155	0.085	-	-
HCM Control Delay (s)	0	-	-	21.8	9.6	17.7	11	8.2	-	-
HCM Lane LOS	A	-	-	C	A	C	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	0.5	0.3	-	-



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	11	47	287	74	52	231
Future Volume (veh/h)	11	47	287	74	52	231
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1838	1900	1827	1827
Adj Flow Rate, veh/h	11	48	296	76	54	238
Adj No. of Lanes	1	1	1	0	1	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	2	4	4	4	4
Cap, veh/h	98	86	565	145	88	1125
Arrive On Green	0.05	0.05	0.40	0.40	0.05	0.62
Sat Flow, veh/h	1810	1583	1411	362	1740	1827
Grp Volume(v), veh/h	11	48	0	372	54	238
Grp Sat Flow(s),veh/h/ln	1810	1583	0	1773	1740	1827
Q Serve(g_s), s	0.1	0.7	0.0	3.9	0.7	1.4
Cycle Q Clear(g_c), s	0.1	0.7	0.0	3.9	0.7	1.4
Prop In Lane	1.00	1.00		0.20	1.00	
Lane Grp Cap(c), veh/h	98	86	0	710	88	1125
V/C Ratio(X)	0.11	0.56	0.00	0.52	0.62	0.21
Avail Cap(c_a), veh/h	597	523	0	4389	1077	5954
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	10.9	11.2	0.0	5.5	11.3	2.1
Incr Delay (d2), s/veh	0.5	5.6	0.0	0.6	6.9	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.4	0.0	2.0	0.5	0.7
LnGrp Delay(d),s/veh	11.4	16.8	0.0	6.1	18.2	2.1
LnGrp LOS	B	B		A	B	A
Approach Vol, veh/h	59		372			292
Approach Delay, s/veh	15.8		6.1			5.1
Approach LOS	B		A			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	5.2	13.7				18.9		5.3
Change Period (Y+Rc), s	4.0	4.0				4.0		4.0
Max Green Setting (Gmax), s	15.0	60.0				79.0		8.0
Max Q Clear Time (g_c+I1), s	2.7	5.9				3.4		2.7
Green Ext Time (p_c), s	0.1	3.7				3.7		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	6.5
HCM 2010 LOS	A

Notes

Intersection	
Int Delay, s/veh	2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	23	39	244	86	65	178
Future Vol, veh/h	23	39	244	86	65	178
Conflicting Peds, #/hr	1	1	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	3	1	5	2
Mvmt Flow	25	42	265	93	71	193

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	649	314	0	0	360	0
Stage 1	313	-	-	-	-	-
Stage 2	336	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.15	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.245	-
Pot Cap-1 Maneuver	438	731	-	-	1182	-
Stage 1	746	-	-	-	-	-
Stage 2	728	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	408	730	-	-	1181	-
Mov Cap-2 Maneuver	408	-	-	-	-	-
Stage 1	745	-	-	-	-	-
Stage 2	679	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.2	0	2.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	565	1181	-
HCM Lane V/C Ratio	-	-	0.119	0.06	-
HCM Control Delay (s)	-	-	12.2	8.2	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.4	0.2	-

Intersection	
Intersection Delay, s/veh	7.4
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Vol, veh/h	0	0	64	17	0	4	54	3	0	11	6	12
Future Vol, veh/h	0	0	64	17	0	4	54	3	0	11	6	12
Peak Hour Factor	1.00	0.81	0.81	0.81	1.00	0.81	0.81	0.81	1.00	0.81	0.81	0.81
Heavy Vehicles, %	2	0	2	0	2	0	6	0	2	0	0	25
Mvmt Flow	0	0	79	21	0	5	67	4	0	14	7	15
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	7.5	7.4	7.3
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	38%	0%	7%	0%
Vol Thru, %	21%	79%	89%	50%
Vol Right, %	41%	21%	5%	50%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	29	81	61	4
LT Vol	11	0	4	0
Through Vol	6	64	54	2
RT Vol	12	17	3	2
Lane Flow Rate	36	100	75	5
Geometry Grp	1	1	1	1
Degree of Util (X)	0.04	0.109	0.084	0.005
Departure Headway (Hd)	4.032	3.935	4.03	3.93
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	878	909	886	898
Service Time	2.104	1.968	2.065	2.008
HCM Lane V/C Ratio	0.041	0.11	0.085	0.006
HCM Control Delay	7.3	7.5	7.4	7
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0.4	0.3	0

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Vol, veh/h	0	0	2	2
Future Vol, veh/h	0	0	2	2
Peak Hour Factor	1.00	0.81	0.81	0.81
Heavy Vehicles, %	2	0	0	0
Mvmt Flow	0	0	2	2
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	7
HCM LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	45	19	145	30	42	37	619	170	66	606	26
Future Volume (veh/h)	13	45	19	145	30	42	37	619	170	66	606	26
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1874	1900	1863	1900	1900	1900	1877	1900	1900	1882	1900
Adj Flow Rate, veh/h	14	47	20	153	32	44	39	652	179	69	638	27
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	2	2	2	0	0	0	1	1	0	1	1
Cap, veh/h	38	179	76	193	167	230	88	1006	276	126	1346	57
Arrive On Green	0.02	0.14	0.14	0.11	0.23	0.23	0.05	0.36	0.36	0.07	0.39	0.39
Sat Flow, veh/h	1810	1242	528	1774	721	992	1810	2764	758	1810	3495	148
Grp Volume(v), veh/h	14	0	67	153	0	76	39	420	411	69	326	339
Grp Sat Flow(s),veh/h/ln	1810	0	1770	1774	0	1713	1810	1783	1738	1810	1788	1855
Q Serve(g_s), s	0.4	0.0	1.9	4.8	0.0	2.0	1.2	11.3	11.3	2.1	7.9	7.9
Cycle Q Clear(g_c), s	0.4	0.0	1.9	4.8	0.0	2.0	1.2	11.3	11.3	2.1	7.9	7.9
Prop In Lane	1.00		0.30	1.00		0.58	1.00		0.44	1.00		0.08
Lane Grp Cap(c), veh/h	38	0	255	193	0	397	88	649	633	126	689	714
V/C Ratio(X)	0.37	0.00	0.26	0.79	0.00	0.19	0.45	0.65	0.65	0.55	0.47	0.47
Avail Cap(c_a), veh/h	205	0	864	294	0	925	205	715	697	205	717	744
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.7	0.0	21.9	24.9	0.0	17.7	26.5	15.2	15.2	25.8	13.3	13.3
Incr Delay (d2), s/veh	2.2	0.0	0.2	4.0	0.0	0.1	1.3	2.4	2.5	1.4	0.9	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	1.0	2.6	0.0	1.0	0.6	5.9	5.8	1.1	4.0	4.1
LnGrp Delay(d),s/veh	29.9	0.0	22.1	29.0	0.0	17.8	27.9	17.6	17.7	27.2	14.1	14.1
LnGrp LOS	C		C	C		B	C	B	B	C	B	B
Approach Vol, veh/h		81			229			870			734	
Approach Delay, s/veh		23.4			25.3			18.1			15.3	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.5	25.4	10.7	12.8	7.3	26.6	5.7	17.8
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	6.5	23.0	9.5	28.0	6.5	23.0	6.5	31.0
Max Q Clear Time (g_c+I1), s	4.1	13.3	6.8	3.9	3.2	9.9	2.4	4.0
Green Ext Time (p_c), s	0.0	7.5	0.0	0.3	0.0	9.7	0.0	0.3

Intersection Summary	
HCM 2010 Ctrl Delay	18.1
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	127	267	71	177	194	145	102	484	114	191	321	76
Future Volume (veh/h)	127	267	71	177	194	145	102	484	114	191	321	76
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1847	1900	1881	1900	1845	1900	1881	1900	1881	1885	1900
Adj Flow Rate, veh/h	143	300	80	199	218	163	115	544	128	215	361	85
Adj No. of Lanes	1	2	0	2	2	1	1	2	1	1	2	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	1	0	3	0	1	0	1	1	1
Cap, veh/h	179	647	170	288	785	338	148	976	437	257	966	225
Arrive On Green	0.10	0.24	0.24	0.08	0.22	0.22	0.08	0.27	0.27	0.14	0.34	0.34
Sat Flow, veh/h	1774	2749	720	3476	3610	1555	1810	3574	1600	1792	2883	671
Grp Volume(v), veh/h	143	190	190	199	218	163	115	544	128	215	223	223
Grp Sat Flow(s),veh/h/ln	1774	1755	1714	1738	1805	1555	1810	1787	1600	1792	1791	1763
Q Serve(g_s), s	5.6	6.6	6.8	4.0	3.6	6.6	4.5	9.3	4.5	8.4	6.8	6.9
Cycle Q Clear(g_c), s	5.6	6.6	6.8	4.0	3.6	6.6	4.5	9.3	4.5	8.4	6.8	6.9
Prop In Lane	1.00		0.42	1.00		1.00	1.00		1.00	1.00		0.38
Lane Grp Cap(c), veh/h	179	413	403	288	785	338	148	976	437	257	600	591
V/C Ratio(X)	0.80	0.46	0.47	0.69	0.28	0.48	0.78	0.56	0.29	0.84	0.37	0.38
Avail Cap(c_a), veh/h	198	916	895	383	1880	810	346	1846	827	343	925	911
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.5	23.5	23.6	32.0	23.3	24.5	32.3	22.3	20.6	29.9	18.1	18.1
Incr Delay (d2), s/veh	16.7	1.0	1.0	1.6	0.2	1.3	3.3	0.6	0.4	9.9	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	3.3	3.3	2.0	1.8	2.9	2.4	4.7	2.0	4.8	3.4	3.4
LnGrp Delay(d),s/veh	48.2	24.4	24.6	33.6	23.6	25.8	35.6	22.9	21.0	39.8	18.5	18.6
LnGrp LOS	D	C	C	C	C	C	D	C	C	D	B	B
Approach Vol, veh/h		523			580			787			661	
Approach Delay, s/veh		31.0			27.6			24.5			25.5	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.4	21.9	10.3	29.0	11.7	20.6	14.8	24.6
Change Period (Y+Rc), s	4.5	5.0	4.5	5.0	4.5	5.0	4.5	5.0
Max Green Setting (Gmax), s	7.9	37.4	13.7	37.0	8.0	37.3	13.7	37.0
Max Q Clear Time (g_c+I1), s	10.3	8.8	6.5	8.9	7.6	8.6	10.4	11.3
Green Ext Time (p_c), s	0.1	4.2	0.0	6.5	0.0	4.2	0.1	6.4

Intersection Summary		
HCM 2010 Ctrl Delay		26.8
HCM 2010 LOS		C

EXISTING PLUS PROJECT CONDITIONS
SYNCHRO OUTPUT SHEETS

Intersection	
Intersection Delay, s/veh	54.8
Intersection LOS	F

Movement	EBU	EBL	EBR	NBU	NBL	NBT	SBU	SBT	SBR
Lane Configurations									
Traffic Vol, veh/h	0	25	50	0	217	426	0	328	181
Future Vol, veh/h	0	25	50	0	217	426	0	328	181
Peak Hour Factor	1.00	0.82	0.82	1.00	0.82	0.82	1.00	0.82	0.82
Heavy Vehicles, %	2	4	10	2	2	1	2	2	7
Mvmt Flow	0	30	61	0	265	520	0	400	221
Number of Lanes	0	1	0	0	0	1	0	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	11.1	80.9	28.2
HCM LOS	B	F	D

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	34%	33%	0%
Vol Thru, %	66%	0%	64%
Vol Right, %	0%	67%	36%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	643	75	509
LT Vol	217	25	0
Through Vol	426	0	328
RT Vol	0	50	181
Lane Flow Rate	784	91	621
Geometry Grp	1	1	1
Degree of Util (X)	1.086	0.164	0.837
Departure Headway (Hd)	4.987	6.761	5.022
Convergence, Y/N	Yes	Yes	Yes
Cap	721	534	726
Service Time	3.081	4.761	3.022
HCM Lane V/C Ratio	1.087	0.17	0.855
HCM Control Delay	80.9	11.1	28.2
HCM Lane LOS	F	B	D
HCM 95th-tile Q	21.2	0.6	9.4

Intersection	
Int Delay, s/veh	10.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	0	12	0	387	0	6	9	270	9	0
Future Vol, veh/h	0	0	0	12	0	387	0	6	9	270	9	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	76	100	76	100	76	76	76	76	100
Heavy Vehicles, %	2	2	2	33	2	3	2	17	33	5	11	2
Mvmt Flow	0	0	0	16	0	509	0	8	12	355	12	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	990	742	12	736	736	14	12	0	0	20	0	0
Stage 1	722	722	-	14	14	-	-	-	-	-	-	-
Stage 2	268	20	-	722	722	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.43	6.52	6.23	4.12	-	-	4.15	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.43	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.43	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.797	4.018	3.327	2.218	-	-	2.245	-	-
Pot Cap-1 Maneuver	225	344	1069	298	346	1063	1607	-	-	1577	-	-
Stage 1	418	431	-	932	884	-	-	-	-	-	-	-
Stage 2	738	879	-	373	431	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	97	266	1069	246	267	1063	1607	-	-	1577	-	-
Mov Cap-2 Maneuver	97	266	-	246	267	-	-	-	-	-	-	-
Stage 1	418	333	-	932	884	-	-	-	-	-	-	-
Stage 2	384	879	-	288	333	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	13.1	0	7.7
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1607	-	-	-	966	1577	-	-
HCM Lane V/C Ratio	-	-	-	-	0.543	0.225	-	-
HCM Control Delay (s)	0	-	-	0	13.1	7.9	0	-
HCM Lane LOS	A	-	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	-	3.4	0.9	-	-

Intersection	
Intersection Delay, s/veh	133.6
Intersection LOS	F

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Vol, veh/h	0	12	158	106	0	170	226	142	0	159	193	21
Future Vol, veh/h	0	12	158	106	0	170	226	142	0	159	193	21
Peak Hour Factor	1.00	0.94	0.94	0.94	1.00	0.94	0.94	0.94	1.00	0.94	0.94	0.94
Heavy Vehicles, %	2	8	3	9	2	2	3	4	2	6	10	5
Mvmt Flow	0	13	168	113	0	181	240	151	0	169	205	22
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	44	228.7	85.9
HCM LOS	E	F	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	43%	4%	32%	22%
Vol Thru, %	52%	57%	42%	74%
Vol Right, %	6%	38%	26%	4%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	373	276	538	412
LT Vol	159	12	170	89
Through Vol	193	158	226	305
RT Vol	21	106	142	18
Lane Flow Rate	397	294	572	438
Geometry Grp	1	1	1	1
Degree of Util (X)	1.01	0.775	1.419	1.105
Departure Headway (Hd)	10.743	11.19	9.399	10.401
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	341	326	389	351
Service Time	8.743	9.19	7.399	8.401
HCM Lane V/C Ratio	1.164	0.902	1.47	1.248
HCM Control Delay	85.9	44	228.7	112.7
HCM Lane LOS	F	E	F	F
HCM 95th-tile Q	11.5	6.2	27.5	14.5

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Vol, veh/h	0	89	305	18
Future Vol, veh/h	0	89	305	18
Peak Hour Factor	1.00	0.94	0.94	0.94
Heavy Vehicles, %	2	4	6	6
Mvmt Flow	0	95	324	19
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	112.7
HCM LOS	F

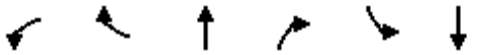
Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	1	2	34	2	142	3	168	8	60	460	19
Future Vol, veh/h	1	1	2	34	2	142	3	168	8	60	460	19
Conflicting Peds, #/hr	0	0	0	1	0	1	0	0	1	1	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	-	135	-	-	200	-	-	95	-	95
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	0	0	0	0	0	1	0	3	0	11	2	10
Mvmt Flow	1	1	2	39	2	161	3	191	9	68	523	22

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	944	867	524	865	862	197	523	0	0	201	0	0
Stage 1	659	659	-	203	203	-	-	-	-	-	-	-
Stage 2	285	208	-	662	659	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.21	4.1	-	-	4.21	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.309	2.2	-	-	2.299	-	-
Pot Cap-1 Maneuver	244	293	557	276	295	847	1054	-	-	1319	-	-
Stage 1	456	464	-	804	737	-	-	-	-	-	-	-
Stage 2	727	734	-	454	464	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	188	277	557	262	279	846	1053	-	-	1318	-	-
Mov Cap-2 Maneuver	188	277	-	262	279	-	-	-	-	-	-	-
Stage 1	455	440	-	801	734	-	-	-	-	-	-	-
Stage 2	584	731	-	427	440	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16.3	12.5	0.1	0.9
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1053	-	-	188	417	262	823	1318	-	-
HCM Lane V/C Ratio	0.003	-	-	0.006	0.008	0.147	0.199	0.052	-	-
HCM Control Delay (s)	8.4	-	-	24.3	13.7	21.1	10.5	7.9	-	-
HCM Lane LOS	A	-	-	C	B	C	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0.5	0.7	0.2	-	-



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	328	48	139	14	11	485
Future Volume (veh/h)	328	48	139	14	11	485
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1759	1555	1900	1743	1845
Adj Flow Rate, veh/h	364	53	154	16	12	539
Adj No. of Lanes	1	1	1	0	1	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	1	8	23	23	9	3
Cap, veh/h	502	419	428	44	21	838
Arrive On Green	0.28	0.28	0.31	0.31	0.01	0.45
Sat Flow, veh/h	1792	1495	1386	144	1660	1845
Grp Volume(v), veh/h	364	53	0	170	12	539
Grp Sat Flow(s),veh/h/ln	1792	1495	0	1530	1660	1845
Q Serve(g_s), s	5.5	0.8	0.0	2.6	0.2	6.8
Cycle Q Clear(g_c), s	5.5	0.8	0.0	2.6	0.2	6.8
Prop In Lane	1.00	1.00		0.09	1.00	
Lane Grp Cap(c), veh/h	502	419	0	472	21	838
V/C Ratio(X)	0.72	0.13	0.00	0.36	0.57	0.64
Avail Cap(c_a), veh/h	1486	1240	0	2182	826	3794
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	9.8	8.1	0.0	8.1	14.8	6.3
Incr Delay (d2), s/veh	2.0	0.1	0.0	0.5	22.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	0.3	0.0	1.1	0.2	3.5
LnGrp Delay(d),s/veh	11.8	8.2	0.0	8.6	36.8	7.2
LnGrp LOS	B	A		A	D	A
Approach Vol, veh/h	417		170			551
Approach Delay, s/veh	11.3		8.6			7.8
Approach LOS	B		A			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	4.4	13.3				17.7		12.5
Change Period (Y+Rc), s	4.0	4.0				4.0		4.0
Max Green Setting (Gmax), s	15.0	43.0				62.0		25.0
Max Q Clear Time (g_c+I1), s	2.2	4.6				8.8		7.5
Green Ext Time (p_c), s	0.0	4.5				4.6		1.2

Intersection Summary	
HCM 2010 Ctrl Delay	9.2
HCM 2010 LOS	A

Intersection	
Int Delay, s/veh	10

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	193	34	118	16	19	794
Future Vol, veh/h	193	34	118	16	19	794
Conflicting Peds, #/hr	1	1	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	2	9	11	0	16	3
Mvmt Flow	199	35	122	16	20	819

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	990	132	0	0	139	0
Stage 1	131	-	-	-	-	-
Stage 2	859	-	-	-	-	-
Critical Hdwy	6.42	6.29	-	-	4.26	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.381	-	-	2.344	-
Pot Cap-1 Maneuver	273	899	-	-	1363	-
Stage 1	895	-	-	-	-	-
Stage 2	415	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	265	898	-	-	1362	-
Mov Cap-2 Maneuver	265	-	-	-	-	-
Stage 1	894	-	-	-	-	-
Stage 2	403	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	51	0	0.2
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	296	1362	-
HCM Lane V/C Ratio	-	-	0.791	0.014	-
HCM Control Delay (s)	-	-	51	7.7	0
HCM Lane LOS	-	-	F	A	A
HCM 95th %tile Q(veh)	-	-	6.3	0	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	223	45	30	402	136	91
Future Volume (veh/h)	223	45	30	402	136	91
Number	4	14	3	8	5	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900	1900	1863	1863	1863
Adj Flow Rate, veh/h	242	49	33	437	148	99
Adj No. of Lanes	1	0	0	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	694	141	0	860	335	299
Arrive On Green	0.46	0.46	0.00	0.46	0.19	0.19
Sat Flow, veh/h	1504	305	0	1863	1774	1583
Grp Volume(v), veh/h	0	291	0	437	148	99
Grp Sat Flow(s),veh/h/ln	0	1809	0	1863	1774	1583
Q Serve(g_s), s	0.0	2.4	0.0	3.8	1.7	1.2
Cycle Q Clear(g_c), s	0.0	2.4	0.0	3.8	1.7	1.2
Prop In Lane		0.17	0.00		1.00	1.00
Lane Grp Cap(c), veh/h	0	835	0	860	335	299
V/C Ratio(X)	0.00	0.35	0.00	0.51	0.44	0.33
Avail Cap(c_a), veh/h	0	2134	0	3093	1473	1315
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	4.0	0.0	4.3	8.2	8.0
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.5	0.9	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.2	0.0	1.9	0.9	0.6
LnGrp Delay(d),s/veh	0.0	4.2	0.0	4.8	9.1	8.7
LnGrp LOS		A		A	A	A
Approach Vol, veh/h	291			437	247	
Approach Delay, s/veh	4.2			4.8	8.9	
Approach LOS	A			A	A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		8.3	0.0	14.6				14.6
Change Period (Y+Rc), s		4.0	4.0	4.0				4.0
Max Green Setting (Gmax), s		19.0	7.0	27.0				38.0
Max Q Clear Time (g_c+I1), s		3.7	0.0	4.4				5.8
Green Ext Time (p_c), s		0.6	0.0	4.5				4.9

Intersection Summary	
HCM 2010 Ctrl Delay	5.7
HCM 2010 LOS	A

Intersection	
Intersection Delay, s/veh	9.3
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations			↕				↕				↕				↕	
Traffic Vol, veh/h	0	8	122	13	0	22	148	2	0	16	4	7	0	3	13	14
Future Vol, veh/h	0	8	122	13	0	22	148	2	0	16	4	7	0	3	13	14
Peak Hour Factor	1.00	0.62	0.62	0.62	1.00	0.62	0.62	0.62	1.00	0.62	0.62	0.62	1.00	0.62	0.62	0.62
Heavy Vehicles, %	2	0	3	8	2	0	0	0	2	6	0	14	2	0	0	0
Mvmt Flow	0	13	197	21	0	35	239	3	0	26	6	11	0	5	21	23
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9.1	9.7	8.5	8.2
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	59%	6%	13%	10%
Vol Thru, %	15%	85%	86%	43%
Vol Right, %	26%	9%	1%	47%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	27	143	172	30
LT Vol	16	8	22	3
Through Vol	4	122	148	13
RT Vol	7	13	2	14
Lane Flow Rate	44	231	277	48
Geometry Grp	1	1	1	1
Degree of Util (X)	0.062	0.281	0.338	0.065
Departure Headway (Hd)	5.15	4.38	4.392	4.819
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	694	821	818	742
Service Time	3.191	2.404	2.415	2.859
HCM Lane V/C Ratio	0.063	0.281	0.339	0.065
HCM Control Delay	8.5	9.1	9.7	8.2
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.2	1.2	1.5	0.2



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	49	20	185	45	100	13	761	168	30	469	22
Future Volume (veh/h)	28	49	20	185	45	100	13	761	168	30	469	22
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1776	1797	1900	1881	1887	1900	1900	1863	1900	1727	1826	1900
Adj Flow Rate, veh/h	31	55	22	208	51	112	15	855	189	34	527	25
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	7	8	8	1	0	0	0	2	2	10	4	4
Cap, veh/h	69	160	64	254	122	268	40	1082	239	72	1340	63
Arrive On Green	0.04	0.13	0.13	0.14	0.23	0.23	0.02	0.38	0.38	0.04	0.40	0.40
Sat Flow, veh/h	1691	1218	487	1792	524	1151	1810	2877	636	1645	3371	160
Grp Volume(v), veh/h	31	0	77	208	0	163	15	526	518	34	271	281
Grp Sat Flow(s),veh/h/ln	1691	0	1705	1792	0	1675	1810	1770	1744	1645	1735	1796
Q Serve(g_s), s	1.0	0.0	2.4	6.6	0.0	4.8	0.5	15.5	15.5	1.2	6.5	6.6
Cycle Q Clear(g_c), s	1.0	0.0	2.4	6.6	0.0	4.8	0.5	15.5	15.5	1.2	6.5	6.6
Prop In Lane	1.00		0.29	1.00		0.69	1.00		0.36	1.00		0.09
Lane Grp Cap(c), veh/h	69	0	224	254	0	390	40	666	656	72	689	714
V/C Ratio(X)	0.45	0.00	0.34	0.82	0.00	0.42	0.37	0.79	0.79	0.47	0.39	0.39
Avail Cap(c_a), veh/h	188	0	815	290	0	886	201	695	684	182	689	714
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.5	0.0	23.2	24.4	0.0	19.1	28.2	16.2	16.2	27.4	12.6	12.6
Incr Delay (d2), s/veh	1.7	0.0	0.3	13.0	0.0	0.3	2.1	6.6	6.7	1.8	0.6	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	1.2	4.2	0.0	2.2	0.3	8.7	8.6	0.6	3.2	3.3
LnGrp Delay(d),s/veh	29.2	0.0	23.5	37.4	0.0	19.4	30.4	22.8	22.9	29.2	13.2	13.2
LnGrp LOS	C		C	D		B	C	C	C	C	B	B
Approach Vol, veh/h		108			371			1059			586	
Approach Delay, s/veh		25.1			29.5			23.0			14.1	
Approach LOS		C			C			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.1	26.5	12.8	12.2	5.8	27.8	6.9	18.1
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	6.5	23.0	9.5	28.0	6.5	23.0	6.5	31.0
Max Q Clear Time (g_c+I1), s	3.2	17.5	8.6	4.4	2.5	8.6	3.0	6.8
Green Ext Time (p_c), s	0.0	4.6	0.0	0.5	0.0	11.0	0.0	0.5

Intersection Summary	
HCM 2010 Ctrl Delay	21.8
HCM 2010 LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	191	227	80	201	254	247	113	429	109	151	320	117
Future Volume (veh/h)	191	227	80	201	254	247	113	429	109	151	320	117
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1868	1900	1863	1845	1845	1881	1863	1810	1810	1868	1900
Adj Flow Rate, veh/h	212	252	89	223	282	274	126	477	121	168	356	130
Adj No. of Lanes	1	2	0	2	2	1	1	2	1	1	2	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	1	2	2	2	3	3	1	2	5	5	2	2
Cap, veh/h	207	736	253	310	906	405	160	881	380	205	712	256
Arrive On Green	0.12	0.28	0.28	0.09	0.26	0.26	0.09	0.25	0.25	0.12	0.28	0.28
Sat Flow, veh/h	1792	2591	892	3442	3505	1566	1792	3539	1526	1723	2556	919
Grp Volume(v), veh/h	212	171	170	223	282	274	126	477	121	168	245	241
Grp Sat Flow(s),veh/h/ln	1792	1774	1709	1721	1752	1566	1792	1770	1526	1723	1774	1701
Q Serve(g_s), s	8.5	5.6	5.8	4.6	4.8	11.6	5.1	8.6	4.8	7.0	8.5	8.7
Cycle Q Clear(g_c), s	8.5	5.6	5.8	4.6	4.8	11.6	5.1	8.6	4.8	7.0	8.5	8.7
Prop In Lane	1.00		0.52	1.00		1.00	1.00		1.00	1.00		0.54
Lane Grp Cap(c), veh/h	207	504	485	310	906	405	160	881	380	205	494	474
V/C Ratio(X)	1.02	0.34	0.35	0.72	0.31	0.68	0.79	0.54	0.32	0.82	0.50	0.51
Avail Cap(c_a), veh/h	207	921	887	388	1810	809	280	1780	767	293	916	878
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.5	20.9	20.9	32.6	22.0	24.5	32.8	24.0	22.5	31.6	22.2	22.3
Incr Delay (d2), s/veh	69.0	0.5	0.5	3.2	0.2	2.4	3.3	0.6	0.6	7.8	0.9	1.0
Initial Q Delay(d3),s/veh	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.1	2.8	2.8	2.3	2.3	5.3	2.7	4.3	2.1	3.8	4.3	4.2
LnGrp Delay(d),s/veh	101.7	21.3	21.5	35.7	22.2	26.9	36.1	24.6	23.1	39.5	23.1	23.3
LnGrp LOS	F	C	C	D	C	C	D	C	C	D	C	C
Approach Vol, veh/h		553			779			724			654	
Approach Delay, s/veh		52.2			27.7			26.4			27.4	
Approach LOS		D			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.1	25.9	11.1	25.5	13.0	24.0	13.3	23.3
Change Period (Y+Rc), s	4.5	5.0	4.5	5.0	4.5	5.0	4.5	5.0
Max Green Setting (Gmax), s	8.3	38.2	11.5	38.0	8.5	38.0	12.5	37.0
Max Q Clear Time (g_c+I1), s	10.6	7.8	7.1	10.7	10.5	13.6	9.0	10.6
Green Ext Time (p_c), s	0.1	5.3	0.0	6.1	0.0	5.1	0.0	6.1

Intersection Summary	
HCM 2010 Ctrl Delay	32.3
HCM 2010 LOS	C

Intersection	
Intersection Delay, s/veh	42
Intersection LOS	E

Movement	EBU	EBL	EBR	NBU	NBL	NBT	SBU	SBT	SBR
Lane Configurations									
Traffic Vol, veh/h	0	189	386	0	110	215	0	226	30
Future Vol, veh/h	0	189	386	0	110	215	0	226	30
Peak Hour Factor	1.00	0.89	0.89	1.00	0.89	0.89	1.00	0.89	0.89
Heavy Vehicles, %	2	1	2	2	3	1	2	1	3
Mvmt Flow	0	212	434	0	124	242	0	254	34
Number of Lanes	0	1	0	0	0	1	0	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	64.2	22.4	17
HCM LOS	F	C	C

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	34%	33%	0%
Vol Thru, %	66%	0%	88%
Vol Right, %	0%	67%	12%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	325	575	256
LT Vol	110	189	0
Through Vol	215	0	226
RT Vol	0	386	30
Lane Flow Rate	365	646	288
Geometry Grp	1	1	1
Degree of Util (X)	0.673	1.019	0.53
Departure Headway (Hd)	6.638	5.68	6.639
Convergence, Y/N	Yes	Yes	Yes
Cap	544	646	541
Service Time	4.703	3.68	4.708
HCM Lane V/C Ratio	0.671	1	0.532
HCM Control Delay	22.4	64.2	17
HCM Lane LOS	C	F	C
HCM 95th-tile Q	5	16.3	3.1

Intersection	
Int Delay, s/veh	9.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	0	7	0	270	0	14	14	438	11	0
Future Vol, veh/h	0	0	0	7	0	270	0	14	14	438	11	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	82	100	82	100	82	82	82	82	100
Heavy Vehicles, %	2	2	2	0	2	2	2	7	14	2	0	2
Mvmt Flow	0	0	0	9	0	329	0	17	17	534	13	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1272	1116	13	1108	1108	26	13	0	0	34	0	0
Stage 1	1082	1082	-	26	26	-	-	-	-	-	-	-
Stage 2	190	34	-	1082	1082	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.1	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.1	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.1	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.5	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	144	208	1067	189	210	1050	1606	-	-	1578	-	-
Stage 1	263	294	-	997	874	-	-	-	-	-	-	-
Stage 2	812	867	-	266	294	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	73	137	1067	139	138	1050	1606	-	-	1578	-	-
Mov Cap-2 Maneuver	73	137	-	139	138	-	-	-	-	-	-	-
Stage 1	263	194	-	997	874	-	-	-	-	-	-	-
Stage 2	557	867	-	175	194	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	11.4	0	8.2
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1606	-	-	-	901	1578	-	-
HCM Lane V/C Ratio	-	-	-	-	0.375	0.338	-	-
HCM Control Delay (s)	0	-	-	0	11.4	8.4	0	-
HCM Lane LOS	A	-	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	-	1.8	1.5	-	-

Intersection	
Intersection Delay, s/veh	195
Intersection LOS	F

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Vol, veh/h	0	51	386	102	0	50	205	171	0	67	280	81
Future Vol, veh/h	0	51	386	102	0	50	205	171	0	67	280	81
Peak Hour Factor	1.00	0.98	0.98	0.98	1.00	0.98	0.98	0.98	1.00	0.98	0.98	0.98
Heavy Vehicles, %	2	0	1	3	2	0	1	0	2	2	2	0
Mvmt Flow	0	52	394	104	0	51	209	174	0	68	286	83
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	250.5	131.4	140.3
HCM LOS	F	F	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	16%	9%	12%	54%
Vol Thru, %	65%	72%	48%	45%
Vol Right, %	19%	19%	40%	1%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	428	539	426	513
LT Vol	67	51	50	275
Through Vol	280	386	205	231
RT Vol	81	102	171	7
Lane Flow Rate	437	550	435	523
Geometry Grp	1	1	1	1
Degree of Util (X)	1.158	1.452	1.133	1.412
Departure Headway (Hd)	12.768	11.693	12.684	12.045
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	288	314	291	309
Service Time	10.768	9.693	10.684	10.045
HCM Lane V/C Ratio	1.517	1.752	1.495	1.693
HCM Control Delay	140.3	250.5	131.4	235.2
HCM Lane LOS	F	F	F	F
HCM 95th-tile Q	14.2	24.3	13.6	22.4

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Vol, veh/h	0	275	231	7
Future Vol, veh/h	0	275	231	7
Peak Hour Factor	1.00	0.98	0.98	0.98
Heavy Vehicles, %	2	1	1	0
Mvmt Flow	0	281	236	7
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	235.2
HCM LOS	F

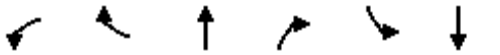
Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	4	1	13	2	97	0	287	30	92	222	3
Future Vol, veh/h	8	4	1	13	2	97	0	287	30	92	222	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	-	135	-	-	200	-	-	95	-	95
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	0	0	0	0	0	1	0	1	0	0	1	0
Mvmt Flow	9	5	1	15	2	110	0	326	34	105	252	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	860	821	252	807	804	343	252	0	0	360	0	0
Stage 1	461	461	-	343	343	-	-	-	-	-	-	-
Stage 2	399	360	-	464	461	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.21	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.309	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	278	312	792	302	319	702	1325	-	-	1210	-	-
Stage 1	584	569	-	676	641	-	-	-	-	-	-	-
Stage 2	631	630	-	582	569	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	218	285	792	278	291	702	1325	-	-	1210	-	-
Mov Cap-2 Maneuver	218	285	-	278	291	-	-	-	-	-	-	-
Stage 1	584	520	-	676	641	-	-	-	-	-	-	-
Stage 2	530	630	-	526	520	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	19.9	12.2	0	2.4
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1325	-	-	218	327	278	683	1210	-	-
HCM Lane V/C Ratio	-	-	-	0.042	0.017	0.053	0.165	0.086	-	-
HCM Control Delay (s)	0	-	-	22.2	16.2	18.7	11.3	8.3	-	-
HCM Lane LOS	A	-	-	C	C	C	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0.2	0.6	0.3	-	-



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	18	47	304	85	52	240
Future Volume (veh/h)	18	47	304	85	52	240
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1839	1900	1827	1827
Adj Flow Rate, veh/h	19	48	313	88	54	247
Adj No. of Lanes	1	1	1	0	1	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	2	4	4	4	4
Cap, veh/h	107	94	573	161	87	1139
Arrive On Green	0.06	0.06	0.42	0.42	0.05	0.62
Sat Flow, veh/h	1810	1583	1381	388	1740	1827
Grp Volume(v), veh/h	19	48	0	401	54	247
Grp Sat Flow(s),veh/h/ln	1810	1583	0	1769	1740	1827
Q Serve(g_s), s	0.3	0.7	0.0	4.3	0.8	1.5
Cycle Q Clear(g_c), s	0.3	0.7	0.0	4.3	0.8	1.5
Prop In Lane	1.00	1.00		0.22	1.00	
Lane Grp Cap(c), veh/h	107	94	0	735	87	1139
V/C Ratio(X)	0.18	0.51	0.00	0.55	0.62	0.22
Avail Cap(c_a), veh/h	574	502	0	4207	1034	5719
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.3	11.5	0.0	5.6	11.8	2.1
Incr Delay (d2), s/veh	0.8	4.2	0.0	0.6	7.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.4	0.0	2.1	0.5	0.7
LnGrp Delay(d),s/veh	12.1	15.7	0.0	6.2	18.8	2.2
LnGrp LOS	B	B		A	B	A
Approach Vol, veh/h	67		401			301
Approach Delay, s/veh	14.7		6.2			5.1
Approach LOS	B		A			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	5.3	14.5				19.7		5.5
Change Period (Y+Rc), s	4.0	4.0				4.0		4.0
Max Green Setting (Gmax), s	15.0	60.0				79.0		8.0
Max Q Clear Time (g_c+I1), s	2.8	6.3				3.5		2.7
Green Ext Time (p_c), s	0.1	4.0				4.0		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	6.5
HCM 2010 LOS	A

Notes

Intersection	
Int Delay, s/veh	2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	23	39	272	86	65	194
Future Vol, veh/h	23	39	272	86	65	194
Conflicting Peds, #/hr	1	1	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	3	1	5	2
Mvmt Flow	25	42	296	93	71	211

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	696	344	0	0	390	0
Stage 1	343	-	-	-	-	-
Stage 2	353	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.15	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.245	-
Pot Cap-1 Maneuver	411	703	-	-	1152	-
Stage 1	723	-	-	-	-	-
Stage 2	716	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	382	702	-	-	1151	-
Mov Cap-2 Maneuver	382	-	-	-	-	-
Stage 1	722	-	-	-	-	-
Stage 2	665	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.7	0	2.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	536	1151	-
HCM Lane V/C Ratio	-	-	0.126	0.061	-
HCM Control Delay (s)	-	-	12.7	8.3	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.4	0.2	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	105	226	138	101	132	82
Future Volume (veh/h)	105	226	138	101	132	82
Number	4	14	3	8	5	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900	1900	1863	1863	1863
Adj Flow Rate, veh/h	114	246	150	110	143	89
Adj No. of Lanes	1	0	0	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	183	395	145	70	801	715
Arrive On Green	0.35	0.35	0.35	0.35	0.45	0.45
Sat Flow, veh/h	526	1136	8	203	1774	1583
Grp Volume(v), veh/h	0	360	260	0	143	89
Grp Sat Flow(s),veh/h/ln	0	1662	210	0	1774	1583
Q Serve(g_s), s	0.0	7.2	4.7	0.0	1.9	1.3
Cycle Q Clear(g_c), s	0.0	7.2	4.7	0.0	1.9	1.3
Prop In Lane		0.68	0.58		1.00	1.00
Lane Grp Cap(c), veh/h	0	578	0	0	801	715
V/C Ratio(X)	0.00	0.62	0.00	0.00	0.18	0.12
Avail Cap(c_a), veh/h	0	1918	0	0	801	715
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	10.8	0.0	0.0	6.5	6.4
Incr Delay (d2), s/veh	0.0	1.1	0.0	0.0	0.5	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.4	0.0	0.0	1.0	0.6
LnGrp Delay(d),s/veh	0.0	11.9	0.0	0.0	7.0	6.7
LnGrp LOS		B			A	A
Approach Vol, veh/h	360			260	232	
Approach Delay, s/veh	11.9			0.0	6.9	
Approach LOS	B			A	A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		22.0		17.9				17.9
Change Period (Y+Rc), s		4.0		4.0				4.0
Max Green Setting (Gmax), s		18.0		46.0				54.0
Max Q Clear Time (g_c+I1), s		3.9		9.2				6.7
Green Ext Time (p_c), s		0.6		4.7				4.8

Intersection Summary	
HCM 2010 Ctrl Delay	6.9
HCM 2010 LOS	A

Notes

Intersection	
Intersection Delay, s/veh	7.6
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations																
Traffic Vol, veh/h	0	21	64	17	0	4	54	3	0	11	17	12	0	0	9	13
Future Vol, veh/h	0	21	64	17	0	4	54	3	0	11	17	12	0	0	9	13
Peak Hour Factor	1.00	0.81	0.81	0.81	1.00	0.81	0.81	0.81	1.00	0.81	0.81	0.81	1.00	0.81	0.81	0.81
Heavy Vehicles, %	2	0	2	0	2	0	6	0	2	0	0	25	2	0	0	0
Mvmt Flow	0	26	79	21	0	5	67	4	0	14	21	15	0	0	11	16
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.8	7.6	7.5	7.2
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	28%	21%	7%	0%
Vol Thru, %	43%	63%	89%	41%
Vol Right, %	30%	17%	5%	59%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	40	102	61	22
LT Vol	11	21	4	0
Through Vol	17	64	54	9
RT Vol	12	17	3	13
Lane Flow Rate	49	126	75	27
Geometry Grp	1	1	1	1
Degree of Util (X)	0.057	0.141	0.086	0.03
Departure Headway (Hd)	4.142	4.031	4.113	4.034
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	850	883	863	893
Service Time	2.239	2.085	2.176	2.034
HCM Lane V/C Ratio	0.058	0.143	0.087	0.03
HCM Control Delay	7.5	7.8	7.6	7.2
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.2	0.5	0.3	0.1



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	45	19	218	30	42	37	647	212	66	652	26
Future Volume (veh/h)	13	45	19	218	30	42	37	647	212	66	652	26
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1874	1900	1863	1900	1900	1900	1877	1900	1900	1882	1900
Adj Flow Rate, veh/h	14	47	20	229	32	44	39	681	223	69	686	27
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	2	2	2	0	0	0	1	1	0	1	1
Cap, veh/h	38	171	73	272	195	268	86	928	304	122	1304	51
Arrive On Green	0.02	0.14	0.14	0.15	0.27	0.27	0.05	0.35	0.35	0.07	0.37	0.37
Sat Flow, veh/h	1810	1241	528	1774	722	993	1810	2638	863	1810	3507	138
Grp Volume(v), veh/h	14	0	67	229	0	76	39	460	444	69	350	363
Grp Sat Flow(s),veh/h/ln	1810	0	1769	1774	0	1714	1810	1783	1718	1810	1788	1857
Q Serve(g_s), s	0.5	0.0	2.1	7.8	0.0	2.1	1.3	14.0	14.0	2.3	9.5	9.5
Cycle Q Clear(g_c), s	0.5	0.0	2.1	7.8	0.0	2.1	1.3	14.0	14.0	2.3	9.5	9.5
Prop In Lane	1.00		0.30	1.00		0.58	1.00		0.50	1.00		0.07
Lane Grp Cap(c), veh/h	38	0	244	272	0	463	86	627	605	122	665	690
V/C Ratio(X)	0.37	0.00	0.28	0.84	0.00	0.16	0.46	0.73	0.73	0.57	0.53	0.53
Avail Cap(c_a), veh/h	190	0	799	272	0	857	190	661	637	190	665	690
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.0	0.0	24.0	25.5	0.0	17.3	28.8	17.6	17.6	28.1	15.2	15.2
Incr Delay (d2), s/veh	2.3	0.0	0.2	19.8	0.0	0.1	1.4	4.7	4.9	1.5	1.2	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	1.0	5.3	0.0	1.0	0.7	7.6	7.4	1.2	4.9	5.1
LnGrp Delay(d),s/veh	32.2	0.0	24.2	45.3	0.0	17.4	30.2	22.3	22.4	29.6	16.4	16.4
LnGrp LOS	C		C	D		B	C	C	C	C	B	B
Approach Vol, veh/h		81			305			943			782	
Approach Delay, s/veh		25.6			38.3			22.7			17.6	
Approach LOS		C			D			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.7	26.3	14.0	13.0	7.4	27.6	5.8	21.3
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	6.5	23.0	9.5	28.0	6.5	23.0	6.5	31.0
Max Q Clear Time (g_c+I1), s	4.3	16.0	9.8	4.1	3.3	11.5	2.5	4.1
Green Ext Time (p_c), s	0.0	5.8	0.0	0.3	0.0	9.1	0.0	0.3

Intersection Summary	
HCM 2010 Ctrl Delay	23.2
HCM 2010 LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	197	274	76	177	205	145	110	484	114	191	321	195
Future Volume (veh/h)	197	274	76	177	205	145	110	484	114	191	321	195
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1847	1900	1881	1900	1845	1900	1881	1900	1881	1888	1900
Adj Flow Rate, veh/h	221	308	85	199	230	163	124	544	128	215	361	219
Adj No. of Lanes	1	2	0	2	2	1	1	2	1	1	2	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	1	0	3	0	1	0	1	1	1
Cap, veh/h	191	657	178	285	779	335	158	997	446	256	722	431
Arrive On Green	0.11	0.24	0.24	0.08	0.22	0.22	0.09	0.28	0.28	0.14	0.33	0.33
Sat Flow, veh/h	1774	2725	739	3476	3610	1555	1810	3574	1601	1792	2160	1288
Grp Volume(v), veh/h	221	196	197	199	230	163	124	544	128	215	299	281
Grp Sat Flow(s),veh/h/ln	1774	1755	1710	1738	1805	1555	1810	1787	1601	1792	1794	1654
Q Serve(g_s), s	8.0	7.1	7.3	4.2	4.0	6.8	5.0	9.6	4.7	8.7	9.9	10.2
Cycle Q Clear(g_c), s	8.0	7.1	7.3	4.2	4.0	6.8	5.0	9.6	4.7	8.7	9.9	10.2
Prop In Lane	1.00		0.43	1.00		1.00	1.00		1.00	1.00		0.78
Lane Grp Cap(c), veh/h	191	423	413	285	779	335	158	997	446	256	600	553
V/C Ratio(X)	1.16	0.46	0.48	0.70	0.30	0.49	0.78	0.55	0.29	0.84	0.50	0.51
Avail Cap(c_a), veh/h	191	881	859	369	1809	779	333	1776	795	330	891	822
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.2	24.1	24.2	33.3	24.5	25.6	33.3	22.8	21.0	31.1	19.8	19.9
Incr Delay (d2), s/veh	114.7	1.0	1.0	2.2	0.3	1.3	3.2	0.6	0.4	11.5	0.8	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.9	3.5	3.6	2.1	2.0	3.0	2.6	4.8	2.1	5.1	5.0	4.7
LnGrp Delay(d),s/veh	147.9	25.1	25.2	35.5	24.7	26.9	36.5	23.4	21.5	42.6	20.6	20.7
LnGrp LOS	F	C	C	D	C	C	D	C	C	D	C	C
Approach Vol, veh/h		614			592			796			795	
Approach Delay, s/veh		69.4			28.9			25.1			26.6	
Approach LOS		E			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.6	23.0	11.0	29.9	12.5	21.1	15.1	25.8
Change Period (Y+Rc), s	4.5	5.0	4.5	5.0	4.5	5.0	4.5	5.0
Max Green Setting (Gmax), s	7.3	37.4	13.7	37.0	8.0	37.3	13.7	37.0
Max Q Clear Time (g_c+I1), s	10.2	9.3	7.0	12.2	10.0	8.8	10.7	11.6
Green Ext Time (p_c), s	0.0	4.4	0.0	7.3	0.0	4.4	0.1	7.3

Intersection Summary		
HCM 2010 Ctrl Delay		36.1
HCM 2010 LOS		D

Intersection	
Intersection Delay, s/veh	40.3
Intersection LOS	E

Movement	EBU	EBL	EBR	NBU	NBL	NBT	SBU	SBT	SBR
Lane Configurations									
Traffic Vol, veh/h	0	25	44	0	190	408	0	324	181
Future Vol, veh/h	0	25	44	0	190	408	0	324	181
Peak Hour Factor	1.00	0.82	0.82	1.00	0.82	0.82	1.00	0.82	0.82
Heavy Vehicles, %	2	4	10	2	2	1	2	2	7
Mvmt Flow	0	30	54	0	232	498	0	395	221
Number of Lanes	0	1	0	0	0	1	0	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	10.7	55.6	26.3
HCM LOS	B	F	D

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	32%	36%	0%
Vol Thru, %	68%	0%	64%
Vol Right, %	0%	64%	36%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	598	69	505
LT Vol	190	25	0
Through Vol	408	0	324
RT Vol	0	44	181
Lane Flow Rate	729	84	616
Geometry Grp	1	1	1
Degree of Util (X)	1	0.151	0.824
Departure Headway (Hd)	4.936	6.474	4.814
Convergence, Y/N	Yes	Yes	Yes
Cap	729	551	751
Service Time	3.035	4.546	2.862
HCM Lane V/C Ratio	1	0.152	0.82
HCM Control Delay	55.6	10.7	26.3
HCM Lane LOS	F	B	D
HCM 95th-tile Q	16.4	0.5	9

Intersection	
Intersection Delay, s/veh	91.2
Intersection LOS	F

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations																
Traffic Vol, veh/h	0	12	148	106	0	170	181	98	0	159	193	21	0	79	305	18
Future Vol, veh/h	0	12	148	106	0	170	181	98	0	159	193	21	0	79	305	18
Peak Hour Factor	1.00	0.94	0.94	0.94	1.00	0.94	0.94	0.94	1.00	0.94	0.94	0.94	1.00	0.94	0.94	0.94
Heavy Vehicles, %	2	8	3	9	2	2	3	4	2	6	10	5	2	4	6	6
Mvmt Flow	0	13	157	113	0	181	193	104	0	169	205	22	0	84	324	19
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	37.8	129.9	78.4	95.2
HCM LOS	E	F	F	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	43%	5%	38%	20%
Vol Thru, %	52%	56%	40%	76%
Vol Right, %	6%	40%	22%	4%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	373	266	449	402
LT Vol	159	12	170	79
Through Vol	193	148	181	305
RT Vol	21	106	98	18
Lane Flow Rate	397	283	478	428
Geometry Grp	1	1	1	1
Degree of Util (X)	0.996	0.742	1.17	1.06
Departure Headway (Hd)	9.856	10.307	9.212	9.62
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	373	354	396	381
Service Time	7.856	8.307	7.212	7.62
HCM Lane V/C Ratio	1.064	0.799	1.207	1.123
HCM Control Delay	78.4	37.8	129.9	95.2
HCM Lane LOS	F	E	F	F
HCM 95th-tile Q	11.6	5.7	17.9	13.7

Intersection	
Int Delay, s/veh	9.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	193	34	115	16	19	782
Future Vol, veh/h	193	34	115	16	19	782
Conflicting Peds, #/hr	1	1	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	2	9	11	0	16	3
Mvmt Flow	199	35	119	16	20	806

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	974	129	0	0	136	0
Stage 1	128	-	-	-	-	-
Stage 2	846	-	-	-	-	-
Critical Hdwy	6.42	6.29	-	-	4.26	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.381	-	-	2.344	-
Pot Cap-1 Maneuver	279	902	-	-	1366	-
Stage 1	898	-	-	-	-	-
Stage 2	421	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	271	900	-	-	1365	-
Mov Cap-2 Maneuver	271	-	-	-	-	-
Stage 1	897	-	-	-	-	-
Stage 2	409	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	47.8	0	0.2
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	303	1365	-
HCM Lane V/C Ratio	-	-	0.772	0.014	-
HCM Control Delay (s)	-	-	47.8	7.7	0
HCM Lane LOS	-	-	E	A	A
HCM 95th %tile Q(veh)	-	-	6	0	-

Intersection	
Intersection Delay, s/veh	23.2
Intersection LOS	C

Movement	EBU	EBL	EBR	NBU	NBL	NBT	SBU	SBT	SBR
Lane Configurations									
Traffic Vol, veh/h	0	189	331	0	79	199	0	196	30
Future Vol, veh/h	0	189	331	0	79	199	0	196	30
Peak Hour Factor	1.00	0.89	0.89	1.00	0.89	0.89	1.00	0.89	0.89
Heavy Vehicles, %	2	1	2	2	3	1	2	1	3
Mvmt Flow	0	212	372	0	89	224	0	220	34
Number of Lanes	0	1	0	0	0	1	0	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	31.2	16	13.7
HCM LOS	D	C	B

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	28%	36%	0%
Vol Thru, %	72%	0%	87%
Vol Right, %	0%	64%	13%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	278	520	226
LT Vol	79	189	0
Through Vol	199	0	196
RT Vol	0	331	30
Lane Flow Rate	312	584	254
Geometry Grp	1	1	1
Degree of Util (X)	0.531	0.853	0.428
Departure Headway (Hd)	6.125	5.257	6.069
Convergence, Y/N	Yes	Yes	Yes
Cap	584	684	589
Service Time	4.205	3.321	4.154
HCM Lane V/C Ratio	0.534	0.854	0.431
HCM Control Delay	16	31.2	13.7
HCM Lane LOS	C	D	B
HCM 95th-tile Q	3.1	9.8	2.1

Intersection	
Intersection Delay, s/veh	114.2
Intersection LOS	F

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations																
Traffic Vol, veh/h	0	51	301	102	0	50	158	124	0	67	280	81	0	194	231	7
Future Vol, veh/h	0	51	301	102	0	50	158	124	0	67	280	81	0	194	231	7
Peak Hour Factor	1.00	0.98	0.98	0.98	1.00	0.98	0.98	0.98	1.00	0.98	0.98	0.98	1.00	0.98	0.98	0.98
Heavy Vehicles, %	2	0	1	3	2	0	1	0	2	2	2	0	2	1	1	0
Mvmt Flow	0	52	307	104	0	51	161	127	0	68	286	83	0	198	236	7
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	137.8	58.7	118	128.3
HCM LOS	F	F	F	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	16%	11%	15%	45%
Vol Thru, %	65%	66%	48%	53%
Vol Right, %	19%	22%	37%	2%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	428	454	332	432
LT Vol	67	51	50	194
Through Vol	280	301	158	231
RT Vol	81	102	124	7
Lane Flow Rate	437	463	339	441
Geometry Grp	1	1	1	1
Degree of Util (X)	1.122	1.182	0.885	1.151
Departure Headway (Hd)	10.326	10.053	10.875	10.4
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	354	366	335	353
Service Time	8.326	8.053	8.875	8.4
HCM Lane V/C Ratio	1.234	1.265	1.012	1.249
HCM Control Delay	118	137.8	58.7	128.3
HCM Lane LOS	F	F	F	F
HCM 95th-tile Q	15.1	17.3	8.4	15.9

BACKGROUND CONDITIONS
SYNCHRO OUTPUT SHEETS



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	64	98	429	721	500	246
Future Volume (veh/h)	64	98	429	721	500	246
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1810	1863	1881	1863	1810
Adj Flow Rate, veh/h	71	109	477	801	556	273
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	5	2	1	2	5
Cap, veh/h	173	150	564	1510	1495	1234
Arrive On Green	0.10	0.10	0.80	0.80	0.80	0.80
Sat Flow, veh/h	1774	1538	659	1881	1863	1538
Grp Volume(v), veh/h	71	109	477	801	556	273
Grp Sat Flow(s),veh/h/ln	1774	1538	659	1881	1863	1538
Q Serve(g_s), s	3.0	5.5	57.3	11.7	6.7	3.4
Cycle Q Clear(g_c), s	3.0	5.5	64.0	11.7	6.7	3.4
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	173	150	564	1510	1495	1234
V/C Ratio(X)	0.41	0.73	0.85	0.53	0.37	0.22
Avail Cap(c_a), veh/h	400	347	564	1510	1495	1234
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.9	35.0	11.5	2.7	2.2	1.9
Incr Delay (d2), s/veh	1.6	6.6	11.5	0.4	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	2.6	12.1	5.9	3.5	1.4
LnGrp Delay(d),s/veh	35.4	41.6	22.9	3.1	2.4	2.0
LnGrp LOS	D	D	C	A	A	A
Approach Vol, veh/h	180			1278	829	
Approach Delay, s/veh	39.2			10.5	2.2	
Approach LOS	D			B	A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		68.0		11.8		68.0		
Change Period (Y+Rc), s		4.0		4.0		4.0		
Max Green Setting (Gmax), s		64.0		18.0		64.0		
Max Q Clear Time (g_c+I1), s		66.0		7.5		8.7		
Green Ext Time (p_c), s		0.0		0.4		20.5		

Intersection Summary	
HCM 2010 Ctrl Delay	9.8
HCM 2010 LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	125	0	446	0	670	91	279	301	0
Future Volume (veh/h)	0	0	0	125	0	446	0	670	91	279	301	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1722	1900	1900	1861	1900	1827	1863	1900
Adj Flow Rate, veh/h	0	0	0	139	0	496	0	744	101	310	334	0
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	1	1	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	4	2	2
Cap, veh/h	0	497	0	135	8	299	0	663	90	278	1167	0
Arrive On Green	0.00	0.00	0.00	0.27	0.00	0.27	0.00	0.41	0.41	0.16	0.63	0.00
Sat Flow, veh/h	0	1863	0	285	29	1119	0	1604	218	1740	1863	0
Grp Volume(v), veh/h	0	0	0	635	0	0	0	0	845	310	334	0
Grp Sat Flow(s),veh/h/ln	0	1863	0	1433	0	0	0	0	1822	1740	1863	0
Q Serve(g_s), s	0.0	0.0	0.0	18.3	0.0	0.0	0.0	0.0	31.0	12.0	6.1	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	20.0	0.0	0.0	0.0	0.0	31.0	12.0	6.1	0.0
Prop In Lane	0.00		0.00	0.22		0.78	0.00		0.12	1.00		0.00
Lane Grp Cap(c), veh/h	0	497	0	441	0	0	0	0	753	278	1167	0
V/C Ratio(X)	0.00	0.00	0.00	1.44	0.00	0.00	0.00	0.00	1.12	1.11	0.29	0.00
Avail Cap(c_a), veh/h	0	497	0	441	0	0	0	0	753	278	1167	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	28.8	0.0	0.0	0.0	0.0	22.0	31.5	6.4	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	211.0	0.0	0.0	0.0	0.0	71.7	87.9	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	34.9	0.0	0.0	0.0	0.0	30.5	12.5	3.1	0.0
LnGrp Delay(d),s/veh	0.0	0.0	0.0	239.7	0.0	0.0	0.0	0.0	93.7	119.4	6.5	0.0
LnGrp LOS				F					F	F	A	
Approach Vol, veh/h		0			635			845			644	
Approach Delay, s/veh		0.0			239.7			93.7			60.9	
Approach LOS					F			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	16.0	35.0		24.0		51.0		24.0
Change Period (Y+Rc), s	4.0	4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s	12.0	31.0		20.0		47.0		20.0
Max Q Clear Time (g_c+I1), s	14.0	33.0		0.0		8.1		22.0
Green Ext Time (p_c), s	0.0	0.0		0.0		6.1		0.0

Intersection Summary		
HCM 2010 Ctrl Delay	127.4	
HCM 2010 LOS	F	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	130	159	116	172	217	131	257	611	54	67	850	45
Future Volume (veh/h)	130	159	116	172	217	131	257	611	54	67	850	45
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1759	1800	1900	1863	1810	1776	1827	1846	1900	1810	1863	1863
Adj Flow Rate, veh/h	138	169	123	183	231	139	273	650	57	71	904	48
Adj No. of Lanes	1	2	0	1	2	1	1	2	0	1	2	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	8	3	3	2	5	7	4	3	3	5	2	2
Cap, veh/h	414	622	427	427	1101	483	367	1726	151	450	1871	837
Arrive On Green	0.32	0.32	0.32	0.32	0.32	0.32	0.53	0.53	0.53	0.53	0.53	0.53
Sat Flow, veh/h	952	1942	1334	1083	3438	1509	576	3264	286	717	3539	1583
Grp Volume(v), veh/h	138	148	144	183	231	139	273	349	358	71	904	48
Grp Sat Flow(s),veh/h/ln	952	1710	1565	1083	1719	1509	576	1754	1796	717	1770	1583
Q Serve(g_s), s	5.7	3.0	3.2	7.1	2.3	3.2	17.0	5.4	5.4	3.0	7.5	0.7
Cycle Q Clear(g_c), s	8.0	3.0	3.2	10.3	2.3	3.2	24.5	5.4	5.4	8.4	7.5	0.7
Prop In Lane	1.00		0.85	1.00		1.00	1.00		0.16	1.00		1.00
Lane Grp Cap(c), veh/h	414	548	501	427	1101	483	367	927	949	450	1871	837
V/C Ratio(X)	0.33	0.27	0.29	0.43	0.21	0.29	0.74	0.38	0.38	0.16	0.48	0.06
Avail Cap(c_a), veh/h	489	683	625	513	1373	603	367	927	949	450	1871	837
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.4	11.7	11.8	15.6	11.5	11.8	16.6	6.4	6.4	8.9	6.9	5.3
Incr Delay (d2), s/veh	0.5	0.3	0.3	0.7	0.1	0.3	8.0	0.3	0.2	0.2	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	1.4	1.4	2.2	1.1	1.4	4.2	2.7	2.8	0.6	3.7	0.3
LnGrp Delay(d),s/veh	14.9	12.0	12.1	16.3	11.6	12.1	24.6	6.7	6.7	9.1	7.1	5.3
LnGrp LOS	B	B	B	B	B	B	C	A	A	A	A	A
Approach Vol, veh/h		430			553			980			1023	
Approach Delay, s/veh		12.9			13.3			11.7			7.2	
Approach LOS		B			B			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		28.0		18.3		28.0		18.3
Change Period (Y+Rc), s		3.5		3.5		3.5		3.5
Max Green Setting (Gmax), s		24.5		18.5		24.5		18.5
Max Q Clear Time (g_c+I1), s		26.5		10.0		10.4		12.3
Green Ext Time (p_c), s		0.0		3.2		9.1		2.6

Intersection Summary	
HCM 2010 Ctrl Delay	10.6
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	92	18	2	23	15	142	20	727	4	60	1091	87
Future Volume (veh/h)	92	18	2	23	15	142	20	727	4	60	1091	87
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1866	1900	1900	1883	1900	1900	1845	1900	1712	1863	1727
Adj Flow Rate, veh/h	105	20	2	26	17	161	23	826	5	68	1240	99
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	0	0	0	0	3	3	11	2	10
Cap, veh/h	134	341	34	43	24	223	39	1536	9	82	1624	673
Arrive On Green	0.08	0.20	0.20	0.02	0.15	0.15	0.02	0.43	0.43	0.05	0.46	0.46
Sat Flow, veh/h	1774	1670	167	1810	155	1466	1810	3572	22	1630	3539	1467
Grp Volume(v), veh/h	105	0	22	26	0	178	23	405	426	68	1240	99
Grp Sat Flow(s),veh/h/ln	1774	0	1837	1810	0	1621	1810	1753	1841	1630	1770	1467
Q Serve(g_s), s	3.2	0.0	0.5	0.8	0.0	5.7	0.7	9.4	9.4	2.3	16.0	2.1
Cycle Q Clear(g_c), s	3.2	0.0	0.5	0.8	0.0	5.7	0.7	9.4	9.4	2.3	16.0	2.1
Prop In Lane	1.00		0.09	1.00		0.90	1.00		0.01	1.00		1.00
Lane Grp Cap(c), veh/h	134	0	375	43	0	247	39	754	792	82	1624	673
V/C Ratio(X)	0.78	0.00	0.06	0.60	0.00	0.72	0.59	0.54	0.54	0.83	0.76	0.15
Avail Cap(c_a), veh/h	162	0	603	165	0	532	132	799	839	178	1742	722
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.9	0.0	17.6	26.5	0.0	22.1	26.6	11.6	11.6	25.8	12.4	8.6
Incr Delay (d2), s/veh	18.4	0.0	0.1	12.7	0.0	3.9	13.4	0.6	0.6	18.4	1.9	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.0	0.3	0.5	0.0	2.8	0.5	4.6	4.9	1.4	8.2	0.9
LnGrp Delay(d),s/veh	43.3	0.0	17.6	39.3	0.0	26.1	39.9	12.2	12.2	44.2	14.3	8.7
LnGrp LOS	D		B	D		C	D	B	B	D	B	A
Approach Vol, veh/h		127			204			854			1407	
Approach Delay, s/veh		38.9			27.8			13.0			15.3	
Approach LOS		D			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.8	27.6	5.3	15.2	5.2	29.2	8.1	12.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	6.8	25.0	5.0	18.0	4.0	27.0	5.0	18.0
Max Q Clear Time (g_c+I1), s	4.3	11.4	2.8	2.5	2.7	18.0	5.2	7.7
Green Ext Time (p_c), s	0.0	10.1	0.0	1.0	0.0	7.2	0.0	0.8

Intersection Summary	
HCM 2010 Ctrl Delay	16.7
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	2	128	414	3	82	73	603	12	11	1095	10
Future Volume (veh/h)	10	2	128	414	3	82	73	603	12	11	1095	10
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1881	1762	1900	1863	1806	1900	1743	1845	1863
Adj Flow Rate, veh/h	11	2	142	460	3	91	81	670	13	12	1217	11
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	1	2	2	2	5	5	9	3	2
Cap, veh/h	19	3	191	481	18	554	87	850	16	277	1280	577
Arrive On Green	0.01	0.12	0.12	0.27	0.38	0.38	0.05	0.25	0.25	0.17	0.37	0.37
Sat Flow, veh/h	1774	22	1565	1792	48	1457	1774	3442	67	1660	3505	1581
Grp Volume(v), veh/h	11	0	144	460	0	94	81	334	349	12	1217	11
Grp Sat Flow(s),veh/h/ln	1774	0	1587	1792	0	1505	1774	1715	1794	1660	1752	1581
Q Serve(g_s), s	0.5	0.0	7.2	20.7	0.0	3.4	3.7	14.9	14.9	0.5	27.7	0.3
Cycle Q Clear(g_c), s	0.5	0.0	7.2	20.7	0.0	3.4	3.7	14.9	14.9	0.5	27.7	0.3
Prop In Lane	1.00		0.99	1.00		0.97	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	19	0	194	481	0	572	87	424	443	277	1280	577
V/C Ratio(X)	0.57	0.00	0.74	0.96	0.00	0.16	0.94	0.79	0.79	0.04	0.95	0.02
Avail Cap(c_a), veh/h	87	0	349	481	0	661	87	628	657	277	1283	579
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.3	0.0	34.7	29.5	0.0	16.8	38.8	28.8	28.8	28.6	25.3	11.4
Incr Delay (d2), s/veh	24.2	0.0	5.5	30.1	0.0	0.1	75.3	4.0	3.9	0.1	15.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	3.5	14.2	0.0	1.4	3.6	7.5	7.8	0.2	16.0	0.2
LnGrp Delay(d),s/veh	64.5	0.0	40.2	59.6	0.0	16.9	114.1	32.9	32.7	28.7	40.3	11.4
LnGrp LOS	E		D	E		B	F	C	C	C	D	B
Approach Vol, veh/h		155			554			764			1240	
Approach Delay, s/veh		41.9			52.4			41.4			39.9	
Approach LOS		D			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.7	24.2	26.0	14.0	8.0	33.9	4.9	35.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	30.0	22.0	18.0	4.0	30.0	4.0	36.0
Max Q Clear Time (g_c+I1), s	12.5	16.9	22.7	9.2	5.7	29.7	2.5	5.4
Green Ext Time (p_c), s	0.0	3.1	0.0	0.9	0.0	0.2	0.0	1.5

Intersection Summary	
HCM 2010 Ctrl Delay	43.0
HCM 2010 LOS	D



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	433	96	542	304	110	1493
Future Volume (veh/h)	433	96	542	304	110	1493
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1859	1900	1863	1900	1863	1863
Adj Flow Rate, veh/h	446	99	559	313	113	1539
Adj No. of Lanes	0	0	1	1	1	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	2	0	2	2
Cap, veh/h	359	80	1099	952	136	1292
Arrive On Green	0.25	0.25	0.59	0.59	0.08	0.69
Sat Flow, veh/h	1415	314	1863	1614	1774	1863
Grp Volume(v), veh/h	546	0	559	313	113	1539
Grp Sat Flow(s),veh/h/ln	1733	0	1863	1614	1774	1863
Q Serve(g_s), s	38.0	0.0	26.4	14.8	9.4	104.0
Cycle Q Clear(g_c), s	38.0	0.0	26.4	14.8	9.4	104.0
Prop In Lane	0.82	0.18		1.00	1.00	
Lane Grp Cap(c), veh/h	439	0	1099	952	136	1292
V/C Ratio(X)	1.24	0.00	0.51	0.33	0.83	1.19
Avail Cap(c_a), veh/h	439	0	1099	952	225	1292
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.0	0.0	18.0	15.6	68.3	23.0
Incr Delay (d2), s/veh	127.7	0.0	0.4	0.2	12.4	94.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	33.7	0.0	13.6	6.7	5.1	86.5
LnGrp Delay(d),s/veh	183.7	0.0	18.4	15.8	80.7	117.2
LnGrp LOS	F		B	B	F	F
Approach Vol, veh/h	546		872			1652
Approach Delay, s/veh	183.7		17.5			114.7
Approach LOS	F		B			F

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	15.5	92.5				108.0		42.0
Change Period (Y+Rc), s	4.0	4.0				4.0		4.0
Max Green Setting (Gmax), s	19.6	81.0				104.0		38.0
Max Q Clear Time (g_c+I1), s	11.4	28.4				106.0		40.0
Green Ext Time (p_c), s	0.2	29.7				0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	99.3
HCM 2010 LOS	F

Notes

Intersection	
Intersection Delay, s/veh	9.6
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations																
Traffic Vol, veh/h	0	21	122	13	0	22	148	2	0	16	24	7	0	3	6	35
Future Vol, veh/h	0	21	122	13	0	22	148	2	0	16	24	7	0	3	6	35
Peak Hour Factor	1.00	0.62	0.62	0.62	1.00	0.62	0.62	0.62	1.00	0.62	0.62	0.62	1.00	0.62	0.62	0.62
Heavy Vehicles, %	2	0	3	8	2	0	0	0	2	6	0	14	2	0	0	0
Mvmt Flow	0	34	197	21	0	35	239	3	0	26	39	11	0	5	10	56
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9.7	10.1	9	8.3
HCM LOS	A	B	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	34%	13%	13%	7%
Vol Thru, %	51%	78%	86%	14%
Vol Right, %	15%	8%	1%	80%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	47	156	172	44
LT Vol	16	21	22	3
Through Vol	24	122	148	6
RT Vol	7	13	2	35
Lane Flow Rate	76	252	277	71
Geometry Grp	1	1	1	1
Degree of Util (X)	0.111	0.318	0.352	0.093
Departure Headway (Hd)	5.273	4.556	4.568	4.742
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	676	788	785	751
Service Time	3.332	2.597	2.608	2.803
HCM Lane V/C Ratio	0.112	0.32	0.353	0.095
HCM Control Delay	9	9.7	10.1	8.3
HCM Lane LOS	A	A	B	A
HCM 95th-tile Q	0.4	1.4	1.6	0.3



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	49	20	249	45	100	13	771	150	30	547	22
Future Volume (veh/h)	28	49	20	249	45	100	13	771	150	30	547	22
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1776	1797	1900	1881	1887	1900	1900	1860	1900	1727	1826	1900
Adj Flow Rate, veh/h	31	55	22	280	51	112	15	866	169	34	615	25
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	7	8	8	1	0	0	0	2	2	10	4	4
Cap, veh/h	68	157	63	284	130	285	40	1086	212	71	1325	54
Arrive On Green	0.04	0.13	0.13	0.16	0.25	0.25	0.02	0.37	0.37	0.04	0.39	0.39
Sat Flow, veh/h	1691	1218	487	1792	524	1151	1810	2944	574	1645	3397	138
Grp Volume(v), veh/h	31	0	77	280	0	163	15	520	515	34	314	326
Grp Sat Flow(s),veh/h/ln	1691	0	1705	1792	0	1676	1810	1767	1752	1645	1735	1800
Q Serve(g_s), s	1.1	0.0	2.5	9.3	0.0	4.9	0.5	15.8	15.8	1.2	8.1	8.1
Cycle Q Clear(g_c), s	1.1	0.0	2.5	9.3	0.0	4.9	0.5	15.8	15.8	1.2	8.1	8.1
Prop In Lane	1.00		0.29	1.00		0.69	1.00		0.33	1.00		0.08
Lane Grp Cap(c), veh/h	68	0	220	284	0	414	40	652	646	71	677	702
V/C Ratio(X)	0.45	0.00	0.35	0.99	0.00	0.39	0.37	0.80	0.80	0.48	0.46	0.46
Avail Cap(c_a), veh/h	183	0	796	284	0	867	196	678	672	178	677	702
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.1	0.0	23.8	25.1	0.0	18.8	28.9	16.9	16.9	28.0	13.6	13.6
Incr Delay (d2), s/veh	1.7	0.0	0.4	49.3	0.0	0.2	2.1	7.1	7.2	1.8	0.8	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	1.2	8.5	0.0	2.2	0.3	8.9	8.9	0.6	4.0	4.1
LnGrp Delay(d),s/veh	29.9	0.0	24.2	74.4	0.0	19.0	31.0	24.0	24.1	29.8	14.5	14.4
LnGrp LOS	C		C	E		B	C	C	C	C	B	B
Approach Vol, veh/h		108			443			1050			674	
Approach Delay, s/veh		25.8			54.0			24.2			15.2	
Approach LOS		C			D			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.1	26.6	14.0	12.2	5.8	27.9	6.9	19.3
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	6.5	23.0	9.5	28.0	6.5	23.0	6.5	31.0
Max Q Clear Time (g_c+I1), s	3.2	17.8	11.3	4.5	2.5	10.1	3.1	6.9
Green Ext Time (p_c), s	0.0	4.3	0.0	0.5	0.0	10.3	0.0	0.5

Intersection Summary	
HCM 2010 Ctrl Delay	27.4
HCM 2010 LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	161	251	87	220	325	247	123	472	139	151	399	180
Future Volume (veh/h)	161	251	87	220	325	247	123	472	139	151	399	180
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1867	1900	1863	1845	1845	1881	1863	1810	1810	1868	1900
Adj Flow Rate, veh/h	179	279	97	244	361	274	137	524	154	168	443	200
Adj No. of Lanes	1	2	0	2	2	1	1	2	1	1	2	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	1	2	2	2	3	3	1	2	5	5	2	2
Cap, veh/h	192	709	241	325	910	407	171	974	420	203	709	317
Arrive On Green	0.11	0.27	0.27	0.09	0.26	0.26	0.10	0.28	0.28	0.12	0.30	0.30
Sat Flow, veh/h	1792	2600	884	3442	3505	1566	1792	3539	1527	1723	2384	1067
Grp Volume(v), veh/h	179	188	188	244	361	274	137	524	154	168	329	314
Grp Sat Flow(s),veh/h/ln	1792	1774	1710	1721	1752	1566	1792	1770	1527	1723	1775	1675
Q Serve(g_s), s	7.8	6.8	7.1	5.5	6.7	12.4	5.9	10.0	6.4	7.5	12.7	12.8
Cycle Q Clear(g_c), s	7.8	6.8	7.1	5.5	6.7	12.4	5.9	10.0	6.4	7.5	12.7	12.8
Prop In Lane	1.00		0.52	1.00		1.00	1.00		1.00	1.00		0.64
Lane Grp Cap(c), veh/h	192	484	466	325	910	407	171	974	420	203	528	498
V/C Ratio(X)	0.93	0.39	0.40	0.75	0.40	0.67	0.80	0.54	0.37	0.83	0.62	0.63
Avail Cap(c_a), veh/h	192	856	825	361	1681	751	260	1653	713	272	851	804
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.1	23.4	23.5	35.0	24.2	26.3	35.1	24.4	23.1	34.1	24.0	24.1
Incr Delay (d2), s/veh	45.0	0.6	0.7	6.4	0.3	2.3	5.1	0.6	0.6	11.0	1.5	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.3	3.4	3.4	2.9	3.3	5.6	3.2	5.0	2.8	4.2	6.4	6.2
LnGrp Delay(d),s/veh	80.1	24.1	24.2	41.4	24.5	28.7	40.2	25.0	23.8	45.1	25.4	25.6
LnGrp LOS	F	C	C	D	C	C	D	C	C	D	C	C
Approach Vol, veh/h		555			879			815			811	
Approach Delay, s/veh		42.2			30.5			27.3			29.6	
Approach LOS		D			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	26.6	12.1	28.6	13.0	25.6	13.8	26.8
Change Period (Y+Rc), s	4.5	5.0	4.5	5.0	4.5	5.0	4.5	5.0
Max Green Setting (Gmax), s	8.3	38.2	11.5	38.0	8.5	38.0	12.5	37.0
Max Q Clear Time (g_c+I1), s	7.5	9.1	7.9	14.8	9.8	14.4	9.5	12.0
Green Ext Time (p_c), s	0.0	6.1	0.0	7.5	0.0	5.8	0.0	7.7

Intersection Summary		
HCM 2010 Ctrl Delay		31.5
HCM 2010 LOS		C



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	471	526	192	523	637	55
Future Volume (veh/h)	471	526	192	523	637	55
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1863	1863	1881	1881	1863
Adj Flow Rate, veh/h	529	591	216	588	716	62
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	1	2	2	1	1	2
Cap, veh/h	573	507	311	1079	1079	889
Arrive On Green	0.32	0.32	0.57	0.57	0.57	0.57
Sat Flow, veh/h	1792	1583	691	1881	1881	1551
Grp Volume(v), veh/h	529	591	216	588	716	62
Grp Sat Flow(s),veh/h/ln	1792	1583	691	1881	1881	1551
Q Serve(g_s), s	21.4	24.0	23.3	14.6	19.7	1.3
Cycle Q Clear(g_c), s	21.4	24.0	43.0	14.6	19.7	1.3
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	573	507	311	1079	1079	889
V/C Ratio(X)	0.92	1.17	0.69	0.55	0.66	0.07
Avail Cap(c_a), veh/h	573	507	311	1079	1079	889
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.6	25.5	25.9	9.9	11.0	7.1
Incr Delay (d2), s/veh	20.7	94.6	6.5	0.6	1.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.7	23.7	5.0	7.7	10.6	0.6
LnGrp Delay(d),s/veh	45.3	120.1	32.4	10.5	12.6	7.1
LnGrp LOS	D	F	C	B	B	A
Approach Vol, veh/h	1120			804	778	
Approach Delay, s/veh	84.8			16.4	12.1	
Approach LOS	F			B	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		47.0		28.0		47.0		
Change Period (Y+Rc), s		4.0		4.0		4.0		
Max Green Setting (Gmax), s		43.0		24.0		43.0		
Max Q Clear Time (g_c+I1), s		45.0		26.0		21.7		
Green Ext Time (p_c), s		0.0		0.0		8.4		

Intersection Summary	
HCM 2010 Ctrl Delay	43.5
HCM 2010 LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	122	0	260	0	562	163	498	868	0
Future Volume (veh/h)	0	0	0	122	0	260	0	562	163	498	868	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1874	1900	1900	1863	1900	1863	1900	1900
Adj Flow Rate, veh/h	0	0	0	137	0	292	0	631	183	560	975	0
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	1	1	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	0	0
Cap, veh/h	0	373	0	138	3	209	0	556	161	516	1382	0
Arrive On Green	0.00	0.00	0.00	0.20	0.00	0.20	0.00	0.40	0.40	0.29	0.73	0.00
Sat Flow, veh/h	0	1863	0	475	16	1047	0	1389	403	1774	1900	0
Grp Volume(v), veh/h	0	0	0	429	0	0	0	0	814	560	975	0
Grp Sat Flow(s),veh/h/ln	0	1863	0	1538	0	0	0	0	1792	1774	1900	0
Q Serve(g_s), s	0.0	0.0	0.0	21.4	0.0	0.0	0.0	0.0	44.0	32.0	31.6	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	22.0	0.0	0.0	0.0	0.0	44.0	32.0	31.6	0.0
Prop In Lane	0.00		0.00	0.32		0.68	0.00		0.22	1.00		0.00
Lane Grp Cap(c), veh/h	0	373	0	351	0	0	0	0	717	516	1382	0
V/C Ratio(X)	0.00	0.00	0.00	1.22	0.00	0.00	0.00	0.00	1.14	1.09	0.71	0.00
Avail Cap(c_a), veh/h	0	373	0	351	0	0	0	0	717	516	1382	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	45.3	0.0	0.0	0.0	0.0	33.0	39.0	8.4	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	123.3	0.0	0.0	0.0	0.0	77.6	64.6	1.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	22.6	0.0	0.0	0.0	0.0	37.2	24.9	16.9	0.0
LnGrp Delay(d),s/veh	0.0	0.0	0.0	168.6	0.0	0.0	0.0	0.0	110.6	103.6	10.1	0.0
LnGrp LOS				F					F	F	B	
Approach Vol, veh/h		0			429			814			1535	
Approach Delay, s/veh		0.0			168.6			110.6			44.2	
Approach LOS					F			F			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	36.0	48.0		26.0		84.0		26.0
Change Period (Y+Rc), s	4.0	4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s	32.0	44.0		22.0		80.0		22.0
Max Q Clear Time (g_c+I1), s	34.0	46.0		0.0		33.6		24.0
Green Ext Time (p_c), s	0.0	0.0		0.0		12.2		0.0

Intersection Summary		
HCM 2010 Ctrl Delay	82.9	
HCM 2010 LOS	F	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	180	355	152	56	180	175	153	1054	170	165	875	59
Future Volume (veh/h)	180	355	152	56	180	175	153	1054	170	165	875	59
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1870	1900	1900	1881	1900	1863	1868	1900	1881	1881	1900
Adj Flow Rate, veh/h	184	362	155	57	184	179	156	1076	173	168	893	60
Adj No. of Lanes	1	2	0	1	2	1	1	2	0	1	2	1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	1	1	0	1	0	2	2	2	1	1	0
Cap, veh/h	373	679	286	260	996	450	399	1837	295	296	2143	968
Arrive On Green	0.28	0.28	0.28	0.28	0.28	0.28	0.60	0.60	0.60	0.60	0.60	0.60
Sat Flow, veh/h	1035	2438	1028	898	3574	1615	586	3064	492	448	3574	1614
Grp Volume(v), veh/h	184	262	255	57	184	179	156	622	627	168	893	60
Grp Sat Flow(s),veh/h/ln	1035	1777	1689	898	1787	1615	586	1774	1781	448	1787	1614
Q Serve(g_s), s	9.5	7.2	7.4	3.3	2.3	5.2	11.1	12.4	12.5	21.4	7.7	0.9
Cycle Q Clear(g_c), s	11.7	7.2	7.4	10.7	2.3	5.2	18.8	12.4	12.5	33.9	7.7	0.9
Prop In Lane	1.00		0.61	1.00		1.00	1.00		0.28	1.00		1.00
Lane Grp Cap(c), veh/h	373	495	471	260	996	450	399	1064	1068	296	2143	968
V/C Ratio(X)	0.49	0.53	0.54	0.22	0.18	0.40	0.39	0.58	0.59	0.57	0.42	0.06
Avail Cap(c_a), veh/h	417	571	543	299	1149	519	399	1064	1068	296	2143	968
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.2	17.6	17.6	22.2	15.8	16.8	11.2	7.1	7.1	17.6	6.1	4.8
Incr Delay (d2), s/veh	1.0	0.9	1.0	0.4	0.1	0.6	0.6	0.8	0.8	2.5	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	3.6	3.5	0.9	1.1	2.4	1.8	6.3	6.3	2.8	3.8	0.4
LnGrp Delay(d),s/veh	21.2	18.4	18.6	22.6	15.9	17.4	11.8	7.9	8.0	20.1	6.3	4.8
LnGrp LOS	C	B	B	C	B	B	B	A	A	C	A	A
Approach Vol, veh/h		701			420			1405			1121	
Approach Delay, s/veh		19.2			17.4			8.4			8.3	
Approach LOS		B			B			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		38.0		19.5		38.0		19.5
Change Period (Y+Rc), s		3.5		3.5		3.5		3.5
Max Green Setting (Gmax), s		34.5		18.5		34.5		18.5
Max Q Clear Time (g_c+I1), s		20.8		13.7		35.9		12.7
Green Ext Time (p_c), s		10.7		2.3		0.0		2.7

Intersection Summary		
HCM 2010 Ctrl Delay		11.5
HCM 2010 LOS		B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	146	50	21	4	46	97	30	1078	13	92	1091	159
Future Volume (veh/h)	146	50	21	4	46	97	30	1078	13	92	1091	159
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1900	1887	1900	1900	1881	1900	1900	1881	1900
Adj Flow Rate, veh/h	166	57	24	5	52	110	34	1225	15	105	1240	181
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	0	0	0	0	1	1	0	1	0
Cap, veh/h	211	244	103	104	73	154	50	1597	20	135	1746	789
Arrive On Green	0.12	0.20	0.20	0.06	0.13	0.13	0.03	0.44	0.44	0.07	0.49	0.49
Sat Flow, veh/h	1774	1246	524	1810	541	1144	1810	3617	44	1810	3574	1615
Grp Volume(v), veh/h	166	0	81	5	0	162	34	605	635	105	1240	181
Grp Sat Flow(s),veh/h/ln	1774	0	1770	1810	0	1685	1810	1787	1874	1810	1787	1615
Q Serve(g_s), s	6.3	0.0	2.7	0.2	0.0	6.4	1.3	19.8	19.8	4.0	18.9	4.5
Cycle Q Clear(g_c), s	6.3	0.0	2.7	0.2	0.0	6.4	1.3	19.8	19.8	4.0	18.9	4.5
Prop In Lane	1.00		0.30	1.00		0.68	1.00		0.02	1.00		1.00
Lane Grp Cap(c), veh/h	211	0	346	104	0	227	50	789	827	135	1746	789
V/C Ratio(X)	0.79	0.00	0.23	0.05	0.00	0.71	0.68	0.77	0.77	0.78	0.71	0.23
Avail Cap(c_a), veh/h	435	0	459	469	0	461	104	824	864	156	1751	791
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.7	0.0	23.5	30.9	0.0	28.7	33.4	16.4	16.4	31.5	13.9	10.2
Incr Delay (d2), s/veh	6.4	0.0	0.3	0.2	0.0	4.2	14.8	4.2	4.0	19.1	1.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	0.0	1.3	0.1	0.0	3.2	0.8	10.7	11.2	2.7	9.5	2.0
LnGrp Delay(d),s/veh	36.2	0.0	23.9	31.1	0.0	32.9	48.2	20.6	20.4	50.6	15.3	10.4
LnGrp LOS	D		C	C		C	D	C	C	D	B	B
Approach Vol, veh/h		247			167			1274			1526	
Approach Delay, s/veh		32.1			32.9			21.2			17.1	
Approach LOS		C			C			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.2	34.6	8.0	17.6	5.9	37.9	12.2	13.3
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	5.2	32.0	18.0	18.0	4.0	34.0	17.0	19.0
Max Q Clear Time (g_c+I1), s	10.3	21.8	2.2	4.7	3.3	20.9	8.3	8.4
Green Ext Time (p_c), s	0.0	8.8	0.0	1.2	0.0	11.1	0.3	1.0

Intersection Summary	
HCM 2010 Ctrl Delay	20.7
HCM 2010 LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	4	178	116	3	47	163	1108	195	52	925	20
Future Volume (veh/h)	20	4	178	116	3	47	163	1108	195	52	925	20
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1900	1863	1900	1863	1605	1900	1827	1827	1863
Adj Flow Rate, veh/h	21	4	184	120	3	48	168	1142	201	54	954	21
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	1	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	0	2	2	2	4	4	4	4	2
Cap, veh/h	32	5	221	133	19	297	200	1497	262	69	920	797
Arrive On Green	0.02	0.14	0.14	0.07	0.20	0.20	0.11	0.58	0.58	0.04	0.50	0.50
Sat Flow, veh/h	1774	34	1555	1810	94	1503	1774	2595	455	1740	1827	1582
Grp Volume(v), veh/h	21	0	188	120	0	51	168	669	674	54	954	21
Grp Sat Flow(s),veh/h/ln	1774	0	1588	1810	0	1597	1774	1525	1524	1740	1827	1582
Q Serve(g_s), s	1.1	0.0	11.0	6.3	0.0	2.5	8.8	31.5	31.9	2.9	48.0	0.6
Cycle Q Clear(g_c), s	1.1	0.0	11.0	6.3	0.0	2.5	8.8	31.5	31.9	2.9	48.0	0.6
Prop In Lane	1.00		0.98	1.00		0.94	1.00		0.30	1.00		1.00
Lane Grp Cap(c), veh/h	32	0	226	133	0	316	200	880	879	69	920	797
V/C Ratio(X)	0.66	0.00	0.83	0.90	0.00	0.16	0.84	0.76	0.77	0.79	1.04	0.03
Avail Cap(c_a), veh/h	74	0	300	133	0	352	205	880	879	146	920	797
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.5	0.0	39.8	43.8	0.0	31.7	41.4	15.2	15.3	45.4	23.6	11.9
Incr Delay (d2), s/veh	21.0	0.0	13.9	49.8	0.0	0.2	25.3	3.9	4.1	17.5	39.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	5.7	5.0	0.0	1.1	5.7	14.2	14.3	1.7	34.1	0.3
LnGrp Delay(d),s/veh	67.5	0.0	53.6	93.6	0.0	31.9	66.8	19.1	19.4	62.9	63.1	11.9
LnGrp LOS	E		D	F		C	E	B	B	E	F	B
Approach Vol, veh/h		209			171			1511			1029	
Approach Delay, s/veh		55.0			75.2			24.5			62.1	
Approach LOS		E			E			C			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.8	59.0	11.0	17.5	14.7	52.0	5.7	22.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	3.8	51.0	7.0	18.0	11.0	48.0	4.0	21.0
Max Q Clear Time (g_c+I1), s	4.9	33.9	8.3	13.0	10.8	50.0	3.1	4.5
Green Ext Time (p_c), s	0.0	13.2	0.0	0.6	0.0	0.0	0.0	1.3

Intersection Summary	
HCM 2010 Ctrl Delay	42.9
HCM 2010 LOS	D

Notes



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	579	203	1230	724	213	980
Future Volume (veh/h)	579	203	1230	724	213	980
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1845	1881	1863	1810
Adj Flow Rate, veh/h	629	221	1337	787	232	1065
Adj No. of Lanes	0	0	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	3	1	2	5
Cap, veh/h	408	143	1054	913	103	1034
Arrive On Green	0.31	0.31	0.57	0.57	0.57	0.57
Sat Flow, veh/h	1297	456	1845	1598	190	1810
Grp Volume(v), veh/h	851	0	1337	787	232	1065
Grp Sat Flow(s),veh/h/ln	1754	0	1845	1598	190	1810
Q Serve(g_s), s	22.0	0.0	40.0	29.1	0.0	40.0
Cycle Q Clear(g_c), s	22.0	0.0	40.0	29.1	40.0	40.0
Prop In Lane	0.74	0.26		1.00	1.00	
Lane Grp Cap(c), veh/h	551	0	1054	913	103	1034
V/C Ratio(X)	1.54	0.00	1.27	0.86	2.26	1.03
Avail Cap(c_a), veh/h	551	0	1054	913	103	1034
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.0	0.0	15.0	12.7	35.0	15.0
Incr Delay (d2), s/veh	253.5	0.0	128.4	8.5	594.9	35.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	49.4	0.0	57.5	14.8	19.0	29.9
LnGrp Delay(d),s/veh	277.5	0.0	143.4	21.2	629.9	50.9
LnGrp LOS	F		F	C	F	F
Approach Vol, veh/h	851		2124			1297
Approach Delay, s/veh	277.5		98.1			154.5
Approach LOS	F		F			F

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		44.0				44.0		26.0
Change Period (Y+Rc), s		4.0				4.0		4.0
Max Green Setting (Gmax), s		40.0				40.0		22.0
Max Q Clear Time (g_c+I1), s		42.0				42.0		24.0
Green Ext Time (p_c), s		0.0				0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	151.0
HCM 2010 LOS	F

Notes

Intersection	
Intersection Delay, s/veh	7.9
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations			↕				↕				↕				↕	
Traffic Vol, veh/h	0	50	64	17	0	4	54	3	0	11	6	12	0	0	2	88
Future Vol, veh/h	0	50	64	17	0	4	54	3	0	11	6	12	0	0	2	88
Peak Hour Factor	1.00	0.81	0.81	0.81	1.00	0.81	0.81	0.81	1.00	0.81	0.81	0.81	1.00	0.81	0.81	0.81
Heavy Vehicles, %	2	0	2	0	2	0	6	0	2	0	0	25	2	0	0	0
Mvmt Flow	0	62	79	21	0	5	67	4	0	14	7	15	0	0	2	109
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.3	7.8	7.6	7.4
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	38%	38%	7%	0%
Vol Thru, %	21%	49%	89%	2%
Vol Right, %	41%	13%	5%	98%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	29	131	61	90
LT Vol	11	50	4	0
Through Vol	6	64	54	2
RT Vol	12	17	3	88
Lane Flow Rate	36	162	75	111
Geometry Grp	1	1	1	1
Degree of Util (X)	0.043	0.189	0.091	0.12
Departure Headway (Hd)	4.372	4.213	4.371	3.884
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	822	841	825	928
Service Time	2.38	2.297	2.371	1.889
HCM Lane V/C Ratio	0.044	0.193	0.091	0.12
HCM Control Delay	7.6	8.3	7.8	7.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0.7	0.3	0.4



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	45	19	260	30	42	37	712	231	66	655	26
Future Volume (veh/h)	13	45	19	260	30	42	37	712	231	66	655	26
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1874	1900	1863	1900	1900	1900	1877	1900	1900	1882	1900
Adj Flow Rate, veh/h	14	47	20	274	32	44	39	749	243	69	689	27
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	2	2	2	0	0	0	1	1	0	1	1
Cap, veh/h	37	170	72	270	194	267	86	938	304	121	1314	51
Arrive On Green	0.02	0.14	0.14	0.15	0.27	0.27	0.05	0.35	0.35	0.07	0.37	0.37
Sat Flow, veh/h	1810	1241	528	1774	722	993	1810	2644	858	1810	3507	137
Grp Volume(v), veh/h	14	0	67	274	0	76	39	505	487	69	351	365
Grp Sat Flow(s),veh/h/ln	1810	0	1769	1774	0	1714	1810	1783	1720	1810	1788	1857
Q Serve(g_s), s	0.5	0.0	2.1	9.5	0.0	2.1	1.3	15.9	15.9	2.3	9.5	9.5
Cycle Q Clear(g_c), s	0.5	0.0	2.1	9.5	0.0	2.1	1.3	15.9	15.9	2.3	9.5	9.5
Prop In Lane	1.00		0.30	1.00		0.58	1.00		0.50	1.00		0.07
Lane Grp Cap(c), veh/h	37	0	243	270	0	461	86	632	610	121	670	696
V/C Ratio(X)	0.37	0.00	0.28	1.01	0.00	0.16	0.46	0.80	0.80	0.57	0.52	0.52
Avail Cap(c_a), veh/h	189	0	794	270	0	852	189	657	634	189	670	696
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.1	0.0	24.1	26.4	0.0	17.4	28.9	18.1	18.1	28.2	15.2	15.2
Incr Delay (d2), s/veh	2.3	0.0	0.2	58.4	0.0	0.1	1.4	7.4	7.6	1.5	1.2	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	1.0	9.0	0.0	1.0	0.7	9.0	8.7	1.2	4.9	5.1
LnGrp Delay(d),s/veh	32.4	0.0	24.4	84.9	0.0	17.5	30.3	25.5	25.7	29.8	16.4	16.3
LnGrp LOS	C		C	F		B	C	C	C	C	B	B
Approach Vol, veh/h		81			350			1031			785	
Approach Delay, s/veh		25.7			70.3			25.8			17.5	
Approach LOS		C			E			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.7	26.6	14.0	13.1	7.4	27.9	5.8	21.3
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	6.5	23.0	9.5	28.0	6.5	23.0	6.5	31.0
Max Q Clear Time (g_c+I1), s	4.3	17.9	11.5	4.1	3.3	11.5	2.5	4.1
Green Ext Time (p_c), s	0.0	4.2	0.0	0.3	0.0	9.4	0.0	0.3

Intersection Summary		
HCM 2010 Ctrl Delay		29.8
HCM 2010 LOS		C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	252	305	89	218	232	145	134	530	128	191	373	179
Future Volume (veh/h)	252	305	89	218	232	145	134	530	128	191	373	179
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1850	1900	1881	1900	1845	1900	1881	1900	1881	1887	1900
Adj Flow Rate, veh/h	283	343	100	245	261	163	151	596	144	215	419	201
Adj No. of Lanes	1	2	0	2	2	1	1	2	1	1	2	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	1	0	3	0	1	0	1	1	1
Cap, veh/h	180	631	181	326	819	353	188	1034	463	254	772	366
Arrive On Green	0.10	0.23	0.23	0.09	0.23	0.23	0.10	0.29	0.29	0.14	0.33	0.33
Sat Flow, veh/h	1774	2692	773	3476	3610	1556	1810	3574	1601	1792	2358	1119
Grp Volume(v), veh/h	283	222	221	245	261	163	151	596	144	215	318	302
Grp Sat Flow(s),veh/h/ln	1774	1758	1707	1738	1805	1556	1810	1787	1601	1792	1793	1684
Q Serve(g_s), s	8.0	8.7	9.0	5.4	4.8	7.1	6.4	11.2	5.5	9.2	11.4	11.6
Cycle Q Clear(g_c), s	8.0	8.7	9.0	5.4	4.8	7.1	6.4	11.2	5.5	9.2	11.4	11.6
Prop In Lane	1.00		0.45	1.00		1.00	1.00		1.00	1.00		0.66
Lane Grp Cap(c), veh/h	180	412	400	326	819	353	188	1034	463	254	587	551
V/C Ratio(X)	1.57	0.54	0.55	0.75	0.32	0.46	0.80	0.58	0.31	0.85	0.54	0.55
Avail Cap(c_a), veh/h	180	833	809	348	1707	735	314	1676	751	311	841	790
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.5	26.5	26.6	34.8	25.4	26.3	34.6	23.9	21.9	33.0	21.7	21.8
Incr Delay (d2), s/veh	283.0	1.3	1.4	7.1	0.3	1.1	3.1	0.6	0.5	14.1	0.9	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.0	4.4	4.4	2.9	2.4	3.2	3.4	5.6	2.5	5.5	5.8	5.5
LnGrp Delay(d),s/veh	318.5	27.8	28.0	42.0	25.7	27.5	37.6	24.5	22.4	47.1	22.6	22.8
LnGrp LOS	F	C	C	D	C	C	D	C	C	D	C	C
Approach Vol, veh/h		726			669			891			835	
Approach Delay, s/veh		141.2			32.1			26.4			29.0	
Approach LOS		F			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.9	23.5	12.7	30.8	12.5	22.9	15.7	27.8
Change Period (Y+Rc), s	4.5	5.0	4.5	5.0	4.5	5.0	4.5	5.0
Max Green Setting (Gmax), s	7.4	37.4	13.7	37.0	8.0	37.3	13.7	37.0
Max Q Clear Time (g_c+I1), s	7.4	11.0	8.4	13.6	10.0	9.1	11.2	13.2
Green Ext Time (p_c), s	0.0	4.9	0.1	7.9	0.0	4.9	0.0	7.9

Intersection Summary		
HCM 2010 Ctrl Delay	55.0	
HCM 2010 LOS	E	

BACKGROUND PLUS PROJECT
CONDITIONS SYNCHRO OUTPUT SHEETS

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	64	112	471	748	509	246
Future Volume (veh/h)	64	112	471	748	509	246
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1827	1863	1881	1863	1810
Adj Flow Rate, veh/h	71	124	523	831	566	273
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	4	2	1	2	5
Cap, veh/h	189	165	549	1494	1479	1222
Arrive On Green	0.11	0.11	0.79	0.79	0.79	0.79
Sat Flow, veh/h	1774	1553	653	1881	1863	1538
Grp Volume(v), veh/h	71	124	523	831	566	273
Grp Sat Flow(s),veh/h/ln	1774	1553	653	1881	1863	1538
Q Serve(g_s), s	3.0	6.2	56.8	13.1	7.2	3.6
Cycle Q Clear(g_c), s	3.0	6.2	64.0	13.1	7.2	3.6
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	189	165	549	1494	1479	1222
V/C Ratio(X)	0.38	0.75	0.95	0.56	0.38	0.22
Avail Cap(c_a), veh/h	396	347	549	1494	1479	1222
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.5	35.0	15.3	3.1	2.4	2.1
Incr Delay (d2), s/veh	1.2	6.7	26.9	0.5	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	3.0	15.6	6.7	3.7	1.5
LnGrp Delay(d),s/veh	34.7	41.6	42.2	3.5	2.6	2.2
LnGrp LOS	C	D	D	A	A	A
Approach Vol, veh/h	195			1354	839	
Approach Delay, s/veh	39.1			18.5	2.5	
Approach LOS	D			B	A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		68.0		12.6		68.0		
Change Period (Y+Rc), s		4.0		4.0		4.0		
Max Green Setting (Gmax), s		64.0		18.0		64.0		
Max Q Clear Time (g_c+I1), s		66.0		8.2		9.2		
Green Ext Time (p_c), s		0.0		0.4		22.7		

Intersection Summary	
HCM 2010 Ctrl Delay	14.5
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	125	0	515	0	670	91	302	301	0
Future Volume (veh/h)	0	0	0	125	0	515	0	670	91	302	301	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1732	1900	1900	1861	1900	1827	1863	1900
Adj Flow Rate, veh/h	0	0	0	139	0	572	0	744	101	336	334	0
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	1	1	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	4	2	2
Cap, veh/h	0	497	0	126	7	310	0	663	90	278	1167	0
Arrive On Green	0.00	0.00	0.00	0.27	0.00	0.27	0.00	0.41	0.41	0.16	0.63	0.00
Sat Flow, veh/h	0	1863	0	257	26	1163	0	1604	218	1740	1863	0
Grp Volume(v), veh/h	0	0	0	711	0	0	0	0	845	336	334	0
Grp Sat Flow(s),veh/h/ln	0	1863	0	1445	0	0	0	0	1822	1740	1863	0
Q Serve(g_s), s	0.0	0.0	0.0	18.3	0.0	0.0	0.0	0.0	31.0	12.0	6.1	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	20.0	0.0	0.0	0.0	0.0	31.0	12.0	6.1	0.0
Prop In Lane	0.00		0.00	0.20		0.80	0.00		0.12	1.00		0.00
Lane Grp Cap(c), veh/h	0	497	0	443	0	0	0	0	753	278	1167	0
V/C Ratio(X)	0.00	0.00	0.00	1.61	0.00	0.00	0.00	0.00	1.12	1.21	0.29	0.00
Avail Cap(c_a), veh/h	0	497	0	443	0	0	0	0	753	278	1167	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	28.8	0.0	0.0	0.0	0.0	22.0	31.5	6.4	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	283.0	0.0	0.0	0.0	0.0	71.7	121.9	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	43.9	0.0	0.0	0.0	0.0	30.5	15.2	3.1	0.0
LnGrp Delay(d),s/veh	0.0	0.0	0.0	311.7	0.0	0.0	0.0	0.0	93.7	153.4	6.5	0.0
LnGrp LOS				F					F	F	A	
Approach Vol, veh/h		0			711			845			670	
Approach Delay, s/veh		0.0			311.7			93.7			80.2	
Approach LOS					F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	16.0	35.0		24.0		51.0		24.0
Change Period (Y+Rc), s	4.0	4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s	12.0	31.0		20.0		47.0		20.0
Max Q Clear Time (g_c+I1), s	14.0	33.0		0.0		8.1		22.0
Green Ext Time (p_c), s	0.0	0.0		0.0		6.1		0.0

Intersection Summary		
HCM 2010 Ctrl Delay	159.3	
HCM 2010 LOS	F	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	130	182	116	172	286	198	257	611	54	89	850	45
Future Volume (veh/h)	130	182	116	172	286	198	257	611	54	89	850	45
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1759	1804	1900	1863	1827	1810	1827	1846	1900	1810	1863	1863
Adj Flow Rate, veh/h	138	194	123	183	304	211	273	650	57	95	904	48
Adj No. of Lanes	1	2	0	1	2	1	1	2	0	1	2	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	8	3	3	2	4	5	4	3	3	5	2	2
Cap, veh/h	375	681	412	426	1150	510	357	1697	149	440	1841	823
Arrive On Green	0.33	0.33	0.33	0.33	0.33	0.33	0.52	0.52	0.52	0.52	0.52	0.52
Sat Flow, veh/h	833	2055	1243	1058	3471	1538	576	3264	286	717	3539	1583
Grp Volume(v), veh/h	138	160	157	183	304	211	273	349	358	95	904	48
Grp Sat Flow(s),veh/h/ln	833	1714	1585	1058	1736	1538	576	1754	1796	717	1770	1583
Q Serve(g_s), s	6.9	3.2	3.5	7.3	3.0	5.0	16.7	5.6	5.6	4.3	7.8	0.7
Cycle Q Clear(g_c), s	9.9	3.2	3.5	10.8	3.0	5.0	24.5	5.6	5.6	9.9	7.8	0.7
Prop In Lane	1.00		0.78	1.00		1.00	1.00		0.16	1.00		1.00
Lane Grp Cap(c), veh/h	375	568	525	426	1150	510	357	912	934	440	1841	823
V/C Ratio(X)	0.37	0.28	0.30	0.43	0.26	0.41	0.76	0.38	0.38	0.22	0.49	0.06
Avail Cap(c_a), veh/h	427	673	622	491	1363	604	357	912	934	440	1841	823
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.2	11.6	11.7	15.7	11.5	12.2	17.3	6.8	6.8	9.8	7.3	5.6
Incr Delay (d2), s/veh	0.6	0.3	0.3	0.7	0.1	0.5	9.4	0.3	0.3	0.2	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	1.6	1.5	2.2	1.5	2.2	4.4	2.8	2.9	0.9	3.8	0.3
LnGrp Delay(d),s/veh	15.8	11.9	12.0	16.4	11.7	12.7	26.7	7.0	7.0	10.0	7.5	5.6
LnGrp LOS	B	B	B	B	B	B	C	A	A	B	A	A
Approach Vol, veh/h		455			698			980			1047	
Approach Delay, s/veh		13.1			13.2			12.5			7.6	
Approach LOS		B			B			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		28.0		19.1		28.0		19.1
Change Period (Y+Rc), s		3.5		3.5		3.5		3.5
Max Green Setting (Gmax), s		24.5		18.5		24.5		18.5
Max Q Clear Time (g_c+I1), s		26.5		11.9		11.9		12.8
Green Ext Time (p_c), s		0.0		3.2		8.5		2.8

Intersection Summary		
HCM 2010 Ctrl Delay		11.1
HCM 2010 LOS		B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	92	19	2	34	17	142	20	727	8	60	1091	87
Future Volume (veh/h)	92	19	2	34	17	142	20	727	8	60	1091	87
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1866	1900	1900	1883	1900	1900	1845	1900	1712	1863	1727
Adj Flow Rate, veh/h	105	22	2	39	19	161	23	826	9	68	1240	99
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	0	0	0	0	3	3	11	2	10
Cap, veh/h	134	331	30	58	26	222	39	1570	17	82	1667	691
Arrive On Green	0.08	0.20	0.20	0.03	0.15	0.15	0.02	0.44	0.44	0.05	0.47	0.47
Sat Flow, veh/h	1774	1686	153	1810	171	1452	1810	3553	39	1630	3539	1467
Grp Volume(v), veh/h	105	0	24	39	0	180	23	408	427	68	1240	99
Grp Sat Flow(s),veh/h/ln	1774	0	1839	1810	0	1624	1810	1753	1838	1630	1770	1467
Q Serve(g_s), s	3.3	0.0	0.6	1.2	0.0	6.1	0.7	9.7	9.7	2.4	16.4	2.2
Cycle Q Clear(g_c), s	3.3	0.0	0.6	1.2	0.0	6.1	0.7	9.7	9.7	2.4	16.4	2.2
Prop In Lane	1.00		0.08	1.00		0.89	1.00		0.02	1.00		1.00
Lane Grp Cap(c), veh/h	134	0	361	58	0	248	39	774	812	82	1667	691
V/C Ratio(X)	0.78	0.00	0.07	0.67	0.00	0.73	0.59	0.53	0.53	0.82	0.74	0.14
Avail Cap(c_a), veh/h	155	0	577	158	0	510	126	774	812	171	1667	691
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.0	0.0	18.8	27.4	0.0	23.1	27.8	11.6	11.6	27.0	12.3	8.6
Incr Delay (d2), s/veh	20.0	0.0	0.1	12.4	0.0	4.0	13.7	2.6	2.4	18.0	3.1	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	0.0	0.3	0.8	0.0	3.0	0.5	5.2	5.4	1.5	8.6	1.0
LnGrp Delay(d),s/veh	46.0	0.0	18.8	39.8	0.0	27.1	41.5	14.2	14.1	45.0	15.4	9.0
LnGrp LOS	D		B	D		C	D	B	B	D	B	A
Approach Vol, veh/h		129			219			858			1407	
Approach Delay, s/veh		41.0			29.4			14.9			16.4	
Approach LOS		D			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.9	29.3	5.9	15.2	5.2	31.0	8.3	12.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	6.3	25.0	5.0	18.0	4.0	27.0	5.0	18.0
Max Q Clear Time (g_c+I1), s	4.4	11.7	3.2	2.6	2.7	18.4	5.3	8.1
Green Ext Time (p_c), s	0.0	9.9	0.0	1.1	0.0	6.9	0.0	0.8

Intersection Summary	
HCM 2010 Ctrl Delay	18.2
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	2	128	421	3	82	73	607	14	11	1106	10
Future Volume (veh/h)	10	2	128	421	3	82	73	607	14	11	1106	10
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1881	1762	1900	1863	1806	1900	1743	1845	1863
Adj Flow Rate, veh/h	11	2	142	468	3	91	81	674	16	12	1229	11
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	1	2	2	2	5	5	9	3	2
Cap, veh/h	19	3	191	481	18	553	87	853	20	275	1282	578
Arrive On Green	0.01	0.12	0.12	0.27	0.38	0.38	0.05	0.25	0.25	0.17	0.37	0.37
Sat Flow, veh/h	1774	22	1565	1792	48	1457	1774	3425	81	1660	3505	1581
Grp Volume(v), veh/h	11	0	144	468	0	94	81	337	353	12	1229	11
Grp Sat Flow(s),veh/h/ln	1774	0	1587	1792	0	1505	1774	1715	1791	1660	1752	1581
Q Serve(g_s), s	0.5	0.0	7.2	21.2	0.0	3.4	3.7	15.1	15.1	0.5	28.1	0.3
Cycle Q Clear(g_c), s	0.5	0.0	7.2	21.2	0.0	3.4	3.7	15.1	15.1	0.5	28.1	0.3
Prop In Lane	1.00		0.99	1.00		0.97	1.00		0.05	1.00		1.00
Lane Grp Cap(c), veh/h	19	0	194	481	0	571	87	427	446	275	1282	578
V/C Ratio(X)	0.57	0.00	0.74	0.97	0.00	0.16	0.94	0.79	0.79	0.04	0.96	0.02
Avail Cap(c_a), veh/h	87	0	348	481	0	661	87	627	655	275	1282	578
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.4	0.0	34.8	29.7	0.0	16.8	38.9	28.8	28.8	28.8	25.4	11.4
Incr Delay (d2), s/veh	24.2	0.0	5.5	34.2	0.0	0.1	75.6	4.2	4.0	0.1	16.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	3.5	15.0	0.0	1.4	3.6	7.6	7.9	0.2	16.4	0.1
LnGrp Delay(d),s/veh	64.6	0.0	40.3	64.0	0.0	17.0	114.5	33.0	32.8	28.8	41.7	11.4
LnGrp LOS	E		D	E		B	F	C	C	C	D	B
Approach Vol, veh/h		155			562			771			1252	
Approach Delay, s/veh		42.0			56.1			41.5			41.3	
Approach LOS		D			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.6	24.4	26.0	14.0	8.0	34.0	4.9	35.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.6	30.0	22.0	18.0	4.0	30.0	4.0	36.0
Max Q Clear Time (g_c+I1), s	2.5	17.1	23.2	9.2	5.7	30.1	2.5	5.4
Green Ext Time (p_c), s	0.0	3.1	0.0	0.9	0.0	0.0	0.0	1.5

Intersection Summary	
HCM 2010 Ctrl Delay	44.4
HCM 2010 LOS	D



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	433	96	548	304	110	1511
Future Volume (veh/h)	433	96	548	304	110	1511
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1859	1900	1863	1900	1863	1863
Adj Flow Rate, veh/h	446	99	565	313	113	1558
Adj No. of Lanes	0	0	1	1	1	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	2	0	2	2
Cap, veh/h	359	80	1099	952	136	1292
Arrive On Green	0.25	0.25	0.59	0.59	0.08	0.69
Sat Flow, veh/h	1415	314	1863	1614	1774	1863
Grp Volume(v), veh/h	546	0	565	313	113	1558
Grp Sat Flow(s),veh/h/ln	1733	0	1863	1614	1774	1863
Q Serve(g_s), s	38.0	0.0	26.8	14.8	9.4	104.0
Cycle Q Clear(g_c), s	38.0	0.0	26.8	14.8	9.4	104.0
Prop In Lane	0.82	0.18		1.00	1.00	
Lane Grp Cap(c), veh/h	439	0	1099	952	136	1292
V/C Ratio(X)	1.24	0.00	0.51	0.33	0.83	1.21
Avail Cap(c_a), veh/h	439	0	1099	952	225	1292
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.0	0.0	18.1	15.6	68.3	23.0
Incr Delay (d2), s/veh	127.7	0.0	0.4	0.2	12.4	100.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	33.7	0.0	13.8	6.7	5.1	88.8
LnGrp Delay(d),s/veh	183.7	0.0	18.5	15.8	80.7	123.4
LnGrp LOS	F		B	B	F	F
Approach Vol, veh/h	546		878			1671
Approach Delay, s/veh	183.7		17.6			120.5
Approach LOS	F		B			F

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	15.5	92.5				108.0		42.0
Change Period (Y+Rc), s	4.0	4.0				4.0		4.0
Max Green Setting (Gmax), s	19.6	81.0				104.0		38.0
Max Q Clear Time (g_c+I1), s	11.4	28.8				106.0		40.0
Green Ext Time (p_c), s	0.2	30.6				0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	102.4
HCM 2010 LOS	F

Notes



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	280	45	30	520	136	91
Future Volume (veh/h)	280	45	30	520	136	91
Number	4	14	3	8	5	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	304	49	33	565	148	99
Adj No. of Lanes	2	1	1	2	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1531	685	723	1531	347	310
Arrive On Green	0.43	0.43	0.43	0.43	0.20	0.20
Sat Flow, veh/h	3632	1583	1024	3632	1774	1583
Grp Volume(v), veh/h	304	49	33	565	148	99
Grp Sat Flow(s),veh/h/ln	1770	1583	1024	1770	1774	1583
Q Serve(g_s), s	1.1	0.4	0.4	2.3	1.6	1.2
Cycle Q Clear(g_c), s	1.1	0.4	1.6	2.3	1.6	1.2
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1531	685	723	1531	347	310
V/C Ratio(X)	0.20	0.07	0.05	0.37	0.43	0.32
Avail Cap(c_a), veh/h	2962	1325	1137	2962	1567	1399
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	3.8	3.6	4.3	4.1	7.6	7.4
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.1	0.8	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.2	0.1	1.1	0.8	0.5
LnGrp Delay(d),s/veh	3.9	3.6	4.3	4.3	8.4	8.0
LnGrp LOS	A	A	A	A	A	A
Approach Vol, veh/h	353			598	247	
Approach Delay, s/veh	3.8			4.3	8.3	
Approach LOS	A			A	A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		8.2		13.3				13.3
Change Period (Y+Rc), s		4.0		4.0				4.0
Max Green Setting (Gmax), s		19.0		18.0				18.0
Max Q Clear Time (g_c+I1), s		3.6		3.1				4.3
Green Ext Time (p_c), s		0.6		5.2				5.0

Intersection Summary	
HCM 2010 Ctrl Delay	5.0
HCM 2010 LOS	A

Intersection	
Intersection Delay, s/veh	9.9
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations																
Traffic Vol, veh/h	0	26	122	13	0	22	148	2	0	16	26	7	0	3	13	48
Future Vol, veh/h	0	26	122	13	0	22	148	2	0	16	26	7	0	3	13	48
Peak Hour Factor	1.00	0.62	0.62	0.62	1.00	0.62	0.62	0.62	1.00	0.62	0.62	0.62	1.00	0.62	0.62	0.62
Heavy Vehicles, %	2	0	3	8	2	0	0	0	2	6	0	14	2	0	0	0
Mvmt Flow	0	42	197	21	0	35	239	3	0	26	42	11	0	5	21	77
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	10.1	10.4	9.2	8.7
HCM LOS	B	B	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	33%	16%	13%	5%
Vol Thru, %	53%	76%	86%	20%
Vol Right, %	14%	8%	1%	75%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	49	161	172	64
LT Vol	16	26	22	3
Through Vol	26	122	148	13
RT Vol	7	13	2	48
Lane Flow Rate	79	260	277	103
Geometry Grp	1	1	1	1
Degree of Util (X)	0.118	0.336	0.36	0.138
Departure Headway (Hd)	5.359	4.661	4.674	4.808
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	663	766	766	739
Service Time	3.436	2.72	2.732	2.882
HCM Lane V/C Ratio	0.119	0.339	0.362	0.139
HCM Control Delay	9.2	10.1	10.4	8.7
HCM Lane LOS	A	B	B	A
HCM 95th-tile Q	0.4	1.5	1.6	0.5



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	49	20	266	45	100	13	798	202	30	556	22
Future Volume (veh/h)	28	49	20	266	45	100	13	798	202	30	556	22
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1776	1797	1900	1881	1887	1900	1900	1863	1900	1727	1826	1900
Adj Flow Rate, veh/h	31	55	22	299	51	112	15	897	227	34	625	25
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	7	8	8	1	0	0	0	2	2	10	4	4
Cap, veh/h	68	156	63	283	129	283	40	1038	262	71	1335	53
Arrive On Green	0.04	0.13	0.13	0.16	0.25	0.25	0.02	0.37	0.37	0.04	0.39	0.39
Sat Flow, veh/h	1691	1218	487	1792	524	1151	1810	2794	706	1645	3400	136
Grp Volume(v), veh/h	31	0	77	299	0	163	15	568	556	34	319	331
Grp Sat Flow(s),veh/h/ln	1691	0	1705	1792	0	1676	1810	1770	1730	1645	1735	1801
Q Serve(g_s), s	1.1	0.0	2.5	9.5	0.0	4.9	0.5	17.9	17.9	1.2	8.2	8.2
Cycle Q Clear(g_c), s	1.1	0.0	2.5	9.5	0.0	4.9	0.5	17.9	17.9	1.2	8.2	8.2
Prop In Lane	1.00		0.29	1.00		0.69	1.00		0.41	1.00		0.08
Lane Grp Cap(c), veh/h	68	0	219	283	0	412	40	658	643	71	681	707
V/C Ratio(X)	0.45	0.00	0.35	1.06	0.00	0.40	0.37	0.86	0.87	0.48	0.47	0.47
Avail Cap(c_a), veh/h	183	0	793	283	0	863	195	676	661	178	681	707
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.2	0.0	23.9	25.4	0.0	19.0	29.0	17.5	17.5	28.1	13.6	13.6
Incr Delay (d2), s/veh	1.7	0.0	0.4	69.6	0.0	0.2	2.1	11.6	12.0	1.8	0.9	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	1.2	10.1	0.0	2.3	0.3	10.8	10.6	0.6	4.1	4.2
LnGrp Delay(d),s/veh	30.0	0.0	24.3	95.0	0.0	19.2	31.2	29.1	29.5	30.0	14.5	14.4
LnGrp LOS	C		C	F		B	C	C	C	C	B	B
Approach Vol, veh/h		108			462			1139			684	
Approach Delay, s/veh		25.9			68.2			29.4			15.2	
Approach LOS		C			E			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.1	26.9	14.0	12.2	5.8	28.1	6.9	19.3
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	6.5	23.0	9.5	28.0	6.5	23.0	6.5	31.0
Max Q Clear Time (g_c+I1), s	3.2	19.9	11.5	4.5	2.5	10.2	3.1	6.9
Green Ext Time (p_c), s	0.0	2.4	0.0	0.5	0.0	10.6	0.0	0.5

Intersection Summary	
HCM 2010 Ctrl Delay	32.7
HCM 2010 LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	240	258	92	220	327	247	125	472	139	151	399	206
Future Volume (veh/h)	240	258	92	220	327	247	125	472	139	151	399	206
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1868	1900	1863	1845	1845	1881	1863	1810	1810	1869	1900
Adj Flow Rate, veh/h	267	287	102	244	363	274	139	524	154	168	443	229
Adj No. of Lanes	1	2	0	2	2	1	1	2	1	1	2	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	1	2	2	2	3	3	1	2	5	5	2	2
Cap, veh/h	189	698	243	323	907	406	173	1001	432	203	690	354
Arrive On Green	0.11	0.27	0.27	0.09	0.26	0.26	0.10	0.28	0.28	0.12	0.30	0.30
Sat Flow, veh/h	1792	2583	899	3442	3505	1566	1792	3539	1527	1723	2270	1164
Grp Volume(v), veh/h	267	195	194	244	363	274	139	524	154	168	346	326
Grp Sat Flow(s),veh/h/ln	1792	1774	1708	1721	1752	1566	1792	1770	1527	1723	1776	1658
Q Serve(g_s), s	8.5	7.3	7.5	5.6	6.9	12.7	6.1	10.1	6.5	7.7	13.6	13.8
Cycle Q Clear(g_c), s	8.5	7.3	7.5	5.6	6.9	12.7	6.1	10.1	6.5	7.7	13.6	13.8
Prop In Lane	1.00		0.53	1.00		1.00	1.00		1.00	1.00		0.70
Lane Grp Cap(c), veh/h	189	480	462	323	907	406	173	1001	432	203	540	504
V/C Ratio(X)	1.42	0.41	0.42	0.76	0.40	0.68	0.80	0.52	0.36	0.83	0.64	0.65
Avail Cap(c_a), veh/h	189	839	808	354	1649	737	255	1622	700	267	836	780
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.1	24.2	24.2	35.7	24.7	26.9	35.7	24.4	23.1	34.8	24.3	24.4
Incr Delay (d2), s/veh	215.3	0.7	0.7	6.9	0.3	2.4	6.4	0.5	0.6	11.8	1.5	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.4	3.7	3.6	3.0	3.4	5.7	3.4	4.9	2.8	4.3	6.9	6.5
LnGrp Delay(d),s/veh	251.4	24.8	25.0	42.6	25.1	29.2	42.1	24.9	23.7	46.6	25.8	26.1
LnGrp LOS	F	C	C	D	C	C	D	C	C	D	C	C
Approach Vol, veh/h		656			881			817			840	
Approach Delay, s/veh		117.1			31.2			27.6			30.1	
Approach LOS		F			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.1	26.8	12.3	29.5	13.0	25.9	14.0	27.8
Change Period (Y+Rc), s	4.5	5.0	4.5	5.0	4.5	5.0	4.5	5.0
Max Green Setting (Gmax), s	8.3	38.2	11.5	38.0	8.5	38.0	12.5	37.0
Max Q Clear Time (g_c+I1), s	7.6	9.5	8.1	15.8	10.5	14.7	9.7	12.1
Green Ext Time (p_c), s	0.0	6.1	0.0	7.6	0.0	5.8	0.0	7.9

Intersection Summary	
HCM 2010 Ctrl Delay	47.6
HCM 2010 LOS	D



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	471	601	236	546	678	55
Future Volume (veh/h)	471	601	236	546	678	55
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1863	1863	1881	1881	1863
Adj Flow Rate, veh/h	529	675	265	613	762	62
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	1	2	2	1	1	2
Cap, veh/h	573	507	283	1079	1079	889
Arrive On Green	0.32	0.32	0.57	0.57	0.57	0.57
Sat Flow, veh/h	1792	1583	662	1881	1881	1551
Grp Volume(v), veh/h	529	675	265	613	762	62
Grp Sat Flow(s),veh/h/ln	1792	1583	662	1881	1881	1551
Q Serve(g_s), s	21.4	24.0	21.2	15.5	21.8	1.3
Cycle Q Clear(g_c), s	21.4	24.0	43.0	15.5	21.8	1.3
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	573	507	283	1079	1079	889
V/C Ratio(X)	0.92	1.33	0.94	0.57	0.71	0.07
Avail Cap(c_a), veh/h	573	507	283	1079	1079	889
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.6	25.5	30.0	10.1	11.5	7.1
Incr Delay (d2), s/veh	20.7	162.6	36.7	0.7	2.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.7	33.3	8.3	8.0	11.9	0.6
LnGrp Delay(d),s/veh	45.3	188.1	66.7	10.8	13.6	7.1
LnGrp LOS	D	F	E	B	B	A
Approach Vol, veh/h	1204			878	824	
Approach Delay, s/veh	125.3			27.7	13.1	
Approach LOS	F			C	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		47.0		28.0		47.0		
Change Period (Y+Rc), s		4.0		4.0		4.0		
Max Green Setting (Gmax), s		43.0		24.0		43.0		
Max Q Clear Time (g_c+I1), s		45.0		26.0		23.8		
Green Ext Time (p_c), s		0.0		0.0		9.1		

Intersection Summary	
HCM 2010 Ctrl Delay	64.0
HCM 2010 LOS	E



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	122	0	327	0	562	163	614	868	0
Future Volume (veh/h)	0	0	0	122	0	327	0	562	163	614	868	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1873	1900	1900	1863	1900	1863	1900	1900
Adj Flow Rate, veh/h	0	0	0	137	0	367	0	631	183	690	975	0
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	1	1	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	0	0
Cap, veh/h	0	373	0	123	3	225	0	556	161	516	1382	0
Arrive On Green	0.00	0.00	0.00	0.20	0.00	0.20	0.00	0.40	0.40	0.29	0.73	0.00
Sat Flow, veh/h	0	1863	0	406	13	1125	0	1389	403	1774	1900	0
Grp Volume(v), veh/h	0	0	0	504	0	0	0	0	814	690	975	0
Grp Sat Flow(s),veh/h/ln	0	1863	0	1544	0	0	0	0	1792	1774	1900	0
Q Serve(g_s), s	0.0	0.0	0.0	21.4	0.0	0.0	0.0	0.0	44.0	32.0	31.6	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	22.0	0.0	0.0	0.0	0.0	44.0	32.0	31.6	0.0
Prop In Lane	0.00		0.00	0.27		0.73	0.00		0.22	1.00		0.00
Lane Grp Cap(c), veh/h	0	373	0	351	0	0	0	0	717	516	1382	0
V/C Ratio(X)	0.00	0.00	0.00	1.44	0.00	0.00	0.00	0.00	1.14	1.34	0.71	0.00
Avail Cap(c_a), veh/h	0	373	0	351	0	0	0	0	717	516	1382	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	45.3	0.0	0.0	0.0	0.0	33.0	39.0	8.4	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	212.7	0.0	0.0	0.0	0.0	77.6	164.4	1.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	31.3	0.0	0.0	0.0	0.0	37.2	39.2	16.9	0.0
LnGrp Delay(d),s/veh	0.0	0.0	0.0	258.0	0.0	0.0	0.0	0.0	110.6	203.4	10.1	0.0
LnGrp LOS				F					F	F	B	
Approach Vol, veh/h		0			504			814			1665	
Approach Delay, s/veh		0.0			258.0			110.6			90.2	
Approach LOS					F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	36.0	48.0		26.0		84.0		26.0
Change Period (Y+Rc), s	4.0	4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s	32.0	44.0		22.0		80.0		22.0
Max Q Clear Time (g_c+I1), s	34.0	46.0		0.0		33.6		24.0
Green Ext Time (p_c), s	0.0	0.0		0.0		12.2		0.0

Intersection Summary		
HCM 2010 Ctrl Delay	124.1	
HCM 2010 LOS	F	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	180	471	152	56	247	240	153	1054	170	275	875	59
Future Volume (veh/h)	180	471	152	56	247	240	153	1054	170	275	875	59
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1872	1900	1900	1881	1900	1863	1868	1900	1881	1881	1900
Adj Flow Rate, veh/h	184	481	155	57	252	245	156	1076	173	281	893	60
Adj No. of Lanes	1	2	0	1	2	1	1	2	0	1	2	1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	1	1	0	1	0	2	2	2	1	1	0
Cap, veh/h	347	795	254	237	1071	484	381	1784	286	280	2081	940
Arrive On Green	0.30	0.30	0.30	0.30	0.30	0.30	0.58	0.58	0.58	0.58	0.58	0.58
Sat Flow, veh/h	915	2652	849	804	3574	1615	586	3064	492	448	3574	1614
Grp Volume(v), veh/h	184	322	314	57	252	245	156	622	627	281	893	60
Grp Sat Flow(s),veh/h/ln	915	1779	1722	804	1787	1615	586	1774	1781	448	1787	1614
Q Serve(g_s), s	11.2	9.2	9.3	3.9	3.1	7.4	12.0	13.4	13.4	21.1	8.2	1.0
Cycle Q Clear(g_c), s	14.4	9.2	9.3	13.1	3.1	7.4	20.2	13.4	13.4	34.5	8.2	1.0
Prop In Lane	1.00		0.49	1.00		1.00	1.00		0.28	1.00		1.00
Lane Grp Cap(c), veh/h	347	533	516	237	1071	484	381	1033	1037	280	2081	940
V/C Ratio(X)	0.53	0.60	0.61	0.24	0.24	0.51	0.41	0.60	0.60	1.00	0.43	0.06
Avail Cap(c_a), veh/h	358	555	538	247	1116	504	381	1033	1037	280	2081	940
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.1	17.7	17.8	23.4	15.6	17.1	12.5	8.0	8.0	23.7	6.9	5.4
Incr Delay (d2), s/veh	1.4	1.7	1.9	0.5	0.1	0.8	0.7	1.0	1.0	54.2	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	4.7	4.6	0.9	1.6	3.4	2.0	6.7	6.7	8.7	4.0	0.4
LnGrp Delay(d),s/veh	22.4	19.5	19.7	23.9	15.7	18.0	13.2	9.0	9.0	77.9	7.0	5.4
LnGrp LOS	C	B	B	C	B	B	B	A	A	F	A	A
Approach Vol, veh/h		820			554			1405			1234	
Approach Delay, s/veh		20.2			17.6			9.4			23.1	
Approach LOS		C			B			A			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		38.0		21.3		38.0		21.3
Change Period (Y+Rc), s		3.5		3.5		3.5		3.5
Max Green Setting (Gmax), s		34.5		18.5		34.5		18.5
Max Q Clear Time (g_c+I1), s		22.2		16.4		36.5		15.1
Green Ext Time (p_c), s		10.3		1.4		0.0		2.1

Intersection Summary		
HCM 2010 Ctrl Delay		17.0
HCM 2010 LOS		B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	146	54	21	13	48	97	30	1078	30	92	1091	159
Future Volume (veh/h)	146	54	21	13	48	97	30	1078	30	92	1091	159
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1887	1900	1900	1882	1900	1900	1881	1900
Adj Flow Rate, veh/h	166	61	24	15	55	110	34	1225	34	105	1240	181
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	0	0	0	0	0	0	0	1	1	0	1	0
Cap, veh/h	212	255	100	104	77	154	50	1571	44	135	1747	790
Arrive On Green	0.12	0.20	0.20	0.06	0.14	0.14	0.03	0.44	0.44	0.07	0.49	0.49
Sat Flow, veh/h	1810	1299	511	1810	563	1126	1810	3553	99	1810	3574	1615
Grp Volume(v), veh/h	166	0	85	15	0	165	34	616	643	105	1240	181
Grp Sat Flow(s),veh/h/ln	1810	0	1810	1810	0	1689	1810	1788	1864	1810	1787	1615
Q Serve(g_s), s	6.2	0.0	2.8	0.5	0.0	6.5	1.3	20.4	20.4	4.0	18.9	4.5
Cycle Q Clear(g_c), s	6.2	0.0	2.8	0.5	0.0	6.5	1.3	20.4	20.4	4.0	18.9	4.5
Prop In Lane	1.00		0.28	1.00		0.67	1.00		0.05	1.00		1.00
Lane Grp Cap(c), veh/h	212	0	355	104	0	231	50	790	824	135	1747	790
V/C Ratio(X)	0.78	0.00	0.24	0.14	0.00	0.72	0.68	0.78	0.78	0.78	0.71	0.23
Avail Cap(c_a), veh/h	442	0	468	468	0	461	104	822	857	156	1747	790
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.9	0.0	23.6	31.2	0.0	28.8	33.5	16.5	16.5	31.6	13.9	10.2
Incr Delay (d2), s/veh	6.3	0.0	0.3	0.6	0.0	4.1	14.9	4.7	4.5	19.2	1.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	0.0	1.4	0.3	0.0	3.3	0.8	11.0	11.4	2.7	9.5	2.0
LnGrp Delay(d),s/veh	36.1	0.0	23.9	31.8	0.0	32.9	48.4	21.2	21.0	50.9	15.3	10.4
LnGrp LOS	D		C	C		C	D	C	C	D	B	B
Approach Vol, veh/h		251			180			1293			1526	
Approach Delay, s/veh		32.0			32.8			21.8			17.1	
Approach LOS		C			C			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.2	34.8	8.0	17.7	5.9	38.0	12.1	13.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	6.6	32.0	18.0	18.0	4.0	34.0	17.0	19.0
Max Q Clear Time (g_c+I1), s	10.5	22.4	2.5	4.8	3.3	20.9	8.2	8.5
Green Ext Time (p_c), s	0.0	8.3	0.0	1.2	0.0	11.1	0.3	1.1

Intersection Summary	
HCM 2010 Ctrl Delay	21.0
HCM 2010 LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	4	178	123	3	47	163	1125	206	52	934	20
Future Volume (veh/h)	20	4	178	123	3	47	163	1125	206	52	934	20
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1900	1863	1900	1863	1835	1900	1827	1827	1863
Adj Flow Rate, veh/h	20	4	178	127	3	48	163	1160	212	54	963	20
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	1	1
Peak Hour Factor	1.00	1.00	1.00	0.97	1.00	0.97	1.00	0.97	0.97	0.97	0.97	1.00
Percent Heavy Veh, %	2	2	2	0	2	2	2	4	4	4	4	2
Cap, veh/h	31	5	216	134	18	294	195	1704	310	69	928	803
Arrive On Green	0.02	0.14	0.14	0.07	0.20	0.20	0.11	0.58	0.58	0.04	0.51	0.51
Sat Flow, veh/h	1774	35	1554	1810	94	1503	1774	2947	536	1740	1827	1582
Grp Volume(v), veh/h	20	0	182	127	0	51	163	684	688	54	963	20
Grp Sat Flow(s),veh/h/ln	1774	0	1589	1810	0	1597	1774	1743	1740	1740	1827	1582
Q Serve(g_s), s	1.1	0.0	10.5	6.6	0.0	2.5	8.5	25.7	26.1	2.9	48.0	0.6
Cycle Q Clear(g_c), s	1.1	0.0	10.5	6.6	0.0	2.5	8.5	25.7	26.1	2.9	48.0	0.6
Prop In Lane	1.00		0.98	1.00		0.94	1.00		0.31	1.00		1.00
Lane Grp Cap(c), veh/h	31	0	221	134	0	312	195	1008	1006	69	928	803
V/C Ratio(X)	0.65	0.00	0.83	0.95	0.00	0.16	0.84	0.68	0.68	0.79	1.04	0.02
Avail Cap(c_a), veh/h	75	0	303	134	0	355	206	1008	1006	147	928	803
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.2	0.0	39.6	43.6	0.0	31.6	41.2	13.8	13.9	45.0	23.3	11.6
Incr Delay (d2), s/veh	21.0	0.0	12.5	61.6	0.0	0.2	23.8	1.8	1.9	17.5	39.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	5.4	5.6	0.0	1.1	5.5	12.7	13.0	1.7	34.2	0.3
LnGrp Delay(d),s/veh	67.1	0.0	52.1	105.2	0.0	31.8	65.1	15.7	15.8	62.5	63.0	11.6
LnGrp LOS	E		D	F		C	E	B	B	E	F	B
Approach Vol, veh/h		202			178			1535			1037	
Approach Delay, s/veh		53.6			84.2			21.0			62.0	
Approach LOS		D			F			C			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.7	58.7	11.0	17.1	14.4	52.0	5.6	22.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	3.6	51.0	7.0	18.0	11.0	48.0	4.0	21.0
Max Q Clear Time (g_c+I1), s	4.9	28.1	8.6	12.5	10.5	50.0	3.1	4.5
Green Ext Time (p_c), s	0.0	16.8	0.0	0.6	0.0	0.0	0.0	1.2

Intersection Summary	
HCM 2010 Ctrl Delay	41.4
HCM 2010 LOS	D

Notes



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	579	203	1258	724	213	996
Future Volume (veh/h)	579	203	1258	724	213	996
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1845	1881	1863	1810
Adj Flow Rate, veh/h	629	221	1367	787	232	1083
Adj No. of Lanes	0	0	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	3	1	2	5
Cap, veh/h	408	143	1054	913	103	1034
Arrive On Green	0.31	0.31	0.57	0.57	0.57	0.57
Sat Flow, veh/h	1297	456	1845	1598	184	1810
Grp Volume(v), veh/h	851	0	1367	787	232	1083
Grp Sat Flow(s),veh/h/ln	1754	0	1845	1598	184	1810
Q Serve(g_s), s	22.0	0.0	40.0	29.1	0.0	40.0
Cycle Q Clear(g_c), s	22.0	0.0	40.0	29.1	40.0	40.0
Prop In Lane	0.74	0.26		1.00	1.00	
Lane Grp Cap(c), veh/h	551	0	1054	913	103	1034
V/C Ratio(X)	1.54	0.00	1.30	0.86	2.26	1.05
Avail Cap(c_a), veh/h	551	0	1054	913	103	1034
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.0	0.0	15.0	12.7	35.0	15.0
Incr Delay (d2), s/veh	253.5	0.0	140.7	8.5	594.9	41.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	49.4	0.0	61.1	14.8	19.0	31.4
LnGrp Delay(d),s/veh	277.5	0.0	155.7	21.2	629.9	56.2
LnGrp LOS	F		F	C	F	F
Approach Vol, veh/h	851		2154			1315
Approach Delay, s/veh	277.5		106.5			157.4
Approach LOS	F		F			F

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		44.0				44.0		26.0
Change Period (Y+Rc), s		4.0				4.0		4.0
Max Green Setting (Gmax), s		40.0				40.0		22.0
Max Q Clear Time (g_c+I1), s		42.0				42.0		24.0
Green Ext Time (p_c), s		0.0				0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	155.7
HCM 2010 LOS	F

Notes



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	690	226	138	411	132	82
Future Volume (veh/h)	690	226	138	411	132	82
Number	4	14	3	8	5	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	750	246	150	447	143	89
Adj No. of Lanes	2	1	1	2	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1979	885	499	1979	288	257
Arrive On Green	0.56	0.56	0.56	0.56	0.16	0.16
Sat Flow, veh/h	3632	1583	563	3632	1774	1583
Grp Volume(v), veh/h	750	246	150	447	143	89
Grp Sat Flow(s),veh/h/ln	1770	1583	563	1770	1774	1583
Q Serve(g_s), s	3.4	2.3	5.8	1.8	2.1	1.4
Cycle Q Clear(g_c), s	3.4	2.3	9.2	1.8	2.1	1.4
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1979	885	499	1979	288	257
V/C Ratio(X)	0.38	0.28	0.30	0.23	0.50	0.35
Avail Cap(c_a), veh/h	2216	992	536	2216	1111	992
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	3.5	3.3	6.1	3.2	11.0	10.7
Incr Delay (d2), s/veh	0.1	0.2	0.3	0.1	1.3	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	1.0	0.9	0.9	1.1	0.7
LnGrp Delay(d),s/veh	3.7	3.5	6.5	3.3	12.3	11.5
LnGrp LOS	A	A	A	A	B	B
Approach Vol, veh/h	996			597	232	
Approach Delay, s/veh	3.6			4.1	12.0	
Approach LOS	A			A	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		8.7		20.1				20.1
Change Period (Y+Rc), s		4.0		4.0				4.0
Max Green Setting (Gmax), s		18.0		18.0				18.0
Max Q Clear Time (g_c+I1), s		4.1		5.4				11.2
Green Ext Time (p_c), s		0.6		7.9				4.8

Intersection Summary	
HCM 2010 Ctrl Delay	4.8
HCM 2010 LOS	A

Intersection	
Intersection Delay, s/veh	8.2
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations																
Traffic Vol, veh/h	0	71	64	17	0	4	54	3	0	11	17	12	0	0	9	99
Future Vol, veh/h	0	71	64	17	0	4	54	3	0	11	17	12	0	0	9	99
Peak Hour Factor	1.00	0.81	0.81	0.81	1.00	0.81	0.81	0.81	1.00	0.81	0.81	0.81	1.00	0.81	0.81	0.81
Heavy Vehicles, %	2	0	2	0	2	0	6	0	2	0	0	25	2	0	0	0
Mvmt Flow	0	88	79	21	0	5	67	4	0	14	21	15	0	0	11	122
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.7	8	7.8	7.7
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	28%	47%	7%	0%
Vol Thru, %	43%	42%	89%	8%
Vol Right, %	30%	11%	5%	92%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	40	152	61	108
LT Vol	11	71	4	0
Through Vol	17	64	54	9
RT Vol	12	17	3	99
Lane Flow Rate	49	188	75	133
Geometry Grp	1	1	1	1
Degree of Util (X)	0.062	0.23	0.094	0.148
Departure Headway (Hd)	4.518	4.419	4.482	4.009
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	794	818	801	896
Service Time	2.541	2.419	2.503	2.028
HCM Lane V/C Ratio	0.062	0.23	0.094	0.148
HCM Control Delay	7.8	8.7	8	7.7
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.2	0.9	0.3	0.5



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	45	19	333	30	42	37	740	273	66	701	26
Future Volume (veh/h)	13	45	19	333	30	42	37	740	273	66	701	26
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1874	1900	1863	1900	1900	1900	1876	1900	1900	1882	1900
Adj Flow Rate, veh/h	14	47	20	351	32	44	39	779	287	69	738	27
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	2	2	2	0	0	0	1	1	0	1	1
Cap, veh/h	37	170	72	269	193	266	85	909	335	121	1325	48
Arrive On Green	0.02	0.14	0.14	0.15	0.27	0.27	0.05	0.36	0.36	0.07	0.38	0.38
Sat Flow, veh/h	1810	1241	528	1774	722	992	1810	2548	938	1810	3517	129
Grp Volume(v), veh/h	14	0	67	351	0	76	39	545	521	69	375	390
Grp Sat Flow(s),veh/h/ln	1810	0	1769	1774	0	1714	1810	1782	1704	1810	1788	1858
Q Serve(g_s), s	0.5	0.0	2.1	9.5	0.0	2.1	1.3	17.7	17.7	2.3	10.4	10.4
Cycle Q Clear(g_c), s	0.5	0.0	2.1	9.5	0.0	2.1	1.3	17.7	17.7	2.3	10.4	10.4
Prop In Lane	1.00		0.30	1.00		0.58	1.00		0.55	1.00		0.07
Lane Grp Cap(c), veh/h	37	0	242	269	0	459	85	636	608	121	673	700
V/C Ratio(X)	0.37	0.00	0.28	1.30	0.00	0.17	0.46	0.86	0.86	0.57	0.56	0.56
Avail Cap(c_a), veh/h	188	0	791	269	0	849	188	655	626	188	673	700
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.2	0.0	24.2	26.5	0.0	17.6	29.0	18.6	18.7	28.3	15.4	15.4
Incr Delay (d2), s/veh	2.3	0.0	0.2	161.0	0.0	0.1	1.4	11.3	11.8	1.6	1.5	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	1.1	16.6	0.0	1.0	0.7	10.6	10.3	1.2	5.4	5.6
LnGrp Delay(d),s/veh	32.5	0.0	24.5	187.6	0.0	17.6	30.4	30.0	30.5	29.9	16.9	16.8
LnGrp LOS	C		C	F		B	C	C	C	C	B	B
Approach Vol, veh/h		81			427			1105			834	
Approach Delay, s/veh		25.9			157.3			30.2			17.9	
Approach LOS		C			F			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.7	26.8	14.0	13.1	7.5	28.1	5.8	21.3
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	6.5	23.0	9.5	28.0	6.5	23.0	6.5	31.0
Max Q Clear Time (g_c+I1), s	4.3	19.7	11.5	4.1	3.3	12.4	2.5	4.1
Green Ext Time (p_c), s	0.0	2.6	0.0	0.3	0.0	9.1	0.0	0.3

Intersection Summary	
HCM 2010 Ctrl Delay	48.1
HCM 2010 LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	322	312	94	218	243	145	142	530	128	191	373	298
Future Volume (veh/h)	322	312	94	218	243	145	142	530	128	191	373	298
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1850	1900	1881	1900	1845	1900	1881	1900	1881	1890	1900
Adj Flow Rate, veh/h	362	351	106	245	273	163	160	596	144	215	419	335
Adj No. of Lanes	1	2	0	2	2	1	1	2	1	1	2	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	1	0	3	0	1	0	1	1	1
Cap, veh/h	173	629	187	323	834	359	196	1066	478	253	628	499
Arrive On Green	0.10	0.24	0.24	0.09	0.23	0.23	0.11	0.30	0.30	0.14	0.33	0.33
Sat Flow, veh/h	1774	2667	794	3476	3610	1556	1810	3574	1601	1792	1901	1509
Grp Volume(v), veh/h	362	230	227	245	273	163	160	596	144	215	396	358
Grp Sat Flow(s),veh/h/ln	1774	1758	1703	1738	1805	1556	1810	1787	1601	1792	1795	1615
Q Serve(g_s), s	8.0	9.4	9.6	5.6	5.2	7.4	7.1	11.5	5.7	9.6	15.5	15.6
Cycle Q Clear(g_c), s	8.0	9.4	9.6	5.6	5.2	7.4	7.1	11.5	5.7	9.6	15.5	15.6
Prop In Lane	1.00		0.47	1.00		1.00	1.00		1.00	1.00		0.93
Lane Grp Cap(c), veh/h	173	414	401	323	834	359	196	1066	478	253	593	534
V/C Ratio(X)	2.09	0.55	0.57	0.76	0.33	0.45	0.81	0.56	0.30	0.85	0.67	0.67
Avail Cap(c_a), veh/h	173	803	778	335	1645	709	303	1616	724	300	811	730
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.9	27.5	27.6	36.2	26.2	27.0	35.7	24.2	22.2	34.3	23.5	23.6
Incr Delay (d2), s/veh	508.8	1.4	1.5	8.2	0.3	1.1	5.0	0.6	0.4	15.8	1.6	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	28.4	4.7	4.7	3.1	2.6	3.3	3.8	5.7	2.6	5.8	7.9	7.2
LnGrp Delay(d),s/veh	545.7	28.9	29.1	44.4	26.5	28.1	40.7	24.8	22.6	50.1	25.1	25.3
LnGrp LOS	F	C	C	D	C	C	D	C	C	D	C	C
Approach Vol, veh/h		819			681			900			969	
Approach Delay, s/veh		257.4			33.3			27.2			30.7	
Approach LOS		F			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.1	24.3	13.4	32.1	12.5	23.9	16.0	29.4
Change Period (Y+Rc), s	4.5	5.0	4.5	5.0	4.5	5.0	4.5	5.0
Max Green Setting (Gmax), s	7.6	37.4	13.7	37.0	8.0	37.3	13.7	37.0
Max Q Clear Time (g_c+I1), s	7.6	11.6	9.1	17.6	10.0	9.4	11.6	13.5
Green Ext Time (p_c), s	0.0	5.0	0.1	8.2	0.0	5.1	0.0	8.9

Intersection Summary	
HCM 2010 Ctrl Delay	85.4
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	125	0	470	0	670	91	292	301	0
Future Volume (veh/h)	0	0	0	125	0	470	0	670	91	292	301	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1726	1900	1900	1861	1900	1827	1863	1900
Adj Flow Rate, veh/h	0	0	0	139	0	522	0	744	101	324	334	0
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	1	1	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	4	2	2
Cap, veh/h	0	497	0	131	7	303	0	663	90	278	1167	0
Arrive On Green	0.00	0.00	0.00	0.27	0.00	0.27	0.00	0.41	0.41	0.16	0.63	0.00
Sat Flow, veh/h	0	1863	0	275	28	1135	0	1604	218	1740	1863	0
Grp Volume(v), veh/h	0	0	0	661	0	0	0	0	845	324	334	0
Grp Sat Flow(s),veh/h/ln	0	1863	0	1438	0	0	0	0	1822	1740	1863	0
Q Serve(g_s), s	0.0	0.0	0.0	18.3	0.0	0.0	0.0	0.0	31.0	12.0	6.1	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	20.0	0.0	0.0	0.0	0.0	31.0	12.0	6.1	0.0
Prop In Lane	0.00		0.00	0.21		0.79	0.00		0.12	1.00		0.00
Lane Grp Cap(c), veh/h	0	497	0	441	0	0	0	0	753	278	1167	0
V/C Ratio(X)	0.00	0.00	0.00	1.50	0.00	0.00	0.00	0.00	1.12	1.16	0.29	0.00
Avail Cap(c_a), veh/h	0	497	0	441	0	0	0	0	753	278	1167	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	28.8	0.0	0.0	0.0	0.0	22.0	31.5	6.4	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	235.5	0.0	0.0	0.0	0.0	71.7	105.8	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	37.9	0.0	0.0	0.0	0.0	30.5	13.9	3.1	0.0
LnGrp Delay(d),s/veh	0.0	0.0	0.0	264.2	0.0	0.0	0.0	0.0	93.7	137.3	6.5	0.0
LnGrp LOS				F					F	F	A	
Approach Vol, veh/h		0			661			845			658	
Approach Delay, s/veh		0.0			264.2			93.7			70.9	
Approach LOS					F			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	16.0	35.0		24.0		51.0		24.0
Change Period (Y+Rc), s	4.0	4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s	12.0	31.0		20.0		47.0		20.0
Max Q Clear Time (g_c+I1), s	14.0	33.0		0.0		8.1		22.0
Green Ext Time (p_c), s	0.0	0.0		0.0		6.1		0.0

Intersection Summary		
HCM 2010 Ctrl Delay		138.9
HCM 2010 LOS		F



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	433	96	545	304	110	1499
Future Volume (veh/h)	433	96	545	304	110	1499
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1859	1900	1863	1900	1863	1863
Adj Flow Rate, veh/h	446	99	562	313	113	1545
Adj No. of Lanes	0	0	1	1	1	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	2	0	2	2
Cap, veh/h	359	80	1099	952	136	1292
Arrive On Green	0.25	0.25	0.59	0.59	0.08	0.69
Sat Flow, veh/h	1415	314	1863	1614	1774	1863
Grp Volume(v), veh/h	546	0	562	313	113	1545
Grp Sat Flow(s),veh/h/ln	1733	0	1863	1614	1774	1863
Q Serve(g_s), s	38.0	0.0	26.6	14.8	9.4	104.0
Cycle Q Clear(g_c), s	38.0	0.0	26.6	14.8	9.4	104.0
Prop In Lane	0.82	0.18		1.00	1.00	
Lane Grp Cap(c), veh/h	439	0	1099	952	136	1292
V/C Ratio(X)	1.24	0.00	0.51	0.33	0.83	1.20
Avail Cap(c_a), veh/h	439	0	1099	952	225	1292
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.0	0.0	18.0	15.6	68.3	23.0
Incr Delay (d2), s/veh	127.7	0.0	0.4	0.2	12.4	96.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	33.7	0.0	13.7	6.7	5.1	87.2
LnGrp Delay(d),s/veh	183.7	0.0	18.4	15.8	80.7	119.1
LnGrp LOS	F		B	B	F	F
Approach Vol, veh/h	546		875			1658
Approach Delay, s/veh	183.7		17.5			116.5
Approach LOS	F		B			F

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	15.5	92.5				108.0		42.0
Change Period (Y+Rc), s	4.0	4.0				4.0		4.0
Max Green Setting (Gmax), s	19.6	81.0				104.0		38.0
Max Q Clear Time (g_c+I1), s	11.4	28.6				106.0		40.0
Green Ext Time (p_c), s	0.2	29.9				0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	100.3
HCM 2010 LOS	F

Notes



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	471	546	205	530	648	55
Future Volume (veh/h)	471	546	205	530	648	55
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1863	1863	1881	1881	1863
Adj Flow Rate, veh/h	529	613	230	596	728	62
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	1	2	2	1	1	2
Cap, veh/h	573	507	304	1079	1079	889
Arrive On Green	0.32	0.32	0.57	0.57	0.57	0.57
Sat Flow, veh/h	1792	1583	683	1881	1881	1551
Grp Volume(v), veh/h	529	613	230	596	728	62
Grp Sat Flow(s),veh/h/ln	1792	1583	683	1881	1881	1551
Q Serve(g_s), s	21.4	24.0	22.8	14.8	20.2	1.3
Cycle Q Clear(g_c), s	21.4	24.0	43.0	14.8	20.2	1.3
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	573	507	304	1079	1079	889
V/C Ratio(X)	0.92	1.21	0.76	0.55	0.67	0.07
Avail Cap(c_a), veh/h	573	507	304	1079	1079	889
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.6	25.5	27.2	10.0	11.1	7.1
Incr Delay (d2), s/veh	20.7	111.7	10.5	0.6	1.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.7	26.1	5.6	7.8	10.8	0.6
LnGrp Delay(d),s/veh	45.3	137.2	37.7	10.6	12.8	7.1
LnGrp LOS	D	F	D	B	B	A
Approach Vol, veh/h	1142			826	790	
Approach Delay, s/veh	94.6			18.1	12.4	
Approach LOS	F			B	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		47.0		28.0		47.0		
Change Period (Y+Rc), s		4.0		4.0		4.0		
Max Green Setting (Gmax), s		43.0		24.0		43.0		
Max Q Clear Time (g_c+I1), s		45.0		26.0		22.2		
Green Ext Time (p_c), s		0.0		0.0		8.6		

Intersection Summary	
HCM 2010 Ctrl Delay	48.2
HCM 2010 LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	122	0	280	0	562	163	529	868	0
Future Volume (veh/h)	0	0	0	122	0	280	0	562	163	529	868	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1874	1900	1900	1863	1900	1863	1900	1900
Adj Flow Rate, veh/h	0	0	0	137	0	315	0	631	183	594	975	0
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	1	1	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	0	0
Cap, veh/h	0	373	0	133	3	215	0	556	161	516	1382	0
Arrive On Green	0.00	0.00	0.00	0.20	0.00	0.20	0.00	0.40	0.40	0.29	0.73	0.00
Sat Flow, veh/h	0	1863	0	452	15	1073	0	1389	403	1774	1900	0
Grp Volume(v), veh/h	0	0	0	452	0	0	0	0	814	594	975	0
Grp Sat Flow(s),veh/h/ln	0	1863	0	1540	0	0	0	0	1792	1774	1900	0
Q Serve(g_s), s	0.0	0.0	0.0	21.4	0.0	0.0	0.0	0.0	44.0	32.0	31.6	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	22.0	0.0	0.0	0.0	0.0	44.0	32.0	31.6	0.0
Prop In Lane	0.00		0.00	0.30		0.70	0.00		0.22	1.00		0.00
Lane Grp Cap(c), veh/h	0	373	0	351	0	0	0	0	717	516	1382	0
V/C Ratio(X)	0.00	0.00	0.00	1.29	0.00	0.00	0.00	0.00	1.14	1.15	0.71	0.00
Avail Cap(c_a), veh/h	0	373	0	351	0	0	0	0	717	516	1382	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	45.3	0.0	0.0	0.0	0.0	33.0	39.0	8.4	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	149.9	0.0	0.0	0.0	0.0	77.6	88.4	1.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	25.2	0.0	0.0	0.0	0.0	37.2	28.3	16.9	0.0
LnGrp Delay(d),s/veh	0.0	0.0	0.0	195.2	0.0	0.0	0.0	0.0	110.6	127.4	10.1	0.0
LnGrp LOS				F					F	F	B	
Approach Vol, veh/h		0			452			814			1569	
Approach Delay, s/veh		0.0			195.2			110.6			54.5	
Approach LOS					F			F			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	36.0	48.0		26.0		84.0		26.0
Change Period (Y+Rc), s	4.0	4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s	32.0	44.0		22.0		80.0		22.0
Max Q Clear Time (g_c+I1), s	34.0	46.0		0.0		33.6		24.0
Green Ext Time (p_c), s	0.0	0.0		0.0		12.2		0.0

Intersection Summary		
HCM 2010 Ctrl Delay	93.0	
HCM 2010 LOS	F	



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	579	203	1237	724	213	985
Future Volume (veh/h)	579	203	1237	724	213	985
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1845	1881	1863	1810
Adj Flow Rate, veh/h	629	221	1345	787	232	1071
Adj No. of Lanes	0	0	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	3	1	2	5
Cap, veh/h	408	143	1054	913	103	1034
Arrive On Green	0.31	0.31	0.57	0.57	0.57	0.57
Sat Flow, veh/h	1297	456	1845	1598	188	1810
Grp Volume(v), veh/h	851	0	1345	787	232	1071
Grp Sat Flow(s),veh/h/ln	1754	0	1845	1598	188	1810
Q Serve(g_s), s	22.0	0.0	40.0	29.1	0.0	40.0
Cycle Q Clear(g_c), s	22.0	0.0	40.0	29.1	40.0	40.0
Prop In Lane	0.74	0.26		1.00	1.00	
Lane Grp Cap(c), veh/h	551	0	1054	913	103	1034
V/C Ratio(X)	1.54	0.00	1.28	0.86	2.26	1.04
Avail Cap(c_a), veh/h	551	0	1054	913	103	1034
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.0	0.0	15.0	12.7	35.0	15.0
Incr Delay (d2), s/veh	253.5	0.0	131.6	8.5	594.9	37.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	49.4	0.0	58.5	14.8	19.0	30.3
LnGrp Delay(d),s/veh	277.5	0.0	146.6	21.2	629.9	52.6
LnGrp LOS	F		F	C	F	F
Approach Vol, veh/h	851		2132			1303
Approach Delay, s/veh	277.5		100.3			155.4
Approach LOS	F		F			F

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		44.0				44.0		26.0
Change Period (Y+Rc), s		4.0				4.0		4.0
Max Green Setting (Gmax), s		40.0				40.0		22.0
Max Q Clear Time (g_c+I1), s		42.0				42.0		24.0
Green Ext Time (p_c), s		0.0				0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	152.3
HCM 2010 LOS	F

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	272	307	90	218	235	145	136	530	128	191	373	211
Future Volume (veh/h)	272	307	90	218	235	145	136	530	128	191	373	211
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1850	1900	1881	1900	1845	1900	1881	1900	1881	1888	1900
Adj Flow Rate, veh/h	306	345	101	245	264	163	153	596	144	215	419	237
Adj No. of Lanes	1	2	0	2	2	1	1	2	1	1	2	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	1	0	3	0	1	0	1	1	1
Cap, veh/h	179	631	182	326	822	354	190	1040	466	254	726	406
Arrive On Green	0.10	0.23	0.23	0.09	0.23	0.23	0.10	0.29	0.29	0.14	0.33	0.33
Sat Flow, veh/h	1774	2689	775	3476	3610	1556	1810	3574	1601	1792	2216	1240
Grp Volume(v), veh/h	306	224	222	245	264	163	153	596	144	215	338	318
Grp Sat Flow(s),veh/h/ln	1774	1758	1707	1738	1805	1556	1810	1787	1601	1792	1794	1662
Q Serve(g_s), s	8.0	8.9	9.1	5.5	4.8	7.2	6.6	11.3	5.6	9.3	12.4	12.6
Cycle Q Clear(g_c), s	8.0	8.9	9.1	5.5	4.8	7.2	6.6	11.3	5.6	9.3	12.4	12.6
Prop In Lane	1.00		0.45	1.00		1.00	1.00		1.00	1.00		0.75
Lane Grp Cap(c), veh/h	179	413	401	326	822	354	190	1040	466	254	588	545
V/C Ratio(X)	1.71	0.54	0.55	0.75	0.32	0.46	0.81	0.57	0.31	0.85	0.58	0.58
Avail Cap(c_a), veh/h	179	827	803	345	1694	730	312	1664	745	309	835	774
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.7	26.7	26.8	35.1	25.6	26.5	34.8	24.0	22.0	33.3	22.1	22.2
Incr Delay (d2), s/veh	343.7	1.3	1.5	7.3	0.3	1.1	3.1	0.6	0.5	14.4	1.1	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	20.9	4.4	4.4	3.0	2.5	3.2	3.4	5.6	2.5	5.6	6.3	5.9
LnGrp Delay(d),s/veh	379.4	28.0	28.2	42.4	25.8	27.6	37.8	24.6	22.4	47.7	23.2	23.4
LnGrp LOS	F	C	C	D	C	C	D	C	C	D	C	C
Approach Vol, veh/h		752			672			893			871	
Approach Delay, s/veh		171.1			32.3			26.5			29.3	
Approach LOS		F			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.9	23.7	12.8	31.0	12.5	23.1	15.8	28.1
Change Period (Y+Rc), s	4.5	5.0	4.5	5.0	4.5	5.0	4.5	5.0
Max Green Setting (Gmax), s	7.4	37.4	13.7	37.0	8.0	37.3	13.7	37.0
Max Q Clear Time (g_c+I1), s	10.5	11.1	8.6	14.6	10.0	9.2	11.3	13.3
Green Ext Time (p_c), s	0.0	4.9	0.1	8.0	0.0	5.0	0.0	8.2

Intersection Summary	
HCM 2010 Ctrl Delay	62.6
HCM 2010 LOS	E

CUMULATIVE CONDITIONS SYNCHRO OUTPUT SHEETS



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	195	124	450	2311	1416	151
Future Volume (veh/h)	195	124	450	2311	1416	151
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	195	0	450	2311	1416	151
Adj No. of Lanes	1	1	1	3	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	240	214	500	3867	2170	676
Arrive On Green	0.14	0.00	0.28	0.76	0.43	0.43
Sat Flow, veh/h	1774	1583	1774	5253	5253	1583
Grp Volume(v), veh/h	195	0	450	2311	1416	151
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1695	1695	1583
Q Serve(g_s), s	8.2	0.0	18.7	15.3	17.0	4.6
Cycle Q Clear(g_c), s	8.2	0.0	18.7	15.3	17.0	4.6
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	240	214	500	3867	2170	676
V/C Ratio(X)	0.81	0.00	0.90	0.60	0.65	0.22
Avail Cap(c_a), veh/h	416	371	601	4238	2252	701
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.2	0.0	26.5	4.0	17.5	14.0
Incr Delay (d2), s/veh	6.5	0.0	14.8	0.2	0.6	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	0.0	11.2	6.9	8.0	2.0
LnGrp Delay(d),s/veh	38.7	0.0	41.4	4.2	18.1	14.1
LnGrp LOS	D		D	A	B	B
Approach Vol, veh/h	195			2761	1567	
Approach Delay, s/veh	38.7			10.3	17.8	
Approach LOS	D			B	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		62.4		14.4	25.6	36.8		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		64.0		18.0	26.0	34.0		
Max Q Clear Time (g_c+I1), s		17.3		10.2	20.7	19.0		
Green Ext Time (p_c), s		37.0		0.4	0.9	13.8		

Intersection Summary	
HCM 2010 Ctrl Delay	14.1
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	10	30	88	10	821	20	2012	127	251	1286	30
Future Volume (veh/h)	10	10	30	88	10	821	20	2012	127	251	1286	30
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	10	10	30	88	10	821	20	2012	127	251	1286	30
Adj No. of Lanes	1	1	1	1	2	0	1	3	1	1	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	16	362	308	110	437	391	27	2420	753	275	3146	73
Arrive On Green	0.01	0.19	0.19	0.06	0.25	0.25	0.02	0.48	0.48	0.15	0.62	0.62
Sat Flow, veh/h	1774	1863	1583	1774	1770	1583	1774	5085	1583	1774	5113	119
Grp Volume(v), veh/h	10	10	30	88	10	821	20	2012	127	251	853	463
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1770	1583	1774	1695	1583	1774	1695	1842
Q Serve(g_s), s	0.8	0.6	2.2	6.9	0.6	35.0	1.6	48.6	6.5	19.7	18.3	18.3
Cycle Q Clear(g_c), s	0.8	0.6	2.2	6.9	0.6	35.0	1.6	48.6	6.5	19.7	18.3	18.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.06
Lane Grp Cap(c), veh/h	16	362	308	110	437	391	27	2420	753	275	2086	1133
V/C Ratio(X)	0.61	0.03	0.10	0.80	0.02	2.10	0.73	0.83	0.17	0.91	0.41	0.41
Avail Cap(c_a), veh/h	50	362	308	175	437	391	75	2549	794	301	2131	1157
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	69.9	46.2	46.8	65.6	40.4	53.3	69.4	32.2	21.1	58.9	14.0	14.0
Incr Delay (d2), s/veh	32.0	0.0	0.1	12.9	0.0	502.8	31.1	2.4	0.1	29.3	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.3	1.0	3.8	0.3	69.9	1.0	23.3	2.9	11.9	8.6	9.3
LnGrp Delay(d),s/veh	101.9	46.2	47.0	78.4	40.4	556.1	100.5	34.6	21.3	88.2	14.1	14.2
LnGrp LOS	F	D	D	E	D	F	F	C	C	F	B	B
Approach Vol, veh/h		50			919			2159			1567	
Approach Delay, s/veh		57.8			504.8			34.4			26.0	
Approach LOS		E			F			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.9	71.4	12.7	31.6	6.2	91.1	5.3	39.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	21.9	71.0	14.0	25.0	6.0	89.0	4.0	35.0
Max Q Clear Time (g_c+I1), s	21.7	50.6	8.9	4.2	3.6	20.3	2.8	37.0
Green Ext Time (p_c), s	0.2	16.8	0.1	7.0	0.0	39.5	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	123.9
HCM 2010 LOS	F



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	270	390	1660	330	240	1210
Future Volume (veh/h)	270	390	1660	330	240	1210
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	270	390	1660	330	240	1210
Adj No. of Lanes	1	1	3	1	3	3
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	498	444	2146	668	450	2955
Arrive On Green	0.28	0.28	0.42	0.42	0.09	0.58
Sat Flow, veh/h	1774	1583	5253	1583	5003	5253
Grp Volume(v), veh/h	270	390	1660	330	240	1210
Grp Sat Flow(s),veh/h/ln	1774	1583	1695	1583	1668	1695
Q Serve(g_s), s	7.5	13.6	16.2	8.8	2.7	7.6
Cycle Q Clear(g_c), s	7.5	13.6	16.2	8.8	2.7	7.6
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	498	444	2146	668	450	2955
V/C Ratio(X)	0.54	0.88	0.77	0.49	0.53	0.41
Avail Cap(c_a), veh/h	552	493	2146	668	1557	3870
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.6	19.9	14.3	12.2	25.2	6.7
Incr Delay (d2), s/veh	0.9	15.3	1.8	0.6	1.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	7.8	7.9	3.9	1.3	3.5
LnGrp Delay(d),s/veh	18.6	35.2	16.2	12.8	26.1	6.8
LnGrp LOS	B	D	B	B	C	A
Approach Vol, veh/h	660		1990			1450
Approach Delay, s/veh	28.4		15.6			10.0
Approach LOS	C		B			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	9.2	28.4				37.6		20.2
Change Period (Y+Rc), s	4.0	4.0				4.0		4.0
Max Green Setting (Gmax), s	18.6	22.0				44.0		18.0
Max Q Clear Time (g_c+I1), s	14.7	18.2				9.6		15.6
Green Ext Time (p_c), s	0.7	3.7				24.0		0.6

Intersection Summary	
HCM 2010 Ctrl Delay	15.7
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	51	223	272	100	682	91	70	650	90	112	443	177
Future Volume (veh/h)	51	223	272	100	682	91	70	650	90	112	443	177
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	51	223	272	100	682	91	70	650	90	112	443	177
Adj No. of Lanes	1	2	0	1	2	1	1	2	0	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	72	480	430	127	1070	479	88	922	128	143	1153	516
Arrive On Green	0.04	0.27	0.27	0.07	0.30	0.30	0.05	0.30	0.30	0.08	0.33	0.33
Sat Flow, veh/h	1774	1770	1583	1774	3539	1583	1774	3124	432	1774	3539	1583
Grp Volume(v), veh/h	51	223	272	100	682	91	70	368	372	112	443	177
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1770	1787	1774	1770	1583
Q Serve(g_s), s	1.4	5.2	7.5	2.8	8.3	2.1	1.9	9.2	9.2	3.1	4.8	4.2
Cycle Q Clear(g_c), s	1.4	5.2	7.5	2.8	8.3	2.1	1.9	9.2	9.2	3.1	4.8	4.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.24	1.00		1.00
Lane Grp Cap(c), veh/h	72	480	430	127	1070	479	88	523	528	143	1153	516
V/C Ratio(X)	0.71	0.46	0.63	0.79	0.64	0.19	0.79	0.70	0.71	0.78	0.38	0.34
Avail Cap(c_a), veh/h	160	658	589	160	1316	589	160	658	664	160	1316	589
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.6	15.1	16.0	22.7	15.0	12.9	23.4	15.6	15.6	22.5	12.9	12.7
Incr Delay (d2), s/veh	11.9	0.7	1.5	18.0	0.7	0.2	14.5	2.5	2.5	20.1	0.2	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	2.6	3.4	2.0	4.1	1.0	1.3	4.9	4.9	2.3	2.4	1.9
LnGrp Delay(d),s/veh	35.5	15.8	17.5	40.7	15.7	13.0	37.9	18.1	18.1	42.5	13.1	13.1
LnGrp LOS	D	B	B	D	B	B	D	B	B	D	B	B
Approach Vol, veh/h		546			873			810			732	
Approach Delay, s/veh		18.5			18.3			19.8			17.6	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.5	18.2	7.1	17.0	6.0	19.7	5.5	18.5
Change Period (Y+Rc), s	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Max Green Setting (Gmax), s	4.5	18.5	4.5	18.5	4.5	18.5	4.5	18.5
Max Q Clear Time (g_c+I1), s	5.1	11.2	4.8	9.5	3.9	6.8	3.4	10.3
Green Ext Time (p_c), s	0.0	3.5	0.0	4.0	0.0	4.6	0.0	3.8

Intersection Summary		
HCM 2010 Ctrl Delay		18.6
HCM 2010 LOS		B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	92	18	2	23	15	142	20	566	4	60	468	87
Future Volume (veh/h)	92	18	2	23	15	142	20	566	4	60	468	87
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	92	18	2	23	15	142	20	566	4	60	468	87
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	117	300	33	38	21	200	34	1670	12	77	1727	772
Arrive On Green	0.07	0.18	0.18	0.02	0.14	0.14	0.02	0.46	0.46	0.04	0.49	0.49
Sat Flow, veh/h	1774	1647	183	1774	153	1450	1774	3602	25	1774	3539	1582
Grp Volume(v), veh/h	92	0	20	23	0	157	20	278	292	60	468	87
Grp Sat Flow(s),veh/h/ln	1774	0	1830	1774	0	1603	1774	1770	1858	1774	1770	1582
Q Serve(g_s), s	2.8	0.0	0.5	0.7	0.0	5.2	0.6	5.5	5.5	1.9	4.3	1.6
Cycle Q Clear(g_c), s	2.8	0.0	0.5	0.7	0.0	5.2	0.6	5.5	5.5	1.9	4.3	1.6
Prop In Lane	1.00		0.10	1.00		0.90	1.00		0.01	1.00		1.00
Lane Grp Cap(c), veh/h	117	0	334	38	0	221	34	820	861	77	1727	772
V/C Ratio(X)	0.79	0.00	0.06	0.60	0.00	0.71	0.59	0.34	0.34	0.78	0.27	0.11
Avail Cap(c_a), veh/h	160	0	595	160	0	521	128	820	861	192	1727	772
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.5	0.0	18.7	26.8	0.0	22.8	26.9	9.4	9.4	26.2	8.4	7.7
Incr Delay (d2), s/veh	16.0	0.0	0.1	14.3	0.0	4.2	15.2	1.1	1.1	15.2	0.4	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	0.3	0.5	0.0	2.5	0.4	3.0	3.1	1.2	2.2	0.8
LnGrp Delay(d),s/veh	41.4	0.0	18.8	41.1	0.0	27.0	42.1	10.6	10.5	41.4	8.7	8.0
LnGrp LOS	D		B	D		C	D	B	B	D	A	A
Approach Vol, veh/h		112			180			590			615	
Approach Delay, s/veh		37.4			28.8			11.6			11.8	
Approach LOS		D			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.4	29.6	5.2	14.1	5.1	31.0	7.7	11.6
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	6.0	25.0	5.0	18.0	4.0	27.0	5.0	18.0
Max Q Clear Time (g_c+I1), s	2.9	7.5	2.7	2.5	2.6	6.3	4.8	7.2
Green Ext Time (p_c), s	0.0	5.9	0.0	0.9	0.0	6.3	0.0	0.7

Intersection Summary	
HCM 2010 Ctrl Delay	15.7
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	2	128	414	3	82	73	448	12	11	337	10
Future Volume (veh/h)	10	2	128	414	3	82	73	448	12	11	337	10
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	10	2	128	414	3	82	73	448	12	11	337	10
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	19	3	209	507	23	628	95	774	21	20	629	281
Arrive On Green	0.01	0.13	0.13	0.29	0.41	0.41	0.05	0.22	0.22	0.01	0.18	0.18
Sat Flow, veh/h	1774	24	1563	1774	56	1536	1774	3521	94	1774	3539	1579
Grp Volume(v), veh/h	10	0	130	414	0	85	73	225	235	11	337	10
Grp Sat Flow(s),veh/h/ln	1774	0	1587	1774	0	1592	1774	1770	1846	1774	1770	1579
Q Serve(g_s), s	0.3	0.0	3.5	10.0	0.0	1.5	1.9	5.2	5.2	0.3	4.0	0.2
Cycle Q Clear(g_c), s	0.3	0.0	3.5	10.0	0.0	1.5	1.9	5.2	5.2	0.3	4.0	0.2
Prop In Lane	1.00		0.98	1.00		0.96	1.00		0.05	1.00		1.00
Lane Grp Cap(c), veh/h	19	0	212	507	0	651	95	389	406	20	629	281
V/C Ratio(X)	0.54	0.00	0.61	0.82	0.00	0.13	0.77	0.58	0.58	0.54	0.54	0.04
Avail Cap(c_a), veh/h	194	0	623	1200	0	1528	310	3050	3181	232	5945	2652
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.6	0.0	18.7	15.2	0.0	8.5	21.4	16.0	16.0	22.5	17.1	9.4
Incr Delay (d2), s/veh	22.3	0.0	2.9	3.3	0.0	0.1	12.2	1.4	1.3	20.8	0.7	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	1.7	5.3	0.0	0.7	1.2	2.6	2.8	0.3	2.0	0.1
LnGrp Delay(d),s/veh	44.9	0.0	21.6	18.5	0.0	8.5	33.6	17.3	17.3	43.3	17.8	9.4
LnGrp LOS	D		C	B		A	C	B	B	D	B	A
Approach Vol, veh/h		140			499			533			358	
Approach Delay, s/veh		23.3			16.8			19.5			18.4	
Approach LOS		C			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.5	14.1	17.1	10.1	6.5	12.2	4.5	22.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	6.0	79.0	31.0	18.0	8.0	77.0	5.0	44.0
Max Q Clear Time (g_c+I1), s	2.3	7.2	12.0	5.5	3.9	6.0	2.3	3.5
Green Ext Time (p_c), s	0.0	2.6	1.2	1.0	0.1	2.2	0.0	1.4

Intersection Summary	
HCM 2010 Ctrl Delay	18.7
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	150	350	70	350	520	129	30	254	349	100	629	150
Future Volume (veh/h)	150	350	70	350	520	129	30	254	349	100	629	150
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	150	350	70	350	520	129	30	254	0	100	629	150
Adj No. of Lanes	2	2	0	2	2	0	1	2	1	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	249	654	129	515	843	208	47	945	423	131	891	212
Arrive On Green	0.07	0.22	0.22	0.15	0.30	0.30	0.03	0.27	0.00	0.07	0.31	0.31
Sat Flow, veh/h	3442	2946	583	3442	2814	695	1774	3539	1583	1774	2837	675
Grp Volume(v), veh/h	150	209	211	350	326	323	30	254	0	100	392	387
Grp Sat Flow(s),veh/h/ln	1721	1770	1760	1721	1770	1739	1774	1770	1583	1774	1770	1743
Q Serve(g_s), s	2.4	5.8	5.9	5.4	8.8	8.9	0.9	3.2	0.0	3.1	10.9	10.9
Cycle Q Clear(g_c), s	2.4	5.8	5.9	5.4	8.8	8.9	0.9	3.2	0.0	3.1	10.9	10.9
Prop In Lane	1.00		0.33	1.00		0.40	1.00		1.00	1.00		0.39
Lane Grp Cap(c), veh/h	249	393	391	515	530	521	47	945	423	131	556	548
V/C Ratio(X)	0.60	0.53	0.54	0.68	0.62	0.62	0.63	0.27	0.00	0.76	0.70	0.71
Avail Cap(c_a), veh/h	433	572	569	989	858	843	127	3623	1621	414	2097	2065
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.1	19.1	19.2	22.4	16.7	16.8	26.8	16.1	0.0	25.3	16.8	16.8
Incr Delay (d2), s/veh	2.4	1.1	1.2	1.6	1.2	1.2	13.2	0.2	0.0	8.8	1.7	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	3.0	3.0	2.6	4.4	4.4	0.6	1.5	0.0	1.8	5.5	5.4
LnGrp Delay(d),s/veh	27.4	20.2	20.3	24.0	17.9	18.0	40.0	16.3	0.0	34.1	18.5	18.5
LnGrp LOS	C	C	C	C	B	B	D	B		C	B	B
Approach Vol, veh/h		570			999			284			879	
Approach Delay, s/veh		22.1			20.1			18.8			20.3	
Approach LOS		C			C			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.1	18.9	12.3	16.4	5.5	21.5	8.0	20.7
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	13.0	57.0	16.0	18.0	4.0	66.0	7.0	27.0
Max Q Clear Time (g_c+I1), s	5.1	5.2	7.4	7.9	2.9	12.9	4.4	10.9
Green Ext Time (p_c), s	0.1	4.6	1.0	4.4	0.0	4.6	0.1	5.7

Intersection Summary		
HCM 2010 Ctrl Delay		20.4
HCM 2010 LOS		C

Intersection	
Intersection Delay, s/veh	8.3
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations			↕				↕				↕				↕	
Traffic Vol, veh/h	0	21	122	13	0	22	148	2	0	16	24	7	0	3	6	36
Future Vol, veh/h	0	21	122	13	0	22	148	2	0	16	24	7	0	3	6	36
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	21	122	13	0	22	148	2	0	16	24	7	0	3	6	36
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.3	8.5	8	7.5
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	34%	13%	13%	7%
Vol Thru, %	51%	78%	86%	13%
Vol Right, %	15%	8%	1%	80%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	47	156	172	45
LT Vol	16	21	22	3
Through Vol	24	122	148	6
RT Vol	7	13	2	36
Lane Flow Rate	47	156	172	45
Geometry Grp	1	1	1	1
Degree of Util (X)	0.061	0.187	0.207	0.053
Departure Headway (Hd)	4.693	4.311	4.335	4.253
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	764	836	832	843
Service Time	2.714	2.315	2.34	2.273
HCM Lane V/C Ratio	0.062	0.187	0.207	0.053
HCM Control Delay	8	8.3	8.5	7.5
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.2	0.7	0.8	0.2



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	104	86	26	290	94	264	26	1136	280	44	664	62
Future Volume (veh/h)	104	86	26	290	94	264	26	1136	280	44	664	62
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	104	86	26	290	94	264	26	1136	280	44	664	62
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	130	188	57	318	105	295	53	1337	327	72	1588	148
Arrive On Green	0.07	0.14	0.14	0.18	0.24	0.24	0.03	0.47	0.47	0.04	0.49	0.49
Sat Flow, veh/h	1774	1370	414	1774	431	1210	1774	2817	688	1774	3271	305
Grp Volume(v), veh/h	104	0	112	290	0	358	26	710	706	44	359	367
Grp Sat Flow(s),veh/h/ln	1774	0	1784	1774	0	1640	1774	1770	1735	1774	1770	1806
Q Serve(g_s), s	6.2	0.0	6.2	17.2	0.0	22.7	1.5	37.8	38.7	2.6	14.1	14.1
Cycle Q Clear(g_c), s	6.2	0.0	6.2	17.2	0.0	22.7	1.5	37.8	38.7	2.6	14.1	14.1
Prop In Lane	1.00		0.23	1.00		0.74	1.00		0.40	1.00		0.17
Lane Grp Cap(c), veh/h	130	0	245	318	0	400	53	840	824	72	859	877
V/C Ratio(X)	0.80	0.00	0.46	0.91	0.00	0.90	0.49	0.84	0.86	0.61	0.42	0.42
Avail Cap(c_a), veh/h	174	0	465	339	0	581	107	857	840	107	859	877
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.0	0.0	42.6	43.2	0.0	39.3	51.2	24.7	25.0	50.6	17.8	17.8
Incr Delay (d2), s/veh	13.0	0.0	0.5	26.0	0.0	9.5	2.5	8.2	9.2	3.0	0.6	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	0.0	3.1	10.8	0.0	11.3	0.8	20.2	20.5	1.3	7.0	7.2
LnGrp Delay(d),s/veh	62.0	0.0	43.1	69.3	0.0	48.7	53.8	32.9	34.1	53.7	18.4	18.4
LnGrp LOS	E		D	E		D	D	C	C	D	B	B
Approach Vol, veh/h		216			648			1442			770	
Approach Delay, s/veh		52.2			57.9			33.9			20.4	
Approach LOS		D			E			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.9	55.5	23.7	19.3	7.7	56.6	12.3	30.7
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	6.5	52.0	20.5	28.0	6.5	52.0	10.5	38.0
Max Q Clear Time (g_c+I1), s	4.4	40.7	19.2	8.2	3.5	16.1	8.2	24.7
Green Ext Time (p_c), s	0.0	10.3	0.0	1.1	0.0	28.8	0.0	1.0

Intersection Summary	
HCM 2010 Ctrl Delay	36.9
HCM 2010 LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	561	127	70	652	519	40	761	310	90	716	167
Future Volume (veh/h)	110	561	127	70	652	519	40	761	310	90	716	167
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	110	561	127	70	652	519	40	761	310	90	716	167
Adj No. of Lanes	1	2	0	2	2	1	1	2	1	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	138	1120	253	175	1286	575	71	1092	485	114	949	221
Arrive On Green	0.08	0.39	0.39	0.05	0.36	0.36	0.04	0.31	0.31	0.06	0.33	0.33
Sat Flow, veh/h	1774	2870	648	3442	3539	1582	1774	3539	1573	1774	2848	664
Grp Volume(v), veh/h	110	345	343	70	652	519	40	761	310	90	445	438
Grp Sat Flow(s),veh/h/ln	1774	1770	1748	1721	1770	1582	1774	1770	1573	1774	1770	1743
Q Serve(g_s), s	6.2	15.1	15.2	2.0	14.7	31.7	2.3	19.3	17.3	5.1	22.8	22.9
Cycle Q Clear(g_c), s	6.2	15.1	15.2	2.0	14.7	31.7	2.3	19.3	17.3	5.1	22.8	22.9
Prop In Lane	1.00		0.37	1.00		1.00	1.00		1.00	1.00		0.38
Lane Grp Cap(c), veh/h	138	690	682	175	1286	575	71	1092	485	114	589	580
V/C Ratio(X)	0.80	0.50	0.50	0.40	0.51	0.90	0.57	0.70	0.64	0.79	0.75	0.76
Avail Cap(c_a), veh/h	322	729	720	489	1318	589	200	1284	571	217	659	649
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.3	23.6	23.6	46.9	25.3	30.8	48.1	31.1	30.4	47.0	30.3	30.3
Incr Delay (d2), s/veh	4.0	0.7	0.7	0.6	0.4	17.2	2.6	1.5	2.1	4.5	4.7	4.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	7.5	7.5	1.0	7.2	16.6	1.2	9.6	7.8	2.6	11.9	11.7
LnGrp Delay(d),s/veh	50.3	24.2	24.3	47.5	25.7	48.0	50.7	32.6	32.5	51.5	35.0	35.1
LnGrp LOS	D	C	C	D	C	D	D	C	C	D	C	D
Approach Vol, veh/h		798			1241			1111			973	
Approach Delay, s/veh		27.9			36.3			33.2			36.6	
Approach LOS		C			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.7	44.8	8.6	39.0	12.4	42.1	11.1	36.5
Change Period (Y+Rc), s	4.5	5.0	4.5	5.0	4.5	5.0	4.5	5.0
Max Green Setting (Gmax), s	14.5	42.0	11.5	38.0	18.5	38.0	12.5	37.0
Max Q Clear Time (g_c+I1), s	4.0	17.2	4.3	24.9	8.2	33.7	7.1	21.3
Green Ext Time (p_c), s	0.0	12.4	0.0	8.4	0.1	3.3	0.0	9.5

Intersection Summary	
HCM 2010 Ctrl Delay	33.9
HCM 2010 LOS	C

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	224	1006	291	2098	2457	40
Future Volume (veh/h)	224	1006	291	2098	2457	40
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	224	0	291	2098	2457	40
Adj No. of Lanes	1	1	1	3	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	271	242	346	3766	2502	763
Arrive On Green	0.15	0.00	0.20	0.74	0.49	0.49
Sat Flow, veh/h	1774	1583	1774	5253	5253	1550
Grp Volume(v), veh/h	224	0	291	2098	2457	40
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1695	1695	1550
Q Serve(g_s), s	9.2	0.0	11.9	13.7	35.7	1.0
Cycle Q Clear(g_c), s	9.2	0.0	11.9	13.7	35.7	1.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	271	242	346	3766	2502	763
V/C Ratio(X)	0.83	0.00	0.84	0.56	0.98	0.05
Avail Cap(c_a), veh/h	425	380	614	4335	2502	763
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.8	0.0	29.1	4.3	18.7	9.9
Incr Delay (d2), s/veh	7.4	0.0	5.5	0.1	14.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	0.0	6.3	6.3	19.6	0.4
LnGrp Delay(d),s/veh	38.2	0.0	34.6	4.4	32.7	10.0
LnGrp LOS	D		C	A	C	A
Approach Vol, veh/h	224			2389	2497	
Approach Delay, s/veh	38.2			8.1	32.4	
Approach LOS	D			A	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		59.6		15.5	18.7	40.9		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		64.0		18.0	26.0	34.0		
Max Q Clear Time (g_c+I1), s		15.7		11.2	13.9	37.7		
Green Ext Time (p_c), s		39.9		0.4	0.8	0.0		

Intersection Summary	
HCM 2010 Ctrl Delay	21.3
HCM 2010 LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	20	230	274	60	374	80	2152	132	740	2737	10
Future Volume (veh/h)	10	20	230	274	60	374	80	2152	132	740	2737	10
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	10	20	230	274	60	374	80	2152	132	740	2737	10
Adj No. of Lanes	1	1	1	1	2	0	1	3	1	1	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	16	224	190	201	397	355	99	1763	549	556	3160	12
Arrive On Green	0.01	0.12	0.12	0.11	0.22	0.22	0.06	0.35	0.35	0.31	0.60	0.60
Sat Flow, veh/h	1774	1863	1583	1774	1770	1583	1774	5085	1583	1774	5230	19
Grp Volume(v), veh/h	10	20	230	274	60	374	80	2152	132	740	1773	974
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1770	1583	1774	1695	1583	1774	1695	1859
Q Serve(g_s), s	0.8	1.4	18.0	17.0	4.1	33.6	6.7	52.0	8.9	47.0	65.1	65.3
Cycle Q Clear(g_c), s	0.8	1.4	18.0	17.0	4.1	33.6	6.7	52.0	8.9	47.0	65.1	65.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.01
Lane Grp Cap(c), veh/h	16	224	190	201	397	355	99	1763	549	556	2048	1123
V/C Ratio(X)	0.62	0.09	1.21	1.36	0.15	1.05	0.81	1.22	0.24	1.33	0.87	0.87
Avail Cap(c_a), veh/h	47	224	190	201	397	355	106	1763	549	556	2048	1123
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	74.1	58.7	66.0	66.5	46.7	58.2	70.0	49.0	34.9	51.5	24.6	24.7
Incr Delay (d2), s/veh	33.0	0.2	133.4	191.9	0.2	62.5	33.5	104.7	0.2	161.1	4.2	7.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.7	14.9	19.0	2.0	20.9	4.2	41.4	3.9	47.9	31.5	35.6
LnGrp Delay(d),s/veh	107.1	58.9	199.4	258.4	46.9	120.7	103.5	153.7	35.1	212.6	28.8	32.0
LnGrp LOS	F	E	F	F	D	F	F	F	D	F	C	C
Approach Vol, veh/h		260			708			2364			3487	
Approach Delay, s/veh		185.1			167.7			145.4			68.7	
Approach LOS		F			F			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	51.0	56.0	21.0	22.0	12.4	94.6	5.4	37.6
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	47.0	52.0	17.0	18.0	9.0	90.0	4.0	31.0
Max Q Clear Time (g_c+I1), s	49.0	54.0	19.0	20.0	8.7	67.3	2.8	35.6
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	21.9	0.0	0.0

Intersection Summary		
HCM 2010 Ctrl Delay	110.0	
HCM 2010 LOS	F	



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	460	460	1860	610	340	2300
Future Volume (veh/h)	460	460	1860	610	340	2300
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	460	460	1860	610	340	2300
Adj No. of Lanes	1	1	3	1	1	3
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	630	563	2269	707	196	2269
Arrive On Green	0.36	0.36	0.45	0.45	0.45	0.45
Sat Flow, veh/h	1774	1583	5253	1583	135	5253
Grp Volume(v), veh/h	460	460	1860	610	340	2300
Grp Sat Flow(s),veh/h/ln	1774	1583	1695	1583	135	1695
Q Serve(g_s), s	9.1	10.6	12.9	14.0	5.1	18.0
Cycle Q Clear(g_c), s	9.1	10.6	12.9	14.0	18.0	18.0
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	630	563	2269	707	196	2269
V/C Ratio(X)	0.73	0.82	0.82	0.86	1.74	1.01
Avail Cap(c_a), veh/h	792	707	2269	707	196	2269
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.3	11.8	9.8	10.1	19.9	11.2
Incr Delay (d2), s/veh	2.6	6.0	2.5	10.8	352.6	22.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	5.5	6.4	8.0	21.3	12.9
LnGrp Delay(d),s/veh	13.9	17.9	12.3	20.8	372.6	33.5
LnGrp LOS	B	B	B	C	F	F
Approach Vol, veh/h	920		2470			2640
Approach Delay, s/veh	15.9		14.4			77.1
Approach LOS	B		B			E

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		22.0				22.0		18.3
Change Period (Y+Rc), s		4.0				4.0		4.0
Max Green Setting (Gmax), s		18.0				18.0		18.0
Max Q Clear Time (g_c+I1), s		16.0				20.0		12.6
Green Ext Time (p_c), s		2.0				0.0		1.7

Intersection Summary	
HCM 2010 Ctrl Delay	42.1
HCM 2010 LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	809	209	64	581	266	80	915	108	259	774	127
Future Volume (veh/h)	70	809	209	64	581	266	80	915	108	259	774	127
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	70	809	209	64	581	266	80	915	108	259	774	127
Adj No. of Lanes	1	2	0	1	2	1	1	2	0	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	89	795	205	81	994	445	103	990	117	273	1436	642
Arrive On Green	0.05	0.29	0.29	0.05	0.28	0.28	0.06	0.31	0.31	0.15	0.41	0.41
Sat Flow, veh/h	1774	2786	720	1774	3539	1583	1774	3189	376	1774	3539	1582
Grp Volume(v), veh/h	70	514	504	64	581	266	80	508	515	259	774	127
Grp Sat Flow(s),veh/h/ln	1774	1770	1736	1774	1770	1583	1774	1770	1796	1774	1770	1582
Q Serve(g_s), s	2.7	19.5	19.5	2.4	9.7	9.9	3.0	19.0	19.0	9.9	11.4	3.5
Cycle Q Clear(g_c), s	2.7	19.5	19.5	2.4	9.7	9.9	3.0	19.0	19.0	9.9	11.4	3.5
Prop In Lane	1.00		0.41	1.00		1.00	1.00		0.21	1.00		1.00
Lane Grp Cap(c), veh/h	89	505	495	81	994	445	103	549	557	273	1436	642
V/C Ratio(X)	0.78	1.02	1.02	0.79	0.58	0.60	0.77	0.92	0.92	0.95	0.54	0.20
Avail Cap(c_a), veh/h	143	505	495	117	994	445	221	557	565	273	1436	642
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.1	24.4	24.4	32.3	21.1	21.2	31.7	22.8	22.8	28.7	15.4	13.1
Incr Delay (d2), s/veh	13.8	44.5	44.9	20.0	0.9	2.2	11.6	21.3	21.1	41.0	0.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	15.6	15.4	1.6	4.8	4.6	1.8	12.4	12.6	7.9	5.6	1.6
LnGrp Delay(d),s/veh	45.9	68.9	69.4	52.3	22.0	23.4	43.4	44.1	43.9	69.6	15.8	13.3
LnGrp LOS	D	F	F	D	C	C	D	D	D	E	B	B
Approach Vol, veh/h		1088			911			1103			1160	
Approach Delay, s/veh		67.6			24.6			43.9			27.6	
Approach LOS		E			C			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	24.7	6.6	23.0	7.5	31.2	6.9	22.7
Change Period (Y+Rc), s	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Max Green Setting (Gmax), s	10.5	21.5	4.5	19.5	8.5	23.5	5.5	18.5
Max Q Clear Time (g_c+I1), s	11.9	21.0	4.4	21.5	5.0	13.4	4.7	11.9
Green Ext Time (p_c), s	0.0	0.2	0.0	0.0	0.1	6.0	0.0	4.4

Intersection Summary	
HCM 2010 Ctrl Delay	41.4
HCM 2010 LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	146	50	21	4	46	97	30	1126	13	92	814	159
Future Volume (veh/h)	146	50	21	4	46	97	30	1126	13	92	814	159
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	146	50	21	4	46	97	30	1126	13	92	814	159
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	190	211	89	113	68	142	46	1594	18	118	1718	768
Arrive On Green	0.11	0.17	0.17	0.06	0.13	0.13	0.03	0.44	0.44	0.07	0.49	0.49
Sat Flow, veh/h	1774	1247	524	1774	535	1128	1774	3584	41	1774	3539	1583
Grp Volume(v), veh/h	146	0	71	4	0	143	30	556	583	92	814	159
Grp Sat Flow(s),veh/h/ln	1774	0	1770	1774	0	1664	1774	1770	1855	1774	1770	1583
Q Serve(g_s), s	5.0	0.0	2.2	0.1	0.0	5.1	1.0	15.9	15.9	3.2	9.6	3.6
Cycle Q Clear(g_c), s	5.0	0.0	2.2	0.1	0.0	5.1	1.0	15.9	15.9	3.2	9.6	3.6
Prop In Lane	1.00		0.30	1.00		0.68	1.00		0.02	1.00		1.00
Lane Grp Cap(c), veh/h	190	0	300	113	0	210	46	787	825	118	1718	768
V/C Ratio(X)	0.77	0.00	0.24	0.04	0.00	0.68	0.65	0.71	0.71	0.78	0.47	0.21
Avail Cap(c_a), veh/h	482	0	509	510	0	505	113	905	949	170	1922	860
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.2	0.0	22.5	27.5	0.0	26.1	30.2	14.1	14.1	28.8	10.8	9.2
Incr Delay (d2), s/veh	6.4	0.0	0.4	0.1	0.0	3.9	14.4	2.1	2.0	13.4	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	0.0	1.1	0.1	0.0	2.6	0.7	8.2	8.6	2.0	4.7	1.6
LnGrp Delay(d),s/veh	33.7	0.0	22.9	27.6	0.0	30.0	44.6	16.2	16.1	42.2	11.0	9.3
LnGrp LOS	C		C	C		C	D	B	B	D	B	A
Approach Vol, veh/h		217			147			1169			1065	
Approach Delay, s/veh		30.1			29.9			16.9			13.4	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.2	31.8	8.0	14.6	5.6	34.4	10.7	11.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	6.6	32.0	18.0	18.0	4.0	34.0	17.0	19.0
Max Q Clear Time (g_c+I1), s	5.2	17.9	2.1	4.2	3.0	11.6	7.0	7.1
Green Ext Time (p_c), s	0.0	9.9	0.0	1.0	0.0	13.7	0.3	0.9

Intersection Summary	
HCM 2010 Ctrl Delay	17.3
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	4	178	116	3	47	163	1156	195	52	648	20
Future Volume (veh/h)	20	4	178	116	3	47	163	1156	195	52	648	20
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	20	4	178	116	3	47	163	1156	195	52	648	20
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	32	5	222	146	20	311	198	1656	278	66	878	746
Arrive On Green	0.02	0.14	0.14	0.08	0.21	0.21	0.11	0.55	0.55	0.04	0.47	0.47
Sat Flow, veh/h	1774	35	1554	1774	96	1502	1774	3033	509	1774	1863	1582
Grp Volume(v), veh/h	20	0	182	116	0	50	163	673	678	52	648	20
Grp Sat Flow(s),veh/h/ln	1774	0	1589	1774	0	1598	1774	1770	1772	1774	1863	1582
Q Serve(g_s), s	0.9	0.0	9.3	5.4	0.0	2.1	7.5	23.2	23.5	2.4	23.5	0.6
Cycle Q Clear(g_c), s	0.9	0.0	9.3	5.4	0.0	2.1	7.5	23.2	23.5	2.4	23.5	0.6
Prop In Lane	1.00		0.98	1.00		0.94	1.00		0.29	1.00		1.00
Lane Grp Cap(c), veh/h	32	0	227	146	0	331	198	966	968	66	878	746
V/C Ratio(X)	0.63	0.00	0.80	0.80	0.00	0.15	0.82	0.70	0.70	0.79	0.74	0.03
Avail Cap(c_a), veh/h	85	0	342	149	0	402	234	1081	1082	170	1070	909
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.7	0.0	34.6	37.6	0.0	27.1	36.3	13.9	13.9	39.9	17.9	11.8
Incr Delay (d2), s/veh	19.1	0.0	7.8	24.8	0.0	0.2	17.9	1.7	1.8	18.1	2.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	4.5	3.6	0.0	1.0	4.7	11.7	11.8	1.5	12.6	0.2
LnGrp Delay(d),s/veh	59.9	0.0	42.5	62.5	0.0	27.3	54.2	15.6	15.7	58.0	20.0	11.8
LnGrp LOS	E		D	E		C	D	B	B	E	C	B
Approach Vol, veh/h		202			166			1514			720	
Approach Delay, s/veh		44.2			51.9			19.8			22.6	
Approach LOS		D			D			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.1	49.6	10.9	15.9	13.3	43.4	5.5	21.3
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	8.0	51.0	7.0	18.0	11.0	48.0	4.0	21.0
Max Q Clear Time (g_c+I1), s	4.4	25.5	7.4	11.3	9.5	25.5	2.9	4.1
Green Ext Time (p_c), s	0.0	15.0	0.0	0.7	0.1	13.8	0.0	1.2

Intersection Summary	
HCM 2010 Ctrl Delay	24.5
HCM 2010 LOS	C

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	300	600	50	570	608	457	30	757	796	150	512	280
Future Volume (veh/h)	300	600	50	570	608	457	30	757	796	150	512	280
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	300	600	50	570	608	457	30	757	0	150	512	280
Adj No. of Lanes	2	2	0	2	2	0	1	2	1	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	367	827	69	656	644	483	41	1038	464	180	823	449
Arrive On Green	0.11	0.25	0.25	0.19	0.33	0.33	0.02	0.29	0.00	0.10	0.37	0.37
Sat Flow, veh/h	3442	3308	275	3442	1928	1447	1774	3539	1583	1774	2212	1206
Grp Volume(v), veh/h	300	320	330	570	558	507	30	757	0	150	409	383
Grp Sat Flow(s),veh/h/ln	1721	1770	1814	1721	1770	1606	1774	1770	1583	1774	1770	1649
Q Serve(g_s), s	8.3	16.1	16.2	15.6	29.8	29.9	1.6	18.7	0.0	8.1	18.4	18.5
Cycle Q Clear(g_c), s	8.3	16.1	16.2	15.6	29.8	29.9	1.6	18.7	0.0	8.1	18.4	18.5
Prop In Lane	1.00		0.15	1.00		0.90	1.00		1.00	1.00		0.73
Lane Grp Cap(c), veh/h	367	442	454	656	591	536	41	1038	464	180	658	614
V/C Ratio(X)	0.82	0.72	0.73	0.87	0.94	0.95	0.74	0.73	0.00	0.83	0.62	0.62
Avail Cap(c_a), veh/h	389	442	454	743	600	545	73	1820	814	182	1019	949
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.5	33.4	33.4	38.2	31.5	31.5	47.2	30.9	0.0	42.9	24.9	25.0
Incr Delay (d2), s/veh	12.2	5.8	5.7	9.9	23.7	25.5	22.9	1.0	0.0	26.3	1.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.6	8.5	8.8	8.3	18.5	17.0	1.1	9.3	0.0	5.3	9.2	8.6
LnGrp Delay(d),s/veh	54.7	39.2	39.2	48.1	55.2	57.0	70.1	31.9	0.0	69.2	25.9	26.0
LnGrp LOS	D	D	D	D	E	E	E	C		E	C	C
Approach Vol, veh/h		950			1635			787			942	
Approach Delay, s/veh		44.1			53.3			33.4			32.8	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.9	32.5	22.5	28.3	6.2	40.2	14.4	36.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	10.0	50.0	21.0	23.0	4.0	56.0	11.0	33.0
Max Q Clear Time (g_c+I1), s	10.1	20.7	17.6	18.2	3.6	20.5	10.3	31.9
Green Ext Time (p_c), s	0.0	7.8	0.9	3.6	0.0	8.1	0.1	0.6

Intersection Summary	
HCM 2010 Ctrl Delay	43.2
HCM 2010 LOS	D

Intersection	
Intersection Delay, s/veh	7.6
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations																
Traffic Vol, veh/h	0	50	64	17	0	4	54	3	0	11	6	12	0	0	2	88
Future Vol, veh/h	0	50	64	17	0	4	54	3	0	11	6	12	0	0	2	88
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	50	64	17	0	4	54	3	0	11	6	12	0	0	2	88
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8	7.6	7.4	7.2
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	38%	38%	7%	0%
Vol Thru, %	21%	49%	89%	2%
Vol Right, %	41%	13%	5%	98%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	29	131	61	90
LT Vol	11	50	4	0
Through Vol	6	64	54	2
RT Vol	12	17	3	88
Lane Flow Rate	29	131	61	90
Geometry Grp	1	1	1	1
Degree of Util (X)	0.034	0.152	0.072	0.095
Departure Headway (Hd)	4.279	4.186	4.226	3.808
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	841	850	838	947
Service Time	2.282	2.247	2.304	1.808
HCM Lane V/C Ratio	0.034	0.154	0.073	0.095
HCM Control Delay	7.4	8	7.6	7.2
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0.5	0.2	0.3



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	97	38	391	75	99	72	1161	376	118	1078	79
Future Volume (veh/h)	37	97	38	391	75	99	72	1161	376	118	1078	79
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.98	0.99		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	37	97	38	391	75	99	72	1161	376	118	1078	79
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	264	158	62	479	212	280	91	1215	386	131	1613	118
Arrive On Green	0.03	0.12	0.12	0.20	0.29	0.29	0.05	0.46	0.46	0.07	0.48	0.48
Sat Flow, veh/h	1774	1267	496	1774	726	958	1774	2641	839	1774	3343	245
Grp Volume(v), veh/h	37	0	135	391	0	174	72	771	766	118	570	587
Grp Sat Flow(s),veh/h/ln	1774	0	1764	1774	0	1684	1774	1770	1710	1774	1770	1818
Q Serve(g_s), s	2.3	0.0	9.4	24.0	0.0	10.5	5.2	53.8	56.5	8.5	31.8	31.8
Cycle Q Clear(g_c), s	2.3	0.0	9.4	24.0	0.0	10.5	5.2	53.8	56.5	8.5	31.8	31.8
Prop In Lane	1.00		0.28	1.00		0.57	1.00		0.49	1.00		0.13
Lane Grp Cap(c), veh/h	264	0	220	479	0	493	91	814	787	131	854	877
V/C Ratio(X)	0.14	0.00	0.61	0.82	0.00	0.35	0.79	0.95	0.97	0.90	0.67	0.67
Avail Cap(c_a), veh/h	293	0	383	526	0	666	117	823	795	131	854	877
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.6	0.0	53.5	36.5	0.0	36.0	60.5	33.3	34.1	59.3	25.5	25.5
Incr Delay (d2), s/veh	0.1	0.0	1.0	8.1	0.0	0.2	18.2	19.8	25.5	49.5	2.4	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	4.6	12.7	0.0	4.9	3.0	30.6	32.2	6.0	16.1	16.5
LnGrp Delay(d),s/veh	46.7	0.0	54.6	44.6	0.0	36.2	78.7	53.1	59.6	108.8	27.9	27.9
LnGrp LOS	D		D	D		D	E	D	E	F	C	C
Approach Vol, veh/h		172			565			1609			1275	
Approach Delay, s/veh		52.9			42.0			57.3			35.4	
Approach LOS		D			D			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	63.9	30.6	20.6	11.1	66.7	8.9	42.2
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	9.5	60.0	29.5	28.0	8.5	61.0	6.5	51.0
Max Q Clear Time (g_c+I1), s	10.5	58.5	26.0	11.4	7.2	33.8	4.3	12.5
Green Ext Time (p_c), s	0.0	0.9	0.1	0.6	0.0	25.4	0.0	0.7

Intersection Summary	
HCM 2010 Ctrl Delay	47.0
HCM 2010 LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	199	761	183	90	713	329	50	979	474	145	1062	234
Future Volume (veh/h)	199	761	183	90	713	329	50	979	474	145	1062	234
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	199	761	183	90	713	329	50	979	474	145	1062	234
Adj No. of Lanes	1	2	0	2	2	1	1	2	1	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	228	1051	253	169	1034	460	74	1122	498	172	1075	236
Arrive On Green	0.13	0.37	0.37	0.05	0.29	0.29	0.04	0.32	0.32	0.10	0.37	0.37
Sat Flow, veh/h	1774	2828	680	3442	3539	1574	1774	3539	1571	1774	2885	633
Grp Volume(v), veh/h	199	476	468	90	713	329	50	979	474	145	650	646
Grp Sat Flow(s),veh/h/ln	1774	1770	1739	1721	1770	1574	1774	1770	1571	1774	1770	1748
Q Serve(g_s), s	12.7	26.6	26.6	2.9	20.5	21.5	3.2	30.0	34.0	9.2	41.9	42.3
Cycle Q Clear(g_c), s	12.7	26.6	26.6	2.9	20.5	21.5	3.2	30.0	34.0	9.2	41.9	42.3
Prop In Lane	1.00		0.39	1.00		1.00	1.00		1.00	1.00		0.36
Lane Grp Cap(c), veh/h	228	657	646	169	1034	460	74	1122	498	172	659	651
V/C Ratio(X)	0.87	0.72	0.72	0.53	0.69	0.72	0.68	0.87	0.95	0.84	0.99	0.99
Avail Cap(c_a), veh/h	393	737	724	464	1166	518	233	1138	505	241	659	651
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.2	31.1	31.1	53.4	36.1	36.4	54.4	37.1	38.4	51.1	35.8	35.9
Incr Delay (d2), s/veh	4.6	3.3	3.4	1.0	1.6	4.4	4.0	7.7	28.2	12.7	31.3	33.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.5	13.6	13.3	1.4	10.2	9.9	1.7	15.9	18.6	5.2	26.1	26.3
LnGrp Delay(d),s/veh	53.8	34.4	34.5	54.4	37.7	40.8	58.4	44.8	66.6	63.7	67.1	69.2
LnGrp LOS	D	C	C	D	D	D	E	D	E	E	E	E
Approach Vol, veh/h		1143			1132			1503			1441	
Approach Delay, s/veh		37.8			39.9			52.1			67.7	
Approach LOS		D			D			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.2	47.7	9.3	47.9	19.3	38.6	15.7	41.5
Change Period (Y+Rc), s	4.5	5.0	4.5	5.0	4.5	5.0	4.5	5.0
Max Green Setting (Gmax), s	15.5	47.9	15.1	37.5	25.5	37.9	15.6	37.0
Max Q Clear Time (g_c+I1), s	14.9	28.6	5.2	44.3	14.7	23.5	11.2	36.0
Green Ext Time (p_c), s	0.1	11.4	0.0	0.0	0.1	9.4	0.0	0.5

Intersection Summary	
HCM 2010 Ctrl Delay	50.6
HCM 2010 LOS	D

Notes

CUMULATIVE PLUS PROJECT CONDITIONS
SYNCHRO OUTPUT SHEETS



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	195	126	457	2338	1425	151
Future Volume (veh/h)	195	126	457	2338	1425	151
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	195	0	457	2338	1425	151
Adj No. of Lanes	1	1	1	3	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	240	214	505	3872	2160	673
Arrive On Green	0.14	0.00	0.28	0.76	0.42	0.42
Sat Flow, veh/h	1774	1583	1774	5253	5253	1583
Grp Volume(v), veh/h	195	0	457	2338	1425	151
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1695	1695	1583
Q Serve(g_s), s	8.3	0.0	19.2	15.7	17.3	4.7
Cycle Q Clear(g_c), s	8.3	0.0	19.2	15.7	17.3	4.7
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	240	214	505	3872	2160	673
V/C Ratio(X)	0.81	0.00	0.90	0.60	0.66	0.22
Avail Cap(c_a), veh/h	413	368	596	4207	2235	696
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.5	0.0	26.6	4.1	17.8	14.2
Incr Delay (d2), s/veh	6.5	0.0	15.6	0.2	0.7	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	0.0	11.6	7.2	8.2	2.1
LnGrp Delay(d),s/veh	39.0	0.0	42.3	4.3	18.5	14.3
LnGrp LOS	D		D	A	B	B
Approach Vol, veh/h	195			2795	1576	
Approach Delay, s/veh	39.0			10.5	18.1	
Approach LOS	D			B	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		62.9		14.5	26.0	36.9		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		64.0		18.0	26.0	34.0		
Max Q Clear Time (g_c+I1), s		17.7		10.3	21.2	19.3		
Green Ext Time (p_c), s		37.1		0.4	0.8	13.5		

Intersection Summary	
HCM 2010 Ctrl Delay	14.3
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	22	30	88	45	855	20	2012	127	262	1286	30
Future Volume (veh/h)	10	22	30	88	45	855	20	2012	127	262	1286	30
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	10	22	30	88	45	855	20	2012	127	262	1286	30
Adj No. of Lanes	1	1	1	1	2	0	1	3	1	1	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	16	359	305	109	434	388	27	2407	749	284	3161	74
Arrive On Green	0.01	0.19	0.19	0.06	0.25	0.25	0.02	0.47	0.47	0.16	0.62	0.62
Sat Flow, veh/h	1774	1863	1583	1774	1770	1583	1774	5085	1583	1774	5113	119
Grp Volume(v), veh/h	10	22	30	88	45	855	20	2012	127	262	853	463
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1770	1583	1774	1695	1583	1774	1695	1842
Q Serve(g_s), s	0.8	1.4	2.2	7.0	2.8	35.0	1.6	49.2	6.6	20.8	18.3	18.3
Cycle Q Clear(g_c), s	0.8	1.4	2.2	7.0	2.8	35.0	1.6	49.2	6.6	20.8	18.3	18.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.06
Lane Grp Cap(c), veh/h	16	359	305	109	434	388	27	2407	749	284	2096	1139
V/C Ratio(X)	0.61	0.06	0.10	0.80	0.10	2.20	0.73	0.84	0.17	0.92	0.41	0.41
Avail Cap(c_a), veh/h	50	359	305	174	434	388	75	2528	787	298	2113	1148
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	70.5	47.1	47.4	66.1	41.7	53.9	70.0	32.8	21.5	59.1	13.9	13.9
Incr Delay (d2), s/veh	32.1	0.1	0.1	13.3	0.1	549.8	31.4	2.5	0.1	31.6	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.7	1.0	3.8	1.4	74.5	1.0	23.5	2.9	12.7	8.6	9.3
LnGrp Delay(d),s/veh	102.6	47.2	47.6	79.4	41.9	603.7	101.4	35.3	21.6	90.7	14.0	14.1
LnGrp LOS	F	D	D	E	D	F	F	D	C	F	B	B
Approach Vol, veh/h		62			988			2159			1578	
Approach Delay, s/veh		56.3			531.4			35.1			26.8	
Approach LOS		E			F			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.9	71.6	12.8	31.5	6.2	92.3	5.3	39.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	24.0	71.0	14.0	25.0	6.0	89.0	4.0	35.0
Max Q Clear Time (g_c+I1), s	2.8	51.2	9.0	4.2	3.6	20.3	2.8	37.0
Green Ext Time (p_c), s	0.1	16.4	0.1	7.7	0.0	39.5	0.0	0.0

Intersection Summary		
HCM 2010 Ctrl Delay	135.1	
HCM 2010 LOS	F	



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	277	390	1660	332	240	1210
Future Volume (veh/h)	277	390	1660	332	240	1210
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	277	390	1660	332	240	1210
Adj No. of Lanes	1	1	3	1	3	3
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	498	444	2146	668	449	2954
Arrive On Green	0.28	0.28	0.42	0.42	0.09	0.58
Sat Flow, veh/h	1774	1583	5253	1583	5003	5253
Grp Volume(v), veh/h	277	390	1660	332	240	1210
Grp Sat Flow(s),veh/h/ln	1774	1583	1695	1583	1668	1695
Q Serve(g_s), s	7.7	13.6	16.2	8.9	2.7	7.6
Cycle Q Clear(g_c), s	7.7	13.6	16.2	8.9	2.7	7.6
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	498	444	2146	668	449	2954
V/C Ratio(X)	0.56	0.88	0.77	0.50	0.53	0.41
Avail Cap(c_a), veh/h	552	493	2146	668	1557	3869
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.7	19.9	14.3	12.2	25.2	6.7
Incr Delay (d2), s/veh	1.0	15.3	1.8	0.6	1.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	7.8	7.9	3.9	1.3	3.5
LnGrp Delay(d),s/veh	18.7	35.1	16.2	12.8	26.1	6.8
LnGrp LOS	B	D	B	B	C	A
Approach Vol, veh/h	667		1992			1450
Approach Delay, s/veh	28.3		15.6			10.0
Approach LOS	C		B			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	9.2	28.4				37.6		20.2
Change Period (Y+Rc), s	4.0	4.0				4.0		4.0
Max Green Setting (Gmax), s	18.6	22.0				44.0		18.0
Max Q Clear Time (g_c+I1), s	11.7	18.2				9.6		15.6
Green Ext Time (p_c), s	0.7	3.7				24.0		0.6

Intersection Summary	
HCM 2010 Ctrl Delay	15.7
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	51	246	272	100	751	158	70	650	90	134	443	177
Future Volume (veh/h)	51	246	272	100	751	158	70	650	90	134	443	177
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	51	246	272	100	751	158	70	650	90	134	443	177
Adj No. of Lanes	1	2	0	1	2	1	1	2	0	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	72	487	436	127	1086	486	88	910	126	156	1168	522
Arrive On Green	0.04	0.28	0.28	0.07	0.31	0.31	0.05	0.29	0.29	0.09	0.33	0.33
Sat Flow, veh/h	1774	1770	1583	1774	3539	1583	1774	3124	432	1774	3539	1583
Grp Volume(v), veh/h	51	246	272	100	751	158	70	368	372	134	443	177
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1770	1787	1774	1770	1583
Q Serve(g_s), s	1.5	6.0	7.7	2.8	9.6	3.9	2.0	9.5	9.5	3.8	4.9	4.3
Cycle Q Clear(g_c), s	1.5	6.0	7.7	2.8	9.6	3.9	2.0	9.5	9.5	3.8	4.9	4.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.24	1.00		1.00
Lane Grp Cap(c), veh/h	72	487	436	127	1086	486	88	516	520	156	1168	522
V/C Ratio(X)	0.71	0.50	0.62	0.79	0.69	0.33	0.80	0.71	0.72	0.86	0.38	0.34
Avail Cap(c_a), veh/h	156	640	573	156	1280	573	156	640	646	156	1280	573
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.3	15.6	16.2	23.4	15.6	13.7	24.1	16.2	16.2	23.0	13.1	12.9
Incr Delay (d2), s/veh	12.3	0.8	1.5	19.0	1.3	0.4	15.2	2.8	2.8	35.1	0.2	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	3.0	3.5	2.1	4.8	1.7	1.3	5.0	5.1	3.4	2.4	1.9
LnGrp Delay(d),s/veh	36.6	16.4	17.7	42.3	16.9	14.0	39.3	19.1	19.1	58.1	13.3	13.3
LnGrp LOS	D	B	B	D	B	B	D	B	B	E	B	B
Approach Vol, veh/h		569			1009			810			754	
Approach Delay, s/veh		18.8			19.0			20.8			21.3	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	18.4	7.2	17.6	6.0	20.4	5.6	19.2
Change Period (Y+Rc), s	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Max Green Setting (Gmax), s	4.5	18.5	4.5	18.5	4.5	18.5	4.5	18.5
Max Q Clear Time (g_c+I1), s	5.8	11.5	4.8	9.7	4.0	6.9	3.5	11.6
Green Ext Time (p_c), s	0.0	3.4	0.0	4.4	0.0	4.6	0.0	3.7

Intersection Summary		
HCM 2010 Ctrl Delay		20.0
HCM 2010 LOS		B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	92	19	2	34	17	142	20	566	8	60	468	87
Future Volume (veh/h)	92	19	2	34	17	142	20	566	8	60	468	87
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	92	19	2	34	17	142	20	566	8	60	468	87
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	117	293	31	52	24	201	34	1651	23	77	1722	770
Arrive On Green	0.07	0.18	0.18	0.03	0.14	0.14	0.02	0.46	0.46	0.04	0.49	0.49
Sat Flow, veh/h	1774	1657	174	1774	172	1434	1774	3573	50	1774	3539	1582
Grp Volume(v), veh/h	92	0	21	34	0	159	20	280	294	60	468	87
Grp Sat Flow(s),veh/h/ln	1774	0	1832	1774	0	1606	1774	1770	1854	1774	1770	1582
Q Serve(g_s), s	2.8	0.0	0.5	1.1	0.0	5.2	0.6	5.6	5.6	1.9	4.3	1.7
Cycle Q Clear(g_c), s	2.8	0.0	0.5	1.1	0.0	5.2	0.6	5.6	5.6	1.9	4.3	1.7
Prop In Lane	1.00		0.10	1.00		0.89	1.00		0.03	1.00		1.00
Lane Grp Cap(c), veh/h	117	0	324	52	0	225	34	818	857	77	1722	770
V/C Ratio(X)	0.78	0.00	0.06	0.65	0.00	0.71	0.59	0.34	0.34	0.78	0.27	0.11
Avail Cap(c_a), veh/h	160	0	594	160	0	521	128	818	857	192	1722	770
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.5	0.0	19.0	26.6	0.0	22.8	27.0	9.5	9.5	26.3	8.4	7.7
Incr Delay (d2), s/veh	16.1	0.0	0.1	12.9	0.0	4.1	15.2	1.1	1.1	15.3	0.4	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	0.3	0.7	0.0	2.6	0.4	3.0	3.1	1.2	2.2	0.8
LnGrp Delay(d),s/veh	41.6	0.0	19.1	39.5	0.0	26.8	42.2	10.7	10.6	41.6	8.8	8.0
LnGrp LOS	D		B	D		C	D	B	B	D	A	A
Approach Vol, veh/h		113			193			594			615	
Approach Delay, s/veh		37.4			29.1			11.7			11.9	
Approach LOS		D			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.4	29.6	5.6	13.8	5.1	31.0	7.7	11.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	6.0	25.0	5.0	18.0	4.0	27.0	5.0	18.0
Max Q Clear Time (g_c+I1), s	2.9	7.6	3.1	2.5	2.6	6.3	4.8	7.2
Green Ext Time (p_c), s	0.0	5.9	0.0	0.9	0.0	6.4	0.0	0.7

Intersection Summary	
HCM 2010 Ctrl Delay	15.9
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	2	128	421	3	82	73	452	14	11	348	10
Future Volume (veh/h)	10	2	128	421	3	82	73	452	14	11	348	10
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	10	2	128	421	3	82	73	452	14	11	348	10
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	18	3	208	513	23	633	93	774	24	22	640	286
Arrive On Green	0.01	0.13	0.13	0.29	0.41	0.41	0.05	0.22	0.22	0.01	0.18	0.18
Sat Flow, veh/h	1774	24	1563	1774	56	1536	1774	3505	108	1774	3539	1579
Grp Volume(v), veh/h	10	0	130	421	0	85	73	228	238	11	348	10
Grp Sat Flow(s),veh/h/ln	1774	0	1587	1774	0	1592	1774	1770	1843	1774	1770	1579
Q Serve(g_s), s	0.3	0.0	3.6	10.3	0.0	1.5	1.9	5.4	5.4	0.3	4.2	0.2
Cycle Q Clear(g_c), s	0.3	0.0	3.6	10.3	0.0	1.5	1.9	5.4	5.4	0.3	4.2	0.2
Prop In Lane	1.00		0.98	1.00		0.96	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	18	0	211	513	0	656	93	391	407	22	640	286
V/C Ratio(X)	0.54	0.00	0.62	0.82	0.00	0.13	0.78	0.58	0.58	0.50	0.54	0.04
Avail Cap(c_a), veh/h	191	0	614	1183	0	1506	305	3006	3131	229	5860	2614
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.9	0.0	19.0	15.4	0.0	8.5	21.8	16.2	16.2	22.8	17.3	9.5
Incr Delay (d2), s/veh	22.3	0.0	2.9	3.3	0.0	0.1	13.3	1.4	1.3	16.1	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	1.7	5.5	0.0	0.7	1.3	2.7	2.9	0.2	2.1	0.1
LnGrp Delay(d),s/veh	45.2	0.0	21.9	18.7	0.0	8.6	35.1	17.6	17.5	38.9	18.0	9.5
LnGrp LOS	D		C	B		A	D	B	B	D	B	A
Approach Vol, veh/h		140			506			539			369	
Approach Delay, s/veh		23.6			17.0			19.9			18.4	
Approach LOS		C			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.6	14.3	17.5	10.2	6.4	12.4	4.5	23.2
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	6.6	79.0	31.0	18.0	8.0	77.0	5.0	44.0
Max Q Clear Time (g_c+I1), s	2.3	7.4	12.3	5.6	3.9	6.2	2.3	3.5
Green Ext Time (p_c), s	0.0	2.7	1.2	1.0	0.1	2.3	0.0	1.4

Intersection Summary	
HCM 2010 Ctrl Delay	18.9
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	152	350	70	350	520	129	30	258	349	100	640	157
Future Volume (veh/h)	152	350	70	350	520	129	30	258	349	100	640	157
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	152	350	70	350	520	129	30	258	0	100	640	157
Adj No. of Lanes	2	2	0	2	2	0	1	2	1	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	250	650	129	513	836	206	47	963	431	131	901	221
Arrive On Green	0.07	0.22	0.22	0.15	0.30	0.30	0.03	0.27	0.00	0.07	0.32	0.32
Sat Flow, veh/h	3442	2946	583	3442	2814	695	1774	3539	1583	1774	2819	691
Grp Volume(v), veh/h	152	209	211	350	326	323	30	258	0	100	401	396
Grp Sat Flow(s),veh/h/ln	1721	1770	1760	1721	1770	1739	1774	1770	1583	1774	1770	1740
Q Serve(g_s), s	2.4	5.9	6.0	5.4	8.9	9.0	0.9	3.2	0.0	3.1	11.2	11.3
Cycle Q Clear(g_c), s	2.4	5.9	6.0	5.4	8.9	9.0	0.9	3.2	0.0	3.1	11.2	11.3
Prop In Lane	1.00		0.33	1.00		0.40	1.00		1.00	1.00		0.40
Lane Grp Cap(c), veh/h	250	391	388	513	526	517	47	963	431	131	565	556
V/C Ratio(X)	0.61	0.53	0.54	0.68	0.62	0.62	0.64	0.27	0.00	0.76	0.71	0.71
Avail Cap(c_a), veh/h	428	566	562	978	848	834	126	3582	1602	409	2074	2039
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.3	19.4	19.4	22.7	17.1	17.1	27.1	16.1	0.0	25.6	16.9	16.9
Incr Delay (d2), s/veh	2.4	1.1	1.2	1.6	1.2	1.2	13.3	0.1	0.0	8.8	1.7	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	3.0	3.0	2.7	4.5	4.5	0.6	1.6	0.0	1.8	5.7	5.6
LnGrp Delay(d),s/veh	27.7	20.5	20.6	24.3	18.3	18.3	40.4	16.2	0.0	34.4	18.5	18.6
LnGrp LOS	C	C	C	C	B	B	D	B		C	B	B
Approach Vol, veh/h		572			999			288			897	
Approach Delay, s/veh		22.5			20.4			18.8			20.3	
Approach LOS		C			C			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.2	19.3	12.4	16.4	5.5	22.0	8.1	20.7
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	13.6	57.0	16.0	18.0	4.0	66.0	7.0	27.0
Max Q Clear Time (g_c+I1), s	5.1	5.2	7.4	8.0	2.9	13.3	4.4	11.0
Green Ext Time (p_c), s	0.1	4.7	1.0	4.4	0.0	4.7	0.1	5.7

Intersection Summary		
HCM 2010 Ctrl Delay		20.6
HCM 2010 LOS		C



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	425	45	30	873	136	91
Future Volume (veh/h)	425	45	30	873	136	91
Number	4	14	3	8	5	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	425	45	30	873	136	91
Adj No. of Lanes	2	1	1	2	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1804	807	694	1804	304	271
Arrive On Green	0.51	0.51	0.51	0.51	0.17	0.17
Sat Flow, veh/h	3632	1583	920	3632	1774	1583
Grp Volume(v), veh/h	425	45	30	873	136	91
Grp Sat Flow(s),veh/h/ln	1770	1583	920	1770	1774	1583
Q Serve(g_s), s	1.7	0.4	0.5	4.0	1.7	1.3
Cycle Q Clear(g_c), s	1.7	0.4	2.1	4.0	1.7	1.3
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1804	807	694	1804	304	271
V/C Ratio(X)	0.24	0.06	0.04	0.48	0.45	0.34
Avail Cap(c_a), veh/h	2541	1137	886	2541	1344	1200
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	3.4	3.1	4.0	4.0	9.3	9.1
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.2	1.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.2	0.1	1.9	0.9	0.6
LnGrp Delay(d),s/veh	3.5	3.1	4.0	4.2	10.4	9.9
LnGrp LOS	A	A	A	A	B	A
Approach Vol, veh/h	470			903	227	
Approach Delay, s/veh	3.5			4.2	10.2	
Approach LOS	A			A	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		8.3		16.8				16.8
Change Period (Y+Rc), s		4.0		4.0				4.0
Max Green Setting (Gmax), s		19.0		18.0				18.0
Max Q Clear Time (g_c+I1), s		3.7		3.7				6.0
Green Ext Time (p_c), s		0.6		7.6				6.8

Intersection Summary	
HCM 2010 Ctrl Delay	4.8
HCM 2010 LOS	A

Intersection	
Intersection Delay, s/veh	8.3
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations																
Traffic Vol, veh/h	0	26	122	13	0	22	148	2	0	16	26	7	0	3	13	49
Future Vol, veh/h	0	26	122	13	0	22	148	2	0	16	26	7	0	3	13	49
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	26	122	13	0	22	148	2	0	16	26	7	0	3	13	49
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.4	8.6	8.1	7.7
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	33%	16%	13%	5%
Vol Thru, %	53%	76%	86%	20%
Vol Right, %	14%	8%	1%	75%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	49	161	172	65
LT Vol	16	26	22	3
Through Vol	26	122	148	13
RT Vol	7	13	2	49
Lane Flow Rate	49	161	172	65
Geometry Grp	1	1	1	1
Degree of Util (X)	0.064	0.195	0.21	0.078
Departure Headway (Hd)	4.736	4.364	4.386	4.298
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	757	824	820	835
Service Time	2.761	2.382	2.403	2.32
HCM Lane V/C Ratio	0.065	0.195	0.21	0.078
HCM Control Delay	8.1	8.4	8.6	7.7
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.2	0.7	0.8	0.3



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	104	86	26	307	94	264	26	1163	332	44	673	62
Future Volume (veh/h)	104	86	26	307	94	264	26	1163	332	44	673	62
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	104	86	26	307	94	264	26	1163	332	44	673	62
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	129	175	53	334	105	294	53	1297	365	72	1594	147
Arrive On Green	0.07	0.13	0.13	0.19	0.24	0.24	0.03	0.48	0.48	0.04	0.49	0.49
Sat Flow, veh/h	1774	1370	414	1774	431	1210	1774	2724	767	1774	3275	301
Grp Volume(v), veh/h	104	0	112	307	0	358	26	750	745	44	363	372
Grp Sat Flow(s),veh/h/ln	1774	0	1784	1774	0	1640	1774	1770	1721	1774	1770	1807
Q Serve(g_s), s	6.2	0.0	6.3	18.3	0.0	22.8	1.6	41.6	43.2	2.6	14.3	14.3
Cycle Q Clear(g_c), s	6.2	0.0	6.3	18.3	0.0	22.8	1.6	41.6	43.2	2.6	14.3	14.3
Prop In Lane	1.00		0.23	1.00		0.74	1.00		0.45	1.00		0.17
Lane Grp Cap(c), veh/h	129	0	228	334	0	399	53	843	819	72	861	880
V/C Ratio(X)	0.80	0.00	0.49	0.92	0.00	0.90	0.49	0.89	0.91	0.61	0.42	0.42
Avail Cap(c_a), veh/h	173	0	463	337	0	577	107	852	829	107	861	880
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.3	0.0	43.8	43.0	0.0	39.5	51.5	25.7	26.1	50.9	17.9	17.9
Incr Delay (d2), s/veh	13.3	0.0	0.6	28.6	0.0	9.7	2.5	11.8	14.3	3.1	0.6	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	0.0	3.1	11.6	0.0	11.4	0.8	23.0	23.7	1.4	7.1	7.3
LnGrp Delay(d),s/veh	62.6	0.0	44.4	71.6	0.0	49.2	54.1	37.5	40.4	54.0	18.5	18.5
LnGrp LOS	E		D	E		D	D	D	D	D	B	B
Approach Vol, veh/h		216			665			1521			779	
Approach Delay, s/veh		53.1			59.5			39.2			20.5	
Approach LOS		D			E			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.9	55.9	24.8	18.3	7.7	57.0	12.4	30.8
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	6.5	52.0	20.5	28.0	6.5	52.0	10.5	38.0
Max Q Clear Time (g_c+I1), s	4.6	45.2	20.3	8.3	3.6	16.3	8.2	24.8
Green Ext Time (p_c), s	0.0	6.2	0.0	1.1	0.0	29.7	0.0	1.0

Intersection Summary	
HCM 2010 Ctrl Delay	39.8
HCM 2010 LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	189	568	132	70	654	519	42	761	310	90	716	193
Future Volume (veh/h)	189	568	132	70	654	519	42	761	310	90	716	193
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	189	568	132	70	654	519	42	761	310	90	716	193
Adj No. of Lanes	1	2	0	2	2	1	1	2	1	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	218	1192	276	166	1214	543	70	1050	467	114	885	239
Arrive On Green	0.12	0.42	0.42	0.05	0.34	0.34	0.04	0.30	0.30	0.06	0.32	0.32
Sat Flow, veh/h	1774	2854	661	3442	3539	1582	1774	3539	1573	1774	2755	743
Grp Volume(v), veh/h	189	352	348	70	654	519	42	761	310	90	460	449
Grp Sat Flow(s),veh/h/ln	1774	1770	1746	1721	1770	1582	1774	1770	1573	1774	1770	1728
Q Serve(g_s), s	11.5	15.8	15.9	2.2	16.3	35.2	2.6	21.1	18.9	5.5	26.1	26.1
Cycle Q Clear(g_c), s	11.5	15.8	15.9	2.2	16.3	35.2	2.6	21.1	18.9	5.5	26.1	26.1
Prop In Lane	1.00		0.38	1.00		1.00	1.00		1.00	1.00		0.43
Lane Grp Cap(c), veh/h	218	739	729	166	1214	543	70	1050	467	114	569	555
V/C Ratio(X)	0.87	0.48	0.48	0.42	0.54	0.96	0.60	0.72	0.66	0.79	0.81	0.81
Avail Cap(c_a), veh/h	299	739	729	455	1226	548	186	1194	530	202	613	599
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.2	23.2	23.2	50.7	29.0	35.2	51.8	34.6	33.8	50.6	34.1	34.1
Incr Delay (d2), s/veh	13.9	0.6	0.6	0.6	0.5	27.8	3.0	2.1	2.9	4.6	7.7	7.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.5	7.8	7.8	1.0	8.1	19.5	1.3	10.7	8.6	2.8	14.0	13.7
LnGrp Delay(d),s/veh	61.1	23.8	23.8	51.4	29.6	63.1	54.9	36.6	36.7	55.2	41.9	42.1
LnGrp LOS	E	C	C	D	C	E	D	D	D	E	D	D
Approach Vol, veh/h		889			1243			1113			999	
Approach Delay, s/veh		31.7			44.8			37.3			43.2	
Approach LOS		C			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.8	50.8	8.8	40.2	18.0	42.6	11.5	37.6
Change Period (Y+Rc), s	4.5	5.0	4.5	5.0	4.5	5.0	4.5	5.0
Max Green Setting (Gmax), s	14.5	42.0	11.5	38.0	18.5	38.0	12.5	37.0
Max Q Clear Time (g_c+I1), s	13.2	17.9	4.6	28.1	13.5	37.2	7.5	23.1
Green Ext Time (p_c), s	0.0	12.3	0.0	6.9	0.1	0.4	0.0	8.8

Intersection Summary	
HCM 2010 Ctrl Delay	39.7
HCM 2010 LOS	D



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	224	1017	298	2121	2498	40
Future Volume (veh/h)	224	1017	298	2121	2498	40
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	224	0	298	2121	2498	40
Adj No. of Lanes	1	1	1	3	3	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	271	242	353	3770	2488	759
Arrive On Green	0.15	0.00	0.20	0.74	0.49	0.49
Sat Flow, veh/h	1774	1583	1774	5253	5253	1550
Grp Volume(v), veh/h	224	0	298	2121	2498	40
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1695	1695	1550
Q Serve(g_s), s	9.2	0.0	12.2	14.0	36.9	1.0
Cycle Q Clear(g_c), s	9.2	0.0	12.2	14.0	36.9	1.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	271	242	353	3770	2488	759
V/C Ratio(X)	0.83	0.00	0.84	0.56	1.00	0.05
Avail Cap(c_a), veh/h	423	377	611	4310	2488	759
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.0	0.0	29.1	4.3	19.3	10.1
Incr Delay (d2), s/veh	7.6	0.0	5.5	0.1	19.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	0.0	6.5	6.3	21.4	0.4
LnGrp Delay(d),s/veh	38.6	0.0	34.6	4.5	38.3	10.1
LnGrp LOS	D		C	A	F	B
Approach Vol, veh/h	224			2419	2538	
Approach Delay, s/veh	38.6			8.2	37.8	
Approach LOS	D			A	D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		60.0		15.5	19.0	40.9		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		64.0		18.0	26.0	34.0		
Max Q Clear Time (g_c+I1), s		16.0		11.2	14.2	38.9		
Green Ext Time (p_c), s		40.0		0.4	0.8	0.0		

Intersection Summary	
HCM 2010 Ctrl Delay	24.0
HCM 2010 LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	84	230	274	97	404	80	2152	132	792	2737	10
Future Volume (veh/h)	10	84	230	274	97	404	80	2152	132	792	2737	10
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	10	84	230	274	97	404	80	2152	132	792	2737	10
Adj No. of Lanes	1	1	1	1	2	0	1	3	1	1	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	16	224	190	201	397	355	99	1763	549	556	3160	12
Arrive On Green	0.01	0.12	0.12	0.11	0.22	0.22	0.06	0.35	0.35	0.31	0.60	0.60
Sat Flow, veh/h	1774	1863	1583	1774	1770	1583	1774	5085	1583	1774	5230	19
Grp Volume(v), veh/h	10	84	230	274	97	404	80	2152	132	792	1773	974
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1770	1583	1774	1695	1583	1774	1695	1859
Q Serve(g_s), s	0.8	6.2	18.0	17.0	6.7	33.6	6.7	52.0	8.9	47.0	65.1	65.3
Cycle Q Clear(g_c), s	0.8	6.2	18.0	17.0	6.7	33.6	6.7	52.0	8.9	47.0	65.1	65.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.01
Lane Grp Cap(c), veh/h	16	224	190	201	397	355	99	1763	549	556	2048	1123
V/C Ratio(X)	0.62	0.38	1.21	1.36	0.24	1.14	0.81	1.22	0.24	1.42	0.87	0.87
Avail Cap(c_a), veh/h	47	224	190	201	397	355	106	1763	549	556	2048	1123
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	74.1	60.8	66.0	66.5	47.8	58.2	70.0	49.0	34.9	51.5	24.6	24.7
Incr Delay (d2), s/veh	33.0	1.0	133.4	191.9	0.3	90.7	33.5	104.7	0.2	201.5	4.2	7.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	3.3	14.9	19.0	3.3	23.6	4.2	41.4	3.9	54.1	31.5	35.6
LnGrp Delay(d),s/veh	107.1	61.9	199.4	258.4	48.1	148.8	103.5	153.7	35.1	253.0	28.8	32.0
LnGrp LOS	F	E	F	F	D	F	F	F	D	F	C	C
Approach Vol, veh/h		324			775			2364			3539	
Approach Delay, s/veh		160.9			175.0			145.4			79.9	
Approach LOS		F			F			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	51.0	56.0	21.0	22.0	12.4	94.6	5.4	37.6
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	47.0	52.0	17.0	18.0	9.0	90.0	4.0	31.0
Max Q Clear Time (g_c+I1), s	49.0	54.0	19.0	20.0	8.7	67.3	2.8	35.6
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	21.9	0.0	0.0

Intersection Summary		
HCM 2010 Ctrl Delay	116.3	
HCM 2010 LOS	F	



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	467	460	1860	621	340	2300
Future Volume (veh/h)	467	460	1860	621	340	2300
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	467	460	1860	621	340	2300
Adj No. of Lanes	1	1	3	1	3	3
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	559	499	2038	635	418	2802
Arrive On Green	0.32	0.32	0.40	0.40	0.08	0.55
Sat Flow, veh/h	1774	1583	5253	1583	5003	5253
Grp Volume(v), veh/h	467	460	1860	621	340	2300
Grp Sat Flow(s),veh/h/ln	1774	1583	1695	1583	1668	1695
Q Serve(g_s), s	14.6	16.8	20.7	23.2	4.0	22.2
Cycle Q Clear(g_c), s	14.6	16.8	20.7	23.2	4.0	22.2
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	559	499	2038	635	418	2802
V/C Ratio(X)	0.83	0.92	0.91	0.98	0.81	0.82
Avail Cap(c_a), veh/h	563	502	2038	635	418	2802
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.1	19.8	17.0	17.7	27.0	11.0
Incr Delay (d2), s/veh	10.5	22.4	6.8	30.3	11.7	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.8	10.4	10.9	15.3	2.3	10.8
LnGrp Delay(d),s/veh	29.5	42.2	23.7	48.0	38.7	13.1
LnGrp LOS	C	D	C	D	D	B
Approach Vol, veh/h	927		2481			2640
Approach Delay, s/veh	35.8		29.8			16.4
Approach LOS	D		C			B

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	9.0	28.0				37.0		22.9
Change Period (Y+Rc), s	4.0	4.0				4.0		4.0
Max Green Setting (Gmax), s	5.0	24.0				33.0		19.0
Max Q Clear Time (g_c+I1), s	6.0	25.2				24.2		18.8
Green Ext Time (p_c), s	0.0	0.0				8.7		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	24.9
HCM 2010 LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	925	209	64	648	331	80	915	108	369	774	127
Future Volume (veh/h)	70	925	209	64	648	331	80	915	108	369	774	127
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	70	925	209	64	648	331	80	915	108	369	774	127
Adj No. of Lanes	1	2	0	1	2	1	1	2	0	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	89	819	185	81	994	445	103	990	117	273	1436	642
Arrive On Green	0.05	0.29	0.29	0.05	0.28	0.28	0.06	0.31	0.31	0.15	0.41	0.41
Sat Flow, veh/h	1774	2870	648	1774	3539	1583	1774	3189	376	1774	3539	1582
Grp Volume(v), veh/h	70	570	564	64	648	331	80	508	515	369	774	127
Grp Sat Flow(s),veh/h/ln	1774	1770	1748	1774	1770	1583	1774	1770	1796	1774	1770	1582
Q Serve(g_s), s	2.7	19.5	19.5	2.4	11.0	13.0	3.0	19.0	19.0	10.5	11.4	3.5
Cycle Q Clear(g_c), s	2.7	19.5	19.5	2.4	11.0	13.0	3.0	19.0	19.0	10.5	11.4	3.5
Prop In Lane	1.00		0.37	1.00		1.00	1.00		0.21	1.00		1.00
Lane Grp Cap(c), veh/h	89	505	499	81	994	445	103	549	557	273	1436	642
V/C Ratio(X)	0.78	1.13	1.13	0.79	0.65	0.74	0.77	0.92	0.92	1.35	0.54	0.20
Avail Cap(c_a), veh/h	143	505	499	117	994	445	221	557	565	273	1436	642
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.1	24.4	24.4	32.3	21.6	22.3	31.7	22.8	22.8	28.9	15.4	13.1
Incr Delay (d2), s/veh	13.8	80.3	81.2	20.0	1.5	6.7	11.6	21.3	21.1	181.2	0.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	20.7	20.5	1.6	5.6	6.4	1.8	12.4	12.6	18.8	5.6	1.6
LnGrp Delay(d),s/veh	45.9	104.7	105.6	52.3	23.2	29.0	43.4	44.1	43.9	210.1	15.8	13.3
LnGrp LOS	D	F	F	D	C	C	D	D	D	F	B	B
Approach Vol, veh/h		1204			1043			1103			1270	
Approach Delay, s/veh		101.7			26.8			43.9			72.0	
Approach LOS		F			C			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	24.7	6.6	23.0	7.5	31.2	6.9	22.7
Change Period (Y+Rc), s	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Max Green Setting (Gmax), s	10.5	21.5	4.5	19.5	8.5	23.5	5.5	18.5
Max Q Clear Time (g_c+I1), s	12.5	21.0	4.4	21.5	5.0	13.4	4.7	15.0
Green Ext Time (p_c), s	0.0	0.2	0.0	0.0	0.1	6.0	0.0	2.8

Intersection Summary	
HCM 2010 Ctrl Delay	62.9
HCM 2010 LOS	E



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	146	54	21	13	48	97	30	1126	30	92	814	159
Future Volume (veh/h)	146	54	21	13	48	97	30	1126	30	92	814	159
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	146	54	21	13	48	97	30	1126	30	92	814	159
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	190	219	85	112	71	143	46	1570	42	118	1721	770
Arrive On Green	0.11	0.17	0.17	0.06	0.13	0.13	0.03	0.45	0.45	0.07	0.49	0.49
Sat Flow, veh/h	1774	1278	497	1774	552	1115	1774	3522	94	1774	3539	1583
Grp Volume(v), veh/h	146	0	75	13	0	145	30	566	590	92	814	159
Grp Sat Flow(s),veh/h/ln	1774	0	1775	1774	0	1666	1774	1770	1846	1774	1770	1583
Q Serve(g_s), s	5.1	0.0	2.3	0.4	0.0	5.3	1.1	16.5	16.5	3.2	9.7	3.6
Cycle Q Clear(g_c), s	5.1	0.0	2.3	0.4	0.0	5.3	1.1	16.5	16.5	3.2	9.7	3.6
Prop In Lane	1.00		0.28	1.00		0.67	1.00		0.05	1.00		1.00
Lane Grp Cap(c), veh/h	190	0	305	112	0	213	46	789	823	118	1721	770
V/C Ratio(X)	0.77	0.00	0.25	0.12	0.00	0.68	0.65	0.72	0.72	0.78	0.47	0.21
Avail Cap(c_a), veh/h	477	0	506	505	0	501	112	896	935	168	1904	852
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.5	0.0	22.6	27.9	0.0	26.3	30.5	14.3	14.3	29.0	10.8	9.3
Incr Delay (d2), s/veh	6.5	0.0	0.4	0.5	0.0	3.8	14.5	2.4	2.3	13.8	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	0.0	1.2	0.2	0.0	2.6	0.7	8.5	8.9	2.0	4.7	1.6
LnGrp Delay(d),s/veh	33.9	0.0	23.1	28.4	0.0	30.1	45.0	16.7	16.6	42.8	11.0	9.4
LnGrp LOS	C		C	C		C	D	B	B	D	B	A
Approach Vol, veh/h		221			158			1186			1065	
Approach Delay, s/veh		30.2			30.0			17.3			13.5	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.2	32.2	8.0	14.9	5.6	34.7	10.8	12.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	6.0	32.0	18.0	18.0	4.0	34.0	17.0	19.0
Max Q Clear Time (g_c+I1), s	5.3	18.5	2.4	4.3	3.1	11.7	7.1	7.3
Green Ext Time (p_c), s	0.0	9.7	0.0	1.1	0.0	13.8	0.3	1.0

Intersection Summary	
HCM 2010 Ctrl Delay	17.6
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	4	178	123	3	47	163	1173	206	52	657	20
Future Volume (veh/h)	20	4	178	123	3	47	163	1173	206	52	657	20
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	20	4	178	123	3	47	163	1173	206	52	657	20
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	31	5	221	147	20	312	198	1652	289	66	883	750
Arrive On Green	0.02	0.14	0.14	0.08	0.21	0.21	0.11	0.55	0.55	0.04	0.47	0.47
Sat Flow, veh/h	1774	35	1554	1774	96	1502	1774	3013	526	1774	1863	1582
Grp Volume(v), veh/h	20	0	182	123	0	50	163	687	692	52	657	20
Grp Sat Flow(s),veh/h/ln	1774	0	1589	1774	0	1598	1774	1770	1769	1774	1863	1582
Q Serve(g_s), s	0.9	0.0	9.4	5.8	0.0	2.2	7.6	24.2	24.6	2.5	24.2	0.6
Cycle Q Clear(g_c), s	0.9	0.0	9.4	5.8	0.0	2.2	7.6	24.2	24.6	2.5	24.2	0.6
Prop In Lane	1.00		0.98	1.00		0.94	1.00		0.30	1.00		1.00
Lane Grp Cap(c), veh/h	31	0	226	147	0	332	198	970	970	66	883	750
V/C Ratio(X)	0.64	0.00	0.80	0.84	0.00	0.15	0.82	0.71	0.71	0.78	0.74	0.03
Avail Cap(c_a), veh/h	84	0	338	147	0	397	231	1067	1067	168	1057	898
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.3	0.0	35.1	38.2	0.0	27.4	36.8	14.1	14.2	40.4	18.1	11.9
Incr Delay (d2), s/veh	19.3	0.0	8.2	32.6	0.0	0.2	18.5	2.0	2.0	18.0	2.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	4.6	4.2	0.0	1.0	4.7	12.2	12.5	1.5	13.0	0.3
LnGrp Delay(d),s/veh	60.6	0.0	43.4	70.9	0.0	27.6	55.2	16.1	16.2	58.4	20.4	11.9
LnGrp LOS	E		D	E		C	E	B	B	E	C	B
Approach Vol, veh/h		202			173			1542			729	
Approach Delay, s/veh		45.1			58.4			20.3			22.9	
Approach LOS		D			E			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.2	50.4	11.0	16.1	13.4	44.1	5.5	21.6
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	8.0	51.0	7.0	18.0	11.0	48.0	4.0	21.0
Max Q Clear Time (g_c+I1), s	4.5	26.6	7.8	11.4	9.6	26.2	2.9	4.2
Green Ext Time (p_c), s	0.0	14.9	0.0	0.7	0.1	13.8	0.0	1.2

Intersection Summary	
HCM 2010 Ctrl Delay	25.4
HCM 2010 LOS	C

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	311	600	50	570	608	457	30	774	796	150	521	287
Future Volume (veh/h)	311	600	50	570	608	457	30	774	796	150	521	287
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	311	600	50	570	608	457	30	774	0	150	521	287
Adj No. of Lanes	2	2	0	2	2	0	1	2	1	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	375	829	69	652	638	479	40	1053	471	179	829	455
Arrive On Green	0.11	0.25	0.25	0.19	0.33	0.33	0.02	0.30	0.00	0.10	0.38	0.38
Sat Flow, veh/h	3442	3308	275	3442	1928	1447	1774	3539	1583	1774	2206	1212
Grp Volume(v), veh/h	311	320	330	570	558	507	30	774	0	150	418	390
Grp Sat Flow(s),veh/h/ln	1721	1770	1814	1721	1770	1606	1774	1770	1583	1774	1770	1648
Q Serve(g_s), s	8.8	16.4	16.5	15.9	30.5	30.6	1.7	19.5	0.0	8.2	19.1	19.2
Cycle Q Clear(g_c), s	8.8	16.4	16.5	15.9	30.5	30.6	1.7	19.5	0.0	8.2	19.1	19.2
Prop In Lane	1.00		0.15	1.00		0.90	1.00		1.00	1.00		0.74
Lane Grp Cap(c), veh/h	375	443	455	652	586	532	40	1053	471	179	665	619
V/C Ratio(X)	0.83	0.72	0.72	0.87	0.95	0.95	0.75	0.73	0.00	0.84	0.63	0.63
Avail Cap(c_a), veh/h	382	443	455	729	589	535	72	1786	799	179	1000	931
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.2	34.0	34.0	39.0	32.4	32.4	48.1	31.3	0.0	43.7	25.3	25.3
Incr Delay (d2), s/veh	14.0	5.7	5.7	10.6	25.7	27.6	23.5	1.0	0.0	28.0	1.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	8.7	9.0	8.6	19.1	17.6	1.1	9.6	0.0	5.4	9.5	8.9
LnGrp Delay(d),s/veh	57.2	39.7	39.7	49.6	58.0	60.0	71.6	32.3	0.0	71.7	26.3	26.4
LnGrp LOS	E	D	D	D	E	E	E	C		E	C	C
Approach Vol, veh/h		961			1635			804			958	
Approach Delay, s/veh		45.4			55.7			33.8			33.4	
Approach LOS		D			E			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	33.5	22.8	28.8	6.2	41.2	14.8	36.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	10.0	50.0	21.0	23.0	4.0	56.0	11.0	33.0
Max Q Clear Time (g_c+I1), s	10.2	21.5	17.9	18.5	3.7	21.2	10.8	32.6
Green Ext Time (p_c), s	0.0	8.0	0.8	3.4	0.0	8.3	0.0	0.2

Intersection Summary	
HCM 2010 Ctrl Delay	44.5
HCM 2010 LOS	D



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1176	226	138	911	132	82
Future Volume (veh/h)	1176	226	138	911	132	82
Number	4	14	3	8	5	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	1176	226	138	911	132	82
Adj No. of Lanes	2	1	1	2	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	2082	931	382	2082	267	238
Arrive On Green	0.59	0.59	0.59	0.59	0.15	0.15
Sat Flow, veh/h	3632	1583	383	3632	1774	1583
Grp Volume(v), veh/h	1176	226	138	911	132	82
Grp Sat Flow(s),veh/h/ln	1770	1583	383	1770	1774	1583
Q Serve(g_s), s	6.3	2.1	10.6	4.4	2.1	1.4
Cycle Q Clear(g_c), s	6.3	2.1	16.9	4.4	2.1	1.4
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	2082	931	382	2082	267	238
V/C Ratio(X)	0.56	0.24	0.36	0.44	0.50	0.34
Avail Cap(c_a), veh/h	2082	931	382	2082	1044	931
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	3.9	3.0	9.1	3.5	11.9	11.7
Incr Delay (d2), s/veh	0.4	0.1	0.6	0.1	1.4	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	0.9	1.1	2.1	1.1	0.7
LnGrp Delay(d),s/veh	4.2	3.2	9.7	3.6	13.4	12.5
LnGrp LOS	A	A	A	A	B	B
Approach Vol, veh/h	1402			1049	214	
Approach Delay, s/veh	4.1			4.4	13.0	
Approach LOS	A			A	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		8.6		22.0				22.0
Change Period (Y+Rc), s		4.0		4.0				4.0
Max Green Setting (Gmax), s		18.0		18.0				18.0
Max Q Clear Time (g_c+I1), s		4.1		8.3				18.9
Green Ext Time (p_c), s		0.5		8.6				0.0

Intersection Summary	
HCM 2010 Ctrl Delay	4.9
HCM 2010 LOS	A

Intersection	
Intersection Delay, s/veh	7.9
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations			↕				↕				↕				↕	
Traffic Vol, veh/h	0	71	64	17	0	4	54	3	0	11	17	12	0	0	9	99
Future Vol, veh/h	0	71	64	17	0	4	54	3	0	11	17	12	0	0	9	99
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	71	64	17	0	4	54	3	0	11	17	12	0	0	9	99
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.3	7.8	7.6	7.4
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	28%	47%	7%	0%
Vol Thru, %	43%	42%	89%	8%
Vol Right, %	30%	11%	5%	92%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	40	152	61	108
LT Vol	11	71	4	0
Through Vol	17	64	54	9
RT Vol	12	17	3	99
Lane Flow Rate	40	152	61	108
Geometry Grp	1	1	1	1
Degree of Util (X)	0.049	0.18	0.075	0.117
Departure Headway (Hd)	4.403	4.265	4.403	3.913
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	817	830	819	920
Service Time	2.411	2.35	2.403	1.919
HCM Lane V/C Ratio	0.049	0.183	0.074	0.117
HCM Control Delay	7.6	8.3	7.8	7.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.2	0.7	0.2	0.4



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	97	38	464	75	99	72	1189	418	118	1124	79
Future Volume (veh/h)	37	97	38	464	75	99	72	1189	418	118	1124	79
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.98	0.99		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	37	97	38	464	75	99	72	1189	418	118	1124	79
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	262	157	61	423	190	251	91	1279	439	129	1730	122
Arrive On Green	0.03	0.12	0.12	0.17	0.26	0.26	0.05	0.49	0.49	0.07	0.52	0.52
Sat Flow, veh/h	1774	1267	496	1774	726	958	1774	2586	886	1774	3354	236
Grp Volume(v), veh/h	37	0	135	464	0	174	72	804	803	118	593	610
Grp Sat Flow(s),veh/h/ln	1774	0	1764	1774	0	1683	1774	1770	1702	1774	1770	1820
Q Serve(g_s), s	2.4	0.0	9.5	22.5	0.0	11.2	5.3	55.2	59.1	8.7	32.0	32.0
Cycle Q Clear(g_c), s	2.4	0.0	9.5	22.5	0.0	11.2	5.3	55.2	59.1	8.7	32.0	32.0
Prop In Lane	1.00		0.28	1.00		0.57	1.00		0.52	1.00		0.13
Lane Grp Cap(c), veh/h	262	0	218	423	0	440	91	876	842	129	913	939
V/C Ratio(X)	0.14	0.00	0.62	1.10	0.00	0.40	0.79	0.92	0.95	0.92	0.65	0.65
Avail Cap(c_a), veh/h	290	0	378	423	0	566	156	903	868	129	913	939
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.5	0.0	54.5	43.8	0.0	39.9	61.5	30.7	31.7	60.4	23.1	23.1
Incr Delay (d2), s/veh	0.1	0.0	1.1	72.8	0.0	0.2	5.6	14.3	20.1	54.1	2.0	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	4.7	12.8	0.0	5.2	2.7	30.3	32.4	6.2	16.0	16.6
LnGrp Delay(d),s/veh	47.6	0.0	55.6	116.7	0.0	40.1	67.1	45.0	51.8	114.5	25.1	25.1
LnGrp LOS	D		E	F		D	E	D	D	F	C	C
Approach Vol, veh/h		172			638			1679			1321	
Approach Delay, s/veh		53.8			95.8			49.2			33.1	
Approach LOS		D			F			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	69.4	27.0	20.7	11.2	72.1	8.9	38.8
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	9.5	66.9	22.5	28.1	11.5	64.9	6.5	44.1
Max Q Clear Time (g_c+I1), s	10.7	61.1	24.5	11.5	7.3	34.0	4.4	13.2
Green Ext Time (p_c), s	0.0	3.7	0.0	0.6	0.0	29.1	0.0	0.7

Intersection Summary	
HCM 2010 Ctrl Delay	51.6
HCM 2010 LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	269	768	188	90	724	329	58	979	474	145	1062	353
Future Volume (veh/h)	269	768	188	90	724	329	58	979	474	145	1062	353
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	269	768	188	90	724	329	58	979	474	145	1062	353
Adj No. of Lanes	1	2	0	2	2	1	1	2	1	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	295	1120	274	161	984	437	75	1074	476	171	935	307
Arrive On Green	0.17	0.40	0.40	0.05	0.28	0.28	0.04	0.30	0.30	0.10	0.36	0.36
Sat Flow, veh/h	1774	2817	690	3442	3539	1573	1774	3539	1570	1774	2617	860
Grp Volume(v), veh/h	269	482	474	90	724	329	58	979	474	145	714	701
Grp Sat Flow(s),veh/h/ln	1774	1770	1737	1721	1770	1573	1774	1770	1570	1774	1770	1707
Q Serve(g_s), s	18.2	27.5	27.5	3.1	22.6	23.3	3.9	32.5	36.7	9.8	43.6	43.6
Cycle Q Clear(g_c), s	18.2	27.5	27.5	3.1	22.6	23.3	3.9	32.5	36.7	9.8	43.6	43.6
Prop In Lane	1.00		0.40	1.00		1.00	1.00		1.00	1.00		0.50
Lane Grp Cap(c), veh/h	295	704	691	161	984	437	75	1074	476	171	633	610
V/C Ratio(X)	0.91	0.69	0.69	0.56	0.74	0.75	0.77	0.91	1.00	0.85	1.13	1.15
Avail Cap(c_a), veh/h	371	704	691	437	1100	489	220	1074	476	227	633	610
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.9	30.4	30.4	56.9	40.0	40.2	57.8	40.9	42.4	54.2	39.2	39.2
Incr Delay (d2), s/veh	20.4	2.9	3.0	1.1	2.5	6.1	6.2	11.7	39.9	16.0	76.8	84.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.6	14.0	13.7	1.5	11.4	10.9	2.1	17.6	21.2	5.6	34.8	34.9
LnGrp Delay(d),s/veh	70.4	33.4	33.4	58.0	42.4	46.3	64.0	52.6	82.3	70.2	116.0	124.1
LnGrp LOS	E	C	C	E	D	D	E	D	F	E	F	F
Approach Vol, veh/h		1225			1143			1511			1560	
Approach Delay, s/veh		41.5			44.8			62.3			115.4	
Approach LOS		D			D			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.2	53.5	9.7	48.6	24.8	38.9	16.3	42.0
Change Period (Y+Rc), s	4.5	5.0	4.5	5.0	4.5	5.0	4.5	5.0
Max Green Setting (Gmax), s	15.5	47.9	15.1	37.5	25.5	37.9	15.6	37.0
Max Q Clear Time (g_c+I1), s	5.1	29.5	5.9	45.6	20.2	25.3	11.8	38.7
Green Ext Time (p_c), s	0.1	11.2	0.0	0.0	0.1	8.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	69.2
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	16	30	88	22	833	20	2012	127	257	1286	30
Future Volume (veh/h)	10	16	30	88	22	833	20	2012	127	257	1286	30
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	10	16	30	88	22	833	20	2012	127	257	1286	30
Adj No. of Lanes	1	1	1	1	2	0	1	3	1	1	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	16	360	306	109	435	390	27	2413	751	280	3154	74
Arrive On Green	0.01	0.19	0.19	0.06	0.25	0.25	0.02	0.47	0.47	0.16	0.62	0.62
Sat Flow, veh/h	1774	1863	1583	1774	1770	1583	1774	5085	1583	1774	5113	119
Grp Volume(v), veh/h	10	16	30	88	22	833	20	2012	127	257	853	463
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1770	1583	1774	1695	1583	1774	1695	1842
Q Serve(g_s), s	0.8	1.0	2.2	7.0	1.4	35.0	1.6	48.9	6.5	20.3	18.3	18.3
Cycle Q Clear(g_c), s	0.8	1.0	2.2	7.0	1.4	35.0	1.6	48.9	6.5	20.3	18.3	18.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.06
Lane Grp Cap(c), veh/h	16	360	306	109	435	390	27	2413	751	280	2092	1136
V/C Ratio(X)	0.61	0.04	0.10	0.80	0.05	2.14	0.73	0.83	0.17	0.92	0.41	0.41
Avail Cap(c_a), veh/h	50	360	306	175	435	390	75	2538	790	299	2121	1152
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	70.2	46.7	47.2	65.9	40.9	53.6	69.7	32.5	21.4	59.0	13.9	13.9
Incr Delay (d2), s/veh	32.1	0.1	0.1	13.1	0.0	520.8	31.2	2.4	0.1	30.6	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.5	1.0	3.8	0.7	71.6	1.0	23.5	2.9	12.4	8.6	9.3
LnGrp Delay(d),s/veh	102.3	46.7	47.3	79.0	41.0	574.5	101.0	35.0	21.5	89.6	14.1	14.2
LnGrp LOS	F	D	D	E	D	F	F	C	C	F	B	B
Approach Vol, veh/h		56			943			2159			1573	
Approach Delay, s/veh		57.0			515.8			34.8			26.4	
Approach LOS		E			F			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.5	71.5	12.8	31.5	6.2	91.8	5.3	39.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	24.0	71.0	14.0	25.0	6.0	89.0	4.0	35.0
Max Q Clear Time (g_c+I1), s	22.3	50.9	9.0	4.2	3.6	20.3	2.8	37.0
Green Ext Time (p_c), s	0.2	16.6	0.1	7.3	0.0	39.5	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	128.1
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	37	230	276	71	383	80	2152	132	754	2737	10
Future Volume (veh/h)	10	37	230	276	71	383	80	2152	132	754	2737	10
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	10	37	230	276	71	383	80	2152	132	754	2737	10
Adj No. of Lanes	1	1	1	1	2	0	1	3	1	1	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	16	224	190	201	397	355	99	1763	549	556	3160	12
Arrive On Green	0.01	0.12	0.12	0.11	0.22	0.22	0.06	0.35	0.35	0.31	0.60	0.60
Sat Flow, veh/h	1774	1863	1583	1774	1770	1583	1774	5085	1583	1774	5230	19
Grp Volume(v), veh/h	10	37	230	276	71	383	80	2152	132	754	1773	974
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1770	1583	1774	1695	1583	1774	1695	1859
Q Serve(g_s), s	0.8	2.7	18.0	17.0	4.9	33.6	6.7	52.0	8.9	47.0	65.1	65.3
Cycle Q Clear(g_c), s	0.8	2.7	18.0	17.0	4.9	33.6	6.7	52.0	8.9	47.0	65.1	65.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.01
Lane Grp Cap(c), veh/h	16	224	190	201	397	355	99	1763	549	556	2048	1123
V/C Ratio(X)	0.62	0.17	1.21	1.37	0.18	1.08	0.81	1.22	0.24	1.36	0.87	0.87
Avail Cap(c_a), veh/h	47	224	190	201	397	355	106	1763	549	556	2048	1123
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	74.1	59.3	66.0	66.5	47.0	58.2	70.0	49.0	34.9	51.5	24.6	24.7
Incr Delay (d2), s/veh	33.0	0.3	133.4	196.0	0.2	70.4	33.5	104.7	0.2	171.9	4.2	7.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	1.4	14.9	19.3	2.4	21.6	4.2	41.4	3.9	49.5	31.5	35.6
LnGrp Delay(d),s/veh	107.1	59.6	199.4	262.5	47.2	128.6	103.5	153.7	35.1	223.4	28.8	32.0
LnGrp LOS	F	E	F	F	D	F	F	F	D	F	C	C
Approach Vol, veh/h		277			730			2364			3501	
Approach Delay, s/veh		177.4			171.3			145.4			71.6	
Approach LOS		F			F			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	51.0	56.0	21.0	22.0	12.4	94.6	5.4	37.6
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	47.0	52.0	17.0	18.0	9.0	90.0	4.0	31.0
Max Q Clear Time (g_c+I1), s	49.0	54.0	19.0	20.0	8.7	67.3	2.8	35.6
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	21.9	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	111.8
HCM 2010 LOS	F



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	843	209	64	603	284	80	915	108	288	774	127
Future Volume (veh/h)	70	843	209	64	603	284	80	915	108	288	774	127
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	70	843	209	64	603	284	80	915	108	288	774	127
Adj No. of Lanes	1	2	0	1	2	1	1	2	0	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	89	803	199	81	994	445	103	990	117	273	1436	642
Arrive On Green	0.05	0.29	0.29	0.05	0.28	0.28	0.06	0.31	0.31	0.15	0.41	0.41
Sat Flow, veh/h	1774	2812	697	1774	3539	1583	1774	3189	376	1774	3539	1582
Grp Volume(v), veh/h	70	530	522	64	603	284	80	508	515	288	774	127
Grp Sat Flow(s),veh/h/ln	1774	1770	1740	1774	1770	1583	1774	1770	1796	1774	1770	1582
Q Serve(g_s), s	2.7	19.5	19.5	2.4	10.1	10.7	3.0	19.0	19.0	10.5	11.4	3.5
Cycle Q Clear(g_c), s	2.7	19.5	19.5	2.4	10.1	10.7	3.0	19.0	19.0	10.5	11.4	3.5
Prop In Lane	1.00		0.40	1.00		1.00	1.00		0.21	1.00		1.00
Lane Grp Cap(c), veh/h	89	505	497	81	994	445	103	549	557	273	1436	642
V/C Ratio(X)	0.78	1.05	1.05	0.79	0.61	0.64	0.77	0.92	0.92	1.06	0.54	0.20
Avail Cap(c_a), veh/h	143	505	497	117	994	445	221	557	565	273	1436	642
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.1	24.4	24.4	32.3	21.3	21.5	31.7	22.8	22.8	28.9	15.4	13.1
Incr Delay (d2), s/veh	13.8	53.8	54.3	20.0	1.1	3.0	11.6	21.3	21.1	70.1	0.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	17.0	16.7	1.6	5.1	5.0	1.8	12.4	12.6	10.4	5.6	1.6
LnGrp Delay(d),s/veh	45.9	78.2	78.7	52.3	22.4	24.6	43.4	44.1	43.9	99.0	15.8	13.3
LnGrp LOS	D	F	F	D	C	C	D	D	D	F	B	B
Approach Vol, veh/h		1122			951			1103			1189	
Approach Delay, s/veh		76.4			25.0			43.9			35.7	
Approach LOS		E			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	24.7	6.6	23.0	7.5	31.2	6.9	22.7
Change Period (Y+Rc), s	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Max Green Setting (Gmax), s	10.5	21.5	4.5	19.5	8.5	23.5	5.5	18.5
Max Q Clear Time (g_c+I1), s	12.5	21.0	4.4	21.5	5.0	13.4	4.7	12.7
Green Ext Time (p_c), s	0.0	0.2	0.0	0.0	0.1	6.0	0.0	4.0

Intersection Summary	
HCM 2010 Ctrl Delay	45.9
HCM 2010 LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	219	763	184	90	716	329	52	979	474	145	1062	266
Future Volume (veh/h)	219	763	184	90	716	329	52	979	474	145	1062	266
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	219	763	184	90	716	329	52	979	474	145	1062	266
Adj No. of Lanes	1	2	0	2	2	1	1	2	1	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	247	1072	259	166	1021	454	74	1111	493	172	1036	258
Arrive On Green	0.14	0.38	0.38	0.05	0.29	0.29	0.04	0.31	0.31	0.10	0.37	0.37
Sat Flow, veh/h	1774	2827	682	3442	3539	1573	1774	3539	1571	1774	2807	699
Grp Volume(v), veh/h	219	478	469	90	716	329	52	979	474	145	667	661
Grp Sat Flow(s),veh/h/ln	1774	1770	1739	1721	1770	1573	1774	1770	1571	1774	1770	1736
Q Serve(g_s), s	14.3	27.0	27.0	3.0	21.2	22.1	3.4	30.9	34.9	9.5	43.4	43.4
Cycle Q Clear(g_c), s	14.3	27.0	27.0	3.0	21.2	22.1	3.4	30.9	34.9	9.5	43.4	43.4
Prop In Lane	1.00		0.39	1.00		1.00	1.00		1.00	1.00		0.40
Lane Grp Cap(c), veh/h	247	671	659	166	1021	454	74	1111	493	172	653	641
V/C Ratio(X)	0.89	0.71	0.71	0.54	0.70	0.73	0.70	0.88	0.96	0.84	1.02	1.03
Avail Cap(c_a), veh/h	385	721	708	453	1140	507	228	1113	494	235	653	641
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.7	31.0	31.0	54.7	37.3	37.7	55.6	38.3	39.6	52.2	37.1	37.1
Incr Delay (d2), s/veh	9.9	3.2	3.3	1.0	1.8	4.8	4.5	8.5	30.7	13.9	40.7	43.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.7	13.7	13.5	1.4	10.6	10.2	1.8	16.4	19.3	5.3	28.4	28.4
LnGrp Delay(d),s/veh	59.6	34.3	34.3	55.7	39.2	42.5	60.1	46.8	70.4	66.1	77.9	80.8
LnGrp LOS	E	C	C	E	D	D	E	D	E	E	F	F
Approach Vol, veh/h		1166			1135			1505			1473	
Approach Delay, s/veh		39.1			41.5			54.7			78.0	
Approach LOS		D			D			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.2	49.6	9.4	48.4	20.9	38.9	15.9	41.9
Change Period (Y+Rc), s	4.5	5.0	4.5	5.0	4.5	5.0	4.5	5.0
Max Green Setting (Gmax), s	15.5	47.9	15.1	37.5	25.5	37.9	15.6	37.0
Max Q Clear Time (g_c+I1), s	5.7	29.0	5.4	45.4	16.3	24.1	11.5	36.9
Green Ext Time (p_c), s	0.1	11.3	0.0	0.0	0.1	9.1	0.0	0.1

Intersection Summary	
HCM 2010 Ctrl Delay	54.9
HCM 2010 LOS	D

Notes

MITIGATED EXISTING PLUS PROJECT CONDITIONS SYNCHRO OUTPUT SHEETS



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	25	50	217	426	328	181
Future Volume (veh/h)	25	50	217	426	328	181
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1727	1863	1881	1863	1776
Adj Flow Rate, veh/h	30	61	265	520	400	221
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Percent Heavy Veh, %	4	10	2	1	2	7
Cap, veh/h	127	107	691	1200	1189	963
Arrive On Green	0.07	0.07	0.64	0.64	0.64	0.64
Sat Flow, veh/h	1740	1468	800	1881	1863	1509
Grp Volume(v), veh/h	30	61	265	520	400	221
Grp Sat Flow(s),veh/h/ln	1740	1468	800	1881	1863	1509
Q Serve(g_s), s	0.5	1.1	6.3	3.8	2.7	1.7
Cycle Q Clear(g_c), s	0.5	1.1	9.1	3.8	2.7	1.7
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	127	107	691	1200	1189	963
V/C Ratio(X)	0.24	0.57	0.38	0.43	0.34	0.23
Avail Cap(c_a), veh/h	1132	955	1019	1972	1952	1582
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.1	12.4	4.4	2.5	2.3	2.1
Incr Delay (d2), s/veh	1.0	4.7	0.3	0.2	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.6	1.4	2.0	1.4	0.7
LnGrp Delay(d),s/veh	13.1	17.1	4.7	2.8	2.5	2.2
LnGrp LOS	B	B	A	A	A	A
Approach Vol, veh/h	91			785	621	
Approach Delay, s/veh	15.8			3.4	2.4	
Approach LOS	B			A	A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		21.7		6.0		21.7		
Change Period (Y+Rc), s		4.0		4.0		4.0		
Max Green Setting (Gmax), s		29.0		18.0		29.0		
Max Q Clear Time (g_c+I1), s		11.1		3.1		4.7		
Green Ext Time (p_c), s		6.6		0.2		7.4		

Intersection Summary	
HCM 2010 Ctrl Delay	3.7
HCM 2010 LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	158	106	170	226	142	159	193	21	89	305	18
Future Volume (veh/h)	12	158	106	170	226	142	159	193	21	89	305	18
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1759	1802	1900	1863	1845	1827	1792	1735	1900	1827	1792	1792
Adj Flow Rate, veh/h	13	168	113	181	240	151	169	205	22	95	324	19
Adj No. of Lanes	1	2	0	1	2	1	1	2	0	1	2	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	8	3	3	2	3	4	6	10	10	4	6	6
Cap, veh/h	558	751	478	594	1310	580	566	1147	122	630	1299	581
Arrive On Green	0.37	0.37	0.37	0.37	0.37	0.37	0.38	0.38	0.38	0.38	0.38	0.38
Sat Flow, veh/h	934	2010	1279	1094	3505	1553	994	3007	319	1127	3406	1524
Grp Volume(v), veh/h	13	142	139	181	240	151	169	111	116	95	324	19
Grp Sat Flow(s),veh/h/ln	934	1712	1577	1094	1752	1553	994	1648	1679	1127	1703	1524
Q Serve(g_s), s	0.3	1.6	1.7	3.9	1.3	1.9	4.0	1.3	1.3	1.7	1.9	0.2
Cycle Q Clear(g_c), s	1.6	1.6	1.7	5.6	1.3	1.9	5.9	1.3	1.3	3.1	1.9	0.2
Prop In Lane	1.00		0.81	1.00		1.00	1.00		0.19	1.00		1.00
Lane Grp Cap(c), veh/h	558	640	589	594	1310	580	566	629	640	630	1299	581
V/C Ratio(X)	0.02	0.22	0.24	0.30	0.18	0.26	0.30	0.18	0.18	0.15	0.25	0.03
Avail Cap(c_a), veh/h	813	1108	1020	893	2267	1005	865	1124	1144	969	2322	1039
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	6.6	6.1	6.2	8.1	6.0	6.2	8.1	5.9	5.9	6.9	6.0	5.5
Incr Delay (d2), s/veh	0.0	0.2	0.2	0.3	0.1	0.2	0.3	0.1	0.1	0.1	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.8	0.8	1.2	0.6	0.8	1.1	0.6	0.6	0.5	0.9	0.1
LnGrp Delay(d),s/veh	6.6	6.3	6.4	8.4	6.1	6.4	8.3	6.0	6.0	7.0	6.1	5.6
LnGrp LOS	A	A	A	A	A	A	A	A	A	A	A	A
Approach Vol, veh/h		294			572			396			438	
Approach Delay, s/veh		6.3			6.9			7.0			6.3	
Approach LOS		A			A			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		14.4		14.2		14.4		14.2
Change Period (Y+Rc), s		3.5		3.5		3.5		3.5
Max Green Setting (Gmax), s		19.5		18.5		19.5		18.5
Max Q Clear Time (g_c+I1), s		7.9		3.7		5.1		7.6
Green Ext Time (p_c), s		3.0		3.5		3.3		3.1

Intersection Summary	
HCM 2010 Ctrl Delay	6.7
HCM 2010 LOS	A



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	193	34	118	16	19	794
Future Volume (veh/h)	193	34	118	16	19	794
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1844	1900	1732	1900	1900	1839
Adj Flow Rate, veh/h	199	35	122	16	20	819
Adj No. of Lanes	0	0	1	0	0	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	11	11	3	3
Cap, veh/h	272	48	847	111	123	1026
Arrive On Green	0.19	0.19	0.56	0.56	0.56	0.56
Sat Flow, veh/h	1460	257	1500	197	16	1816
Grp Volume(v), veh/h	235	0	0	138	839	0
Grp Sat Flow(s),veh/h/ln	1725	0	0	1697	1831	0
Q Serve(g_s), s	4.1	0.0	0.0	1.2	0.2	0.0
Cycle Q Clear(g_c), s	4.1	0.0	0.0	1.2	11.7	0.0
Prop In Lane	0.85	0.15		0.12	0.02	
Lane Grp Cap(c), veh/h	321	0	0	959	1149	0
V/C Ratio(X)	0.73	0.00	0.00	0.14	0.73	0.00
Avail Cap(c_a), veh/h	965	0	0	1793	2043	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	12.3	0.0	0.0	3.3	5.6	0.0
Incr Delay (d2), s/veh	3.2	0.0	0.0	0.1	0.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.0	0.0	0.6	5.9	0.0
LnGrp Delay(d),s/veh	15.5	0.0	0.0	3.4	6.5	0.0
LnGrp LOS	B			A	A	
Approach Vol, veh/h	235		138			839
Approach Delay, s/veh	15.5		3.4			6.5
Approach LOS	B		A			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		22.2				22.2		10.0
Change Period (Y+Rc), s		4.0				4.0		4.0
Max Green Setting (Gmax), s		34.0				34.0		18.0
Max Q Clear Time (g_c+I1), s		3.2				13.7		6.1
Green Ext Time (p_c), s		4.8				4.4		0.6

Intersection Summary	
HCM 2010 Ctrl Delay	7.9
HCM 2010 LOS	A

Notes

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	189	386	110	215	226	30
Future Volume (veh/h)	189	386	110	215	226	30
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1863	1845	1881	1881	1845
Adj Flow Rate, veh/h	212	434	124	242	254	34
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	1	2	3	1	1	3
Cap, veh/h	685	606	507	654	654	534
Arrive On Green	0.38	0.38	0.35	0.35	0.35	0.35
Sat Flow, veh/h	1792	1583	1076	1881	1881	1535
Grp Volume(v), veh/h	212	434	124	242	254	34
Grp Sat Flow(s),veh/h/ln	1792	1583	1076	1881	1881	1535
Q Serve(g_s), s	2.5	6.9	2.9	2.9	3.0	0.4
Cycle Q Clear(g_c), s	2.5	6.9	5.9	2.9	3.0	0.4
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	685	606	507	654	654	534
V/C Ratio(X)	0.31	0.72	0.24	0.37	0.39	0.06
Avail Cap(c_a), veh/h	1630	1440	1039	1584	1584	1293
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	6.4	7.8	9.5	7.2	7.3	6.5
Incr Delay (d2), s/veh	0.3	1.6	0.2	0.3	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	3.2	0.9	1.5	1.6	0.2
LnGrp Delay(d),s/veh	6.7	9.4	9.8	7.6	7.7	6.5
LnGrp LOS	A	A	A	A	A	A
Approach Vol, veh/h	646			366	288	
Approach Delay, s/veh	8.5			8.3	7.5	
Approach LOS	A			A	A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		14.3		15.4		14.3		
Change Period (Y+Rc), s		4.0		4.0		4.0		
Max Green Setting (Gmax), s		25.0		27.0		25.0		
Max Q Clear Time (g_c+I1), s		7.9		8.9		5.0		
Green Ext Time (p_c), s		2.4		2.5		2.5		

Intersection Summary	
HCM 2010 Ctrl Delay	8.2
HCM 2010 LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	51	386	102	50	205	171	67	280	81	275	231	7
Future Volume (veh/h)	51	386	102	50	205	171	67	280	81	275	231	7
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1873	1900	1900	1881	1900	1863	1871	1900	1881	1881	1900
Adj Flow Rate, veh/h	52	394	104	51	209	174	68	286	83	281	236	7
Adj No. of Lanes	1	2	0	1	2	1	1	2	0	1	2	1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	1	1	0	1	0	2	2	2	1	1	0
Cap, veh/h	503	904	236	410	1156	523	701	1271	362	626	1663	751
Arrive On Green	0.32	0.32	0.32	0.32	0.32	0.32	0.47	0.47	0.47	0.47	0.47	0.47
Sat Flow, veh/h	1016	2794	730	914	3574	1615	1131	2732	778	1018	3574	1613
Grp Volume(v), veh/h	52	249	249	51	209	174	68	184	185	281	236	7
Grp Sat Flow(s),veh/h/ln	1016	1780	1745	914	1787	1615	1131	1777	1733	1018	1787	1613
Q Serve(g_s), s	1.3	3.7	3.7	1.5	1.4	2.7	1.2	2.0	2.1	7.6	1.3	0.1
Cycle Q Clear(g_c), s	2.7	3.7	3.7	5.3	1.4	2.7	2.5	2.0	2.1	9.7	1.3	0.1
Prop In Lane	1.00		0.42	1.00		1.00	1.00		0.45	1.00		1.00
Lane Grp Cap(c), veh/h	503	576	564	410	1156	523	701	827	806	626	1663	751
V/C Ratio(X)	0.10	0.43	0.44	0.12	0.18	0.33	0.10	0.22	0.23	0.45	0.14	0.01
Avail Cap(c_a), veh/h	741	993	973	624	1994	901	1010	1313	1280	904	2640	1192
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	9.0	8.8	8.8	10.9	8.1	8.5	5.8	5.3	5.3	8.2	5.1	4.8
Incr Delay (d2), s/veh	0.1	0.5	0.5	0.1	0.1	0.4	0.1	0.1	0.1	0.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	1.9	1.9	0.4	0.7	1.3	0.4	1.0	1.0	2.2	0.6	0.0
LnGrp Delay(d),s/veh	9.1	9.3	9.4	11.1	8.1	8.9	5.8	5.4	5.4	8.7	5.1	4.8
LnGrp LOS	A	A	A	B	A	A	A	A	A	A	A	A
Approach Vol, veh/h		550			434			437			524	
Approach Delay, s/veh		9.3			8.8			5.5			7.0	
Approach LOS		A			A			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		18.9		14.2		18.9		14.2
Change Period (Y+Rc), s		3.5		3.5		3.5		3.5
Max Green Setting (Gmax), s		24.5		18.5		24.5		18.5
Max Q Clear Time (g_c+I1), s		4.5		5.7		11.7		7.3
Green Ext Time (p_c), s		4.4		3.7		3.7		3.5

Intersection Summary	
HCM 2010 Ctrl Delay	7.7
HCM 2010 LOS	A



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	23	39	272	86	65	194
Future Volume (veh/h)	23	39	272	86	65	194
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1853	1900	1900	1849
Adj Flow Rate, veh/h	25	42	296	93	71	211
Adj No. of Lanes	0	0	1	0	0	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	3	3	2	2
Cap, veh/h	42	70	589	185	384	609
Arrive On Green	0.07	0.07	0.44	0.44	0.44	0.44
Sat Flow, veh/h	619	1040	1353	425	239	1400
Grp Volume(v), veh/h	68	0	0	389	282	0
Grp Sat Flow(s),veh/h/ln	1683	0	0	1778	1638	0
Q Serve(g_s), s	0.6	0.0	0.0	2.5	0.0	0.0
Cycle Q Clear(g_c), s	0.6	0.0	0.0	2.5	1.6	0.0
Prop In Lane	0.37	0.62		0.24	0.25	
Lane Grp Cap(c), veh/h	114	0	0	774	993	0
V/C Ratio(X)	0.60	0.00	0.00	0.50	0.28	0.00
Avail Cap(c_a), veh/h	1883	0	0	2099	2122	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	7.3	0.0	0.0	3.3	3.0	0.0
Incr Delay (d2), s/veh	5.0	0.0	0.0	0.5	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.0	1.3	0.8	0.0
LnGrp Delay(d),s/veh	12.2	0.0	0.0	3.8	3.2	0.0
LnGrp LOS	B			A	A	
Approach Vol, veh/h	68		389			282
Approach Delay, s/veh	12.2		3.8			3.2
Approach LOS	B		A			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		11.0				11.0		5.1
Change Period (Y+Rc), s		4.0				4.0		4.0
Max Green Setting (Gmax), s		19.0				19.0		18.0
Max Q Clear Time (g_c+I1), s		4.5				3.6		2.6
Green Ext Time (p_c), s		2.4				2.5		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	4.3
HCM 2010 LOS	A

Notes

MITIGATED BACKGROUND PLUS PROJECT CONDITIONS SYNCHRO OUTPUT SHEETS



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	64	112	471	748	509	246
Future Volume (veh/h)	64	112	471	748	509	246
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1827	1863	1881	1863	1810
Adj Flow Rate, veh/h	71	124	523	831	566	273
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	4	2	1	2	5
Cap, veh/h	154	653	592	1482	729	602
Arrive On Green	0.09	0.09	0.33	0.79	0.39	0.39
Sat Flow, veh/h	1774	1553	1774	1881	1863	1538
Grp Volume(v), veh/h	71	124	523	831	566	273
Grp Sat Flow(s),veh/h/ln	1774	1553	1774	1881	1863	1538
Q Serve(g_s), s	2.4	3.2	17.8	10.7	17.0	8.4
Cycle Q Clear(g_c), s	2.4	3.2	17.8	10.7	17.0	8.4
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	154	653	592	1482	729	602
V/C Ratio(X)	0.46	0.19	0.88	0.56	0.78	0.45
Avail Cap(c_a), veh/h	500	956	806	1886	904	747
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.7	11.6	20.1	2.6	17.0	14.4
Incr Delay (d2), s/veh	2.1	0.1	8.8	0.3	3.4	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	3.5	10.0	5.4	9.3	3.7
LnGrp Delay(d),s/veh	29.9	11.8	28.9	2.9	20.4	14.9
LnGrp LOS	C	B	C	A	C	B
Approach Vol, veh/h	195			1354	839	
Approach Delay, s/veh	18.4			13.0	18.6	
Approach LOS	B			B	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		54.3		9.5	25.3	29.0		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		64.0		18.0	29.0	31.0		
Max Q Clear Time (g_c+I1), s		12.7		5.2	19.8	19.0		
Green Ext Time (p_c), s		9.7		0.5	1.5	6.0		

Intersection Summary	
HCM 2010 Ctrl Delay	15.4
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	125	0	515	0	670	91	302	301	0
Future Volume (veh/h)	0	0	0	125	0	515	0	670	91	302	301	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1429	1827	1900	1863	1845	1827	1863	1900
Adj Flow Rate, veh/h	0	0	0	139	0	572	0	744	101	336	334	0
Adj No. of Lanes	0	1	0	0	1	1	0	1	1	1	1	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	4	2	2	3	4	2	2
Cap, veh/h	0	394	0	314	0	662	0	806	678	373	1293	0
Arrive On Green	0.00	0.00	0.00	0.21	0.00	0.21	0.00	0.43	0.43	0.21	0.69	0.00
Sat Flow, veh/h	0	1863	0	1083	0	1553	0	1863	1568	1740	1863	0
Grp Volume(v), veh/h	0	0	0	139	0	572	0	744	101	336	334	0
Grp Sat Flow(s),veh/h/ln	0	1863	0	1083	0	1553	0	1863	1568	1740	1863	0
Q Serve(g_s), s	0.0	0.0	0.0	9.9	0.0	18.0	0.0	32.1	3.3	16.0	5.7	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	9.9	0.0	18.0	0.0	32.1	3.3	16.0	5.7	0.0
Prop In Lane	0.00		0.00	1.00		1.00	0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	0	394	0	314	0	662	0	806	678	373	1293	0
V/C Ratio(X)	0.00	0.00	0.00	0.44	0.00	0.86	0.00	0.92	0.15	0.90	0.26	0.00
Avail Cap(c_a), veh/h	0	394	0	314	0	662	0	876	738	409	1402	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	30.3	0.0	22.1	0.0	22.8	14.6	32.5	4.8	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	1.0	0.0	11.4	0.0	14.5	0.1	21.2	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	3.0	0.0	14.1	0.0	19.6	1.4	9.8	2.9	0.0
LnGrp Delay(d),s/veh	0.0	0.0	0.0	31.3	0.0	33.6	0.0	37.3	14.7	53.7	4.9	0.0
LnGrp LOS				C		C		D	B	D	A	
Approach Vol, veh/h		0			711			845			670	
Approach Delay, s/veh		0.0			33.1			34.6			29.4	
Approach LOS					C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	22.2	40.8		22.0		63.0		22.0
Change Period (Y+Rc), s	4.0	4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s	20.6	40.0		18.0		64.0		18.0
Max Q Clear Time (g_c+I1), s	19.3	34.1		0.0		7.7		20.0
Green Ext Time (p_c), s	0.3	2.7		0.0		5.7		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	32.6
HCM 2010 LOS	C



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	433	96	548	304	110	1511
Future Volume (veh/h)	433	96	548	304	110	1511
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1845	1863	1900	1863	1863
Adj Flow Rate, veh/h	446	99	565	313	113	1558
Adj No. of Lanes	1	1	2	1	1	2
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	3	2	0	2	2
Cap, veh/h	528	596	1373	626	147	1939
Arrive On Green	0.30	0.30	0.39	0.39	0.08	0.55
Sat Flow, veh/h	1774	1568	3632	1613	1774	3632
Grp Volume(v), veh/h	446	99	565	313	113	1558
Grp Sat Flow(s),veh/h/ln	1774	1568	1770	1613	1774	1770
Q Serve(g_s), s	12.2	2.2	6.0	7.6	3.2	18.4
Cycle Q Clear(g_c), s	12.2	2.2	6.0	7.6	3.2	18.4
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	528	596	1373	626	147	1939
V/C Ratio(X)	0.85	0.17	0.41	0.50	0.77	0.80
Avail Cap(c_a), veh/h	686	736	1373	626	309	2189
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.1	10.6	11.5	12.0	23.3	9.4
Incr Delay (d2), s/veh	7.6	0.1	0.2	0.6	8.3	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.1	1.0	2.9	3.5	1.9	9.4
LnGrp Delay(d),s/veh	24.7	10.7	11.7	12.6	31.5	11.5
LnGrp LOS	C	B	B	B	C	B
Approach Vol, veh/h	545		878			1671
Approach Delay, s/veh	22.1		12.1			12.8
Approach LOS	C		B			B

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	8.3	24.1				32.4		19.4
Change Period (Y+Rc), s	4.0	4.0				4.0		4.0
Max Green Setting (Gmax), s	9.6	19.0				32.0		20.0
Max Q Clear Time (g_c+I1), s	15.2	9.6				20.4		14.2
Green Ext Time (p_c), s	0.1	7.2				8.0		1.2

Intersection Summary	
HCM 2010 Ctrl Delay	14.2
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	240	258	92	220	327	247	125	472	139	151	399	206
Future Volume (veh/h)	240	258	92	220	327	247	125	472	139	151	399	206
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1868	1900	1863	1845	1845	1881	1863	1810	1810	1869	1900
Adj Flow Rate, veh/h	267	287	102	244	363	274	139	524	154	168	443	229
Adj No. of Lanes	1	2	0	2	2	1	1	2	1	1	2	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	1	2	2	2	3	3	1	2	5	5	2	2
Cap, veh/h	189	698	243	323	907	406	173	1001	432	203	690	354
Arrive On Green	0.11	0.27	0.27	0.09	0.26	0.26	0.10	0.28	0.28	0.12	0.30	0.30
Sat Flow, veh/h	1792	2583	899	3442	3505	1566	1792	3539	1527	1723	2270	1164
Grp Volume(v), veh/h	267	195	194	244	363	274	139	524	154	168	346	326
Grp Sat Flow(s),veh/h/ln	1792	1774	1708	1721	1752	1566	1792	1770	1527	1723	1776	1658
Q Serve(g_s), s	8.5	7.3	7.5	5.6	6.9	12.7	6.1	10.1	6.5	7.7	13.6	13.8
Cycle Q Clear(g_c), s	8.5	7.3	7.5	5.6	6.9	12.7	6.1	10.1	6.5	7.7	13.6	13.8
Prop In Lane	1.00		0.53	1.00		1.00	1.00		1.00	1.00		0.70
Lane Grp Cap(c), veh/h	189	480	462	323	907	406	173	1001	432	203	540	504
V/C Ratio(X)	1.42	0.41	0.42	0.76	0.40	0.68	0.80	0.52	0.36	0.83	0.64	0.65
Avail Cap(c_a), veh/h	189	839	808	354	1649	737	255	1622	700	267	836	780
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.1	24.2	24.2	35.7	24.7	26.9	35.7	24.4	23.1	34.8	24.3	24.4
Incr Delay (d2), s/veh	215.3	0.7	0.7	6.9	0.3	2.4	6.4	0.5	0.6	11.8	1.5	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.4	3.7	3.6	3.0	3.4	5.7	3.4	4.9	2.8	4.3	6.9	6.5
LnGrp Delay(d),s/veh	251.4	24.8	25.0	42.6	25.1	29.2	42.1	24.9	23.7	46.6	25.8	26.1
LnGrp LOS	F	C	C	D	C	C	D	C	C	D	C	C
Approach Vol, veh/h		656			881			817			840	
Approach Delay, s/veh		117.1			31.2			27.6			30.1	
Approach LOS		F			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.1	26.8	12.3	29.5	13.0	25.9	14.0	27.8
Change Period (Y+Rc), s	4.5	5.0	4.5	5.0	4.5	5.0	4.5	5.0
Max Green Setting (Gmax), s	8.3	38.2	11.5	38.0	8.5	38.0	12.5	37.0
Max Q Clear Time (g_c+I1), s	7.6	9.5	8.1	15.8	10.5	14.7	9.7	12.1
Green Ext Time (p_c), s	0.0	6.1	0.0	7.6	0.0	5.8	0.0	7.9

Intersection Summary	
HCM 2010 Ctrl Delay	47.6
HCM 2010 LOS	D



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	471	601	236	546	678	55
Future Volume (veh/h)	471	601	236	546	678	55
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1863	1863	1881	1881	1863
Adj Flow Rate, veh/h	529	675	265	613	762	62
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	1	2	2	1	1	2
Cap, veh/h	519	705	277	1169	792	653
Arrive On Green	0.29	0.29	0.16	0.62	0.42	0.42
Sat Flow, veh/h	1792	1583	1774	1881	1881	1550
Grp Volume(v), veh/h	529	675	265	613	762	62
Grp Sat Flow(s),veh/h/ln	1792	1583	1774	1881	1881	1550
Q Serve(g_s), s	26.0	26.0	13.3	16.4	35.4	2.2
Cycle Q Clear(g_c), s	26.0	26.0	13.3	16.4	35.4	2.2
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	519	705	277	1169	792	653
V/C Ratio(X)	1.02	0.96	0.96	0.52	0.96	0.09
Avail Cap(c_a), veh/h	519	705	277	1173	796	656
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.9	24.1	37.6	9.5	25.3	15.7
Incr Delay (d2), s/veh	44.7	23.8	42.7	0.4	22.9	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	19.3	4.7	9.8	8.5	23.3	0.9
LnGrp Delay(d),s/veh	76.6	47.9	80.3	10.0	48.3	15.7
LnGrp LOS	F	D	F	A	D	B
Approach Vol, veh/h	1204			878	824	
Approach Delay, s/veh	60.5			31.2	45.8	
Approach LOS	E			C	D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		59.8		30.0	18.0	41.8		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		56.0		26.0	14.0	38.0		
Max Q Clear Time (g_c+I1), s		18.4		28.0	15.3	37.4		
Green Ext Time (p_c), s		7.5		0.0	0.0	0.4		

Intersection Summary	
HCM 2010 Ctrl Delay	47.5
HCM 2010 LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	122	0	327	0	562	163	614	868	0
Future Volume (veh/h)	0	0	0	122	0	327	0	562	163	614	868	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1900	1863	1900	1863	1863	1863	1900	1900
Adj Flow Rate, veh/h	0	0	0	137	0	367	0	631	183	690	975	0
Adj No. of Lanes	0	1	0	0	1	1	0	1	1	1	1	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	0	0
Cap, veh/h	0	295	0	294	0	859	0	647	550	681	1460	0
Arrive On Green	0.00	0.00	0.00	0.16	0.00	0.16	0.00	0.35	0.35	0.38	0.77	0.00
Sat Flow, veh/h	0	1863	0	1440	0	1583	0	1863	1583	1774	1900	0
Grp Volume(v), veh/h	0	0	0	137	0	367	0	631	183	690	975	0
Grp Sat Flow(s),veh/h/ln	0	1863	0	1440	0	1583	0	1863	1583	1774	1900	0
Q Serve(g_s), s	0.0	0.0	0.0	9.7	0.0	15.1	0.0	36.5	9.3	42.0	26.7	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	9.7	0.0	15.1	0.0	36.5	9.3	42.0	26.7	0.0
Prop In Lane	0.00		0.00	1.00		1.00	0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	0	295	0	294	0	859	0	647	550	681	1460	0
V/C Ratio(X)	0.00	0.00	0.00	0.47	0.00	0.43	0.00	0.97	0.33	1.01	0.67	0.00
Avail Cap(c_a), veh/h	0	307	0	303	0	869	0	647	550	681	1460	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	42.8	0.0	14.9	0.0	35.2	26.3	33.7	6.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	1.1	0.0	0.3	0.0	29.0	0.4	37.6	1.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	3.9	0.0	6.6	0.0	24.0	4.1	27.6	14.3	0.0
LnGrp Delay(d),s/veh	0.0	0.0	0.0	43.9	0.0	15.2	0.0	64.2	26.7	71.3	7.2	0.0
LnGrp LOS				D		B		E	C	F	A	
Approach Vol, veh/h		0			504			814			1665	
Approach Delay, s/veh		0.0			23.0			55.8			33.8	
Approach LOS					C			E			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	46.0	42.0		21.3		88.0		21.3
Change Period (Y+Rc), s	4.0	4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s	42.0	38.0		18.0		84.0		18.0
Max Q Clear Time (g_c+I1), s	44.0	38.5		0.0		28.7		17.1
Green Ext Time (p_c), s	0.0	0.0		0.0		11.6		0.3

Intersection Summary	
HCM 2010 Ctrl Delay	38.0
HCM 2010 LOS	D



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	579	203	1258	724	213	996
Future Volume (veh/h)	579	203	1258	724	213	996
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1845	1881	1863	1810
Adj Flow Rate, veh/h	629	221	1367	787	232	1083
Adj No. of Lanes	1	1	2	1	1	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	3	1	2	5
Cap, veh/h	523	682	1558	710	237	2139
Arrive On Green	0.29	0.29	0.44	0.44	0.13	0.62
Sat Flow, veh/h	1810	1615	3597	1597	1774	3529
Grp Volume(v), veh/h	629	221	1367	787	232	1083
Grp Sat Flow(s),veh/h/ln	1810	1615	1752	1597	1774	1719
Q Serve(g_s), s	26.0	8.2	32.0	40.0	11.7	15.6
Cycle Q Clear(g_c), s	26.0	8.2	32.0	40.0	11.7	15.6
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	523	682	1558	710	237	2139
V/C Ratio(X)	1.20	0.32	0.88	1.11	0.98	0.51
Avail Cap(c_a), veh/h	523	682	1558	710	237	2139
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.0	17.4	22.8	25.0	38.9	9.4
Incr Delay (d2), s/veh	108.6	0.3	6.0	67.6	52.9	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	28.7	3.7	16.7	30.9	9.2	7.4
LnGrp Delay(d),s/veh	140.6	17.7	28.8	92.6	91.8	9.6
LnGrp LOS	F	B	C	F	F	A
Approach Vol, veh/h	850		2154			1315
Approach Delay, s/veh	108.7		52.1			24.1
Approach LOS	F		D			C

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	16.0	44.0				60.0		30.0
Change Period (Y+Rc), s	4.0	4.0				4.0		4.0
Max Green Setting (Gmax), s	12.0	40.0				56.0		26.0
Max Q Clear Time (g_c+I1), s	13.7	42.0				17.6		28.0
Green Ext Time (p_c), s	0.0	0.0				26.4		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	54.7
HCM 2010 LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	322	312	94	218	243	145	142	530	128	191	373	298
Future Volume (veh/h)	322	312	94	218	243	145	142	530	128	191	373	298
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1850	1900	1881	1900	1845	1900	1881	1900	1881	1890	1900
Adj Flow Rate, veh/h	362	351	106	245	273	163	160	596	144	215	419	335
Adj No. of Lanes	1	2	0	2	2	1	1	2	1	1	2	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	1	0	3	0	1	0	1	1	1
Cap, veh/h	391	864	257	312	698	300	191	954	427	245	567	451
Arrive On Green	0.22	0.32	0.32	0.09	0.19	0.19	0.11	0.27	0.27	0.14	0.30	0.30
Sat Flow, veh/h	1774	2668	794	3476	3610	1553	1810	3574	1600	1792	1900	1509
Grp Volume(v), veh/h	362	229	228	245	273	163	160	596	144	215	396	358
Grp Sat Flow(s),veh/h/ln	1774	1758	1705	1738	1805	1553	1810	1787	1600	1792	1795	1614
Q Serve(g_s), s	20.8	10.6	10.8	7.2	6.9	9.8	9.0	15.3	7.5	12.3	20.6	20.8
Cycle Q Clear(g_c), s	20.8	10.6	10.8	7.2	6.9	9.8	9.0	15.3	7.5	12.3	20.6	20.8
Prop In Lane	1.00		0.47	1.00		1.00	1.00		1.00	1.00		0.93
Lane Grp Cap(c), veh/h	391	569	552	312	698	300	191	954	427	245	536	482
V/C Ratio(X)	0.93	0.40	0.41	0.78	0.39	0.54	0.84	0.62	0.34	0.88	0.74	0.74
Avail Cap(c_a), veh/h	440	808	784	517	1304	561	248	1270	568	268	660	594
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.8	27.4	27.5	46.4	36.7	37.9	45.7	33.6	30.7	44.1	32.9	32.9
Incr Delay (d2), s/veh	23.0	0.6	0.6	1.7	0.4	1.8	14.2	0.8	0.6	23.3	3.7	4.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.7	5.2	5.2	3.5	3.5	4.4	5.3	7.6	3.4	7.7	10.8	9.8
LnGrp Delay(d),s/veh	62.8	27.9	28.1	48.1	37.1	39.7	59.9	34.4	31.3	67.4	36.6	37.2
LnGrp LOS	E	C	C	D	D	D	E	C	C	E	D	D
Approach Vol, veh/h		819			681			900			969	
Approach Delay, s/veh		43.4			41.7			38.4			43.7	
Approach LOS		D			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.9	38.7	15.5	36.1	27.4	25.1	18.8	32.8
Change Period (Y+Rc), s	4.5	5.0	4.5	5.0	4.5	5.0	4.5	5.0
Max Green Setting (Gmax), s	15.5	47.9	14.3	38.3	25.8	37.6	15.6	37.0
Max Q Clear Time (g_c+I1), s	9.2	12.8	11.0	22.8	22.8	11.8	14.3	17.3
Green Ext Time (p_c), s	0.2	5.3	0.0	7.3	0.1	5.0	0.0	8.3

Intersection Summary	
HCM 2010 Ctrl Delay	41.8
HCM 2010 LOS	D

MITIGATED CUMULATIVE PLUS PROJECT CONDITIONS SYNCHRO OUTPUT SHEETS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	22	30	88	45	855	20	2012	127	262	1286	30
Future Volume (veh/h)	10	22	30	88	45	855	20	2012	127	262	1286	30
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	10	22	30	88	45	0	20	2012	127	262	1286	30
Adj No. of Lanes	1	1	1	1	1	1	1	3	1	2	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	18	86	101	113	186	158	32	2919	1010	387	3418	80
Arrive On Green	0.01	0.05	0.05	0.06	0.10	0.00	0.02	0.57	0.57	0.11	0.67	0.67
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	5085	1583	3442	5113	119
Grp Volume(v), veh/h	10	22	30	88	45	0	20	2012	127	262	853	463
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1695	1583	1721	1695	1842
Q Serve(g_s), s	0.4	0.9	1.4	3.8	1.7	0.0	0.9	21.9	2.5	5.7	8.7	8.7
Cycle Q Clear(g_c), s	0.4	0.9	1.4	3.8	1.7	0.0	0.9	21.9	2.5	5.7	8.7	8.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.06
Lane Grp Cap(c), veh/h	18	86	101	113	186	158	32	2919	1010	387	2266	1231
V/C Ratio(X)	0.56	0.26	0.30	0.78	0.24	0.00	0.63	0.69	0.13	0.68	0.38	0.38
Avail Cap(c_a), veh/h	90	427	392	158	498	424	113	3304	1130	1666	3628	1971
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.7	36.1	35.0	36.2	32.6	0.0	38.3	11.8	5.6	33.5	5.8	5.8
Incr Delay (d2), s/veh	25.2	1.6	1.6	14.9	0.7	0.0	18.4	0.5	0.1	2.1	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.5	0.7	2.3	0.9	0.0	0.6	10.2	1.1	2.8	4.1	4.4
LnGrp Delay(d),s/veh	63.9	37.7	36.7	51.1	33.3	0.0	56.6	12.3	5.7	35.5	5.9	6.0
LnGrp LOS	E	D	D	D	C		E	B	A	D	A	A
Approach Vol, veh/h		62			133			2159			1578	
Approach Delay, s/veh		41.4			45.0			12.3			10.8	
Approach LOS		D			D			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.8	49.1	9.0	7.6	5.4	56.5	4.8	11.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	38.0	51.0	7.0	18.0	5.0	84.0	4.0	21.0
Max Q Clear Time (g_c+I1), s	7.7	23.9	5.8	3.4	2.9	10.7	2.4	3.7
Green Ext Time (p_c), s	1.1	21.2	0.0	0.3	0.0	40.8	0.0	0.3

Intersection Summary	
HCM 2010 Ctrl Delay	13.3
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	51	246	272	100	751	158	70	650	90	134	443	177
Future Volume (veh/h)	51	246	272	100	751	158	70	650	90	134	443	177
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	51	246	272	100	751	158	70	650	90	134	443	177
Adj No. of Lanes	1	2	0	1	2	1	1	2	0	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	72	487	436	127	1086	486	88	910	126	156	1168	522
Arrive On Green	0.04	0.28	0.28	0.07	0.31	0.31	0.05	0.29	0.29	0.09	0.33	0.33
Sat Flow, veh/h	1774	1770	1583	1774	3539	1583	1774	3124	432	1774	3539	1583
Grp Volume(v), veh/h	51	246	272	100	751	158	70	368	372	134	443	177
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1770	1787	1774	1770	1583
Q Serve(g_s), s	1.5	6.0	7.7	2.8	9.6	3.9	2.0	9.5	9.5	3.8	4.9	4.3
Cycle Q Clear(g_c), s	1.5	6.0	7.7	2.8	9.6	3.9	2.0	9.5	9.5	3.8	4.9	4.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.24	1.00		1.00
Lane Grp Cap(c), veh/h	72	487	436	127	1086	486	88	516	520	156	1168	522
V/C Ratio(X)	0.71	0.50	0.62	0.79	0.69	0.33	0.80	0.71	0.72	0.86	0.38	0.34
Avail Cap(c_a), veh/h	156	640	573	156	1280	573	156	640	646	156	1280	573
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.3	15.6	16.2	23.4	15.6	13.7	24.1	16.2	16.2	23.0	13.1	12.9
Incr Delay (d2), s/veh	12.3	0.8	1.5	19.0	1.3	0.4	15.2	2.8	2.8	35.1	0.2	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	3.0	3.5	2.1	4.8	1.7	1.3	5.0	5.1	3.4	2.4	1.9
LnGrp Delay(d),s/veh	36.6	16.4	17.7	42.3	16.9	14.0	39.3	19.1	19.1	58.1	13.3	13.3
LnGrp LOS	D	B	B	D	B	B	D	B	B	E	B	B
Approach Vol, veh/h		569			1009			810			754	
Approach Delay, s/veh		18.8			19.0			20.8			21.3	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	18.4	7.2	17.6	6.0	20.4	5.6	19.2
Change Period (Y+Rc), s	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Max Green Setting (Gmax), s	4.5	18.5	4.5	18.5	4.5	18.5	4.5	18.5
Max Q Clear Time (g_c+I1), s	5.8	11.5	4.8	9.7	4.0	6.9	3.5	11.6
Green Ext Time (p_c), s	0.0	3.4	0.0	4.4	0.0	4.6	0.0	3.7

Intersection Summary	
HCM 2010 Ctrl Delay	20.0
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	189	568	132	70	654	519	42	761	310	90	716	193
Future Volume (veh/h)	189	568	132	70	654	519	42	761	310	90	716	193
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	189	568	132	70	654	519	42	761	310	90	716	193
Adj No. of Lanes	1	2	0	2	2	1	1	2	1	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	218	1155	268	166	1169	624	70	1096	563	114	920	248
Arrive On Green	0.12	0.40	0.40	0.05	0.33	0.33	0.04	0.31	0.31	0.06	0.33	0.33
Sat Flow, veh/h	1774	2854	661	3442	3539	1582	1774	3539	1573	1774	2756	743
Grp Volume(v), veh/h	189	352	348	70	654	519	42	761	310	90	460	449
Grp Sat Flow(s),veh/h/ln	1774	1770	1745	1721	1770	1582	1774	1770	1573	1774	1770	1729
Q Serve(g_s), s	11.5	16.2	16.3	2.2	16.6	32.4	2.6	20.7	17.3	5.5	25.6	25.6
Cycle Q Clear(g_c), s	11.5	16.2	16.3	2.2	16.6	32.4	2.6	20.7	17.3	5.5	25.6	25.6
Prop In Lane	1.00		0.38	1.00		1.00	1.00		1.00	1.00		0.43
Lane Grp Cap(c), veh/h	218	716	707	166	1169	624	70	1096	563	114	591	577
V/C Ratio(X)	0.87	0.49	0.49	0.42	0.56	0.83	0.60	0.69	0.55	0.79	0.78	0.78
Avail Cap(c_a), veh/h	235	716	707	324	1227	650	110	1195	608	186	673	658
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.2	24.2	24.3	50.7	30.1	29.9	51.8	33.3	28.1	50.6	32.8	32.8
Incr Delay (d2), s/veh	24.7	0.6	0.6	0.6	0.6	9.0	3.0	1.7	1.1	4.6	5.4	5.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.1	8.0	8.0	1.0	8.2	15.6	1.3	10.4	7.7	2.8	13.4	13.1
LnGrp Delay(d),s/veh	71.9	24.9	24.9	51.3	30.7	38.9	54.8	35.0	29.2	55.2	38.2	38.3
LnGrp LOS	E	C	C	D	C	D	D	C	C	E	D	D
Approach Vol, veh/h		889			1243			1113			999	
Approach Delay, s/veh		34.9			35.3			34.1			39.8	
Approach LOS		C			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.8	49.4	8.8	41.6	17.9	41.2	11.5	38.9
Change Period (Y+Rc), s	4.5	5.0	4.5	5.0	4.5	5.0	4.5	5.0
Max Green Setting (Gmax), s	10.3	42.2	6.8	41.7	14.5	38.0	11.5	37.0
Max Q Clear Time (g_c+I1), s	4.2	18.3	4.6	27.6	13.5	34.4	7.5	22.7
Green Ext Time (p_c), s	0.0	12.3	0.0	8.9	0.0	1.8	0.0	9.0

Intersection Summary	
HCM 2010 Ctrl Delay	36.0
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	84	230	274	97	404	80	2152	132	792	2737	10
Future Volume (veh/h)	10	84	230	274	97	404	80	2152	132	792	2737	10
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	10	84	230	274	97	0	80	2152	132	792	2737	10
Adj No. of Lanes	1	1	1	1	1	1	1	3	1	2	3	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	16	125	250	276	397	338	162	2193	929	803	2999	11
Arrive On Green	0.01	0.07	0.07	0.16	0.21	0.00	0.09	0.43	0.43	0.23	0.57	0.57
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	5085	1583	3442	5230	19
Grp Volume(v), veh/h	10	84	230	274	97	0	80	2152	132	792	1773	974
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1695	1583	1721	1695	1859
Q Serve(g_s), s	0.8	6.2	6.0	21.8	6.1	0.0	6.1	59.0	1.2	32.4	66.2	66.4
Cycle Q Clear(g_c), s	0.8	6.2	6.0	21.8	6.1	0.0	6.1	59.0	1.2	32.4	66.2	66.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.01
Lane Grp Cap(c), veh/h	16	125	250	276	397	338	162	2193	929	803	1944	1066
V/C Ratio(X)	0.61	0.67	0.92	0.99	0.24	0.00	0.50	0.98	0.14	0.99	0.91	0.91
Avail Cap(c_a), veh/h	50	237	346	276	474	403	162	2193	929	803	2037	1117
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	69.8	64.5	34.7	59.7	46.2	0.0	61.2	39.7	6.0	54.0	27.0	27.0
Incr Delay (d2), s/veh	32.0	6.2	23.5	52.2	0.3	0.0	2.3	15.1	0.1	28.3	6.6	11.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	3.4	10.0	14.7	3.2	0.0	3.1	30.6	1.5	18.6	32.6	37.1
LnGrp Delay(d),s/veh	101.8	70.7	58.3	111.9	46.5	0.0	63.5	54.7	6.0	82.4	33.6	38.1
LnGrp LOS	F	E	E	F	D		E	D	A	F	C	D
Approach Vol, veh/h		324			371			2364			3539	
Approach Delay, s/veh		62.8			94.8			52.3			45.7	
Approach LOS		E			F			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	37.0	65.0	26.0	13.5	16.9	85.1	5.3	34.2
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	33.0	61.0	22.0	18.0	9.0	85.0	4.0	36.0
Max Q Clear Time (g_c+I1), s	34.4	61.0	23.8	8.2	8.1	68.4	2.8	8.1
Green Ext Time (p_c), s	0.0	0.0	0.0	1.2	0.4	12.7	0.0	1.8

Intersection Summary	
HCM 2010 Ctrl Delay	51.7
HCM 2010 LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	925	209	64	648	331	80	915	108	369	774	127
Future Volume (veh/h)	70	925	209	64	648	331	80	915	108	369	774	127
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	70	925	209	64	648	331	80	915	108	369	774	127
Adj No. of Lanes	1	2	0	1	2	1	1	2	0	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	90	878	198	80	1062	800	103	967	114	365	1596	794
Arrive On Green	0.05	0.31	0.31	0.05	0.30	0.30	0.06	0.30	0.30	0.21	0.45	0.45
Sat Flow, veh/h	1774	2870	648	1774	3539	1583	1774	3189	376	1774	3539	1582
Grp Volume(v), veh/h	70	570	564	64	648	331	80	508	515	369	774	127
Grp Sat Flow(s),veh/h/ln	1774	1770	1748	1774	1770	1583	1774	1770	1796	1774	1770	1582
Q Serve(g_s), s	3.9	30.5	30.5	3.6	15.6	2.3	4.4	28.0	28.0	20.5	15.3	4.3
Cycle Q Clear(g_c), s	3.9	30.5	30.5	3.6	15.6	2.3	4.4	28.0	28.0	20.5	15.3	4.3
Prop In Lane	1.00		0.37	1.00		1.00	1.00		0.21	1.00		1.00
Lane Grp Cap(c), veh/h	90	541	535	80	1062	800	103	537	545	365	1596	794
V/C Ratio(X)	0.78	1.05	1.06	0.80	0.61	0.41	0.78	0.95	0.95	1.01	0.49	0.16
Avail Cap(c_a), veh/h	151	541	535	80	1062	800	169	541	549	365	1596	794
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.8	34.6	34.6	47.2	29.9	7.7	46.4	34.0	34.0	39.6	19.3	13.5
Incr Delay (d2), s/veh	13.2	53.5	54.2	42.0	1.0	0.3	11.9	25.8	25.6	50.2	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	22.8	22.6	2.7	7.8	3.9	2.5	17.5	17.8	15.0	7.5	1.9
LnGrp Delay(d),s/veh	60.0	88.1	88.9	89.2	30.9	8.0	58.2	59.8	59.5	89.9	19.5	13.6
LnGrp LOS	E	F	F	F	C	A	E	E	E	F	B	B
Approach Vol, veh/h		1204			1043			1103			1270	
Approach Delay, s/veh		86.8			27.2			59.5			39.3	
Approach LOS		F			C			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	33.7	8.0	34.0	9.3	48.5	8.6	33.4
Change Period (Y+Rc), s	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Max Green Setting (Gmax), s	10.5	30.5	4.5	30.5	9.5	41.5	8.5	26.5
Max Q Clear Time (g_c+I1), s	22.5	30.0	5.6	32.5	6.4	17.3	5.9	17.6
Green Ext Time (p_c), s	0.0	0.3	0.0	0.0	0.0	6.1	0.0	6.1

Intersection Summary	
HCM 2010 Ctrl Delay	53.8
HCM 2010 LOS	D



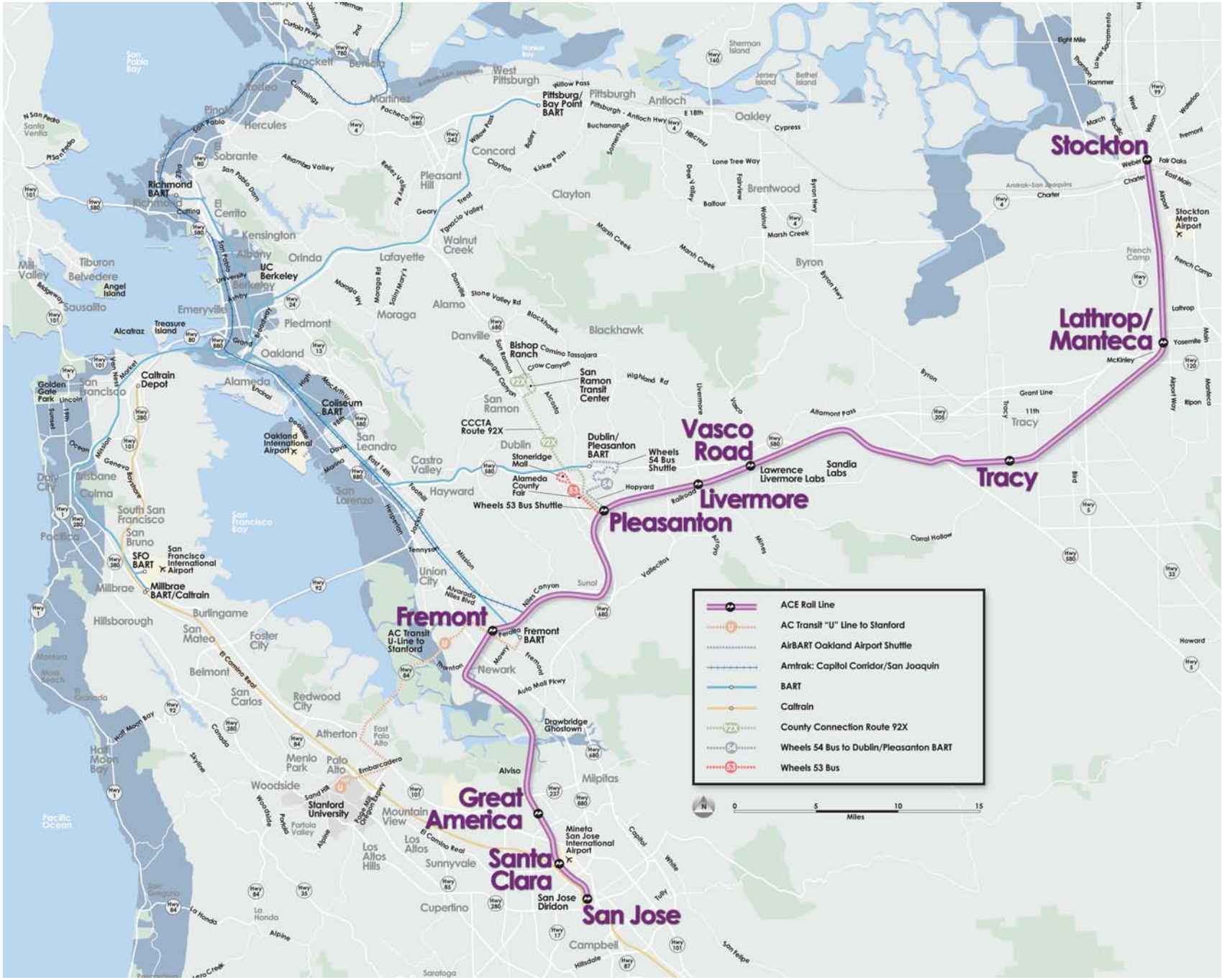
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	269	768	188	90	724	329	58	979	474	145	1062	353
Future Volume (veh/h)	269	768	188	90	724	329	58	979	474	145	1062	353
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	269	768	188	90	724	329	58	979	474	145	1062	353
Adj No. of Lanes	1	2	0	2	2	1	1	2	1	1	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	288	1021	250	156	868	537	74	1227	617	170	1048	344
Arrive On Green	0.16	0.36	0.36	0.05	0.25	0.25	0.04	0.35	0.35	0.10	0.40	0.40
Sat Flow, veh/h	1774	2817	690	3442	3539	1572	1774	3539	1572	1774	2617	860
Grp Volume(v), veh/h	269	482	474	90	724	329	58	979	474	145	714	701
Grp Sat Flow(s),veh/h/ln	1774	1770	1737	1721	1770	1572	1774	1770	1572	1774	1770	1707
Q Serve(g_s), s	19.0	30.3	30.3	3.3	24.6	22.1	4.1	31.7	33.3	10.2	50.8	50.8
Cycle Q Clear(g_c), s	19.0	30.3	30.3	3.3	24.6	22.1	4.1	31.7	33.3	10.2	50.8	50.8
Prop In Lane	1.00		0.40	1.00		1.00	1.00		1.00	1.00		0.50
Lane Grp Cap(c), veh/h	288	641	629	156	868	537	74	1227	617	170	709	684
V/C Ratio(X)	0.93	0.75	0.75	0.58	0.83	0.61	0.78	0.80	0.77	0.85	1.01	1.02
Avail Cap(c_a), veh/h	288	641	629	421	1035	612	105	1227	617	217	709	684
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.4	35.4	35.4	59.3	45.4	34.8	60.2	37.4	33.6	56.4	38.0	38.0
Incr Delay (d2), s/veh	35.3	5.2	5.3	1.3	5.4	1.7	13.4	3.9	6.0	18.6	35.6	40.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.2	15.7	15.4	1.6	12.7	9.8	2.3	16.2	15.4	5.9	31.6	31.5
LnGrp Delay(d),s/veh	87.7	40.6	40.7	60.6	50.8	36.5	73.5	41.3	39.6	75.0	73.6	78.9
LnGrp LOS	F	D	D	E	D	D	E	D	D	E	F	F
Approach Vol, veh/h		1225			1143			1511			1560	
Approach Delay, s/veh		51.0			47.5			42.0			76.1	
Approach LOS		D			D			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.2	50.9	9.8	55.8	25.1	36.1	16.7	49.0
Change Period (Y+Rc), s	4.5	5.0	4.5	5.0	4.5	5.0	4.5	5.0
Max Green Setting (Gmax), s	15.5	42.2	7.5	50.8	20.6	37.1	15.5	42.8
Max Q Clear Time (g_c+I1), s	5.3	32.3	6.1	52.8	21.0	26.6	12.2	35.3
Green Ext Time (p_c), s	0.1	7.1	0.0	0.0	0.0	3.9	0.0	6.8

Intersection Summary	
HCM 2010 Ctrl Delay	55.0
HCM 2010 LOS	D

Notes

TRANSIT SYSTEM MAPS



ACE Train Map

Six Bus Routes — Citywide Service

The City of Tracy now offers six TRACER bus routes, including new commuter routes with morning and afternoon service to most local schools. It's easy to travel throughout Tracy for school, work, shopping or recreation. This guide includes everything you need to plan your trip.

HOW TO USE THIS GUIDE

The map on the reverse side of this guide shows each of the routes in a distinct color. All the bus stops are shown as yellow triangles along the route.

TIMEPOINTS (those bus stops highlighted on the schedule) are shown with a number in a circle. Use these easy steps to plan your trip:

1. Use the map to identify the route(s) that connects where you are and where you wish to go.
2. Find the timepoint on that route which is nearest the bus stop where you wish to board.
3. Find the schedule for your route (it is shown in a matching color).
4. Find the same numbered timepoint on the schedule. Read down to see what time buses depart from that point.
5. If you're boarding at a non-timepoint, use the nearest timepoint before your stop to estimate the bus departure time.

For personal trip planning assistance CALL (209) 831-4BUS (831-4287).

SERVICE HOURS AND DAYS

TRACER Routes A B C and D run Monday through Friday from approximately 7:00 am to 8:00 pm and Saturday from Saturday 9:00 am to 7:00 pm. The Commuter Routes E and F run only weekdays when school is in session. TRACER does not operate on Sundays or the following holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day.

FARES

CASH FARE (ONE WAY)		
Adult	**Student**	**Senior(65+)/Disabled/ ADA/Medicare**
$1.25	$1.00	$.50
ADA ATTENDANT	**CHILD** (6 and under with adult)	
FREE	FREE	
DAY PASS (UNLIMITED TRIPS. SINGLE DAY)		
Adult	**Student**	**Senior(65+)/Disabled/ ADA/Medicare**
$3.00	$2.50	$1.25
10-RIDE TICKET OR WEEKLY PASS		
Adult	**Student**	**Senior(65+)/Disabled/ ADA/Medicare**
$12.50	$10.00	$5.00

PASS SALES

All TRACER passes can be purchased on the bus, using exact cash. Passes can also be purchased, by cash or check, at the following locations:

- Tracy Transit Station, 50 E. Sixth Street Ticket hours: Monday – Friday: 8:00 am – 7:00 pm; Saturday: 10:00 am – 6:00 pm
- City Hall, 333 Civic Center Plaza. Alternate Fridays closed. Ticket hours: Monday – Friday, 8:00 am – 5:00 pm

Passes must be handed to the driver for verification prior to being seated. Each rider MUST possess and present their own bus fare or pass every time he/she boards the bus. Using or attempting to use another rider's bus fare or pass is NOT allowed.

Effective December 1, 2015



HOW TO CATCH THE BUS

TRACER bus stops are clearly marked with the sign shown here. To ensure you catch the bus, be at the bus stop a little before the scheduled departure time. (Do not stand in the road.) As the bus approaches, signal the driver that you wish to board by waving your hand. Once on board, pay your fare or show your pass to the driver, take a seat and enjoy the ride.



TRANSFERRING
You can transfer between TRACER routes for no extra charge. Just ask your driver for a transfer slip when you board. It is good for one hour. Bus transfers at Transit Station, West Valley Mall and TRACER stops where two or more TRACER routes provide service.

TEXT FOR THE BUS

TXT4 BUS

If you have ever wondered what time the next bus will be coming to your stop, you will be able to find out instantly through a text message. All fixed route stops have a sign indicating a phone number in which to text your location. Within seconds a text will be sent back to you stating when the next bus will be at your stop. Passengers will now be able to plan their schedules more accurately along with the timing of the buses.

HERE IS HOW:
Find your stop ID: Located on the bus stop sign
Use your cell phone & text: (stop id) to (209) 839-7550
Receive estimate arrival times

Check out the web site at **www.ridetracer.com** for more information.

RIDING GUIDELINES AND POLICIES

BUS CODE OF CONDUCT
TRACER buses and facilities are for everyone, however, some activities that disrupt the safety, order, or rights of other passengers will not be tolerated.

The following activities may result in ejection from a bus or transit facility by City of Tracy Police Department or TRACER employee.

KEEP YOUR COOL
Don't threaten or intimidate riders or bus drivers. It's unlawful to threaten the safety of a rider or driver, or interfere with the movement of a bus.

PAY YOUR FARE SHARE
It is against the law to fail to pay the correct fare or to misuse transfers, passes or tickets.

DO NOT DISTURB
Everyone deserves a comfortable ride. Excessive noise is not allowed. Use headphones if listening to music.

MAKE WAY
Don't block the aisles or doors. If you have a bag or basket, make sure it's not blocking the aisle or doorway. Strollers and non-mobility devices must be folded before boarding and stored stowed safely away from the aisles. If you're standing, move back so others can board.

SORRY, NO PETS
Except for guide dogs and other service animals trained to assist passengers with disabilities, animals are not allowed on the bus.

NO SMOKING
Smoking is prohibited on buses, bus stops and at the Transit Station. If you smoke, be considerate of your fellow riders by moving away from the bus stop or shelter.

UNACCEPTABLE CARGO
It is against the law to carry any explosives, acid, flammable liquid, and/or toxic or hazardous materials.

RIDER SAFETY
Spilled food and drinks pose serious safety hazards. Therefore, eating and drinking is not allowed on the bus, but you can bring food and drinks on board in closed containers.

RIDER HEALTH SAFETY
Maintain acceptable standards of hygiene; open wounds or bodily fluids are considered a significant risk to the health or safety of others – (DOT ADA CFR 37.3)

END OF THE LINE
During your trip, as the bus approaches your stop, pull the cord to alert the driver that you wish to disembark. Please be sure the driver has enough time to make a safe stop. Prior to disembarking, gather your personal belongs and dispose of trash properly.

REDUCED FARES
TRACER offers reduced fares to seniors age 65 and over, individuals with qualifying disabilities, ADA and Medicare card holders. For additional information contact TRACER Customer Service at (209) 831-4BUS(4287)

TITLE VI COMPLIANCE
City of Tracy TRACER is committed to ensuring that no person is excluded from participation in, or denied the benefits of its transit services on the basis of race, color, or national origin, as protected by Title VI in Federal Transit Administration (FTA) Circular 4702.1.A. Any person who believes that they have been subjected to discrimination may file a written complaint with the City of Tracy, Title VI Coordinator.

Report complaints to: Jayne Pramod, Title VI Coordinator, City of Tracy Transit Station, 50 E. Sixth Street, Tracy, CA 95376. Telephone: (209) 831-6214, E-mail: **jayne.pramod@ci.tracy.ca.us.**

www.RideTracer.com

REGIONAL BUS SERVICE

San Joaquin Regional Transit District's (SJRTD) Intercity Route 97 and Hopper Route 90 connects Tracy to Stockton. RTD Rural Connection connects Tracy to Mountain House. The service complements TRACER service, serves many local businesses along the route and provides connections to Stockton.

For information, call 1-800-HOW-TO-RIDE or (209) 943-1111, or visit **www.sanjoaquinrtd.com**

For information on bus service to Bart and Bay Area, call RTD-BART Commuter at (888) 802-WORK (9675) or Commute Connection at (209) 235-1094

GREYHOUND

TRACY TRANSIT STATION
50 E. Sixth Street, Tracy, CA -95376
(209) 831–4BUS (4287)

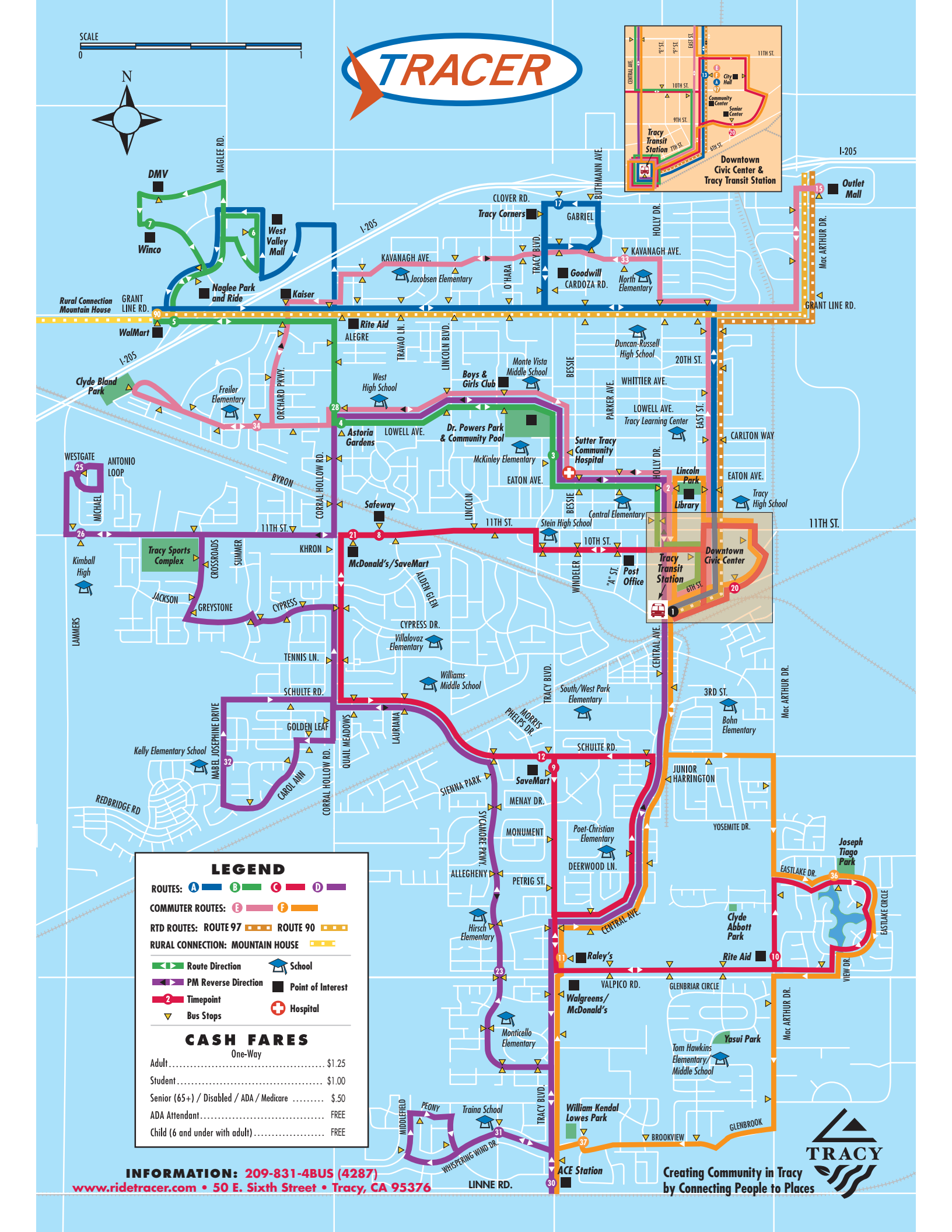
TRANSIT STATION
BUSINESS & TICKET HOURS
Monday – Friday: 8:00AM - 7:00PM
Saturday:10:00AM – 6:00PM
Holidays & Sunday: CLOSED

FOR CURRENT FARE & SCHEDULE INFORMATION
1-800-231-2222(English)
1-800-531-5332(Espanol)
www.greyhound.com

PARATRANSIT

Curb-to-curb paratransit is available to seniors (65+) and persons who, because of their disability or health-related condition, (1) cannot independently board, ride and/or disembark from an accessible fixed route transit bus or (2) cannot get to or from a boarding or disembarking location. *All Paratransit customers must be certified as eligible by the City of Tracy.*

Paratransit Applications can be downloaded from www.ridetracer.com


SCALE
0
1
N
TRACER
Downtown Civic Center & Tracy Transit Station
City Hall
Community Center
Senior Center
Tracy Transit Station
CENTRAL AVE.
EASY ST.
"E" ST.
"F" ST.
11TH ST.
10TH ST.
9TH ST.
7TH ST.
6TH ST.
I-205
DMV
NAGLEE RD.
Winco
West Valley Mall
Naglee Park and Ride
Kaiser
Rural Connection Mountain House
GRANT LINE RD.
WalMart
Rite Aid
ALEGRE
TRAVAO LN.
LINCOLN BLVD.
Clyde Bland Park
Freiler Elementary
ORCHARD PKWY.
West High School
Astoria Gardens
LOWELL AVE.
Boys & Girls Club
Monte Vista Middle School
Dr. Powers Park & Community Pool
McKinley Elementary
Sutter Tracy Community Hospital
BESSIE
PARKER AVE.
WHITTIER AVE.
Duncan-Russell High School
20TH ST.
LOWELL AVE.
Tracy Learning Center
EAST ST.
CARLTON WAY
EATON AVE.
Lincoln Park
Library
Tracy High School
Central Elementary
Stein High School
10TH ST.
11TH ST.
Tracy Transit Station
Downtown Civic Center
6TH ST.
Post Office
"A" ST.
WINDELER
HOLLY DR.
BUTHMANN AVE.
CLOVER RD.
Tracy Corners
GABRIEL
TRACY BLVD.
O'HARA
KAVANAGH AVE.
Jacobsen Elementary
Goodwill
CARDOZA RD.
North Elementary
Outlet Mall
Mac ARTHUR DR.
WESTGATE
ANTONIO
LOOP
MICHAEL
BYRON
CORRAL HOLLOW RD.
Safeway
McDonald's/SaveMart
LINCOLN
ALDEN GLEN
Kimball High
Tracy Sports Complex
CROSSROADS
SUMMER
KHRON
JACKSON
GREYSTONE
CYPRESS
LAMMERS
CYPRESS DR.
Villalovoz Elementary
TENNIS LN.
Williams Middle School
SCHULTE RD.
GOLDEN LEAF
MABEL JOSEPHINE DRIVE
Kelly Elementary School
CAROL ANN
REDBRIDGE RD
QUAIL MEADOWS
LAURIANA
MORRIS PHELPS DR.
TRACY BLVD.
South/West Park Elementary
CENTRAL AVE.
3RD ST.
Bohn Elementary
JUNIOR HARRINGTON
SaveMart
SIENNA PARK
MENAY DR.
MONUMENT
SYCAMORE PKWY.
ALLEGHENY
PETRIG ST.
Poet-Christian Elementary
DEERWOOD LN.
YOSEMITE DR.
Joseph Tiago Park
EASTLAKE DR.
EASTLAKE CIRCLE
VIEW DR.
Hirsch Elementary
Raley's
Rite Aid
Clyde Abbott Park
VALPICO RD.
GLENBRIAR CIRCLE
Walgreens/ McDonald's
Monticello Elementary
Yasui Park
Tom Hawkins Elementary/ Middle School
Mac ARTHUR DR.
William Kendal Lowes Park
BROOKVIEW
GLENBROOK
MIDDLEFIELD
PEONY
Traina School
WHISPERING WIND DR.
TRACY BLVD.
ACE Station
LINNE RD.
LEGEND
ROUTES: A B C D
COMMUTER ROUTES: E F
RTD ROUTES: ROUTE 97 ROUTE 90
RURAL CONNECTION: MOUNTAIN HOUSE
Route Direction
PM Reverse Direction
Timepoint
Bus Stops
School
Point of Interest
Hospital
CASH FARES
One-Way
Adult $1.25
Student $1.00
Senior (65+) / Disabled / ADA / Medicare ..... $.50
ADA Attendant ..... FREE
Child (6 and under with adult) ..... FREE
INFORMATION: 209-831-4BUS (4287)
www.ridetracer.com • 50 E. Sixth Street • Tracy, CA 95376
TRACY
Creating Community in Tracy by Connecting People to Places

ROUTE A : OUTBOUND: Transit Station to West Valley Mall
INBOUND: West Valley Mall to Transit Station

Tracy Transit Station	City Hall on East St.	Clover Tracy Blvd.	West Valley Mall Food Court	Walmart	Clover Tracy Blvd.	Tracy Transit Station
1	13	17	6	5	17	1
7:00	7:02	7:12	7:25	7:35	7:45	7:58
7:30	7:32	7:42	7:55	8:05	8:15	8:28
8:00	8:02	8:12	8:25	8:35	8:45	8:58
8:30	8:32	8:42	8:55	9:05	9:15	9:28
9:00	9:02	9:12	9:25	9:35	9:45	9:58
9:30	9:32	9:42	9:55	10:05	10:15	10:28
10:00	10:02	10:12	10:25	10:35	10:45	10:58
10:30	10:32	10:42	10:55	11:05	11:15	11:28
11:00	11:02	11:12	11:25	11:35	11:45	11:58
11:30	11:32	11:42	11:55	12:05	12:15	12:28
12:00	**12:02**	**12:12**	**12:25**	**12:35**	**12:45**	**12:58**
12:30	**12:32**	**12:42**	**12:55**	**1:05**	**1:15**	**1:28**
1:00	**1:02**	**1:12**	**1:25**	**1:35**	**1:45**	**1:58**
1:30	**1:32**	**1:42**	**1:55**	**2:05**	**2:15**	**2:28**
2:00	**2:02**	**2:12**	**2:25**	**2:35**	**2:45**	**2:58**
2:30	**2:32**	**2:42**	**2:55**	**3:05**	**3:15**	**3:28**
3:00	**3:02**	**3:12**	**3:25**	**3:35**	**3:45**	**3:58**
3:30	**3:32**	**3:42**	**3:55**	**4:05**	**4:15**	**4:28**
4:00	**4:02**	**4:12**	**4:25**	**4:35**	**4:45**	**4:58**
4:30	**4:32**	**4:42**	**4:55**	**5:05**	**5:15**	**5:28**
5:00	**5:02**	**5:12**	**5:25**	**5:35**	**5:45**	**5:58**
5:30	**5:32**	**5:42**	**5:55**	**6:05**	**6:15**	**6:28**
6:00	**6:02**	**6:12**	**6:25**	**6:35**	**6:45**	**6:58**
6:30	**6:32**	**6:42**	**6:55**	**7:05**	**7:15**	**7:28**
7:00	**7:02**	**7:12**	**7:25**	**7:35**	**7:45**	**7:58**

MONDAY – FRIDAY ONLY

No Saturday Service during times shown in light yellow tint blocks.

ROUTE B : OUTBOUND: Transit Station to West Valley Mall
INBOUND: West Valley Mall to Transit Station

Tracy Transit Station	Sutter Hospital	Corral Hollow Lowell	Walmart	West Valley Mall Food Court	Winco	Astoria Gardens Lowell	Sutter Hospital	Tracy Transit Station
1	3	28	5	6	7	4	3	1
7:00	7:08	7:13	7:20	7:30	7:35	7:43	7:46	7:58
7:30	7:38	7:43	7:50	8:00	8:05	8:13	8:16	8:28
8:00	8:08	8:13	8:20	8:30	8:35	8:43	8:46	8:58
8:30	8:38	8:43	8:50	9:00	9:05	9:13	9:16	9:28
9:00	9:08	9:13	9:20	9:30	9:35	9:43	9:46	9:58
9:30	9:38	9:43	9:50	10:00	10:05	10:13	10:16	10:28
10:00	10:08	10:13	10:20	10:30	10:35	10:43	10:46	10:58
10:30	10:38	10:43	10:50	11:00	11:05	11:13	11:16	11:28
11:00	11:08	11:13	11:20	11:30	11:35	11:43	11:46	11:58
11:30	11:38	11:43	11:50	**12:00**	**12:05**	**12:13**	**12:16**	**12:28**
12:00	**12:08**	**12:13**	**12:20**	**12:30**	**12:35**	**12:43**	**12:46**	**12:58**
12:30	**12:38**	**12:43**	**12:50**	**1:00**	**1:05**	**1:13**	**1:16**	**1:28**
1:00	**1:08**	**1:13**	**1:20**	**1:30**	**1:35**	**1:43**	**1:46**	**1:58**
1:30	**1:38**	**1:43**	**1:50**	**2:00**	**2:05**	**2:13**	**2:16**	**2:28**
2:00	**2:08**	**2:13**	**2:20**	**2:30**	**2:35**	**2:43**	**2:46**	**2:58**
2:30	**2:38**	**2:43**	**2:50**	**3:00**	**3:05**	**3:13**	**3:16**	**3:28**
3:00	**3:08**	**3:13**	**3:20**	**3:30**	**3:35**	**3:43**	**3:46**	**3:58**
3:30	**3:38**	**3:43**	**3:50**	**4:00**	**4:05**	**4:13**	**4:16**	**4:28**
4:00	**4:08**	**4:13**	**4:20**	**4:30**	**4:35**	**4:43**	**4:46**	**4:58**
4:30	**4:38**	**4:43**	**4:50**	**5:00**	**5:05**	**5:13**	**5:16**	**5:28**
5:00	**5:08**	**5:13**	**5:20**	**5:30**	**5:35**	**5:43**	**5:46**	**5:58**
5:30	**5:38**	**5:43**	**5:50**	**6:00**	**6:05**	**6:13**	**6:16**	**6:28**
6:00	**6:08**	**6:13**	**6:20**	**6:30**	**6:35**	**6:43**	**6:46**	**6:58**
6:30	**6:38**	**6:43**	**6:50**	**7:00**	**7:05**	**7:13**	**7:16**	**7:28**
7:00	**7:08**	**7:13**	**7:20**	**7:30**	**7:35**	**7:43**	**7:46**	**7:58**

MONDAY – FRIDAY ONLY

No Saturday Service during times shown in light yellow tint blocks.

MONDAY – FRIDAY COMMUTER ROUTES

COMMUTER ROUTE E – MON-FRI MORNING
OUTBOUND: Transit Station to West High School INBOUND: West High School to Transit Station

Tracy Transit Station	City Hall East Street	Outlet Mall MacArthur	Kavanagh North School	Lowell Astoria Gardens	Sutter Hospital	Tracy Transit Station
1	13	15	33	4	3	1
6:40	6:43	6:53	7:03	7:20	7:24	7:30
7:35	7:38	7:50	8:00	8:17	8:21	8:30

COMMUTER ROUTE F – MON-FRI MORNING
OUTBOUND: Transit Station to ACE Station INBOUND: ACE Station To Transit Station

Tracy Transit Station	Hidden Lake	Brookview Lowes Park	ACE Station	Tracy Blvd. Raleys	Tracy Transit Station	Holly Eaton Library	Senior Center 9th Street	Tracy Transit Station
1	36	37	30	11	1	2	20	1
6:40	6:47	6:55	7:03	7:10	7:20	7:25	7:40	7:45

COMMUTER ROUTE E – MON-FRI AFTERNOON REVERSE DIRECTION
OUTBOUND: Transit Station to West High School INBOUND: West High School to Transit Station

Tracy Transit Station	Holly Eaton Library	Sutter Hospital	Lowell Art Frieller	Kavanagh North School	Outlet Mall MacArthur	Transit Station
1	2	3	34	33	15	1
1:25	**1:30**	**1:35**	**1:45**	**1:58**	**2:08**	**2:20**
2:55	**3:00**	**3:05**	**3:15**	**3:28**	**3:38**	**3:50**
3:55	**4:00**	**4:05**	**4:15**	**4:28**	**4:38**	**4:50**

MONDAY SERVICE ONLY

COMMUTER ROUTE F – MON-FRI AFTERNOON REVERSE DIRECTION
Outbound: Transit Station to ACE Station Inbound: ACE Station To Transit Station

Tracy Transit Station	Holly Eaton Library	Senior Center 9th Street	Transit Station	Hidden Lake	Brookview Lowes Park	ACE Station	Tracy Blvd. Raleys	Tracy Transit Station
1	2	20	1	36	37	30	11	1
1:40	**1:45**	**1:55**	**2:00**	**2:07**	**2:15**	**2:20**	**2:27**	**2:35**
3:15	**3:20**	**3:30**	**3:35**	**3:42**	**3:50**	**3:55**	**4:02**	**4:10**
4:15	**4:20**	**4:30**	**4:35**	**4:42**	**4:50**	**4:55**	**5:02**	**5:10**

MONDAY SERVICE ONLY

ROUTE C : OUTBOUND: Transit Station to Hidden lake INBOUND: Hidden Lake to Transit Station

Tracy Transit Station	Senior Center 9th Street	11th Street Safeway	Tracy Blvd. Schulte rd	Mac Arthur Rite Aid	Tracy Blvd Raleys	Schulte Rd Tracy Blvd	11th Street McDonalds	Tracy Transit Station
1	20	8	9	10	11	12	21	1
7:00	7:05	7:13	7:20	7:25	7:36	7:42	7:48	7:58
8:00	8:05	8:13	8:20	8:25	8:36	8:42	8:48	8:58
9:00	9:05	9:13	9:20	9:25	9:36	9:42	9:48	9:58
10:00	10:05	10:13	10:20	10:25	10:36	10:42	10:48	10:58
11:00	11:05	11:13	11:20	11:25	11:36	11:42	11:48	11:58
12:00	**12:05**	**12:13**	**12:20**	**12:25**	**12:36**	**12:42**	**12:48**	**12:58**
1:00	**1:05**	**1:13**	**1:20**	**1:25**	**1:36**	**1:42**	**1:48**	**1:58**
2:00	**2:05**	**2:13**	**2:20**	**2:25**	**2:36**	**2:42**	**2:48**	**2:58**
3:00	**3:05**	**3:13**	**3:20**	**3:25**	**3:36**	**3:42**	**3:48**	**3:58**
4:00	**4:05**	**4:13**	**4:20**	**4:25**	**4:36**	**4:42**	**4:48**	**4:58**
5:00	**5:05**	**5:13**	**5:20**	**5:25**	**5:36**	**5:42**	**5:48**	**5:58**
6:00	**6:05**	**6:13**	**6:20**	**6:25**	**6:36**	**6:42**	**6:48**	**6:58**
7:00	**7:05**	**7:13**	**7:20**	**7:25**	**7:36**	**7:42**	**7:48**	**7:58**

No Saturday Service during times shown in light yellow tint blocks.

ROUTE D : PEAK HOUR SERVICE, REVERSE DIRECTION (Monday–Friday)
OUTBOUND: Transit Station to Antonio Loop INBOUND: Antonio Loop to Transit Station

Tracy Transit Station	Holly Eaton Library	Sutter Hospital	Antonio Loop	11th Street Lammers Kimball High	Mable Josephine	Sycamore Pkwy. Valpico	Whispering Wind	ACE Station	Transit Station
1	2	3	25	26	32	23	31	30	1
5:00	5:03	5:07	5:17	5:24	5:35	5:42	5:46	6:00	6:10
6:00	6:03	6:07	6:17	6:24	6:35	6:42	6:46	7:00	7:10
2:00	**2:05**	**2:10**	**2:20**	**2:30**	**2:40**	**2:50**	**2:55**	**NS**	**3:10**
3:20	**3:25**	**3:30**	**3:40**	**3:50**	**4:00**	**4:10**	**4:15**	**4:25**	**4:35**

MONDAY SERVICE ONLY

ROUTE D : OUTBOUND: Transit Station to Antonio Loop INBOUND: Antonio Loop to Transit Station

Tracy Transit Station	ACE Station	Whispering Wind	ACE Station	Sycamore Pkwy Valpico	Mable Josephine	Antonio Loop	11 th St. Lammers Kimball High	Sutter Hospital	Transit Station
1	30	31	30	23	32	25	26	3	1
6:20	NS	6:28	6:38	6:48	6:58	7:10	7:16	7:26	7:35
7:10	NS	7:18	7:28	7:38	7:48	7:58	8:06	8:16	8:25
8:00	NS	8:08	NS	8:18	8:28	8:38	8:44	8:54	9:04
9:00	NS	9:08	NS	9:18	9:28	9:38	9:44	9:54	10:04
10:05	NS	10:13	NS	10:23	10:33	10:43	10:49	10:59	11:09
11:10	NS	11:18	NS	11:28	11:38	11:48	11:54	**12:04**	**12:14**
12:15	**NS**	**12:23**	**NS**	**12:33**	**12:43**	**12:53**	**1:00**	**1:10**	**1:20**
1:20	**NS**	**1:28**	**NS**	**1:38**	**1:48**	**1:58**	**2:04**	**2:14**	**2:24**
2:25	**NS**	**2:33**	**NS**	**2:43**	**2:53**	**3:03**	**3:09**	**3:20**	**3:30**
3:30	**NS**	**3:38**	**NS**	**3:48**	**3:58**	**4:08**	**4:15**	**4:25**	**4:35**
4:40	**NS**	**4:48**	**4:58**	**5:08**	**5:18**	**5:28**	**5:35**	**5:45**	**5:55**
5:15	**5:25**	**5:30**	**NS**	**5:40**	**5:50**	**6:00**	**6:07**	**6:17**	**6:27**
6:15	**6:25**	**6:30**	**NS**	**6:40**	**6:50**	**7:00**	**7:07**	**7:17**	**7:27**

No Saturday Service during times shown in light yellow tint blocks.

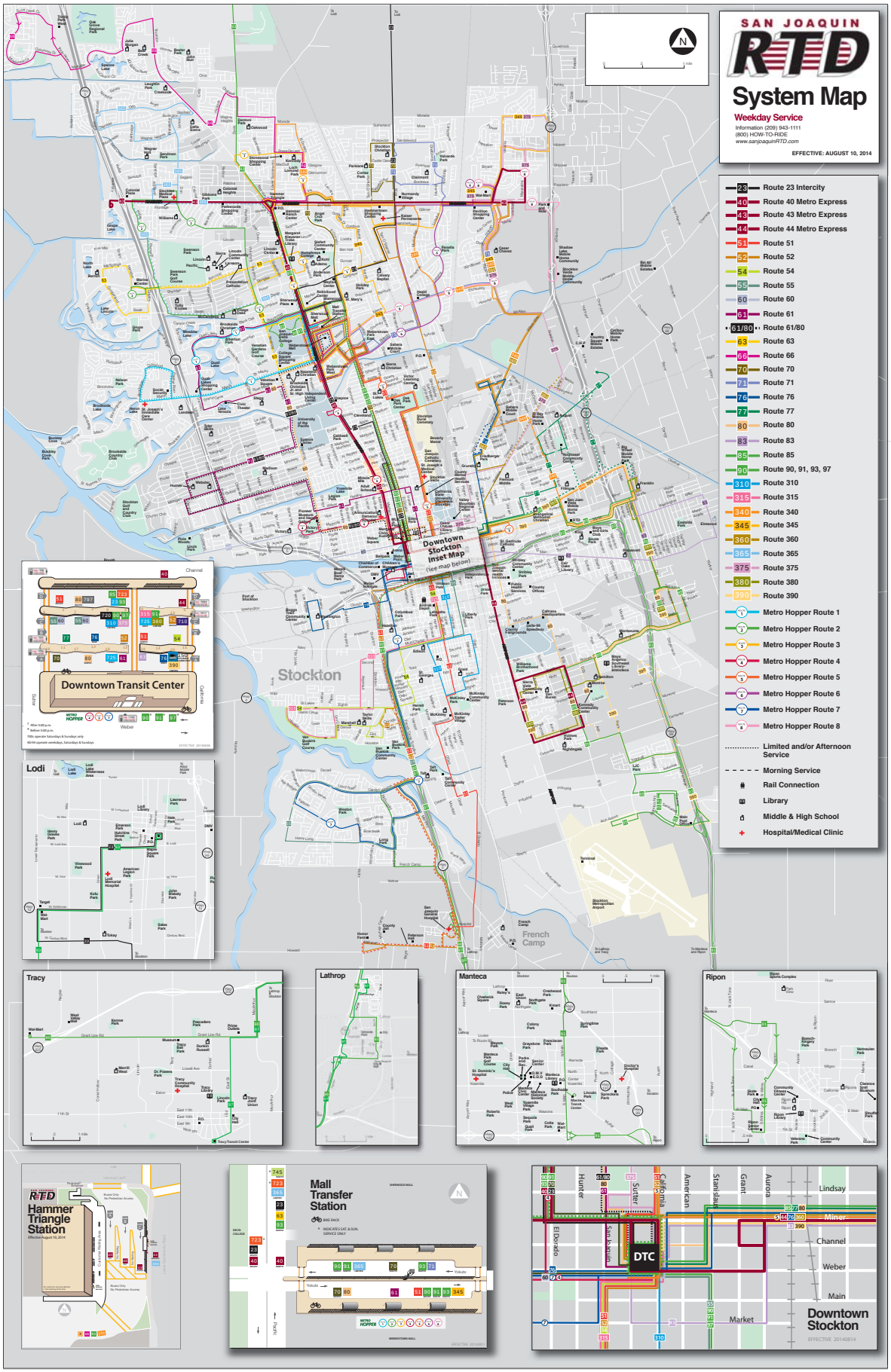
SCHEDULE NOTES:

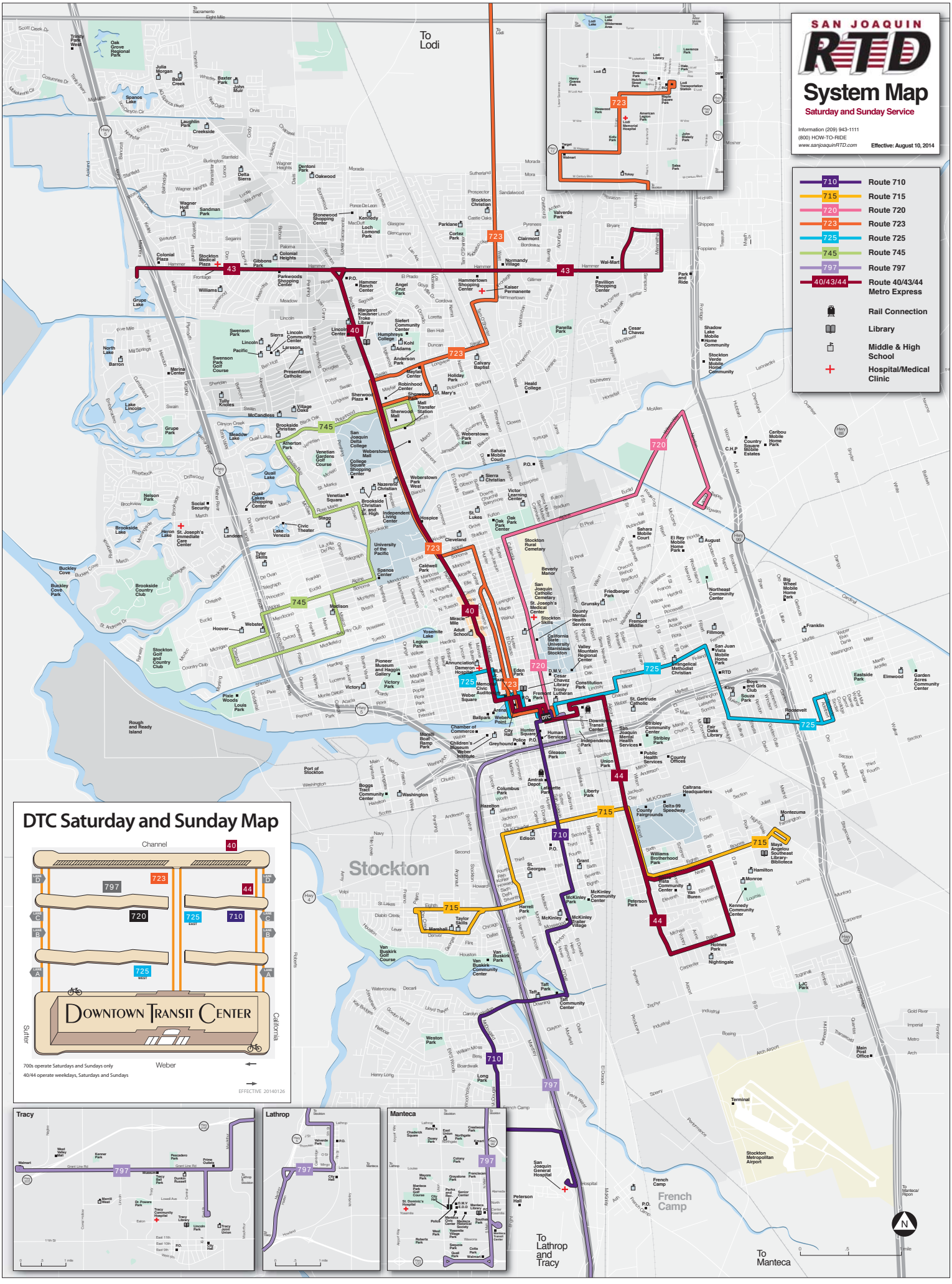
Transferring points are Tracy Transit Station, City Hall, Walmart and West Valley Mall and TRACER stops where two or more TRACER routes provide service.

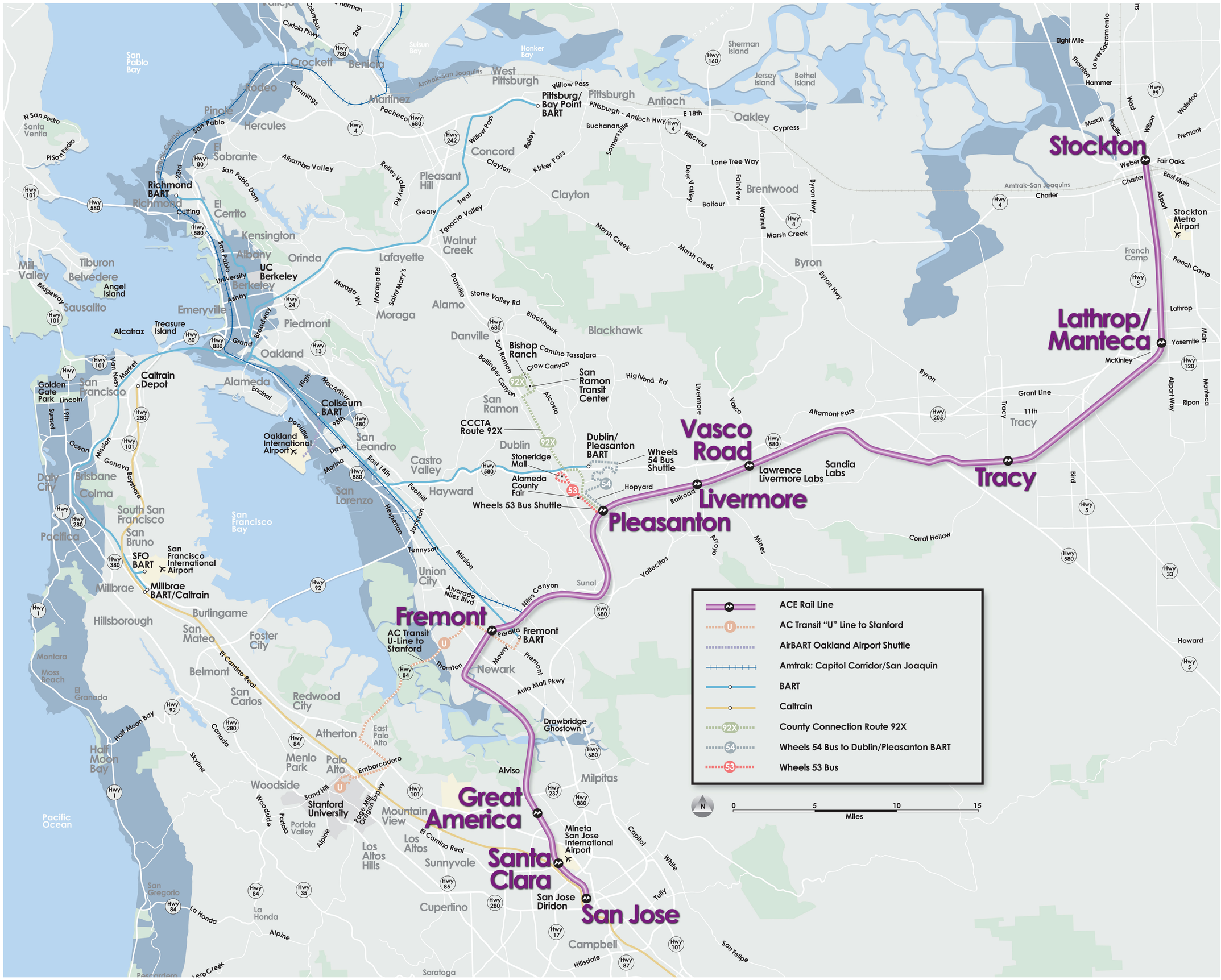
PM times are shown in BOLD FACE type.

Times are approximate and may vary due to traffic or weather conditions.

Saturday Service does not operate during times shown in light yellow tint blocks.


SAN JOAQUIN RTD
System Map
Weekday Service
Information (209) 943-1111
(800) HOW-TO-RIDE
www.sanjoaquinRTD.com
EFFECTIVE: AUGUST 10, 2014
23 Route 23 Intercity
40 Route 40 Metro Express
43 Route 43 Metro Express
44 Route 44 Metro Express
51 Route 51
52 Route 52
54 Route 54
55 Route 55
60 Route 60
61 Route 61
61/80 Route 61/80
63 Route 63
66 Route 66
70 Route 70
71 Route 71
76 Route 76
77 Route 77
80 Route 80
83 Route 83
85 Route 85
90 Route 90, 91, 93, 97
310 Route 310
315 Route 315
340 Route 340
345 Route 345
360 Route 360
365 Route 365
375 Route 375
380 Route 380
390 Route 390
Metro Hopper Route 1
Metro Hopper Route 2
Metro Hopper Route 3
Metro Hopper Route 4
Metro Hopper Route 5
Metro Hopper Route 6
Metro Hopper Route 7
Metro Hopper Route 8
Limited and/or Afternoon Service
Morning Service
Rail Connection
Library
Middle & High School
Hospital/Medical Clinic
Downtown Stockton Inset Map
(See map below)
Stockton
Downtown Transit Center
Lodi
Tracy
Lathrop
Manteca
Ripon
French Camp
Hammer Triangle Station
Mall Transfer Station
DTC
Downtown Stockton
EFFECTIVE 20140814


SAN JOAQUIN RTD
System Map
Saturday and Sunday Service
Information (209) 943-1111
(800) HOW-TO-RIDE
www.sanjoaquinRTD.com
Effective: August 10, 2014
710 Route 710
715 Route 715
720 Route 720
723 Route 723
725 Route 725
745 Route 745
797 Route 797
40/43/44 Route 40/43/44 Metro Express
Rail Connection
Library
Middle & High School
Hospital/Medical Clinic
To Lodi
Stockton
French Camp
To Lathrop and Tracy
To Manteca
DTC Saturday and Sunday Map
Channel
Sutter
California
Weber
DOWNTOWN TRANSIT CENTER
700s operate Saturdays and Sundays only
40/44 operate weekdays, Saturdays and Sundays
EFFECTIVE 20140126
Tracy
Lathrop
Manteca



ACE Train Map

Six Bus Routes — Citywide Service

The City of Tracy now offers six TRACER bus routes, including new commuter routes with morning and afternoon service to most local schools. It's easy to travel throughout Tracy for school, work, shopping or recreation. This guide includes everything you need to plan your trip.

HOW TO USE THIS GUIDE

The map on the reverse side of this guide shows each of the routes in a distinct color. All the bus stops are shown as yellow triangles along the route.

TIMEPOINTS (those bus stops highlighted on the schedule) are shown with a number in a circle. Use these easy steps to plan your trip:

1. Use the map to identify the route(s) that connects where you are and where you wish to go.
2. Find the timepoint on that route which is nearest the bus stop where you wish to board.
3. Find the schedule for your route (it is shown in a matching color).
4. Find the same numbered timepoint on the schedule. Read down to see what time buses depart from that point.
5. If you're boarding at a non-timepoint, use the nearest timepoint before your stop to estimate the bus departure time.

For personal trip planning assistance CALL (209) 831-4BUS (831-4287).

SERVICE HOURS AND DAYS

TRACER Routes A B C and D run Monday through Friday from approximately 7:00 am to 8:00 pm and Saturday from Saturday 9:00 am to 7:00 pm. The Commuter Routes E and F run only weekdays when school is in session. TRACER does not operate on Sundays or the following holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day.

FARES

CASH FARE (ONE WAY)		
Adult	Student	Senior(65+)/Disabled/ ADA/Medicare
$1.25	$1.00	$.50
ADA ATTENDANT	**CHILD** (6 and under with adult)	
FREE	FREE	
DAY PASS (UNLIMITED TRIPS. SINGLE DAY)		
Adult	Student	Senior(65+)/Disabled/ ADA/Medicare
$3.00	$2.50	$1.25
10-RIDE TICKET OR WEEKLY PASS		
Adult	Student	Senior(65+)/Disabled/ ADA/Medicare
$12.50	$10.00	$5.00

PASS SALES

All TRACER passes can be purchased on the bus, using exact cash. Passes can also be purchased, by cash or check, at the following locations:

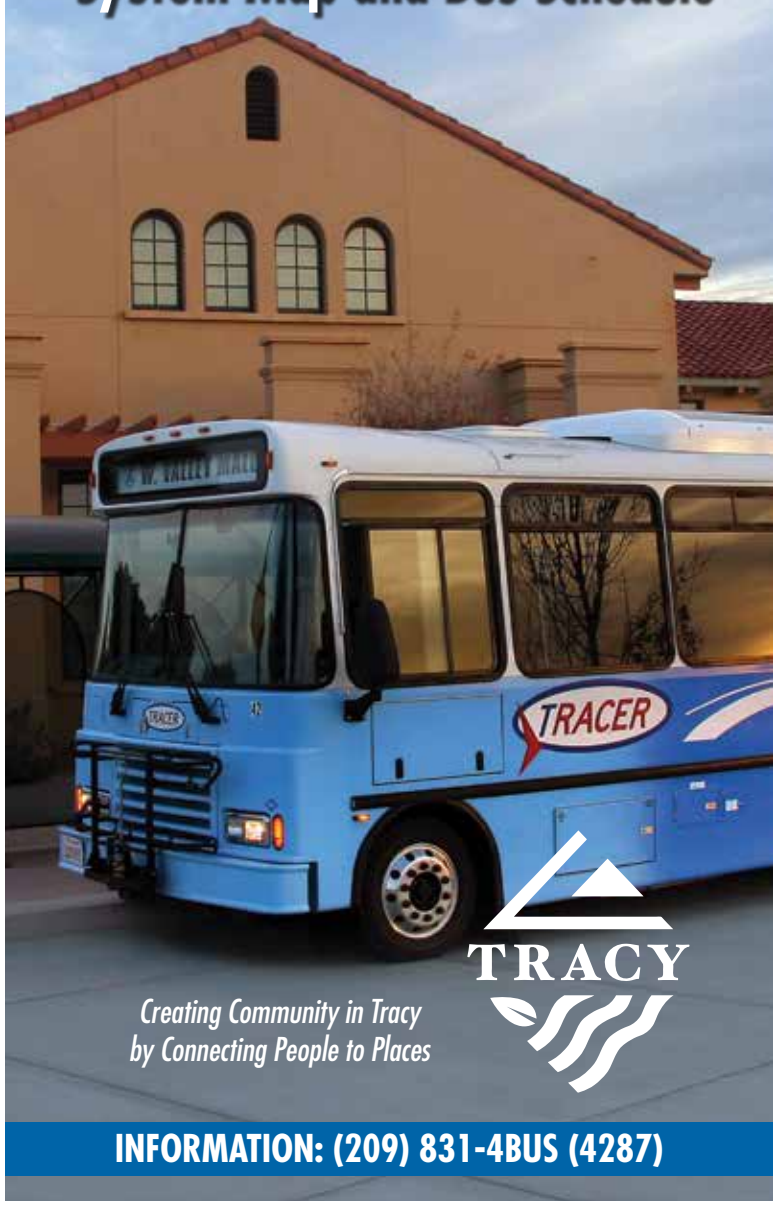
- Tracy Transit Station, 50 E. Sixth Street Ticket hours: Monday – Friday: 8:00 am – 7:00 pm; Saturday: 10:00 am – 6:00 pm
- City Hall, 333 Civic Center Plaza. Alternate Fridays closed. Ticket hours: Monday – Friday, 8:00 am – 5:00 pm

Passes must be handed to the driver for verification prior to being seated. Each rider MUST possess and present their own bus fare or pass every time he/she boards the bus. Using or attempting to use another rider's bus fare or pass is NOT allowed.

Effective December 1, 2015

TRACER

System Map and Bus Schedule



INFORMATION: (209) 831-4BUS (4287)

HOW TO CATCH THE BUS

TRACER bus stops are clearly marked with the sign shown here. To ensure you catch the bus, be at the bus stop a little before the scheduled departure time. (Do not stand in the road.) As the bus approaches, signal the driver that you wish to board by waving your hand. Once on board, pay your fare or show your pass to the driver, take a seat and enjoy the ride.



TRANSFERRING

You can transfer between TRACER routes for no extra charge. Just ask your driver for a transfer slip when you board. It is good for one hour. Bus transfers at Transit Station, West Valley Mall and TRACER stops where two or more TRACER routes provide service.

TEXT FOR THE BUS

TXT4 BUS

If you have ever wondered what time the next bus will be coming to your stop, you will be able to find out instantly through a text message. All fixed route stops have a sign indicating a phone number in which to text your location. Within seconds a text will be sent back to you stating when the next bus will be at your stop. Passengers will now be able to plan their schedules more accurately along with the timing of the buses.

HERE IS HOW:

Find your stop ID: Located on the bus stop sign
Use your cell phone & text: (stop id) to (209) 839-7550
Receive estimate arrival times

Check out the web site at **www.ridetracer.com** for more information.

REGIONAL BUS SERVICE

San Joaquin Regional Transit District's (SJRTD) Intercity Route 97 and Hopper Route 90 connects Tracy to Stockton. RTD Rural Connection connects Tracy to Mountain House. The service complements TRACER service, serves many local businesses along the route and provides connections to Stockton.

For information, call 1-800-HOW-TO-RIDE or (209) 943-1111, or visit **www.sanjoaquinrtd.com**

For information on bus service to Bart and Bay Area, call RTD-BART Commuter at (888) 802-WORK (9675) or Commute Connection at (209) 235-1094

GREYHOUND

TRACY TRANSIT STATION
50 E. Sixth Street, Tracy, CA -95376
(209) 831–4BUS (4287)

TRANSIT STATION
BUSINESS & TICKET HOURS
Monday – Friday: 8:00AM - 7:00PM
Saturday:10:00AM – 6:00PM
Holidays & Sunday: CLOSED

FOR CURRENT FARE & SCHEDULE INFORMATION
1-800-231-2222(English)
1-800-531-5332(Espanol)
www.greyhound.com

PARATRANSIT

Curb-to-curb paratransit is available to seniors (65+) and persons who, because of their disability or health-related condition, (1) cannot independently board, ride and/or disembark from an accessible fixed route transit bus or (2) cannot get to or from a boarding or disembarking location. *All Paratransit customers must be certified as eligible by the City of Tracy.*

Paratransit Applications can be downloaded from www.ridetracer.com

RIDING GUIDELINES AND POLICIES

BUS CODE OF CONDUCT

TRACER buses and facilities are for everyone, however, some activities that disrupt the safety, order, or rights of other passengers will not be tolerated.

The following activities may result in ejection from a bus or transit facility by City of Tracy Police Department or TRACER employee.

KEEP YOUR COOL

Don't threaten or intimidate riders or bus drivers. It's unlawful to threaten the safety of a rider or driver, or interfere with the movement of a bus.

PAY YOUR FARE SHARE

It is against the law to fail to pay the correct fare or to misuse transfers, passes or tickets.

DO NOT DISTURB

Everyone deserves a comfortable ride. Excessive noise is not allowed. Use headphones if listening to music.

MAKE WAY

Don't block the aisles or doors. If you have a bag or basket, make sure it's not blocking the aisle or doorway. Strollers and non-mobility devices must be folded before boarding and stored stowed safely away from the aisles. If you're standing, move back so others can board.

SORRY, NO PETS

Except for guide dogs and other service animals trained to assist passengers with disabilities, animals are not allowed on the bus.

NO SMOKING

Smoking is prohibited on buses, bus stops and at the Transit Station. If you smoke, be considerate of your fellow riders by moving away from the bus stop or shelter.

UNACCEPTABLE CARGO

It is against the law to carry any explosives, acid, flammable liquid, and/or toxic or hazardous materials.

RIDER SAFETY

Spilled food and drinks pose serious safety hazards. Therefore, eating and drinking is not allowed on the bus, but you can bring food and drinks on board in closed containers.

RIDER HEALTH SAFETY

Maintain acceptable standards of hygiene; open wounds or bodily fluids are considered a significant risk to the health or safety of others – (DOT ADA CFR 37.3)

END OF THE LINE

During your trip, as the bus approaches your stop, pull the cord to alert the driver that you wish to disembark. Please be sure the driver has enough time to make a safe stop. Prior to disembarking, gather your personal belongs and dispose of trash properly.

REDUCED FARES

TRACER offers reduced fares to seniors age 65 and over, individuals with qualifying disabilities, ADA and Medicare card holders. For additional information contact TRACER Customer Service at (209) 831-4BUS(4287)

TITLE VI COMPLIANCE

City of Tracy TRACER is committed to ensuring that no person is excluded from participation in, or denied the benefits of its transit services on the basis of race, color, or national origin, as protected by Title VI in Federal Transit Administration (FTA) Circular 4702.1.A. Any person who believes that they have been subjected to discrimination may file a written complaint with the City of Tracy, Title VI Coordinator.

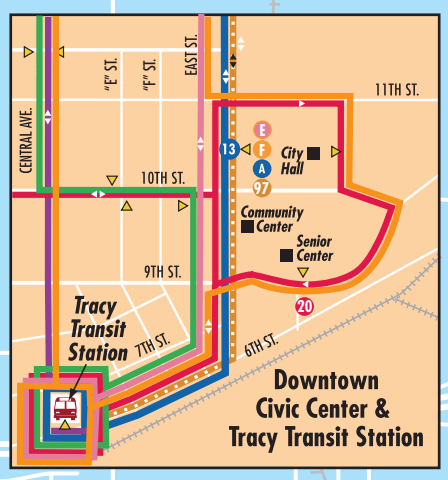
Report complaints to: Jayne Pramod, Title VI Coordinator, City of Tracy Transit Station, 50 E. Sixth Street, Tracy, CA 95376. Telephone: (209) 831-6214, E-mail: **jayne.pramod@ci.tracy.ca.us.**

www.RideTracer.com

SCALE
0 1

N

TRACER



DMV
Winco
NAGLEE RD.
West Valley Mall
Naglee Park and Ride
Kaiser
I-205
CLOVER RD.
Tracy Corners
17
BUTHMANN AVE.
GABRIEL
HOLLY DR.
KAVANAGH AVE.
Jacobsen Elementary
O'HARA
TRACY BLVD.
Goodwill
CARDOZA RD.
North Elementary
33
Outlet Mall
15
Mac ARTHUR DR.
Rural Connection Mountain House
GRANT LINE RD.
90
5
WalMart
Rite Aid
ALEGRE
TRAVAO LN.
LINCOLN BLVD.
Monte Vista Middle School
Boys & Girls Club
BESSIE
Duncan-Russell High School
20TH ST.
PARKER AVE.
WHITTIER AVE.
LOWELL AVE.
Tracy Learning Center
EAST ST.
CARLTON WAY
Clyde Bland Park
Freiler Elementary
ORCHARD PKWY.
West High School
28
4
34
Astoria Gardens
Dr. Powers Park & Community Pool
McKinley Elementary
Sutter Tracy Community Hospital
3
EATON AVE.
Lincoln Park
Library
2
Tracy High School
WESTGATE
25
ANTONIO LOOP
MICHAEL
BYRON
CORRAL HOLLOW RD.
Safeway
LINCOLN
Central Elementary
Stein High School
11TH ST.
26
21
8
McDonald's/SaveMart
10TH ST.
Tracy Sports Complex
CROSSROADS
SUMMER
KHRON
Kimball High
JACKSON
GREYSTONE
CYPRESS
ALDEN GLEN
WINDELER
"A" ST.
Post Office
Tracy Transit Station
Downtown Civic Center
6TH ST.
20
1
LAMMERS
CYPRESS DR.
Villalovoz Elementary
TENNIS LN.
Williams Middle School
CENTRAL AVE.
SCHULTE RD.
South/West Park Elementary
3RD ST.
Bohn Elementary
MABEL JOSEPHINE DRIVE
GOLDEN LEAF
Kelly Elementary School
32
CAROL ANN
QUAIL MEADOWS
LAURIANA
MORRIS PHELPS DR.
12
9
SaveMart
JUNIOR HARRINGTON
REDBRIDGE RD
CORRAL HOLLOW RD.
SIENNA PARK
MENAY DR.
SYCAMORE PKWY.
MONUMENT
Poet-Christian Elementary
YOSEMITE DR.
Joseph Tiago Park
DEERWOOD LN.
EASTLAKE DR.
36
EASTLAKE CIRCLE
ALLEGHENY
PETRIG ST.
Hirsch Elementary
CENTRAL AVE.
Clyde Abbott Park
11
Raley's
Rite Aid
10
VIEW DR.
23
VALPICO RD.
GLENBRIAR CIRCLE
Walgreens/ McDonald's
Monticello Elementary
Yasui Park
Tom Hawkins Elementary/ Middle School
MIDDLEFIELD
PEONY
Traina School
31
TRACY BLVD.
William Kendal Lowes Park
37
BROOKVIEW
GLENBROOK
WHISPERING WIND DR.
ACE Station
30
LINNE RD.

LEGEND

ROUTES: A B C D
COMMUTER ROUTES: E F
RTD ROUTES: ROUTE 97 ROUTE 90
RURAL CONNECTION: MOUNTAIN HOUSE

- Route Direction
- PM Reverse Direction
- Timepoint
- Bus Stops
- School
- Point of Interest
- Hospital

CASH FARES

One-Way

Adult	$1.25
Student	$1.00
Senior (65+) / Disabled / ADA / Medicare	$.50
ADA Attendant	FREE
Child (6 and under with adult)	FREE

INFORMATION: 209-831-4BUS (4287)
www.ridetracer.com • 50 E. Sixth Street • Tracy, CA 95376

TRACY
Creating Community in Tracy by Connecting People to Places

ROUTE A : OUTBOUND: Transit Station to West Valley Mall
INBOUND: West Valley Mall to Transit Station

Tracy Transit Station (1)	City Hall on East St. (13)	Clover Tracy Blvd. (17)	West Valley Mall Food Court (6)	Walmart (5)	Clover Tracy Blvd. (17)	Tracy Transit Station (1)
7:00	7:02	7:12	7:25	7:35	7:45	7:58
7:30	7:32	7:42	7:55	8:05	8:15	8:28
8:00	8:02	8:12	8:25	8:35	8:45	8:58
8:30	8:32	8:42	8:55	9:05	9:15	9:28
9:00	9:02	9:12	9:25	9:35	9:45	9:58
9:30	9:32	9:42	9:55	10:05	10:15	10:28
10:00	10:02	10:12	10:25	10:35	10:45	10:58
10:30	10:32	10:42	10:55	11:05	11:15	11:28
11:00	11:02	11:12	11:25	11:35	11:45	11:58
11:30	11:32	11:42	11:55	12:05	12:15	12:28
12:00	**12:02**	**12:12**	**12:25**	**12:35**	**12:45**	**12:58**
12:30	**12:32**	**12:42**	**12:55**	**1:05**	**1:15**	**1:28**
1:00	**1:02**	**1:12**	**1:25**	**1:35**	**1:45**	**1:58**
1:30	**1:32**	**1:42**	**1:55**	**2:05**	**2:15**	**2:28**
2:00	**2:02**	**2:12**	**2:25**	**2:35**	**2:45**	**2:58**
2:30	**2:32**	**2:42**	**2:55**	**3:05**	**3:15**	**3:28**
3:00	**3:02**	**3:12**	**3:25**	**3:35**	**3:45**	**3:58**
3:30	**3:32**	**3:42**	**3:55**	**4:05**	**4:15**	**4:28**
4:00	**4:02**	**4:12**	**4:25**	**4:35**	**4:45**	**4:58**
4:30	**4:32**	**4:42**	**4:55**	**5:05**	**5:15**	**5:28**
5:00	**5:02**	**5:12**	**5:25**	**5:35**	**5:45**	**5:58**
5:30	**5:32**	**5:42**	**5:55**	**6:05**	**6:15**	**6:28**
6:00	6:02	6:12	6:25	6:35	6:45	6:58
6:30	6:32	6:42	6:55	7:05	7:15	7:28
7:00	7:02	7:12	7:25	7:35	7:45	7:58

MONDAY – FRIDAY ONLY

No Saturday Service during times shown in light yellow tint blocks.

ROUTE B : OUTBOUND: Transit Station to West Valley Mall
INBOUND: West Valley Mall to Transit Station

Tracy Transit Station (1)	Sutter Hospital (3)	Corral Hollow Lowell (28)	Walmart (5)	West Valley Mall Food Court (6)	Winco (7)	Astoria Gardens Lowell (4)	Sutter Hospital (3)	Tracy Transit Station (1)
7:00	7:08	7:13	7:20	7:30	7:35	7:43	7:46	7:58
7:30	7:38	7:43	7:50	8:00	8:05	8:13	8:16	8:28
8:00	8:08	8:13	8:20	8:30	8:35	8:43	8:46	8:58
8:30	8:38	8:43	8:50	9:00	9:05	9:13	9:16	9:28
9:00	9:08	9:13	9:20	9:30	9:35	9:43	9:46	9:58
9:30	9:38	9:43	9:50	10:00	10:05	10:13	10:16	10:28
10:00	10:08	10:13	10:20	10:30	10:35	10:43	10:46	10:58
10:30	10:38	10:43	10:50	11:00	11:05	11:13	11:16	11:28
11:00	11:08	11:13	11:20	11:30	11:35	11:43	11:46	11:58
11:30	11:38	11:43	11:50	**12:00**	**12:05**	**12:13**	**12:16**	**12:28**
12:00	**12:08**	**12:13**	**12:20**	**12:30**	**12:35**	**12:43**	**12:46**	**12:58**
12:30	**12:38**	**12:43**	**12:50**	**1:00**	**1:05**	**1:13**	**1:16**	**1:28**
1:00	**1:08**	**1:13**	**1:20**	**1:30**	**1:35**	**1:43**	**1:46**	**1:58**
1:30	**1:38**	**1:43**	**1:50**	**2:00**	**2:05**	**2:13**	**2:16**	**2:28**
2:00	**2:08**	**2:13**	**2:20**	**2:30**	**2:35**	**2:43**	**2:46**	**2:58**
2:30	**2:38**	**2:43**	**2:50**	**3:00**	**3:05**	**3:13**	**3:16**	**3:28**
3:00	**3:08**	**3:13**	**3:20**	**3:30**	**3:35**	**3:43**	**3:46**	**3:58**
3:30	**3:38**	**3:43**	**3:50**	**4:00**	**4:05**	**4:13**	**4:16**	**4:28**
4:00	**4:08**	**4:13**	**4:20**	**4:30**	**4:35**	**4:43**	**4:46**	**4:58**
4:30	**4:38**	**4:43**	**4:50**	**5:00**	**5:05**	**5:13**	**5:16**	**5:28**
5:00	**5:08**	**5:13**	**5:20**	**5:30**	**5:35**	**5:43**	**5:46**	**5:58**
5:30	**5:38**	**5:43**	**5:50**	**6:00**	**6:05**	**6:13**	**6:16**	**6:28**
6:00	6:08	6:13	6:20	6:30	6:35	6:43	6:46	6:58
6:30	6:38	6:43	6:50	7:00	7:05	7:13	7:16	7:28
7:00	7:08	7:13	7:20	7:30	7:35	7:43	7:46	7:58

MONDAY – FRIDAY ONLY

No Saturday Service during times shown in light yellow tint blocks.

ROUTE C : OUTBOUND: Transit Station to Hidden lake INBOUND: Hidden Lake to Transit Station

Tracy Transit Station (1)	Senior Center 9th Street (20)	11th Street Safeway (8)	Tracy Blvd. Schulte rd (9)	Mac Arthur Rite Aid (10)	Tracy Blvd Raleys (11)	Schulte Rd Tracy Blvd (12)	11th Street McDonalds (21)	Tracy Transit Station (1)
7:00	7:05	7:13	7:20	7:25	7:36	7:42	7:48	7:58
8:00	8:05	8:13	8:20	8:25	8:36	8:42	8:48	8:58
9:00	9:05	9:13	9:20	9:25	9:36	9:42	9:48	9:58
10:00	10:05	10:13	10:20	10:25	10:36	10:42	10:48	10:58
11:00	11:05	11:13	11:20	11:25	11:36	11:42	11:48	11:58
12:00	**12:05**	**12:13**	**12:20**	**12:25**	**12:36**	**12:42**	**12:48**	**12:58**
1:00	**1:05**	**1:13**	**1:20**	**1:25**	**1:36**	**1:42**	**1:48**	**1:58**
2:00	**2:05**	**2:13**	**2:20**	**2:25**	**2:36**	**2:42**	**2:48**	**2:58**
3:00	**3:05**	**3:13**	**3:20**	**3:25**	**3:36**	**3:42**	**3:48**	**3:58**
4:00	**4:05**	**4:13**	**4:20**	**4:25**	**4:36**	**4:42**	**4:48**	**4:58**
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7:00	**7:05**	**7:13**	**7:20**	**7:25**	**7:36**	**7:42**	**7:48**	**7:58**

No Saturday Service during times shown in light yellow tint blocks.

ROUTE D : PEAK HOUR SERVICE, REVERSE DIRECTION (Monday–Friday)
OUTBOUND: Transit Station to Antonio Loop INBOUND: Antonio Loop to Transit Station

Tracy Transit Station (1)	Holly Eaton Library (2)	Sutter Hospital (3)	Antonio Loop (25)	11th Street Lammers Kimball High (26)	Mable Josephine (32)	Sycamore Pkwy. Valpico (23)	Whispering Wind (31)	ACE Station (30)	Transit Station (1)
5:00	5:03	5:07	5:17	5:24	5:35	5:42	5:46	6:00	6:10
6:00	6:03	6:07	6:17	6:24	6:35	6:42	6:46	7:00	7:10
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MONDAY SERVICE ONLY

ROUTE D : OUTBOUND: Transit Station to Antonio Loop INBOUND: Antonio Loop to Transit Station

Tracy Transit Station (1)	ACE Station (30)	Whispering Wind (31)	ACE Station (30)	Sycamore Pkwy Valpico (23)	Mable Josephine (32)	Antonio Loop (25)	11th St. Lammers Kimball High (26)	Sutter Hospital (3)	Transit Station (1)
6:20	NS	6:28	6:38	6:48	6:58	7:10	7:16	7:26	7:35
7:10	NS	7:18	7:28	7:38	7:48	7:58	8:06	8:16	8:25
8:00	NS	8:08	NS	8:18	8:28	8:38	8:44	8:54	9:04
9:00	NS	9:08	NS	9:18	9:28	9:38	9:44	9:54	10:04
10:05	NS	10:13	NS	10:23	10:33	10:43	10:49	10:59	11:09
11:10	NS	11:18	NS	11:28	11:38	11:48	11:54	**12:04**	**12:14**
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2:25	**NS**	**2:33**	**NS**	**2:43**	**2:53**	**3:03**	**3:09**	**3:20**	**3:30**
3:30	**NS**	**3:38**	**NS**	**3:48**	**3:58**	**4:08**	**4:15**	**4:25**	**4:35**
4:40	**NS**	**4:48**	**4:58**	**5:08**	**5:18**	**5:28**	**5:35**	**5:45**	**5:55**
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No Saturday Service during times shown in light yellow tint blocks.

MONDAY – FRIDAY COMMUTER ROUTES

COMMUTER ROUTE E – MON-FRI MORNING
OUTBOUND: Transit Station to West High School INBOUND: West High School to Transit Station

Tracy Transit Station (1)	City Hall East Street (13)	Outlet Mall MacArthur (15)	Kavanagh North School (33)	Lowell Astoria Gardens (4)	Sutter Hospital (3)	Tracy Transit Station (1)
6:40	6:43	6:53	7:03	7:20	7:24	7:30
7:35	7:38	7:50	8:00	8:17	8:21	8:30

COMMUTER ROUTE F – MON-FRI MORNING
OUTBOUND: Transit Station to ACE Station INBOUND: ACE Station To Transit Station

Tracy Transit Station (1)	Hidden Lake (36)	Brookview Lowes Park (37)	ACE Station (30)	Tracy Blvd. Raleys (11)	Tracy Transit Station (1)	Holly Eaton Library (2)	Senior Center 9th Street (20)	Tracy Transit Station (1)
6:40	6:47	6:55	7:03	7:10	7:20	7:25	7:40	7:45

COMMUTER ROUTE E – MON-FRI AFTERNOON REVERSE DIRECTION
OUTBOUND: Transit Station to West High School INBOUND: West High School to Transit Station

Tracy Transit Station (1)	Holly Eaton Library (2)	Sutter Hospital (3)	Lowell Art Frieller (34)	Kavanagh North School (33)	Outlet Mall MacArthur (15)	Transit Station (1)
1:25	**1:30**	**1:35**	**1:45**	**1:58**	**2:08**	**2:20**
2:55	**3:00**	**3:05**	**3:15**	**3:28**	**3:38**	**3:50**
3:55	**4:00**	**4:05**	**4:15**	**4:28**	**4:38**	**4:50**

MONDAY SERVICE ONLY

COMMUTER ROUTE F – MON-FRI AFTERNOON REVERSE DIRECTION
Outbound: Transit Station to ACE Station Inbound: ACE Station To Transit Station

Tracy Transit Station (1)	Holly Eaton Library (2)	Senior Center 9th Street (20)	Transit Station (1)	Hidden Lake (36)	Brookview Lowes Park (37)	ACE Station (30)	Tracy Blvd. Raleys (11)	Tracy Transit Station (1)
1:40	**1:45**	**1:55**	**2:00**	**2:07**	**2:15**	**2:20**	**2:27**	**2:35**
3:15	**3:20**	**3:30**	**3:35**	**3:42**	**3:50**	**3:55**	**4:02**	**4:10**
4:15	**4:20**	**4:30**	**4:35**	**4:42**	**4:50**	**4:55**	**5:02**	**5:10**

MONDAY SERVICE ONLY

SCHEDULE NOTES:

Transferring points are Tracy Transit Station, City Hall, Walmart and West Valley Mall and TRACER stops where two or more TRACER routes provide service.

PM times are shown in BOLD FACE type.

Times are approximate and may vary due to traffic or weather conditions.

Saturday Service does not operate during times shown in light yellow tint blocks.

SAN JOAQUIN RTD

System Map

Weekday Service

Information (209) 943-1111
(800) HOW-TO-RIDE
www.sanjoaquinRTD.com

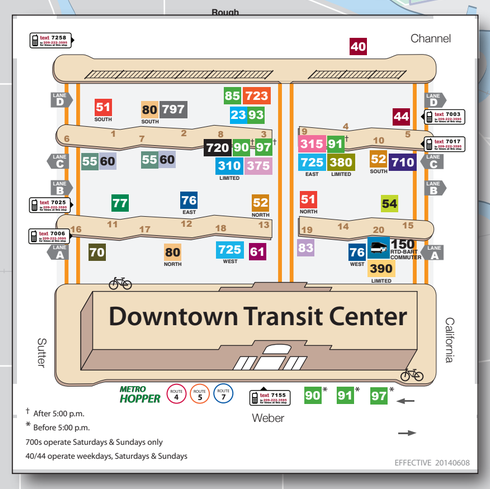
EFFECTIVE: AUGUST 10, 2014

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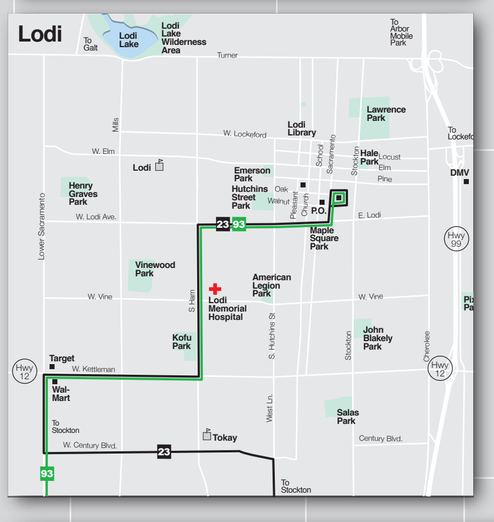
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- 40 Route 40 Metro Express
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- 51 Route 51
- 52 Route 52
- 54 Route 54
- 55 Route 55
- 60 Route 60
- 61 Route 61
- 61/80 Route 61/80
- 63 Route 63
- 66 Route 66
- 70 Route 70
- 71 Route 71
- 76 Route 76
- 77 Route 77
- 80 Route 80
- 83 Route 83
- 85 Route 85
- 90 Route 90, 91, 93, 97
- 310 Route 310
- 315 Route 315
- 340 Route 340
- 345 Route 345
- 360 Route 360
- 365 Route 365
- 375 Route 375
- 380 Route 380
- 390 Route 390
- 1 Metro Hopper Route 1
- 2 Metro Hopper Route 2
- 3 Metro Hopper Route 3
- 4 Metro Hopper Route 4
- 5 Metro Hopper Route 5
- 6 Metro Hopper Route 6
- 7 Metro Hopper Route 7
- 8 Metro Hopper Route 8
- Limited and/or Afternoon Service
- Morning Service
- Rail Connection
- Library
- Middle & High School
- Hospital/Medical Clinic

Downtown Stockton Inset Map
(see map below)

Downtown Transit Center



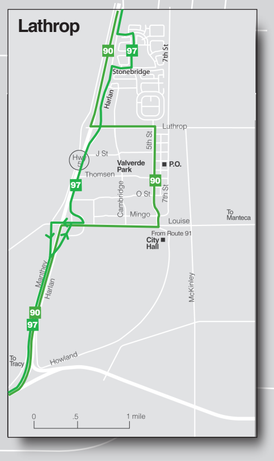
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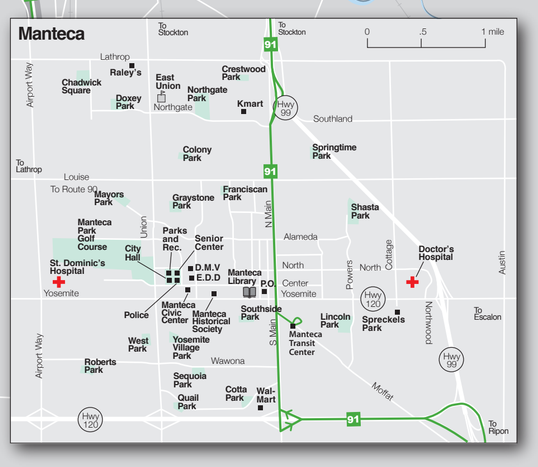
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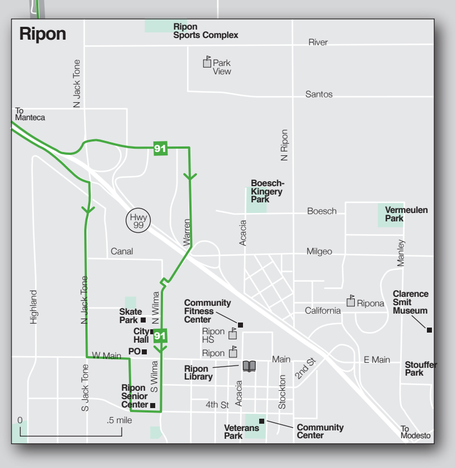
Lathrop



Manteca



Ripon



Hammer Triangle Station

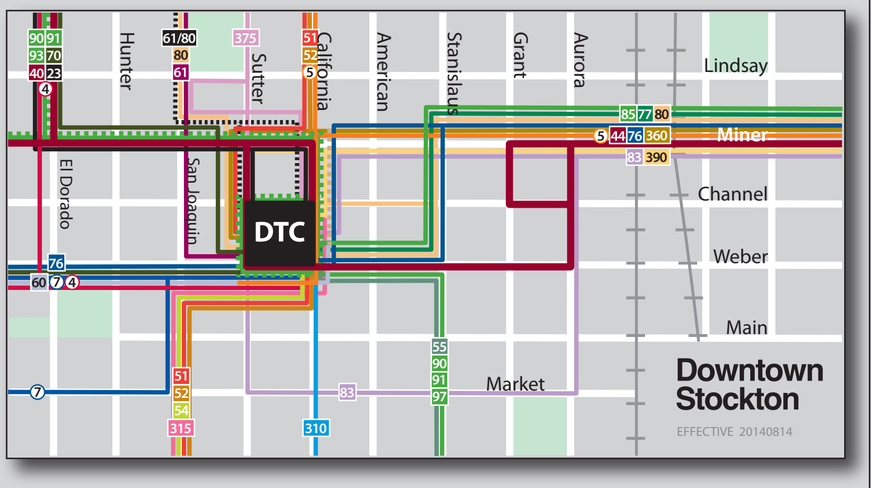
Effective August 10, 2014



Mall Transfer Station



Downtown Stockton



SAN JOAQUIN RTD

System Map

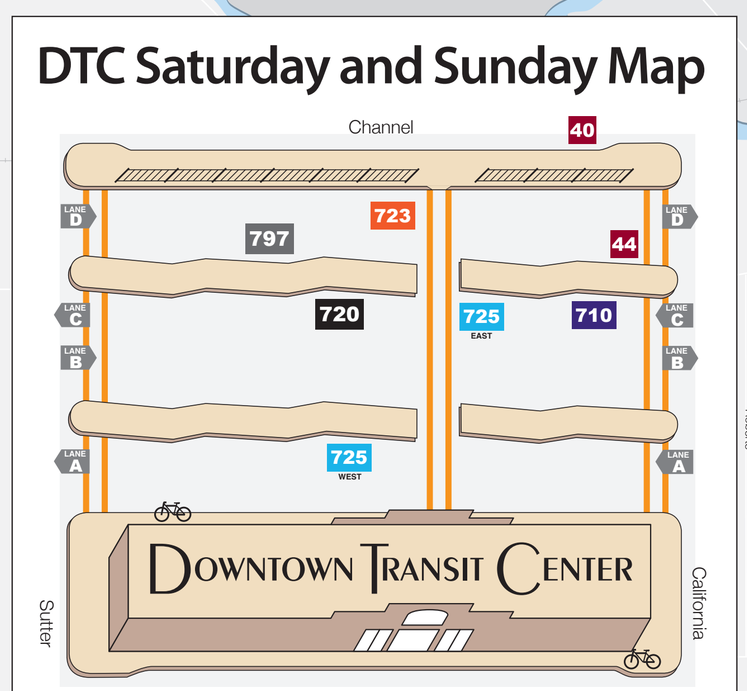
Saturday and Sunday Service

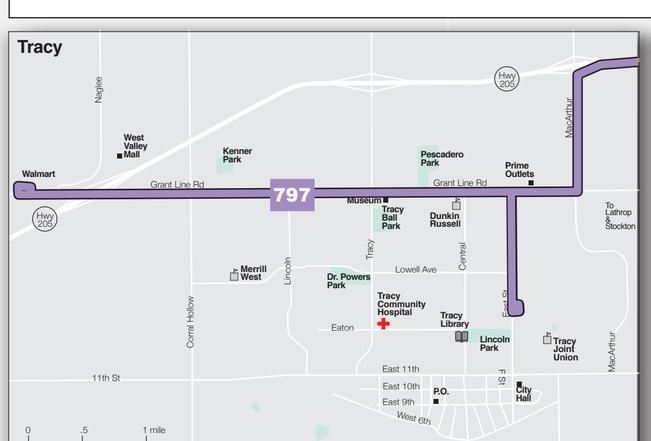
Information (209) 943-1111
(800) HOW-TO-RIDE
www.sanjoaquinRTD.com

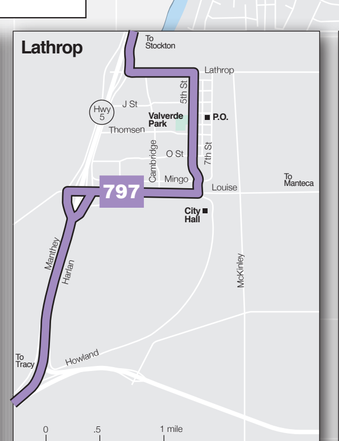
Effective: August 10, 2014

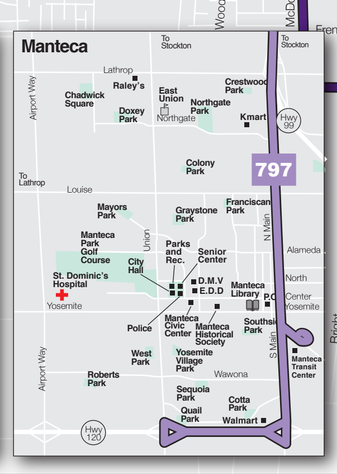
- 710 — Route 710
- 715 — Route 715
- 720 — Route 720
- 723 — Route 723
- 725 — Route 725
- 745 — Route 745
- 797 — Route 797
- 40/43/44 — Route 40/43/44 Metro Express
- Rail Connection
- Library
- Middle & High School
- Hospital/Medical Clinic











Appendix I:
Water Supply Assessment

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Tracy Village Specific Plan
Water Supply Assessment

Prepared for

City of Tracy

February 2017

WEST YOST ASSOCIATES
Consulting Engineers

404-12-15-15

DRAFT

Project Manager Elizabeth Drayer, PE	Date
QA/QC Review	Date

This report printed on 50% post-consumer paper

Table of Contents

Executive Summary 1
Purpose of Water Supply Assessment 1
Proposed Project Overview 1
Potable and Recycled Water Demands and Supply Availability 1
Verification of Sufficient Water Supply 2
1.0 Introduction 3
1.1 Legal Requirement for Water Supply Assessment 3
1.2 Need for and Purpose of Water Supply Assessment 3
1.3 Water Supply Assessment Preparation, Format and Organization 4
2.0 Description of Proposed Project 5
2.1 Proposed Project Location 5
2.2 Proposed Land Uses and Acreages 7
2.3 Projected Water Demand 7
2.3.1 Water Use Factors and Assumptions 7
2.3.1.1 Potable Water Use Factors 7
2.3.1.2 Recycled Water Use Factors 9
2.3.2 Water Demand Calculations 10
2.4 Projected Water Supply 11
3.0 Required Determinations 13
3.1 Does SB 610 apply to the Proposed Project? 13
3.2 Does SB 221 apply to the Proposed Project? 13
3.3 Who is the Identified Public Water System? 14
3.4 Does the City have an adopted Urban Water Management Plan (UWMP) and does the UWMP include the projected water demand for the Proposed Project? 14
4.0 City of Tracy Water Service Area 16
4.1 Water Service Area 16
4.2 Population 16
4.3 Climate 17
5.0 City of Tracy Water Demands 19
5.1 Historical and Existing Water Demand 19
5.2 Future Water Demand 19
5.3 Dry Year Water Demand 22
6.0 City of Tracy Water Supplies 24
6.1 Existing Potable Water Supplies 25
6.1.1 Central Valley Project Water via the Delta-Mendota Canal 25
6.1.2 Stanislaus River Water 28
6.1.3 Groundwater 29
6.1.3.1 Groundwater Overview 30
6.1.3.2 Basin Description 30

DRAFT

Table of Contents

6.1.3.3 Groundwater Level Trends 33
6.1.3.4 Groundwater Storage 33
6.1.3.5 Conditions of Overdraft 33
6.1.3.6 Groundwater Yield 34
6.1.3.7 Groundwater Quality 34
6.1.3.8 Groundwater Management 35
6.1.3.8.1 Groundwater Management Plan for the Northern Agencies in the Delta-Mendota Canal Service Area and a Portion of San Joaquin County 35
6.1.3.8.2 San Joaquin County Groundwater Export Ordinance 36
6.1.3.8.3 City Groundwater Management Policy and Mitigated Negative Declaration for City Groundwater Production of 9,000 af/yr 36
6.1.3.8.4 Tracy Regional Groundwater Management Plan (Regional GMP) 37
6.1.3.9 Historical Groundwater Use 37
6.1.3.10 Projected Future Groundwater Use 38
6.1.3.11 Groundwater Sufficiency 39
6.1.4 Surface Water from BBID Pre-1914 Water Rights 39
6.1.5 Semitropic Groundwater Storage Bank 40
6.1.6 Aquifer Storage and Recovery 41
6.2 Additional Planned Future Potable Water Supplies 42
6.2.1 BBID Central Valley Project Supplies 43
6.2.2 Additional SCWSP Supplies 43
6.3 Additional Planned Future Non-Potable Water Supplies 43
6.3.1 Recycled Water 43
6.4 Summary of Existing and Additional Planned Future Water Supplies 44
6.5 Water Supply Availability and Reliability 46
6.5.1 Normal Years 47
6.5.2 Single Dry Years 50
6.5.3 Multiple Dry Years 53
6.5.4 Emergency Water Supply Conditions 55
7.0 Determination of Water Supply Sufficiency Based on the Requirements of SB 610 59
8.0 Verification of Sufficient Water Supply Based on the Requirements of SB 221 62
8.1 Historical Water Deliveries 62
8.2 Projected Water Demand by Customer Sector 63
8.3 Water Shortage Contingency Analysis 63
8.4 Future Water Supplies to Serve Water Demands Associated with Buildout of the Proposed Project 65
8.5 Verification of Sufficient Water Supply 65
9.0 Water Supply Assessment Approval Process 66
10.0 References 67

DRAFT

Table of Contents

List of Tables

Table 2-1. Proposed Land Uses for the Proposed Project 7
Table 2-2. Water Use Factors 10
Table 2-3. Projected Water Demand for Buildout of the Proposed Project 11
Table 3-1. Projected Water Demand for Proposed Project Area based on Previous Land Use Assumptions (as included in the City's Water System Master Plan and 2015 UWMP) 15
Table 3-2. Comparison of Water Demands for the Proposed Project with those included in the City's 2015 UWMP 15
Table 4-1. City of Tracy Historical and Projected Population 17
Table 4-2. City of Tracy Climate Data 18
Table 5-1. Historical Potable Water Demand 19
Table 5-2. Projected Future Water Demand in Normal Years 20
Table 5-3. Projected Future Dry Year Potable Water Demand 23
Table 6-1. Historical Allocations for USBR Central Valley Project Water Supplies 28
Table 6-2. City of Tracy Historical Groundwater Production 38
Table 6-3. City of Tracy Projected Future Groundwater Production in Normal and Dry Years 39
Table 6-4. Summary of Existing and Additional Planned Future Water Supplies 45
Table 6-5. Historical Potable Water Supplies, af/yr 46
Table 6-6. Water Supply Reliability in Normal, Single Dry and Multiple Dry Years 47
Table 6-7. Projected Existing and Additional Planned Future Water Supplies Available in Normal Years 50
Table 6-8. Projected Existing and Additional Planned Future Water Supplies Available in Single Dry Years 53
Table 6-9. Projected Existing and Additional Planned Future Water Supplies Available in Multiple Dry Years 58
Table 8-1. Actual and Projected Water Demands by Customer Sector 63

List of Figures

Figure 2-1. Proposed Project Location 6
Figure 2-2. Land Uses of Proposed Tracy Village Project 8
Figure 5-1. City of Tracy Historical Potable Water Demand 20
Figure 5-2. City of Tracy Historical and Projected Future Water Demand 21
Figure 6-1. City of Tracy Historical Potable Water Supplies 26
Figure 6-2. Groundwater Basin and Well Locations 31
Figure 6-3. City of Tracy Future Potable Water Supply vs. Demand in Normal Years 49
Figure 6-4. City of Tracy Future Potable Water Supply vs. Demand in a Single Dry Year 52

DRAFT

Figure 6-5. City of Tracy Future Potable Water Supply vs. Demand in a Multiple Dry Year 1 56
Figure 6-6. City of Tracy Future Potable Water Supply vs. Demand in a Multiple Dry Year 2 and 3 .. 57
Figure 7-1. City of Tracy Existing and Planned Future Potable Water Supplies at Year 2040 vs. Projected Demand at Year 2040 61

List of Appendices

Appendix A: Detailed Landscape Demand Projections
Appendix B: Groundwater Management Plan

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EXECUTIVE SUMMARY

Purpose of Water Supply Assessment

The purpose of this Water Supply Assessment (WSA) is to perform the evaluation required by California Water Code sections 10910 through 10915, as established by Senate Bill 610 (SB 610), in connection with the City of Tracy's (City) proposed Tracy Village Specific Plan (Proposed Project). This WSA evaluates the adequacy of the City's total projected water supplies, including existing water supplies and future planned water supplies, to meet the City's existing and projected future water demands, including those future water demands associated with the Proposed Project, under all hydrologic conditions (Normal Years, Single Dry Years, and Multiple Dry Years).

Also, because the Proposed Project meets the definition of a residential subdivision, this WSA must also meet the requirements of California Government Code section 66473.7(a)(1), as established by SB 221 in 2001.

Proposed Project Overview

The Proposed Project will be a master-planned, age-qualified community that will include up to 600 single-family detached homes, in addition to a community building, pool and a series of lakes and open spaces. The Proposed Project area includes approximately 132 acres of land located on the southeast corner of Corral Hollow and Valpico Roads in San Joaquin County, just outside the Tracy City Limits, but within the City Sphere of Influence as defined in the City's General Plan. The Proposed Project site is surrounded on three sides by existing residential development in the City of Tracy. The Proposed Project area has a land use designation of "Residential Low" in the City's General Plan. If approved, the Proposed Project area would be annexed into the City.

The Proposed Project meets the definition of a "Project" per California Water Code sections 10910 through 10915, as established by SB 610 in 2001, thus requiring the preparation of this WSA. The Proposed Project also meets the definition of a residential subdivision and therefore must also meet the requirements of California Government Code section 66473.7(a)(1), as established by SB 221 in 2001.

Potable and Recycled Water Demands and Supply Availability

Projected water demands for buildout of the Proposed Project total approximately 283 acre-feet per year (af/yr), of which about approximately 175 af/yr is potable water demand and approximately 108 af/yr is recycled water demand for landscape irrigation and lake maintenance.

It is anticipated that the Proposed Project, if approved by the City, would be served from the City's existing and future portfolio of water supplies. The inclusion of existing and planned future water supplies is specifically allowed by the Water Code:

> *Water Code section 10631(b): Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments described in subdivision (a).*

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Because recycled water infrastructure may not be initially available to deliver recycled water to the Proposed Project, potable water supplies, if available, may be used in the interim period before recycled water becomes available to meet the non-potable water demands associated with the initial phases of the Proposed Project (see Section 2.4 for further discussion).

Proponents of the Proposed Project will provide their proportionate share of required funding to the City for the acquisition, treatment and delivery of treated potable and recycled water supplies to the Proposed Project area.

Pursuant to Water Code section 10910(c)(4), and based on the technical analyses described in this Water Supply Assessment, this Water Supply Assessment demonstrates that the City's existing and additional planned future water supplies are sufficient to meet the City's existing and projected future water demands, including those future water demands associated with the Proposed Project, to the year 2040 under all hydrologic conditions (including Normal Years, Single Dry Years, and Multiple Dry Years).

Furthermore, in the event of a water supply emergency where surface water supplies may be limited or unavailable, this WSA shows that based upon current groundwater basin conditions, the City would be able to meet its potable water demands using only groundwater supplies in any single year without causing any long-term impacts to the groundwater basin (see Section 6.1.3.10 for further discussion).

Verification of Sufficient Water Supply

In accordance with the requirements of SB 221, Section 8.0 of this WSA provides a verification of sufficient water supply to meet the projected demands associated with the Proposed Project, in addition to the City's existing and planned future uses, including, but not limited to, agricultural and industrial uses.

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1.0 INTRODUCTION

1.1 Legal Requirement for Water Supply Assessment

California Senate Bill 610 (SB 610) and Senate Bill 221 (SB 221) amended state law, effective January 1, 2002, to improve the link between information on water supply availability and certain land use decisions made by cities and counties. SB 610 and SB 221 were companion measures which sought to promote more collaborative planning between local water suppliers and cities and counties. Both statutes require detailed information regarding water availability to be provided to the city and county decision-makers prior to approval of specified large development projects. The purpose of this coordination is to ensure that prudent water supply planning has been conducted, and that planned water supplies are adequate to meet existing demands, anticipated demands from approved projects and tentative maps, and the demands of proposed projects.

SB 610 amended California Water Code sections 10910 through 10915 (inclusive) to require land use lead agencies to:

- Identify any public water purveyor that may supply water for a proposed development project; and
- Request a Water Supply Assessment (WSA) from the identified water purveyor.

The purpose of the WSA is to demonstrate the sufficiency of the purveyor's water supplies to satisfy the water demands of the proposed project, while still meeting the water purveyor's existing and planned future uses. Water Code sections 10910 through 10915 delineate the specific information that must be included in the WSA.

SB 221 amended State law (California Government Code section 66473.7) to require that approval by a city or county of certain residential subdivisions[1] requires an affirmative written verification of sufficient water supply. SB 221 was intended as a fail-safe mechanism to ensure that collaboration on finding the needed water supplies to serve a new large residential subdivision occurs before construction begins. Section 8.0 of this WSA provides such a written verification.

1.2 Need for and Purpose of Water Supply Assessment

The purpose of this WSA is to perform the evaluation required by Water Code sections 10910 through 10915 in connection with the City of Tracy's (City) proposed Tracy Village Specific Plan (Proposed Project). It is not to reserve water, or to function as a "will serve" letter or any other form of commitment to supply water (see Water Code section 10914). The provision of water service will continue to be undertaken in a manner consistent with applicable City policies and procedures, consistent with existing law.

[1] Per Government Code Section 66473.7(a)(1) subdivision means a proposed residential development of more than 500 dwelling units.

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1.3 Water Supply Assessment Preparation, Format and Organization

The format of this WSA is intended to follow Water Code sections 10910 through 10915 to clearly delineate compliance with the specific requirements for a WSA. The WSA includes the following sections:

- Section 1: Introduction
- Section 2: Description of Proposed Project
- Section 3: Required SB 610 Determinations
- Section 4: City of Tracy Water Service Area
- Section 5: City of Tracy Water Demands
- Section 6: City of Tracy Water Supplies
- Section 7: Determination of Water Supply Sufficiency Based on the Requirements of SB 610
- Section 8: Verification of Sufficient Water Supply Based on the Requirements of SB 221
- Section 9: Water Supply Assessment Approval Process
- Section 10: References

Relevant citations of Water Code sections 10910 through 10915 are included throughout this WSA in *italics* to demonstrate compliance with the specific requirements of SB 610.

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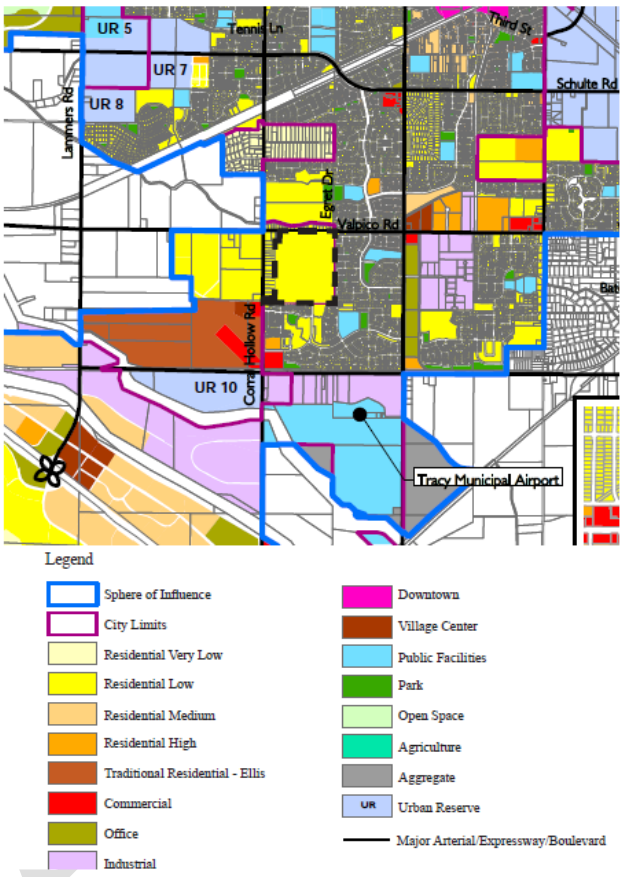
2.0 DESCRIPTION OF PROPOSED PROJECT

2.1 Proposed Project Location

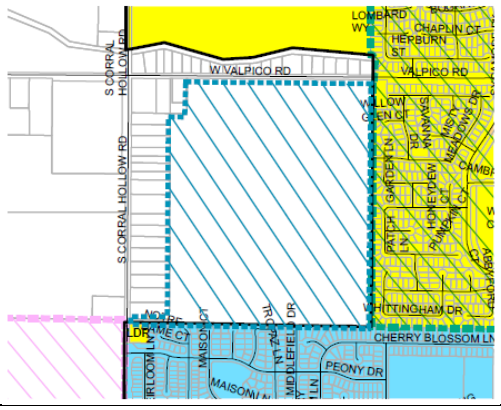
The Proposed Project is located in the City of Tracy's (City) Sphere of Influence (SOI) and includes approximately 132 acres of land located on the southeast corner of Corral Hollow and Valpico Roads in San Joaquin County, just outside the Tracy City Limits (see Figure 2-1). If approved, the Proposed Project area would be annexed into the City.

The Proposed Project area has a land use designation of "Residential Low" in the City's General Plan and is surrounded on three sides by existing residential development in the City of Tracy.

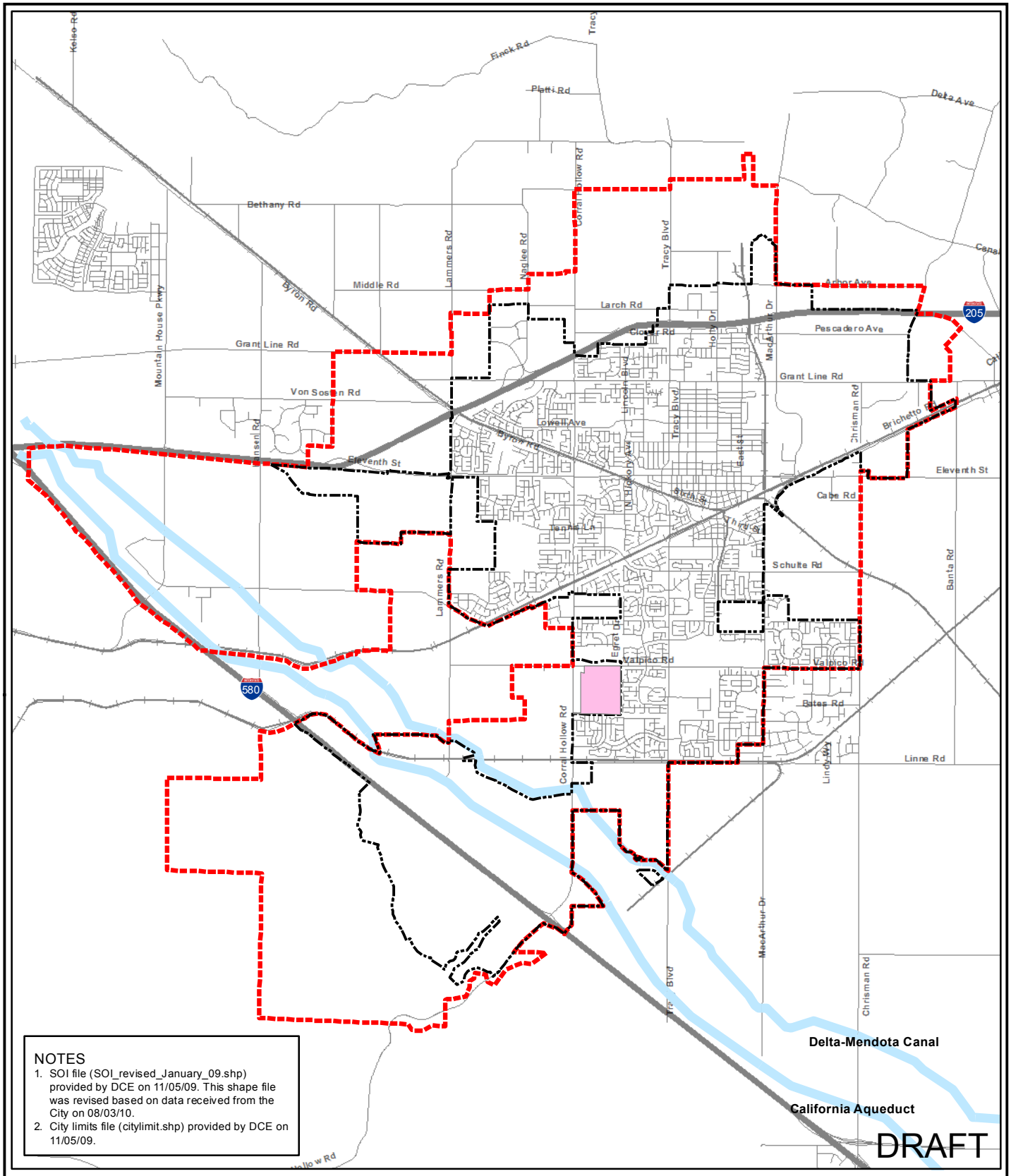
The Proposed Project would also include the annexation of forty-eight (48) existing residential lots located immediately west of the Proposed Project property on the east side of Corral Hollow Road and existing lots immediately north of the Proposed Project property on the north side of Valpico Road. Connection of these existing lots to City water service will not be required for those lots already developed with private wells supporting existing single-family residences. A property owner may request connection to the City water system. Development of the new single-family residences within the Proposed Project will be required to connect to City water service. Although the forty-eight (48) existing residential lots are not located within the Proposed Project boundary, their water demand is included in the water demand associated with buildout of the Proposed Project.



City of Tracy General Plan Land Uses



Adjacent Existing Lots



NOTES
1. SOI file (SOI_revised_January_09.shp) provided by DCE on 11/05/09. This shape file was revised based on data received from the City on 08/03/10.
2. City limits file (citylimit.shp) provided by DCE on 11/05/09.

LEGEND:
- Tracy Village Specific Plan
- City Limits
- SOI
- Railroad
- Highway
- Existing Street

N

0 3,750 7,500
Scale in Feet

FIGURE 2-1

City of Tracy
Water Supply Assessment
for the Tracy Village Specific Plan

PROPOSED PROJECT LOCATION

WEST YOST ASSOCIATES
Consulting Engineers

2.2 Proposed Land Uses and Acreages

The Proposed Project will be a master-planned, age-qualified community that will include up to 600 single-family detached homes, in addition to a community building, pool and a series of lakes and open spaces.

Proposed land uses for the Proposed Project are summarized in Table 2-1 and shown on Figure 2-2.

Table 2-1. Proposed Land Uses for the Proposed Project[a]

Proposed Land Use	Approximate Acres	Projected Dwelling Units
Age-Qualified Residential[a]	109.9	Up to 600
Open Space[b]		
Lake System	10.5	
Parks	3.2	
Dog Park	0.2	
Open Space System	3.9	
Recreational Facilities (includes clubhouse)	4.0	
Pedestrian Connection	0.5	
Subtotal	132.2	Up to 600

[a] Table 4-6 Projected Water Demand, Tracy Village Specific Plan, August 2016.
[b] Table 2-3 Open Space, Tracy Village Specific Plan, August 2016.

2.3 Projected Water Demand

2.3.1 Water Use Factors and Assumptions

As part of the Citywide Water System Master Plan, the City adopted unit water use factors for use in projecting potable and recycled water demand based on the proposed future land uses within the City's General Plan[2]. These are described below.

2.3.1.1 Potable Water Use Factors

Potable water use factors for various land uses were established based on historical metered water use data for various land use types, taking into consideration reduced water use as a result of new building codes, improved water use efficiency and water conservation measures.

[2] As established in the City of Tracy Citywide Water System Master Plan, prepared by West Yost Associates, Final Report dated December 2012, and included in the City's 2015 UWMP.



Figure 2-2. Land Uses of Proposed Tracy Village Project

The potable water use factors for residential land uses were based on following criteria:

- The number of proposed dwelling units per acre ranging from 0.1 du/acre for Very Low Density Residential to 25 du/acre for Very High Density Residential;
- The number of people per dwelling unit ranging from 2.2 to 3.3 people/du; and
- The per capita water use ranging from 100 to 150 gallons per capita per day (gpcd), depending upon lot size and use of recycled water supplies for landscape irrigation.

The Proposed Project is being planned to be an age-qualified community which will have less residents per dwelling unit than conventional residential development and consequently have less demand for water. Therefore, the number of residents per dwelling unit has been estimated to be 2.0 residents per dwelling unit (lower than for typical residential developments with young families) and the per capita water use has been assumed to be 100 gpcd.

Based on the dwelling unit density (dwelling units per acre), the Proposed Project's 600 dwelling units have housing types classified as low-density residential (5.5 dwelling units per acre). Therefore, if the Project's Proponents were to develop the Proposed Project based on conventional residential development, the number of residents per dwelling unit would be 3.3 residents per dwelling unit and the per capita water use would be 130 gpcd, consistent with assumptions used in the Citywide Water Master Plan. This alternative land use scenario would represent the maximum potable water demand that could be required by the Proposed Project's residential community.

For the existing residential lots to be annexed into the City in conjunction with annexation the Proposed Project property, it is unknown how many of the existing lots will actually connect to the City's water system. However, for purposes of this WSA, it has been assumed that all of the existing residential lots will connect to the City's water system and that each existing lot has 3.0 residents per dwelling unit and would have a per capita water use of 100 gpcd.

For non-residential land uses for the Proposed Project (i.e., the proposed clubhouse), a Commercial water use factor of 2.0 acre-feet per acre per year (af/ac/yr) has been assumed.

2.3.1.2 Recycled Water Use Factors

In the Citywide Water System Master Plan, exterior recycled water use was assumed to be 4.0 af/ac/yr for irrigated landscape areas, including roadway medians and other landscape areas. For the Proposed Project, exterior landscaping will be designed for low water use. To account for this low water use, the Proposed Project developer has developed demand projections for the Proposed Project's irrigated landscaped areas. The detailed water demand projections for the Proposed Project are included in Appendix A.

Recycled water will be used to fill and maintain the water levels in the Proposed Project's lakes. Because the majority of the Proposed Project's common area landscape will be in close proximity to the proposed lakes, the lakes will be used as a water supply for the common area and front yard landscaping. This will also facilitate the cycling of water through the lakes, which is important to prevent the buildup of nutrients, silt and other contaminants which can reduce water quality in the lakes. There are additional opportunities to irrigate landscaping proposed at the Proposed Project

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entry, along the Valpico Road frontage, as well as portions of the recreation site, other common area landscaping and front yards.

The potential use of potable water supplies to meet non-potable water demands in the interim period before recycled water becomes available to the Proposed Project is described in Section 2.4.

Table 2-2 summarizes the unit water use factors for the land use designations applicable to the Proposed Project.

Table 2-2. Water Use Factors

Land Use Designation	Water Use Factor
Age-Qualified Residential (2 people per DU)	200 gpd/du
Single Family Residential (Existing Lots) (3 people per DU)	300 gpd/du
Low Density Residential (3.3 people per DU)	429 gpd/du[(a)]
Clubhouse (Commercial)	2.0 af/ac/yr[(a)]
Landscape Irrigation	see Section 2.3.2
Lake Makeup Water	see Section 2.3.2

[(a)] Based on unit water demand factors established in the 2012 Citywide Water System Master Plan.

2.3.2 Water Demand Calculations

Based on the water use factors described above, the projected water demand[3] at buildout of the Proposed Project is shown in Table 2-3. The total normal year water demand for the Proposed Project at buildout is projected to be approximately 283 af/yr. Of this total water demand, the potable water demand at buildout is projected to be approximately 175 af/yr and the recycled water demand at buildout is projected to be approximately 108 af/yr. During dry years, the recycled water demand at buildout is projected to be approximately 128 af/yr.

[3] Projected water demands include Unaccounted for Water (UAW) consistent with assumptions used in the City's 2015 UWMP. UAW of 9.6 percent is added to the projected potable water demand by dividing the projected potable water demand by 0.904, as the UAW factor is based on 9.6 percent of the total required potable water production. UAW of 5 percent is added to the projected recycled water demand by dividing the projected recycled water demand by 0.95, as the UAW factor is based on 5 percent of the total required recycled water production.

Table 2-3. Projected Water Demand for Buildout of the Proposed Project

Land Use Designation	Gross Area, acres	Dwelling Units	Water Use Factor			Potable Water Demand, af/yr	Recycled Water Demand	
			Potable Water Use Factor	Recycled Water Use Factor	Units		Normal Year, af/yr	Dry Year, af/yr
Age-Qualified Residential (2 people per DU)		600	200		gpd/du	134		
Single Family Residential (Existing Lots) (3 people per DU)		48	300		gpd/du	16		
Clubhouse (Commercial)	4.0		2.0		af/ac/yr	8		
Landscape Irrigation	21.3[b]			see footnote[b]			40	47
Lake Makeup Water				see footnote[c]			63	81
Subtotal						158	103	128
Unaccounted for Water (9.6% for potable water demands and 5% for recycled water demands)[a]						17	5	7
Total Demand						**175**	**108**	**135**

[a] Consistent with assumptions used in the City's 2015 UWMP.
[b] Gross landscape area and estimated water use obtained from the Proposed Project developer (July 20, 2016). Detailed demand projections are included in Appendix A.
[c] Estimated water use obtained from Proposed Project developer (March 28, 2016). Detailed demand projections are included in Appendix A.

If the Proposed Project were to develop its 600 dwelling units as low density residential units instead of age-qualified residential units, the potable water demand of these residential units would increase from the 149 af/yr (134 af/yr plus 9.6 percent unaccounted for water) to approximately 319 af/yr (288 af/yr plus 9.6 percent unaccounted for water). For this alternative land use scenario, the total potable water demand for the Proposed Project would increase to approximately 345 af/yr (including residential and non-residential uses). The recycled water demand for the Proposed Project would remain the same as shown in Table 2-3.

2.4 Projected Water Supply

Water demands for the Proposed Project will be served using the City's existing and future portfolio of water supplies. The inclusion of existing and planned future water supplies is specifically allowed by the Water Code:

> *Water Code section 10631(b): Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments described in subdivision (a).*

Recycled water infrastructure will need to be constructed to deliver recycled water supplies to the Proposed Project. In 2012, the Citywide Water System Master Plan and Tracy Wastewater Master Plan were completed. Both plans included recommended capital improvement projects for the development of the City's recycled water system. In 2016, the City was awarded a Proposition 84 grant from DWR to fund construction of recycled water distribution facilities. Until such recycled water infrastructure is constructed (currently anticipated to be completed by 2019), potable water supplies, if available, may be used in the interim to meet non-potable water demands within the Proposed Project consistent with the City's recycled water ordinance.

Proponents of the Proposed Project will provide their proportionate share of required funding to the City for the acquisition and delivery of treated potable and recycled water supplies to the Proposed Project area.

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3.0 REQUIRED DETERMINATIONS

3.1 Does SB 610 apply to the Proposed Project?

10910 (a) Any city or county that determines that a project, as defined in Section 10912, is subject to the California Environmental Quality Act (Division 13 (commencing with Section 21000) of the Public Resources Code) under Section 21080 of the Public Resources Code shall comply with this part.

10912 (a) "Project" means any of the following:

(1) A proposed residential development of more than 500 dwelling units.

(2) A proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space.

(3) A proposed commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space.

(4) A proposed hotel or motel, or both, having more than 500 rooms.

(5) A proposed industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area.

(6) A mixed-use project that includes one or more of the projects specified in this subdivision.

(7) A project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500-dwelling unit project.

Based on the following facts, SB 610 does apply to the Proposed Project.

- The City of Tracy has determined that the Proposed Project is subject to the California Environmental Quality Act (CEQA) and that an Environmental Impact Report (EIR) is required.
- The Proposed Project, with up to 600 residential dwelling units meets the definition of a "Project" as specified in Water Code section 10912(a) paragraph (1) as defined for residential development.

The Proposed Project has not been the subject of a previously adopted WSA and has not been included in an adopted WSA for a larger project. Therefore, according to Water Code section 10910(a), a WSA is required for the Proposed Project.

3.2 Does SB 221 apply to the Proposed Project?

In 2001, SB 221 amended State law to require that approval by a city or county of certain residential subdivisions requires an affirmative written verification of sufficient water supply. Per California Government Code section 66473.7(a)(1), a subdivision means a proposed residential development of more than 500 dwelling units. The Proposed Project, with up to 600 residential dwelling units, is therefore subject to the requirements of SB 221. Section 8.0 of this WSA provides the required written verification of sufficient water supply.

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3.3 Who is the Identified Public Water System?

10910(b) The city or county, at the time that it determines whether an environmental impact report, a negative declaration, or a mitigated negative declaration is required for any project subject to the California Environmental Quality Act pursuant to Section 21080.1 of the Public Resources Code, shall identify any water system that is, or may become as a result of supplying water to the project identified pursuant to this subdivision, a public water system, as defined by Section 10912, that may supply water for the project

10912 (c) "Public water system" means a system for the provision of piped water to the public for human consumption that has 3,000 or more service connections…

As shown on Figure 2-1, the Proposed Project is located within the City's General Plan Sphere of Influence (SOI), just outside of the Tracy City Limits. The City's water system service area includes all areas within the City Limits and the General Plan SOI as they are annexed into the City. Therefore, the City is the identified public water system for the Proposed Project.

3.4 Does the City have an adopted Urban Water Management Plan (UWMP) and does the UWMP include the projected water demand for the Proposed Project?

10910(c)(1) The city or county, at the time it makes the determination required under Section 21080.1 of the Public Resources Code, shall request each public water system identified pursuant to subdivision (b) to determine whether the projected water demand associated with a proposed project was included as part of the most recently adopted urban water management plan adopted pursuant to Part 2.6 (commencing with Section 10610).

The City's most recently adopted UWMP (the City's 2015 UWMP) was adopted by the Tracy City Council in May 2016 and is incorporated by reference into this WSA[4]. The City's 2015 UWMP included water demand projections for current water demands within the City (baseline demand) and anticipated water demands associated with future development projects and planning areas within the City's General Plan SOI through 2040. The Proposed Project was included in the demand projections as a future service area in the City's 2015 UWMP. However, the water demands currently calculated for the Proposed Project are different than those included in the City's 2015 UWMP due to changes in the Proposed Project land use[5].

Table 3-1 shows that the projected potable and recycled water demands based on the land use assumptions contained in the City's 2015 UWMP (and 2012 Citywide Water Master Plan) are approximately 371 AF and 38 AF, respectively. A comparison of currently projected water demands for the Proposed Project with those included in the City's 2015 UWMP is provided in Table 3-2. As shown, the potable water demand for the Proposed Project is 196 af/yr lower than what was included in the City's 2015 UWMP, and the recycled water demand for the Proposed Project is 70 af/yr higher than what was included in the City's 2015 UWMP. Therefore, the projected potable water demand for the Proposed Project is well within the demand projections included in the City's 2015 UWMP. Although the projected recycled water demand is an increase from the City's 2015 UWMP, the Proposed Project's recycled water demand is still within the City's total projected recycled water supplies (963 AF by 2020 and 4,814 AF by 2040).

[4] City of Tracy 2015 Urban Water Management Plan, prepared by Erler & Kalinowski, Inc., May 2016.

[5] Buildout water demands in the City's 2015 UWMP are based on the same land use assumptions and unit water demand factors presented in Appendix D of the City's Water System Master Plan (December 2012).

Table 3-1. Projected Water Demand for Proposed Project Area based on Previous Land Use Assumptions (as included in the City's Water System Master Plan and 2015 UWMP)

Land Use Designation	Gross Area, acres	Dwelling Units	Water Use Factor				Potable Water Demand, af/yr	Recycled Water Demand, af/yr
			Potable Water Use Factor[a]	Units	Recycled Water Use Factor	Units		
Low Density Residential (3.3 people per DU)	70	305	429	gpd/du	n/a		147	0
Medium Density Residential (2.7 people per DU)	43	387	310	gpd/du	4.0	af/ac/yr on 15% of acres	134	26
High Density Residential (2.2 people per DU)	17	319	150	gpd/du	4.0	af/ac/yr on 15% of acres	54	10
Subtotal	130	1,011					335	36
Unaccounted for Water (9.6% for potable water demands and 5% for recycled water demands)[b]							36	2
Total Demand							**371**	**38**

[a] From Table 4-14 of the 2012 Citywide Water Master Plan.
[b] Consistent with assumptions used in the City's 2015 UWMP.

Table 3-2. Comparison of Water Demands for the Proposed Project with those included in the City's 2015 UWMP

Document	Potable Water Demand (includes UAW), af/yr	Recycled Water Demand (includes UAW), af/yr
Water Supply Assessment for the Tracy Village Specific Plan (see Table 2-3)	175	108
City of Tracy 2015 UWMP (see Table 3-1)	371	38
Difference (increase(+) or decrease(-) from 2015 UWMP)	-196	+70

If the Proposed Project were to develop its 600 dwelling units as low density residential units instead of age-qualified residential units, the potable water demand for the Proposed Project would increase to 344 af/yr, but would still be 26 af/yr lower than what was included in the City's 2015 UWMP (371 af/yr). Therefore, the projected potable water demand for the Proposed Project based on this alternative land use scenario would still be within the demand projections included in the City's 2015 UWMP.

The City's ability to meet the projected water demands for the Proposed Project, as defined in the City's 2015 UWMP, is described in Section 7.0 of this WSA.

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4.0 CITY OF TRACY WATER SERVICE AREA

4.1 Water Service Area

The City of Tracy is located in San Joaquin County, California, about 68 miles south of Sacramento and 60 miles east of San Francisco. The existing incorporated area of the City encompasses approximately 22 square miles. The City's General Plan includes the area outside of the City limits that the City expects to annex and urbanize in the future. It is the expected physical limit of the City based on the most current information. During the City's recent General Plan update process and in response to Local Agency Formation Commission (LAFCo) policies established in 2007, revisions to the City's SOI were made to more accurately reflect locations where the City may grow in the future and locations where no urban growth is expected. The recently adopted revised SOI encompasses an area of approximately 42 square miles and is 20 square miles larger than the current City limits.

The City's water service area is coterminous with the City limits. As future developments within the SOI, but outside the City Limits, are approved, they will be annexed into the City and served by the City water system. Figure 2-1 illustrates the current City Limits and the SOI. The Proposed Project is located outside the City's existing City Limits, but within the SOI.

4.2 Population

The State of California Department of Finance (DOF) population estimate for the City as of January 1, 2015 was 85,296 people[6]. In 2015, the City also served 118 residences in the Larch Clover County Services District (CSD) and the persons per household factor was 3.48 (per DOF). Therefore, the City's total population served in 2015 was estimated to be 85,707.

Future population estimates for the City are described in the City's 2015 UWMP and are summarized as follows. Population growth was rapid in the City over the 15-year period of 1990 through 2005, with the City growing by 139 percent. Since 2005, however, growth has slowed relative to historical rates (population increased approximately 9 percent over this 10-year period). The reduction in growth rate has likely been caused by a combination of economic forces, such as the economic downturn of 2008 through 2011, and measures taken by the City to limit growth. In 1987, the City adopted a residential Growth Management Ordinance (GMO), which was amended in 2000 by the voter-initiative Measure A. The objective of the GMO and Measure A is to achieve a steady and orderly growth rate that allows for the adequate provision of services and community facilities, and includes a balance of housing opportunities. Under the GMO, builders must obtain a Residential Growth Allotment (RGA) to secure a residential building permit. The GMO limits the number of RGAs and building permits to an average of 600 housing units per year for market-rate housing, with a maximum of 750 units in any single year, although there are exceptions for affordable housing (General Plan, 2011).

[6] State of California, Department of Finance, E-5 Population Estimates for Cities, Counties, and the State, January 1, 2011-2015, with 2010 Benchmark, revised May 1, 2015.

It should be noted that on December 8, 2015 City of Tracy voters passed Measure K which added a new chapter to the City's Municipal Code establishing an Active Adult Residential Allotment program which makes the development of property with allocated Active Adult Residential Allotments (AARAs), such as the Proposed Project, not subject to the City's GMO. The measure specifically allocated 600 AARAs to the Proposed Project, referenced in the measure as the "Tracy Village Specific Plan" property. The measure prohibits any AARA allocated to the Proposed Project from being transferred to other property and allows the City to issue no more than 200 residential building permits to the Proposed Project in any given calendar year.

The population estimates for 2020 through 2040 presented in the City's 2015 UWMP are projected using the methodology presented in the City's Water System Master Plan, but incorporated new assumptions about the timing of planned development over this time frame.

Table 4-1 shows the City's projected population in five-year increments to the year 2040.

Table 4-1. City of Tracy Historical and Projected Population

	Year	Population
Historical	1990	32,827
	1995	44,906
	2000	57,298
	2005	78,613
	2010	83,312
	2015	85,707
Projected	2020	91,601
	2025	96,542
	2030	101,483
	2035	106,423
	2040	111,365

Source: City of Tracy 2015 UWMP, Table 2-1 Historical and Projected Service Area Population, May 2016; includes residents served by the City in the Larch Clover CSD.

4.3 Climate

Spring, summer, and fall are generally hot in the City, with temperatures often reaching over 100 degrees Fahrenheit on summer days. The City's winters are usually mild, although the dense "Tule fog" can last for weeks. Annual rainfall averages 9.86 inches and is generally confined to the wet season from late October to early May. The average reference evapotranspiration (ETo) for the region is 48.5 inches.

Table 4-2 summarizes the City's average temperature and rainfall data.

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Table 4-2. City of Tracy Climate Data

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
Average ET_o, inches	1.0	1.5	2.9	4.5	6.1	7.3	7.9	6.7	5.3	3.2	1.3	0.7	48.5
Average Max Temperature, °F	54.1	61.0	66.7	73.1	80.7	88.0	93.6	92.1	87.9	78.5	64.9	54.7	74.6
Average Min Temperature, °F	36.7	40.0	42.6	45.5	50.4	55.2	57.1	55.7	53.9	48.7	42.1	36.6	47.0
Average Rainfall, inches	1.9	1.7	1.4	0.8	0.5	0.1	0.0	0.1	0.2	0.5	1.1	1.6	9.86

Source: City of Tracy 2015 UWMP, Table 2-2 Average Monthly Climatic Conditions, May 2016.

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5.0 CITY OF TRACY WATER DEMANDS

10910(c)(2) If the projected water demand associated with the proposed project was accounted for in the most recently adopted urban water management plan, the public water system may incorporate the requested information from the urban water management plan in preparing the elements of the assessment required to comply with subdivisions (d), (e), (f), and (g).

The descriptions provided below for the City's water demands have been taken, for the most part, from the City's 2015 UWMP, which was adopted in May 2016. Supplemental information from other available reports has been included to provide the most recent data available and to meet the specific requirements of SB 610.

5.1 Historical and Existing Water Demand

The City's water demand has increased significantly in the last 30 years. In 1986, the City's water demand was 8,104 af/yr and by 2007 the City's water demand had increased to 19,176 af/yr. In recent years, the City's water demand has decreased as a result of the economic downturn of 2008 through 2011 and water use reductions in response to recent drought conditions. In 2016, the City's water demand was 14,653 af/yr. Figure 5-1 shows the City's historical annual water demand (based on water production) from 1986 through 2016. Table 5-1 shows the City's water demand (based on water production) for the past five years.

Table 5-1. Historical Potable Water Demand

	2012	2013	2014	2015	2016
Total UWMP Water Demand, af/yr	17,592	18,587	16,213	14,041	14,653

Source: City of Tracy 2015 UWMP, Table 3-1 Current and Historical Potable Water Demand and Population, May 2016; City of Tracy 2016 Production and Water Demand Data

5.2 Future Water Demand

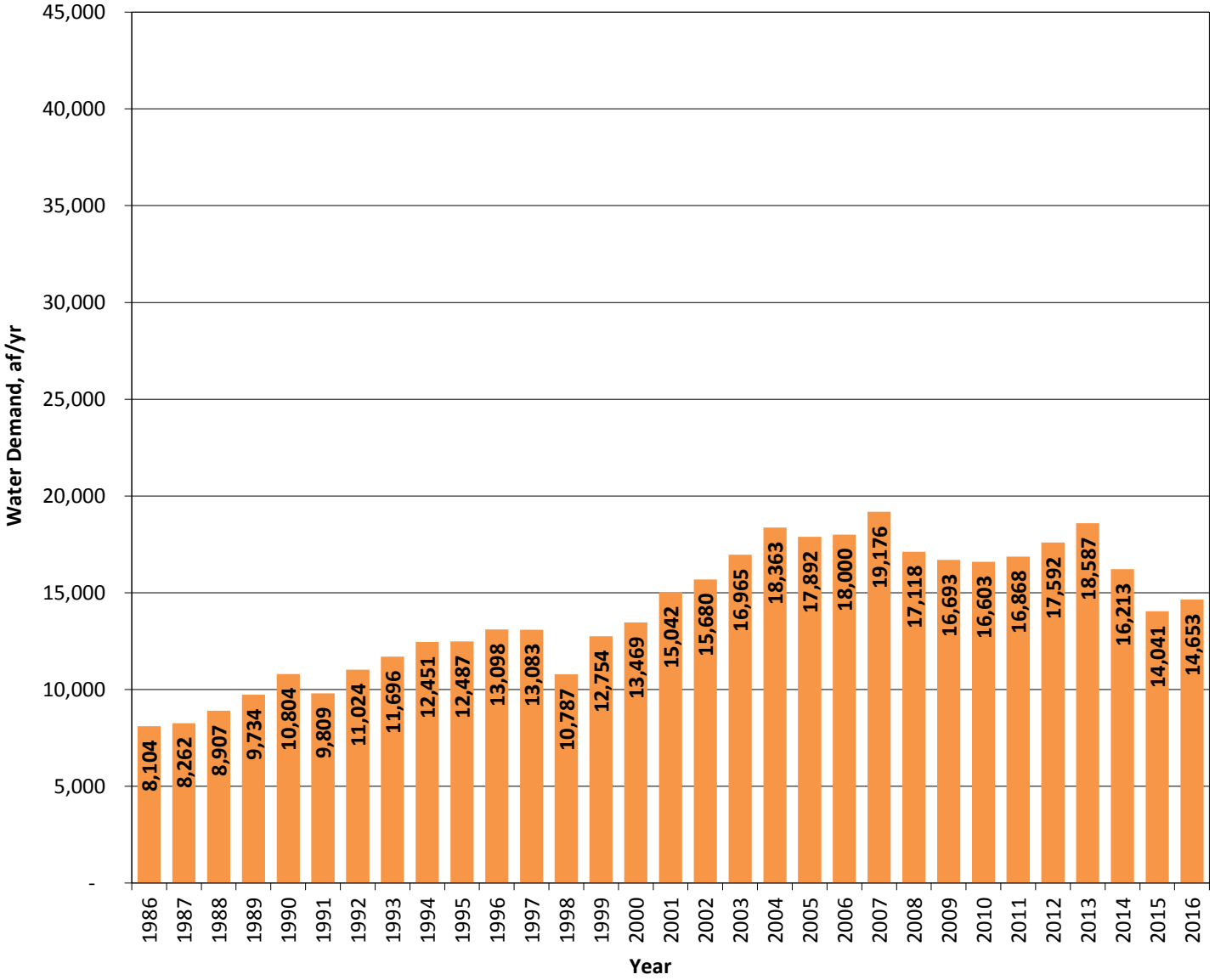
The City's water demand is anticipated to continue to increase as approved projects build out and new developments are approved and constructed in accordance with the City's General Plan within the City's water service area. However, as discussed above, the rate of growth within the City service area has slowed as a result of the GMO and the slow economic recovery from the recent economic downturn. Hence, water demands are not anticipated to increase as rapidly as they have in past years. According to the City's 2015 UWMP, Buildout is not anticipated to occur by or before 2040.

The City's projected future water demand was determined based on potable water use factors for various land uses based on historical metered water use data for various land use types, and taking into consideration reduced future water use as a result of new building codes, improved water use efficiency and water conservation measures. Table 5-2 shows the projected potable and recycled water demand through 2040 as presented in the City's 2015 UWMP assuming normal year conditions. Figure 5-2 illustrates the City's projected water demand through 2040 as presented in the City's 2015 UWMP.

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Figure 5-1. City of Tracy Historical Potable Water Demand



Legend:

- Historical Potable Water Demand

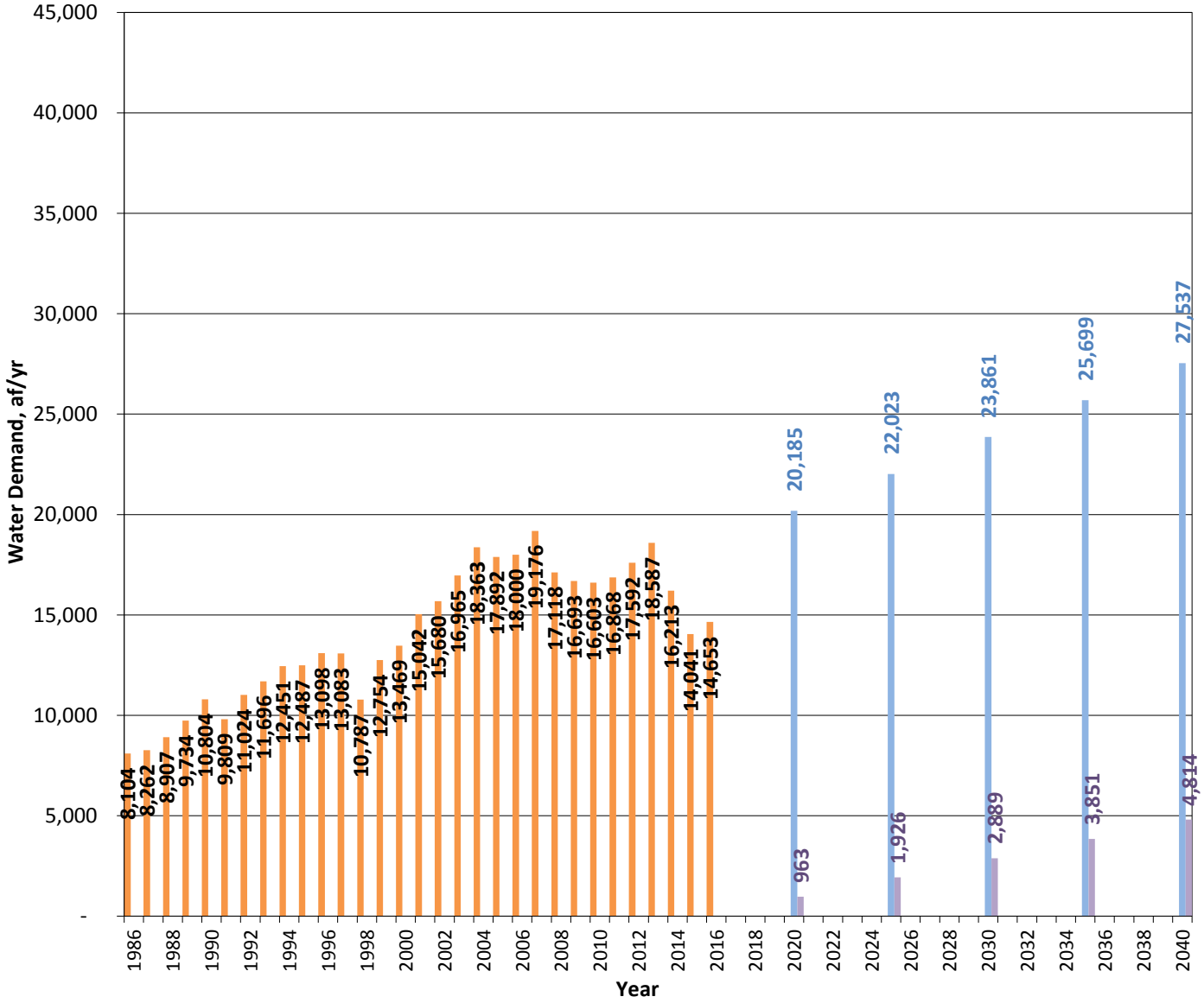
Notes:

(1) Based on annual water production.

(2) Source: City of Tracy Water Inventory Reports, Annual Production Reports, and Table 3-1 Current and Historical Potable Water Demand and Population of the City of Tracy 2015 UWMP, May 2016.

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Figure 5-2. City of Tracy Historical and Projected Future Water Demand



Legend:

- Historical Potable Water Demand
- Projected Future Potable Water Demand (per 2015 UWMP)
- Projected Future Recycled Water Demand (per 2015 UWMP)

Notes:

(1) Historical water demand based on annual water production. Source: City of Tracy Water Inventory Reports, Annual Production Reports, and Table 3-1 Current and Historical Potable Water Demand and Population of the City of Tracy 2015 UWMP, May 2016.

(2) Projected future demands include projected water demands for existing users, development projects with approved water supply and future service areas. Source: Table 3-5 Total Current and Projected Water Demands of the City of Tracy 2015 UWMP, May 2016.

(3) Projected future water demands include unaccounted for water.

(4) For the purposes of the City's 2015 UWMP and this WSA, buildout of the City's General Plan (37,444 af/yr) has been assumed to occur after the year 2040.

Table 5-2. Projected Future Water Demand in Normal Years					
	2020	2025	2030	2035	2040
Total Potable Water Demand, af/yr	20,185	22,023	23,861	25,699	27,537
Total Recycled Water Demand, af/yr	963	1,926	2,889	3,851	4,814
Source: City of Tracy 2015 UWMP, Table 3-5 Total Current and Projected Water Demands, May 2016.					

As discussed in Section 3.4, the potable water demand for the Proposed Project is included in the City's 2015 UWMP, but the potable water demand based on the current proposed land uses (as included in the current Tracy Village Specific Plan) is less than the potable water demand for the Proposed Project area included in the 2015 UWMP. In addition, the projected recycled water demand for the Proposed Project is well within the City's total projected recycled water supplies.

5.3 Dry Year Water Demand

The City currently has a water conservation program in place, as described in Section 7 of the City's 2015 UWMP. The projected future water demand presented in Table 5-2 includes continued implementation of the City's existing water conservation program, and is based on future normal hydrologic years. In the City's 2015 UWMP, and this WSA, the additional water conservation which may occur in single dry or multiple dry years is not assumed to happen. This is a conservative assumption as additional water conservation may indeed occur as a result of the City's implementation of additional water conservation measures as outlined in the City's Water Shortage Contingency Plan[7] in response to multiple dry years or other water supply shortages. The City's Water Shortage Contingency Plan includes a five-phase plan describing specific actions to reduce water demand by up to 50 percent in the event of a water supply shortage or emergency.

As shown in Table 5-1, the City's 2015 demand was significantly lower than 2014 demand in response to the Governor's April 2015 Executive Order B-29-15 mandating 25 percent water conservation statewide. To reduce water use by 25 percent statewide, the SWRCB adopted a regulation which placed each urban water supplier into one of eight tiers which are assigned a conservation standard, ranging between 4 percent and 36 percent. Each month, the SWRCB compared every urban water suppliers' water use with their use for the same month in 2013 to determine if they were on track for meeting their conservation standard. The City of Tracy was initially placed into Tier 7 with a water conservation standard of 28 percent as compared to 2013 use (the City's conservation standard was reduced to 25 percent in early 2016).

In response, in June 2015, City Council authorized the implementation and amendment of the City's Phase III and IV water restrictions (as defined in Chapter 11.28 of the Tracy Municipal Code) to meet SWRCB emergency drought regulations. The City's recent water conservation efforts and results are an example of the City's ability to implement its Water Shortage

[7] The City's Water Shortage Contingency Plan is incorporated into the Water Management Chapter of the Tracy Municipal Code Chapter 11.28.

Contingency Plan and reduce water demands in the event of an emergency water supply shortage. In May 2016, the City's water demand was 32.6 percent less than in May 2013, and the City's cumulative savings from June 2015 to May 2016 was 27.2 percent as compared to 2013, indicating the responsiveness of the City's residents to the call for water conservation[8].

Table 5-3 presents the projected future dry year potable water demand.

Table 5-3. Projected Future Dry Year Potable Water Demand

Hydrologic Condition	Demand Reduction[(a)]	2020	2025	2030	2035	2040
Single Dry Year[(b)], af/yr	0%	20,185	22,023	23,861	25,699	27,537
Multiple Dry Years, af/yr[(c,d)]	0%	20,185	22,023	23,861	25,699	27,537

(a) Conservatively assumes no demand reduction in dry years. Demands may be reduced in dry years as a result of the City's implementation of its Water Shortage Contingency Plan; however, such a demand reduction is not assumed or relied upon for the purposes of the Single Dry Year and Multiple Dry Year evaluations for this WSA.

(b) See Table 6-5 Projected Supply Versus Demand for Single Dry Year Scenario of the City's 2015 UWMP. Includes unaccounted for water of 9.6% based on the City's historical (2014) unaccounted for water.

(c) See Table 6-6 Projected Supply Versus Demand for Multiple Dry Years Scenario of the City's 2015 UWMP. Includes unaccounted for water of 9.6% based on the City's historical (2014) unaccounted for water.

(d) Represents demands for each year of the 3-year multiple dry year period.

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[8] SWRCB May 2016 Supplier Conservation Compliance (data from June 21, 2016), SWRCB Water Conservation Portal – Conservation Reporting (http://www.waterboards.ca.gov/water_issues/programs/conservation_portal/conservation_reporting.shtml)

6.0 CITY OF TRACY WATER SUPPLIES

10910(c)(2) If the projected water demand associated with the proposed project was accounted for in the most recently adopted urban water management plan, the public water system may incorporate the requested information from the urban water management plan in preparing the elements of the assessment required to comply with subdivisions (d), (e), (f) and (g).

10910(d)(1) The assessment required by this section shall include an identification of any existing water supply entitlements, water rights, or water service contracts relevant to the identified water supply for the proposed project, and a description of the quantities of water received in prior years by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), under the existing water supply entitlements, water rights, or water service contracts

10910(d)(2) An identification of existing water supply entitlements, water rights, or water service contracts held by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), shall be demonstrated by providing information related to all of the following:

(A) Written contracts or other proof of entitlement to an identified water supply.

(B) Copies of a capital outlay program for financing the delivery of a water supply that has been adopted by the public water system.

(C) Federal, state, and local permits for construction of necessary infrastructure associated with delivering the water supply.

(D) Any necessary regulatory approvals that are required in order to be able to convey or deliver the water supply.

10910(e) If no water has been received in prior years by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), under the existing water supply entitlements, water rights, or water service contracts, the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), shall also include in its water supply assessment pursuant to subdivision (c), an identification of the other public water systems or water service contract-holders that receive a water supply or have existing water supply entitlements, water rights, or water service contracts, to the same source of water as the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), has identified as a source of water supply within its water supply assessments.

It is anticipated that the Proposed Project, if approved by the City, would be served from City's existing and future portfolio of water supplies. The inclusion of existing and planned future water supplies is specifically allowed by the Water Code:

> *Water Code section 10631(b): Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments described in subdivision (a).*

The water supply for the Proposed Project will have the same water supply reliability and water quality as the water supply available to the City's other existing and future water customers. Proponents of the Proposed Project will provide their proportionate share of required funding to the City for the acquisition and delivery of treated potable and recycled water supplies to the Proposed Project area.

The water supplies needed to serve the Proposed Project (together with existing water demands and planned future uses) are described in the City's 2015 UWMP. Therefore, the descriptions provided below for the City's water supplies have been taken, for the most part, from the City's 2015 UWMP, which was adopted in May 2016. Supplemental information from other available reports has also been included to provide the most recent data available and to meet the specific requirements of SB 610.

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6.1 Existing Potable Water Supplies

The City currently receives water supplies from three sources:

- Surface water from the Delta-Mendota Canal (Central Valley Project (CVP)),
- Surface water from the Stanislaus River via the South County Water Supply Project (delivered by the South San Joaquin Irrigation District (SSJID)), and
- Groundwater pumped from nine groundwater wells located within the City.

In addition, a wholesale water agreement between the Byron Bethany Irrigation District (BBID) and the City has been approved for surface water from BBID pre-1914 water rights to serve the Proposed Tracy Hills Project. The agreement, in conjunction with the April 2014 Exchange Agreement between BBID and the United States Bureau of Reclamation (USBR), provides for BBID's water to be pumped into the Delta-Mendota Canal (DMC) and delivered to the City's John Jones Water Treatment Plant (JJWTP) for treatment and delivery to the Proposed Tracy Hills Project.

Also, the City has entered into an agreement with the Semitropic Water Storage District for storage of water supplies for use in dry years and has recently implemented an Aquifer Storage and Recovery (ASR) program to allow for injection of surface water supplies into the underlying groundwater basin for storage and later extraction.

Each of these existing supplies is described below. Summary tables listing the City's existing and additional planned future water supplies, and historical and anticipated future quantities, are provided following the discussion of the City's additional planned future water supplies. Figure 6-1 shows the City's historical use of these existing water supplies.

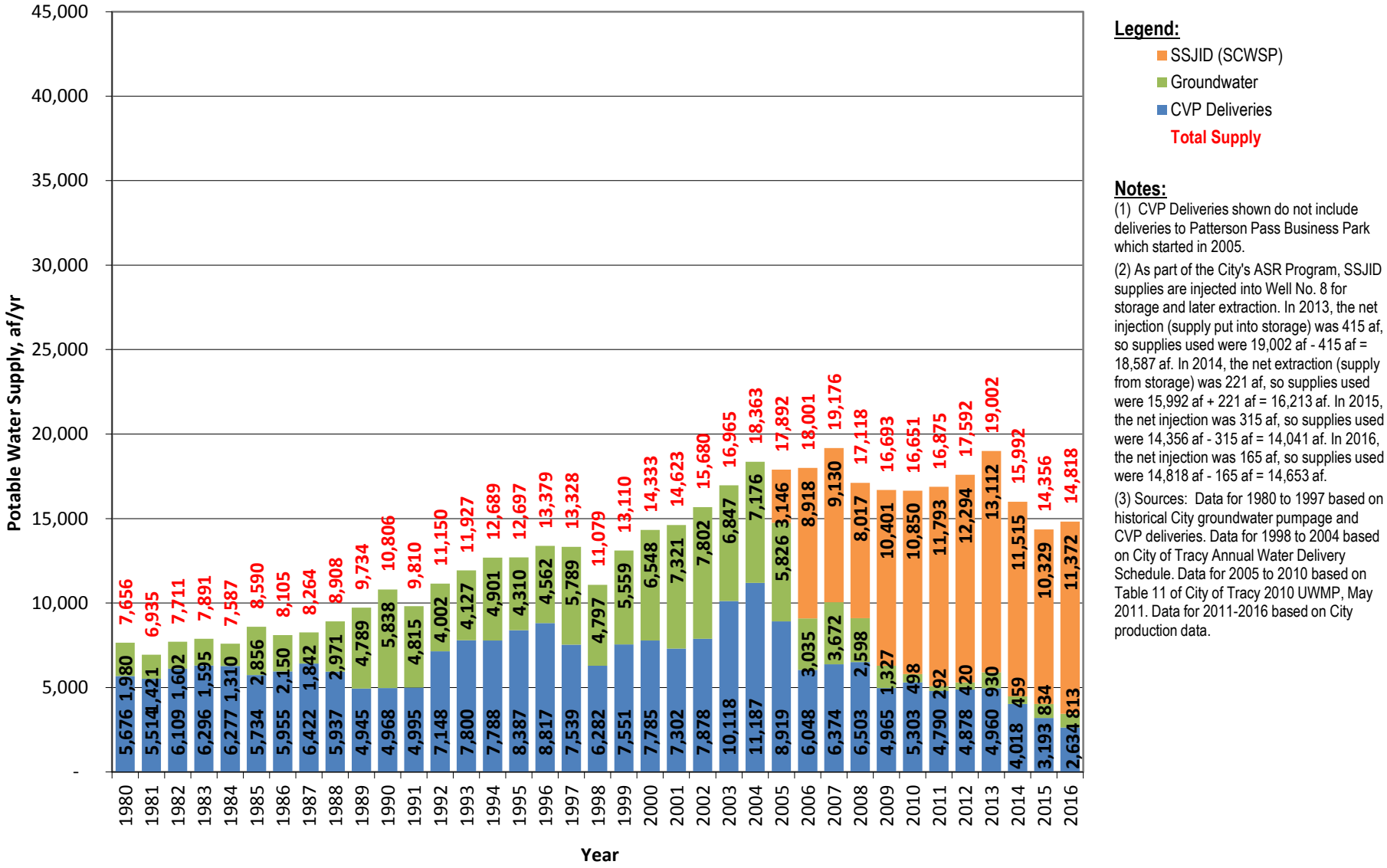
6.1.1 Central Valley Project Water via the Delta-Mendota Canal

In July 1974, the City entered into a 40-year Municipal and Industrial (M&I) contract with the USBR for an annual entitlement of 10,000 af/yr of surface water from the CVP via the DMC. In 2004, the USBR approved the assignment of 5,000 af/yr of Ag-reliability CVP contract entitlement to the City from the Banta Carbona Irrigation District (BCID). Also in 2004, the USBR approved the assignment of 2,500 af/yr of Ag-reliability CVP contract entitlement water to the City from the West Side Irrigation District (WSID), with the option to purchase an additional 2,500 af/yr of CVP contract entitlement from the WSID. In December 2013, the City and WSID approved the additional assignment in which the City's current assignment of WSID CVP water is 5,000 af/yr. In the aggregate, the City's contractual entitlement to the M&I-reliability CVP water and assignments of Ag-reliability water CVP water from BCID and WSID are referred to as the City's "Existing Contract" with the USBR. The total quantity of CVP water available to the City under its Existing Contract is 20,000 af/yr (10,000 af/yr of M&I-reliability water and 10,000 af/yr of Ag-reliability water).

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Figure 6-1. City of Tracy Historical Potable Water Supplies



Legend:

- SSJID (SCWSP)
- Groundwater
- CVP Deliveries
- Total Supply

Notes:

(1) CVP Deliveries shown do not include deliveries to Patterson Pass Business Park which started in 2005.

(2) As part of the City's ASR Program, SSJID supplies are injected into Well No. 8 for storage and later extraction. In 2013, the net injection (supply put into storage) was 415 af, so supplies used were 19,002 af - 415 af = 18,587 af. In 2014, the net extraction (supply from storage) was 221 af, so supplies used were 15,992 af + 221 af = 16,213 af. In 2015, the net injection was 315 af, so supplies used were 14,356 af - 315 af = 14,041 af. In 2016, the net injection was 165 af, so supplies used were 14,818 af - 165 af = 14,653 af.

(3) Sources: Data for 1980 to 1997 based on historical City groundwater pumpage and CVP deliveries. Data for 1998 to 2004 based on City of Tracy Annual Water Delivery Schedule. Data for 2005 to 2010 based on Table 11 of City of Tracy 2010 UWMP, May 2011. Data for 2011-2016 based on City production data.

The City's Existing Contract was scheduled to expire on January 1, 2014. Prior to expiration, the City entered into a two-year Interim Renewal Contract with the USBR providing for water service from the CVP on December 31, 2013. In February 2016, the City and USBR negotiated a second interim renewal, effective March 1, 2016, that will last for two years and is scheduled to expire February 28, 2018. The City and USBR are mutually committed to negotiating a long-term extension of the City's DMC/CVP contract, but anticipate that the environmental documentation necessary for the execution of any long-term renewal contract may be delayed for reasons beyond the control of the parties.

The City's CVP water supplies are subject to allocations determined by the USBR for 'South-of-Delta' contractors. Historical M&I and Ag allocations for the CVP water supplies are summarized in Table 6-1. Based on the historical record, the City's long-term average allocation of CVP water pursuant to the contract is anticipated to be at least 85 percent of the total entitlement. However, due to recent environmental concerns in the Delta and potential future impacts due to climate change, the normal year reliability of CVP water was been assumed to be 75 percent in the City's 2015 UWMP. In addition, the City conservatively estimated that it will receive 50 percent of its Ag-reliability contractual entitlement in normal water years.

During dry years, a CVP M&I contractor is typically eligible for a minimum shortage allocation equal to 75 percent of adjusted historical use. Per the CVP M&I Water Shortage Allocation Plan, the minimum shortage allocation may be reduced further when the allocation of Ag-reliability water in that year is reduced below 25 percent of contract entitlement. The component of the City's CVP supply that carries Ag-reliability is subject to more significant reductions and is much more dependent on yearly hydrologic conditions than the City's M&I-reliability allocation. For single dry year reliability, the City has based its reliability assumptions on the actual allocations in 2015:

- 25 percent for M&I CVP water, and
- 0 percent for Ag CVP water.

The City based multiple dry year reliability on the average allocations for 2014 and 2015 and initial allocations for 2016 (43 percent for M&I CVP water and 2 percent for Ag CVP water[9]). The City conservatively rounds these values down and is using the following reliabilities for multiple dry year scenarios:

- 40 percent for M&I CVP water, and
- 0 percent for Ag CVP water.

[9] Source: City's 2015 UWMP, Section 6.1.1.1 DMC/CVP Reliability, page 81

Table 6-1. Historical Allocations for USBR Central Valley Project Water Supplies

Year	M&I Allocation for South of Delta Contractors (% of contract supply)	Ag Allocation for South of Delta Contractors (% of contract supply)
2005	100%	85%
2006	100%	100%
2007	75%	50%
2008	75%	40%
2009	60%	10%
2010	75%	45%
2011	100%	80%
2012	75%	40%
2013	70%	20%
2014	50%	0%
2015	25%	0%
2016	55%[a]	5%[a]

[a] Based on 2016 water supply allocation for Central Valley Project agricultural contractors and municipal and industrial contractors as updated by USBR on April 1, 2016.

The City's CVP water supplies are treated at the City's JJWTP, which was originally constructed in 1979, expanded in 1988, and then expanded again in 2008. The JJWTP is located just north of the Delta-Mendota Canal in the southern portion of the City. With the recent plant expansion now complete, the current treatment capacity of the JJWTP is 30 million gallons per day (mgd) which is sufficient to treat all of Tracy's CVP water supplies. Future additional expansion of the JJWTP is planned in conjunction with buildout of the City's General Plan and is described in the Citywide Water System Master Plan.

The City also treats and serves CVP water purchased by others. Over the period 2011 through 2015, an average of approximately 180 af/yr of water from the Plain View Water District's (now BBID's) USBR allocation was treated at the JJWTP and delivered to the Patterson Pass Business Park through the City's water distribution system. A comparable quantity of BBID water is anticipated to be treated and delivered annually to the Patterson Pass Business Park in the future. Neither the water supply nor the demand for Patterson Pass Business Park are included in the City supply and demand estimates because the water supply is BBID's, not the City's, and the City solely provides water treatment, delivery and billing services on a contractual basis; the City does not manage either the supply or the demand.

6.1.2 Stanislaus River Water

The City, in partnership with the cities of Manteca, Lathrop and Escalon, and the SSJID, have constructed a surface water treatment plant near Woodward Reservoir in Stanislaus County and a transmission pipeline to deliver treated surface water to each city. The project is called the South County Water Supply Project (SCWSP). This water supply is based on SSJID's senior pre-1914

appropriative water rights to the Stanislaus River, coupled with an agreement with the USBR to store water in New Melones Reservoir. As part of the SCWSP, the City was allocated up to 10,000 af/yr of water based upon SSJID's senior water rights.

Treated water deliveries commenced in July 2005, and deliveries have been essentially uninterrupted since then (see Figure 6-1). In the first few years, SCWSP deliveries were less than the City's full project allotment; however, during these years the City did not require its full SCWSP allotment, even though the full 10,000 acre-feet was available from SCWSP. However, in some years since 2009 the City has actually received more than its allotment.

In August 2013, SSJID and the cities of Tracy and Lathrop approved a Lathrop-Tracy Purchase, Sale and Amendment Agreement for the sale of a portion of the City of Lathrop's SCWSP supply and capacity to the City of Tracy. The agreement provides the City of Tracy with an additional 1,120 af/yr of SCWSP supply and 2 mgd of SCWSP capacity. This additional SCWSP supply has the same reliability as the City's original SCWSP supplies.

Currently, the City has access to 11,120 af/yr of Stanislaus River water provided for by the SCWSP. Due to the seniority of the water rights underling the SCWSP, SSJID's pre-1914 appropriative rights to Stanislaus River water, the City has historically assigned a high reliability to SCWSP water. However, the experiences of the recent drought have caused the City to revise its reliability projections for SCWSP water in dry years. In August 2014, due to concerns about decreasing water levels in the New Melones Reservoir, SSJID curtailed water deliveries to the SCWSP contracting cities by 20 percent of their monthly allocations. This 20 percent curtailment translated to an allocation to the City of approximately 85 percent of its annual contractual entitlement in 2014. In 2015, SSJID allocated water to each SCWSCP contracting city based upon actual water use in 2013. Under this allocation scheme, the City was assigned 85 percent of its actual 2013 water use.

For the City's 2015 UWMP, it was assumed that the City will receive 100 percent of its SWSCP contractual entitlement in normal years. In future dry years, the City assumed that allocations will be based on the City's contractual entitlement, rather than consumption in a given year. Therefore, the City's allocation of SCWSP water in 2014 serves as the basis for the City's single dry year projections. In single dry years, the City anticipates receiving 85 percent of its SCWSP contractual entitlement. The City is also conservatively assuming that it will receive 85 percent of its contractual entitlement to SCWSP water in multiple dry years.

6.1.3 Groundwater

10910(f) If a water supply for a proposed project includes groundwater, the following additional information shall be included in the water supply assessment.

10910(f)(1) A review of any information contained in the urban water management plan relevant to the identified water supply for the proposed project.

10910(f)(2) A description of any groundwater basin or basins from which the proposed project will be supplied. For those basins for which a court or the board has adjudicated the rights to pump groundwater, a copy of the order or decree adopted by the court or the board and a description of the amount of groundwater the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), has the legal right to pump under the order or decree. For basins that have not been adjudicated, information as to whether the department has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted

if present management conditions continue, in the most current bulletin of the department that characterizes the condition of the groundwater basin, and a detailed description by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), of the efforts being undertaken in the basin or basins to eliminate the long-term overdraft condition.

10910(f)(3) A detailed description and analysis of the amount and location of groundwater pumped by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), for the past five years from any groundwater basin from which the proposed project will be supplied. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historical use records.

A detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), from any basin from which the proposed project will be supplied. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historical use records.

10910(f)(4) An analysis of the sufficiency of the groundwater from the basin or basins from which the proposed project will be supplied to meet the projected water demand associated with the proposed project.

A water assessment shall not be required to include the information required by this paragraph if the public water system determines, as part of the review required by paragraph (1), that the sufficiency of groundwater necessary to meet the initial and projected water demand associated with the project was addressed in the description and analysis required by paragraph (4) of subdivision (b) of Section 10631.

6.1.3.1 Groundwater Overview

The City overlies a portion of the San Joaquin Valley Groundwater Basin-Tracy Sub-basin (Tracy Sub-basin). The City currently operates nine groundwater wells, with a total extraction capacity of about 18,300 gpm, or 26 mgd (GEI, 2015). Four wells (Production Wells 1, 2, 3 and 4) are located near the City's JJWTP and pump directly into the JJWTP clearwells, where the groundwater is blended with treated surface water. The other wells (Lincoln Well, Lewis Manor Well (Well 5), Park and Ride Well (Well 6), Ball Park Well (Well 7) and Well 8) are located throughout the City and pump water directly into the distribution system after disinfection. The City's newest well, Well 8, located near the intersection of Tracy Boulevard and 6th Street, was designed as an Aquifer Storage and Recovery (ASR) well, and has been put into service as an ASR well as permitted by the Central Valley Regional Water Quality Control Board (see discussion under *Section 6.1.6 Aquifer Storage and Recovery*).

Figure 6-2 shows the locations of the City's wells and the Tracy Sub-basin.

6.1.3.2 Basin Description

The following section describes the Tracy Sub-basin, including its water-bearing formations, water levels, and water quality. Much of the following information has been incorporated from the City's 2015 UWMP. Except where noted, the description of the sub-basin is based largely on information provided in the 2003 DWR Bulletin 118, in which the groundwater basin description was last updated in January 2006.

The sub-basin consists of unconsolidated to semi-consolidated sedimentary deposits that are bounded by the Diablo Range on the west, the Mokelumne and San Joaquin Rivers on the north, the San Joaquin River to the east, and the San Joaquin-Stanislaus County line on the south. Adjacent to the Tracy Sub-basin are the Eastern San Joaquin Sub-basin to the east, the

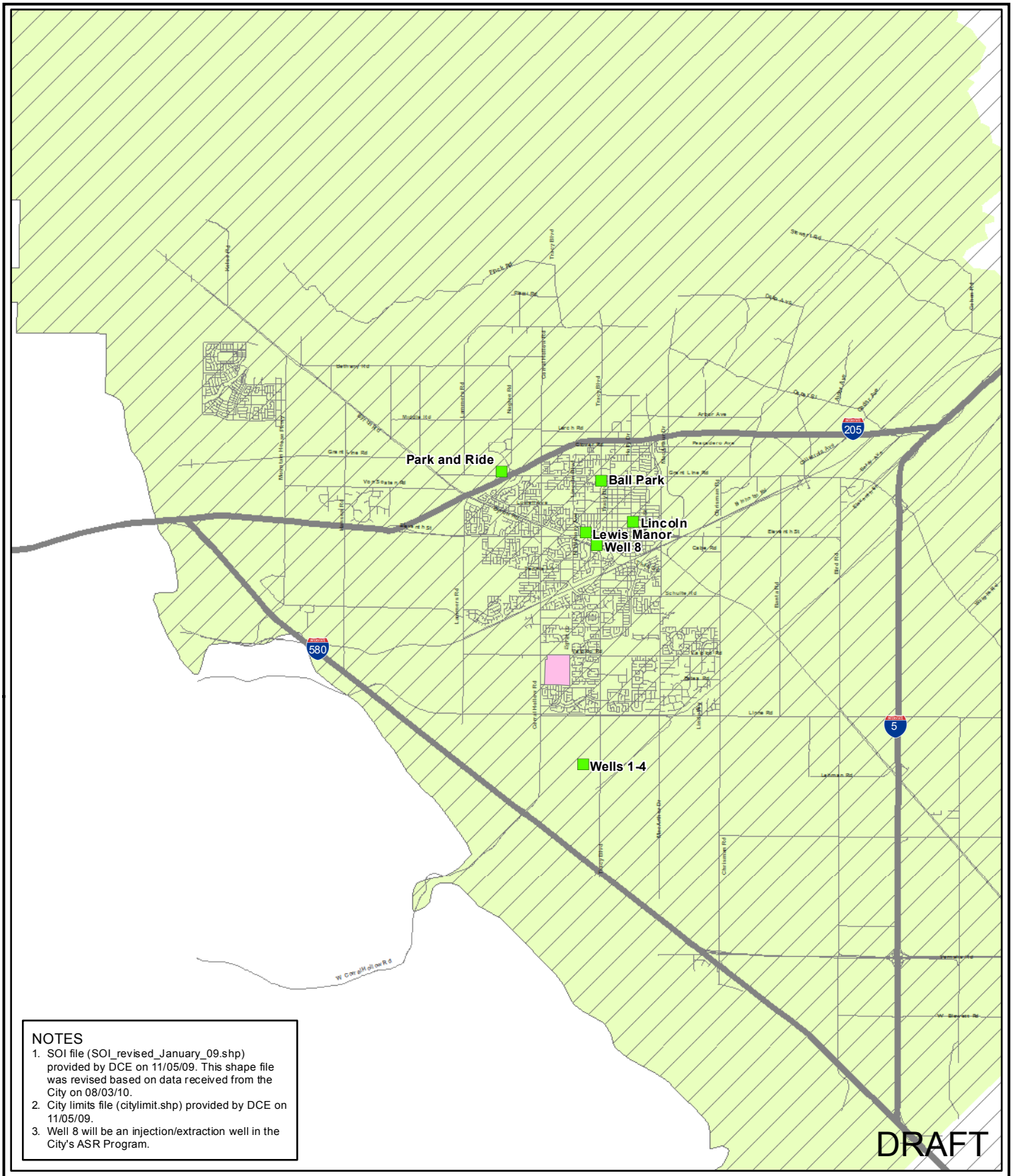


FIGURE 6-2

City of Tracy
Water Supply Assessment
for the Tracy Village Specific Plan

GROUNDWATER BASIN AND WELL LOCATIONS

WEST YOST ASSOCIATES
Consulting Engineers

Delta-Mendota Sub-basin to the south, and the Sacramento Valley Groundwater Basin to the north. The three sub-basins, not including the Sacramento Valley Groundwater Basin, are part of the San Joaquin Valley Groundwater Basin. The San Joaquin River and one of its major west side tributaries, Corral Hollow Creek, provide drainage from the Tracy Sub-basin. The San Joaquin River flows northward into the Sacramento and San Joaquin Delta and discharges into San Francisco Bay.

The Tracy Sub-basin is comprised of continental deposits of Late Tertiary to Quaternary age. These deposits include the Tulare Formation, Older Alluvium, Flood Basin Deposits, and Younger Alluvium. The cumulative thickness of these deposits increases from a few hundred feet near the Coast Range foothills on the west to about 3,000 feet along the eastern margin of the sub-basin.

Each of these formations is described below.

- The Tulare Formation is exposed in the Coast Range foothills along the western margin of the sub-basin and dips eastward toward the axis of the San Joaquin Valley. The Tulare Formation is approximately 1,400 feet thick and consists of semi-consolidated, poorly sorted, discontinuous deposits of clay, silt, and gravel. The Corcoran Clay occurs near the top of the Tulare Formation and confines the underlying fresh water deposits. The eastern limit of the Corcoran Clay is near the eastern boundary of the sub-basin. The Tulare Formation is moderately permeable, with most of the larger agricultural, municipal, and industrial wells completed below the Corcoran Clay and capable of producing up to about 3,000 gallons per minute (gpm). Smaller, domestic wells are typically completed above the Corcoran Clay, where the groundwater is often of poor quality. Specific yield values for the Tulare Formation in the San Joaquin Valley and Delta area range from 7 to 10 percent.
- The Older Alluvium is approximately 150 feet thick and consists of loosely to moderately compacted sand, silt, and gravel deposited in alluvial fans during the Pliocene and Pleistocene eras. The Older Alluvium is widely exposed between the Coast Range foothills and the Delta and is moderately to locally highly permeable.
- The Flood Basin Deposits occur in the Delta portion of the sub-basin and are the distal equivalents of the Tulare Formation and Older and Younger alluvial units. The Flood Basin Deposits consist primarily of silts and clays with occasional interbeds of gravel along the present waterways. Because of their fine-grained nature, the Flood Basin Deposits have low permeability and generally yield low quantities of water to wells. Occasional zones of fresh water are found in the Flood Basin Deposits, but they generally contain poor quality groundwater. The maximum thickness of the Flood Basin Deposits is about 1,400 feet.
- The Younger Alluvium includes those deposits that are currently accumulating, including sediments deposited in the channels of active streams, as well as overbank deposits and terraces of these active streams. The Younger Alluvium, consisting of unconsolidated silt, fine- to medium-grained sand, and gravel, is present to depths of less than 100 ft below ground surface (bgs) along the channel of Corral Hollow Creek. Sand and gravel zones in the Younger Alluvium are highly permeable and, where saturated, yield significant quantities of water to wells.

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6.1.3.3 Groundwater Level Trends

Based on records from several monitoring wells located in south-central Tracy near the City's MW-4 well cluster, water levels within the semi-confined aquifer above the Corcoran Clay are between approximately 20 and 60 feet msl (GEI, 2014) and have been generally stable over the last 15 years with no long-term trend or significant seasonal fluctuations. Groundwater flow directions in the unconfined aquifer are generally from the southeast to the north (GEI, 2014). Within the lower confined zone of the Tulare Formation, where the City's groundwater production wells are screened, water levels are monitored by six City-owned monitoring wells constructed between 2001 and 2003. Water levels in those wells have ranged between approximately 0 and negative 60 feet msl, show seasonal fluctuations of up to 20 feet, and have shown an increasing trend since 2005 due to decreased pumping from City wells. After reaching recent highs in 2012 and 2013, water levels declined in 2014. This decline may be caused by reduced recharge due to drought conditions and possibly by increased pumping (GEI, 2015). The potentiometric head in the confined aquifer is approximately 60 to 100 feet lower than in the unconfined aquifer.

6.1.3.4 Groundwater Storage

There are no published groundwater storage values for the entire sub-basin (DWR, 2006). However, Hotchkiss and Balding (1971) estimated the groundwater storage capacity for the Tracy-Patterson Storage Unit at 4,040,000 af. The Tracy-Patterson Storage Unit includes the southern portion of the currently-defined Tracy Sub-basin, from approximately one-mile north of Tracy to the San Joaquin-Stanislaus County line. Since the Tracy Sub-basin comprises roughly one-third of the Tracy-Patterson Storage Unit, it can be inferred that the approximate storage capacity of the Tracy Sub-basin is on the order of 1,300,000 af.

6.1.3.5 Conditions of Overdraft

The Tracy Subbasin has not been designated by DWR as being in a condition of critical overdraft. In an eight-year study conducted by Stoddard & Associates (1996), the average change in the entire sub-basin storage was approximately negative 13,000 af/yr. Stoddard & Associates (1996) noted that rainfall during the study period was well below average, thus they inferred that the Tracy Subbasin was in a hydrologically-balanced condition and not overdrafted[10].

As part of the California Statewide Groundwater Elevation Monitoring (CASGEM) Program, DWR is required to prioritize California groundwater basins in order to help identify, evaluate, and determine the need for additional groundwater level monitoring. Per the current CASGEM prioritization, finalized in June 2014, the Tracy Subbasin is a medium priority subbasin.

Additionally, the Sustainable Groundwater Management Act directs DWR to identify groundwater basins and subbasins that are in conditions of critical overdraft. This designation is determined based upon the presence of "undesirable impacts" such as seawater intrusion, land subsidence, groundwater depletion, and chronic lowering of groundwater levels. Per DWR's current list of critically overdrafted basins, finalized in January 2016, the Tracy Subbasin is not designated as a

[10] Page 63, City of Tracy 2015 Urban Water Management Plan, prepared by Erler & Kalinowski, Inc., May 2016.

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critically overdrafted basin. However, the Delta-Mendota Subbasin and the Eastern San Joaquin, which border the Tracy Subbasin to the south and to the east, respectively, have been designated as being in conditions of critical overdraft.

6.1.3.6 Groundwater Yield

A 1990 Kennedy/Jenks/Chilton (K/J/C) study estimated a perennial groundwater yield of 6,700 af/yr in the Tracy Sub-basin within the Tracy Study Area. However, in 2001, to determine if additional groundwater resources were available in the Tracy Study Area, the City conducted an updated groundwater analysis. The Estimated Groundwater Yield Study, prepared by Bookman-Edmonston Engineering provided an evaluation of potential groundwater yield and determined that a 2,300 af/yr increase of the average annual operational groundwater yield above the groundwater yield recommended in the 1990 K/J/C study could be provided within the estimated safe yield of the Tracy Sub-basin in the Tracy Study Area, without adverse impact to groundwater resources or quality in the Tracy Study Area over a 50-year timeframe. This expansion of groundwater usage to 9,000 af/yr would be within the City's estimated 22,000 af/yr share of the aquifer's estimated total safe yield of 28,000 af/yr (total includes City groundwater usage as well as groundwater usage within West Side Irrigation District, Naglee-Burk Irrigation District, Plain View Water District (now part of the Byron Bethany Irrigation District), and Banta-Carbona Irrigation District). It was also estimated that this expansion of groundwater usage would result in a groundwater level drop of 10 feet, but would stabilize at this level.

In 2015, the City hired GEI to perform an assessment on what the effects would be if the City were to pump between 16,000 and 22,000 AFY for a single year to meet its demands during a drought emergency when no surface water supplies were available. The assessment considered potential impacts on groundwater levels, groundwater quality, and land subsidence. GEI's approach to this assessment was to estimate drawdown beneath the City, including drawdown caused by well interference, under scenarios wherein all of the City's wells were pumped for a single year at rates needed to meet the above stated demands. Drawdown estimates were made using analytical methods and aquifer hydraulic property data from pumping tests performed at two of the City's wells. Results showed that the City does have capacity to pump its wells to meet these single dry year demands, but that drawdown in the City wells and at locations proximate to the City would exceed that which has been historically observed. GEI (2015) estimated that groundwater levels would recover from their drawdown within approximately seven years.

6.1.3.7 Groundwater Quality

Groundwater quality in the Tracy Sub-basin varies spatially and with depth. In general, the northern part of the Tracy Sub-basin is characterized by a sodium water type, and the southern part of the Sub-basin is characterized by calcium-sodium water type (Sorenson, 1981). The northern part of the Tracy Sub-basin is also characterized by a wide range of anionic water types, including bicarbonate; chloride; and mixed bicarbonate-chloride. Major anions in the southern part of the Tracy Sub-basin include sulfate-chloride and bicarbonate-chloride.

There is also a difference between the water quality in the water-bearing zones above the Corcoran Clay (termed the "semi-confined aquifer") and below the Corcoran Clay (termed the "confined aquifer"). Generally, the water quality of the confined aquifer is better than that of the

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semi-confined aquifer (Stoddard & Associates 1996). Total dissolved solids (TDS) concentrations in well water sampled in the semi-confined aquifer ranged between 1,000 milligrams per liter (mg/L) and 1,500 mg/L, while the measured TDS in the City's production wells in the confined aquifer are in the range of approximately 500 to 900 mg/L (GEI, 2015).

Constituents present at elevated concentrations throughout the Tracy Sub-basin in both the semi-confined and confined aquifers include chloride, nitrate, sulfate, and boron. Elevated chloride occurs in several areas near Tracy and along the San Joaquin River. Areas of elevated nitrate occur in the northwestern part of the Tracy Sub-basin and in the vicinity of Tracy. Elevated boron occurs over a large portion of the Sub-basin from south of Tracy extending to the northwest side of the Tracy Sub-basin. Sulfate concentrations of up to 500 mg/L have been detected in Tracy Sub-basin groundwater. The groundwater near Tracy is considered to be very hard (Stoddard & Associates, 1996).

6.1.3.8 Groundwater Management

The 1992 Groundwater Management Act, AB 3030, established provisions by which local water agencies could develop and implement groundwater management plans (GMPs). GMPs are generally designed to prevent local and regional aquifer overdrafting, which reduces available groundwater resources and which, under certain conditions, can lead to degradation of water quality and to land subsidence. The City has been, and continues to be, involved in both regional and local groundwater management efforts.

6.1.3.8.1 Groundwater Management Plan for the Northern Agencies in the Delta-Mendota Canal Service Area and a Portion of San Joaquin County

In 1996, the City adopted the Northern Delta-Mendota Canal Groundwater Management Plan pursuant to Water Code Sections 10750 et seq., also known as AB 3030. The plan was developed in coordination with other DMC northern agencies, including: BCID, BBID, Del Puerto Water District, Patterson Irrigation District, West Stanislaus Irrigation District, WSID, San Joaquin County, and the City of Tracy. The 1996 GMP included information on groundwater levels and quality, conjunctive management of groundwater and surface water resources, and measures to protect groundwater resources within the plan area.

In 2011, the GMP was revised to include additional information to comply with new provisions adopted by the State Legislature which included:

- The DWR to establish a priority schedule for monitoring groundwater basins and elevation reports as well as issuing recommendations to local entities to improve water quality;
- Permit local entities to determine best methods of groundwater monitoring to meet local demand;
- The DWR to implement groundwater monitoring if local agencies fail to do so. This will result in loss of eligibility for State grant funds.

DRAFT

6.1.3.8.2 San Joaquin County Groundwater Export Ordinance

Occasional drought conditions and ongoing restrictions on Delta export pumping have reduced the imported CVP surface water supply available to entities located south of the Delta that rely on CVP water (Stoddard, 1996). Arrangements for water transfers between entities that receive CVP water were developed to allocate the reduced CVP supply to match demand, including pumping of groundwater into the DMC for conveyance and use in other areas. This additional groundwater extraction, for the purpose of selling it to other CVP users, raised concerns amongst sub-basin groundwater users regarding groundwater overdraft and quality degradation. In response to these concerns, San Joaquin County enacted a Groundwater Export Ordinance in June 2000 that now requires an entity to secure a permit from San Joaquin County prior to exporting groundwater out of the County (such as by pumping extracted groundwater into the DMC for conveyance to other areas).

6.1.3.8.3 City Groundwater Management Policy and Mitigated Negative Declaration for City Groundwater Production of 9,000 af/yr

On a local level, in 2001, the City adopted a Groundwater Management Policy, and prepared a Groundwater Management Policy Mitigated Negative Declaration. The Groundwater Management Policy and the Groundwater Management Policy Mitigated Negative Declaration are described below.

In 2001, the City anticipated that, to make up a projected temporary shortfall between supply and demand, groundwater extraction would have to increase from approximately 6,000 af/yr to a maximum of 9,000 af/yr over the three-year period from 2001 through 2004. Prior to 2001, the City used 6,700 af/yr as an estimated maximum groundwater extraction rate (K/J/C, 1990). However, the 2001 Estimated Groundwater Yield Study by Bookman-Edmonston, revised the estimated average annual operational groundwater yield to 9,000 af/yr. This operational yield, though larger than the earlier estimate, is within the City's estimated 22,000 af/yr share of the aquifer's estimated total safe yield of 28,000 af/yr (total includes City groundwater usage as well as groundwater usage within West Side Irrigation District, Naglee-Burk Irrigation District, Plain View Water District (now part of the Byron Bethany Irrigation District), and Banta-Carbona Irrigation District).

Pursuant to the findings of the 2001 Bookman-Edmonston study, the City of Tracy adopted a Groundwater Management Policy in 2001 that established the City's maximum annual groundwater extraction rate of 9,000 af/yr on a continuous basis. To comply with CEQA and to evaluate the potential negative effects of increased groundwater extraction on water quality, water levels, and subsidence, the City also prepared a Groundwater Management Policy Mitigated Negative Declaration. The Groundwater Management Policy Mitigated Negative Declaration specifies the frequency and type of monitoring and reporting the City must conduct to evaluate the sustainability of the increased groundwater extraction rate.

Consistent with the Groundwater Management Policy Mitigated Negative Declaration, the City has maintained groundwater production rates well below the maximum annual groundwater extraction rate of 9,000 af/yr. In addition, the City hired Bookman to monitor the impacts of groundwater extraction on groundwater levels, groundwater quality, and land subsidence.

DRAFT

Bookman's most recent Mitigation Monitoring Report dated January 23, 2009 covering the period from November 2007 through November 2008 includes well production data, water quality data, hydrographs, and groundwater contour maps for the City's production and monitoring wells. As described in the report, there is no indication that pumping by the City is significantly or adversely affecting groundwater levels or water quality at this time. In fact, the report shows that groundwater levels in the City's wells have increased over the last couple of years, likely as a direct result of decreased groundwater pumpage by the City since 2005.

6.1.3.8.4 Tracy Regional Groundwater Management Plan (Regional GMP)

In addition to participating in the development of the Tracy Sub-basin GMP, in 2005 the City was awarded a DWR grant for approximately $185,000 to prepare a Tracy Regional Groundwater Management Plan (Tracy Regional GMP) for the portion of the Tracy Sub-basin that underlies the City of Tracy. The Tracy Regional GMP was completed in March 2007. A key objective of the Tracy Regional GMP was the development of Basin Management Objectives (BMOs) for groundwater levels, groundwater quality, and land subsidence in the region.

Links to the Tracy Regional GMP are provided in Appendix B.

6.1.3.9 Historical Groundwater Use

As discussed previously, the City currently operates nine groundwater extraction wells (see Figure 6-2):

- Well 1 (at JJWTP)
- Well 2 (at JJWTP)
- Well 3 (at JJWTP)
- Well 4 (at JJWTP)
- Lincoln Well
- Well 5 (Lewis Manor Well)
- Well 6 (Ball Park Well)
- Well 7 (Park & Ride Well)
- Well 8 (for ASR)

The City's newest well, Well 8, was constructed in January 2004 and was permitted by the California Department of Public Health[11] for use as a municipal production well in September 2010, and was used as an ASR demonstration well during 2011, 2012 and 2013, In November 2013, the City received authorization from the Central Valley Regional Water Quality Control Board (RWQCB) to operate Well 8 as an ASR well (see discussion under *Section 6.2.3 Aquifer Storage and Recovery*).

Historically, groundwater has accounted for up to 50 percent of the City's water supply. Prior to 2001, groundwater extraction in Tracy totaled less than 6,000 af/yr. Between 2001 and 2004, to meet increased demands for water, Tracy began extracting additional groundwater, ranging from 6,878 to 7,717 af/yr. In 2005, groundwater extraction decreased to approximately 6,000 af/yr because: (1) the SCWSP was completed and Tracy began receiving Stanislaus River water, and

[11] As of July 1, 2014, the State's administration of the Drinking Water Program transferred from the State Department of Public Health to the State Water Resources Control Board (SWRCB) Division of Drinking Water (DDW).

(2) rainfall was above normal, meaning that Tracy received a high percentage of its DMC/CVP contractual entitlements. From 2006 through 2010 groundwater extraction ranged from 3,672 to 498 af/yr, declining as more water was used from SSJID. From 2012 through 2016, the average net groundwater production by the City was 522 af/yr. The City's groundwater production over the last five years is provided in Table 6-2.

Table 6-2. City of Tracy Historical Groundwater Production

	2012	2013	2014	2015	2016
Total Groundwater Production, af/yr	252	515	680	519	648

Source: City of Tracy 2015 UWMP, Table 5-1 Current and Historical Potable Water Supply, May 2016; City of Tracy 2016 Water Production Data

Other groundwater users in the Tracy area include the West Side Irrigation District, Naglee-Burk Irrigation District, Plain View Water District (now the Byron Bethany Irrigation District), Banta-Carbona Irrigation District. Although current groundwater pumpage by these users was not available for inclusion in this WSA, the 2001 Estimated Groundwater Yield Study, which established the City's estimated groundwater yield of 9,000 af/yr, considered the cumulative groundwater usage in the study area by the City and other users in the Tracy area.

6.1.3.10 Projected Future Groundwater Use

An assessment of the aquifer beneath the City indicates that there is an average annual operational yield of 9,000 af/yr (Bookman-Edmonston, 2001). Since the hard, high-TDS groundwater is of lower quality than the City's surface water sources, the City has scaled back its groundwater extraction in most years. However, Tracy will continue to rely on groundwater for peaking and drought and emergency supplies, among other things. Table 6-3 shows the anticipated future groundwater production during a normal year and during dry years.

As can be seen in Table 6-3, the City anticipates that total extraction during a normal year will decrease to less than 2,500 af/yr through the planning horizon. By reducing groundwater extraction on an average annual basis, the City will: (1) increase the overall quality of its drinking water, thus increasing customer satisfaction and reducing system maintenance and repair caused by the lower-quality groundwater; and (2) recharge the underlying aquifer, effectively increasing the availability of groundwater during a drought or emergency condition (i.e., Tracy will effectively be "banking" its groundwater). At the production volumes shown in Table 6-3, the City's groundwater supplies are considered to be 100 percent reliable.

The projected uses of groundwater during droughts shown in Table 6-3 are consistent with Tracy's Groundwater Management Policy (PMC, 2001). In the event that the City is unable to secure additional high quality surface water supplies in the future, the City is able to expand groundwater production up to 9,000 af/yr. In the event of a severe water supply shortage or emergency the City has the ability to increase production dramatically, up to 22,000 af/yr (GEI, 2015).

DRAFT

Table 6-3. City of Tracy Projected Future Groundwater Production in Normal and Dry Years

	2015	2020	2025	2030	2035
Total Groundwater Production During a Normal Year, af/yr	2,500	2,500	2,500	2,500	2,500
Total Groundwater Production During Dry Years, af/yr[(a)]	9,000	9,000	9,000	9,000	9,000

Source: City of Tracy 2015 UWMP, Table 5-2 Current and Projected Potable Water Supply Entitlements, May 2016.

(a) The City is able to withdraw up to 9,000 AF of groundwater from the Subbasin. During multiple dry years, the City anticipates increasing its normal year groundwater production of 2,500 af/yr by 6,500 af/yr (i.e., the City's dry year supply), providing a total groundwater supply of 9,000 af/yr.

6.1.3.11 Groundwater Sufficiency

The City's 2015 UWMP addressed the sufficiency of the City's groundwater supplies, in conjunction with the City's other existing and additional water supplies, to meet the City's existing and planned future uses[12]. Based on the information provided above and that included in the City's 2015 UWMP, the City's groundwater supply, together with the City's other existing and additional planned future water supplies, is sufficient to meet the water demands of the Proposed Project, in addition to the City's existing and planned future uses.

As discussed above, the City's use of groundwater over the last few years has significantly declined, primarily due to the availability of new high-quality surface water supplies from the SCWSP. In the future, although the City can sustainably extract up to 9,000 af/yr of groundwater on a continuous basis, the City's use of groundwater under normal hydrologic conditions is anticipated to decrease even further, as additional high-quality surface water supplies become available. As shown in Table 6-3, in the future, assuming normal year hydrologic conditions, annual groundwater use is anticipated to be 2,500 af/yr. This anticipated future groundwater pumpage is significantly below the City's maximum historical groundwater pumpage (see Figure 6-1) and the average annual operational yield of 9,000 af/yr.

6.1.4 Surface Water from BBID Pre-1914 Water Rights

A portion of the land area included in the Tracy Hills Specific Plan was annexed into the BBID in 1999 and is entitled to water service from BBID as part of BBID's pre-1914 appropriative water rights. The City anticipates that up to 4,500 af/yr of the BBID pre-1914 water will be available to the City as the Tracy Hills Development is built and this area begins to experience potable water demand. Use of this water, however, is limited to the area of Tracy Hills included in BBID's service area; this area is referred to as the BBID Raw Water Service Area 2. The agreement between the USBR and BBID that enables the City to receive this water further limits

[12] Chapter 6, City of Tracy 2015 Urban Water Management Plan, May 2016.

use of BBID pre-1914 water to the CVP Consolidated Place of Use (CPOU).[13] Therefore, the volume of water that will be available to the City is equal to the potable water demand that will occur within the portion of BBID that is within Raw Water Service Area 2 and the CVP CPOU. Based on the projected potable water demands in this area, the City anticipates that up to 2,430 af/yr of BBID pre-1914 water will be available by 2035.

6.1.5 Semitropic Groundwater Storage Bank

The City has acquired the rights to store and recover water in the Semitropic Groundwater Storage Bank (Semitropic) operated by the Semitropic Water Storage District (Semitropic WSD). The Semitropic facilities are located in Kern County alongside the California Aqueduct and the DMC. The first phase of Semitropic was initiated in the early 1990s and established one million AF of storage for a group of agencies referred to as the Original Banking Partners. In response to increased demand for banking capacity, up to 650,000 AF of additional storage was created for the Stored Water Recovery Unit (SWRU). When an agency purchases storage capacity in Semitropic, it is able to recover the volume of water it has banked over a period of three consecutive years (i.e., 3,000 AF equates to a maximum recovery rate of 1,000 af/yr for three years).

In 2012, the City entered into a long-term agreement with Semitropic WSD for up to 10,500 AF of storage volume.[14] This storage agreement allows the City to withdraw up to 3,500 AF of water annually for three years. To store water in Semitropic, the City withdraws less than its available allocation of CVP water from the DMC. This water travels through the DMC where it is diverted by Semitropic and used for local groundwater recharge. When the City wishes to withdraw water that it has banked previously, Semitropic arranges for the City to divert CVP water beyond its allocation from the DMC. This source of water is provided through either an exchange of Semitropic WSD's contractual entitlement to SWP water or through direct "pumpback" of stored groundwater into the California Aqueduct by Semitropic WSD.

Though the City could utilize this supply in any year, it is most valuable during drought years when the City's surface water supplies are reduced. The City anticipates that banking water at Semitropic will increase the reliability of the City's water supply and help close the potential future gap between supply and demand during drought conditions or other water shortage emergencies. If the City uses water from the Semitropic water bank in any given year, it would manage its supplies during subsequent years such that it could refill the water bank for future use.

The City's ability to access this water was previously considered highly reliable, but this assumption has been revised in light of the City's experiences during the recent drought. As the drought intensified in 2015, the City was unable to access CVP water that had been stored in the San Luis Reservoir. In order to access water stored in the San Luis Reservoir, which is fed by the

[13] Long Term Contract between the United States and Byron Bethany Irrigation District Providing for the Exchange of Non-Project Water for Project Water, dated April 2014

[14] "Agreement Between City of Tracy and Semitropic Water Storage District and Its Improvement Districts for Participation in the Stored Water Recovery Unit of the Semitropic Water Banking and Exchange Program" dated November 2012.

DMC and is located downstream from the City, the City has historically diverted CVP water from the DMC upstream of the reservoir. However, due to flow restrictions in the DMC imposed by the USBR, the City was unable to divert water from the DMC and access its stored water. In July 2015, the City participated in an emergency project with other CVP contractors in the region to reverse the flow of the DMC and pump water back from the San Luis Reservoir.[15]

In order to withdraw previously banked water from Semitropic, the City will need to divert CVP water from the DMC. The Semitropic water supply will only be used during dry years, so this withdrawal will frequently occur during a period where CVP supplies are stressed. Given the City's experience with the emergency pumpback project in 2015, the ability to access Semitropic water in a time of water shortage may be restricted by the operational requirements of the DMC.

In the City's 2015 UWMP, the City conservatively assumes that Semitropic water will be inaccessible during a single dry year and during the first year of a multiple dry year period. Because the City has demonstrated an ability to access banked water when necessary, the City assumes that its Semitropic water supply will be available in the second and third years of a multiple dry year period through water exchanges and transfers or through a physical solution such as the 2015 emergency pumpback project. In Multiple Dry Years 2 and 3, the supply reliability of Semitropic is projected to be 100 percent.

6.1.6 Aquifer Storage and Recovery

The City's ASR Program allows the City to optimize conjunctive use of its water supplies through injection of surplus treated (potable) drinking water into selected aquifer zones within the groundwater sub-basin for storage when surplus supplies are available, and recovery of that potable water from the aquifer to optimize water quality and meet seasonal peak demands during drought periods, or when emergency or disaster scenarios preclude the use of imported water supplies.

In January 2004, the City constructed a new well (Well 8) that was designed to allow for both injection and extraction of water supplies in conjunction with the City's proposed ASR Program. In early 2009, the City contracted to construct the above-ground well facilities (including the pump house, pump, motor, SCADA, electrical, telemetry, chemical feed systems, *etc.*) to have Well 8 operational in September 2010, initially as an extraction well, and in the future as part of the City's proposed ASR Program. In addition, the City has already installed two monitoring wells for use in the demonstration project monitoring and testing for the proposed ASR Program.

The City obtained regulatory approval from the Central Valley RWQCB to conduct an ASR Demonstration Testing Program. The Phase 1 ASR Demonstration Testing was conducted between January 2011 and September 2011 and involved the injection of 233 acre-feet (76 million gallons) of treated SSJID potable water, storage in the confined aquifer and subsequent extraction of

[15] The emergency pumpback project was a collaborative effort between the City, DPWD, WSID, PWD, BCID, and BBID. Over July and August of 2015, the project pumped over 4,000 AF of DMC/CVP water north using three portable pumps installed at checks along the DMC. The pumps were removed and normal flows in the DMC resumed on September 2, 2015.

340 acre-feet (111 million gallons) of water[16]. The Phase 2 ASR Testing was initiated in late December 2011 and was completed in September 2012 with injection of 700 acre-feet. The Tracy City Council approved and adopted a CEQA Negative Declaration (SCH No. 2012102013) for the permanent ASR Program on December 4, 2012.

Injection of SCWSP water into the ASR well occurs during the winter months (i.e., November through April), when City demands are low. Extraction occurs primarily in the summer months to meet increased demands associated with irrigation needs, and as needed during droughts and water shortage emergencies. It is estimated that between 685 and 915 af/yr of potable water could be injected into the aquifer, assuming a 5-month continuous injection rate of 1.5 to 2.0 mgd at Well 8. The City's strategic plan for ASR operations at Wells involves injecting up to 1,000 af/yr over six months during the winter and extracting 75 percent of the injection volume during the following summer. These operations would result in net injection into the Lower Tulare Formation aquifer, which will gradually create a "buffer supply" that the City can utilize in dry years or during water shortage emergencies. Annual net injection/extractions from Well 8 since 2013 are shown below:

- 2013: 415 af injected (net)
- 2014: 221 af extracted (net)
- 2015: 315 af injection (net)
- 2016: 165 af injection (net)

The ASR Program will be implemented in stages as new ASR wells are constructed. While the City previously anticipated that 3,000 af/yr of ASR supplies would be available as part of the ASR Program, the City has revised this assumption. In the City's 2015 UWMP, the City conservatively projects that up to 1,000 af/yr of groundwater will be available for extraction from buffer storage in the Lower Tulare Formation aquifer associated with the ASR Program. During normal years, the City will not withdraw ASR water. In single dry years and multiple dry years, this water supply is considered to be 100 percent reliable. The ASR supply will be available to meet demands in dry years, thereby increasing the reliability of the City's water supply and closing the potential future gap between supply and demand during drought conditions or water shortage emergencies.

6.2 Additional Planned Future Potable Water Supplies

In addition to the City's existing potable water supplies described above, the City has a number of additional planned future potable water supplies to meet the City's existing and projected future water demands, including those associated with the Proposed Project. The inclusion of planned future water supplies in this WSA is specifically allowed by the Water Code:

> *Water Code section 10631(b): Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments described in subdivision (a).*

[16] Interim (Final) Status Report for Well 8 ASR Demonstration Program, Memorandum prepared for City of Tracy by Pueblo Water Resources, dated December 7, 2011.

DRAFT

The City is currently anticipating the following additional planned future potable water supplies in the future:

- BBID CVP supplies; and
- Additional SCWSP supplies.

These additional planned future water supplies are described below. Summary tables listing the City's existing and additional planned future water supplies, and historical and anticipated future quantities are provided in Section 6.5.

6.2.1 BBID Central Valley Project Supplies

The City anticipates that BBID DMC/CVP water supplies will be available to the City as agricultural land is converted to other uses. The land area that could potentially provide this additional water supply includes the portion of BBID's service area that falls within the City's planning areas (excluding the BBID Raw Water Service Area 2). Eligible land area is estimated to be approximately 2,600 acres. While the exact quantity of water that would be available is unknown, the City believes that a contractual entitlement equal to 3.4 af/yr/acre may be available. Therefore, the City anticipates that this additional BBID DMC/CVP water supply will become available to the City in 2020 and then gradually increase up to 8,800 af/yr (2,600 acres x 3.4 af/yr/acre) by 2040. Agreements between Tracy, BBID and the USBR, as well as environmental compliance, would need to occur before such a transaction could take place.

6.2.2 Additional SCWSP Supplies

The City is anticipating that an additional 1,880 af/yr of treated water supplies will be available from the SCWSP in the future through a Conserved Water Amendment Agreement. This additional supply would have the same high reliability as the supply that the City is currently receiving from the SCWSP, including that recently purchased from the City of Lathrop. Delivery of these additional supplies to the City would be through the same, existing facilities currently delivering the City's existing SCWSP supplies. Delivery of these additional supplies will be subject to approval and environmental review. The City anticipates that these additional supplies will be available by 2035.

The agreement associated with the additional SCWSP supplies has precedent, as the City and SSJID have previously successfully negotiated water supply agreements that are currently in place (see Section 6.1.2 Stanislaus River Water). The City will continue to work with SSJID to secure these additional supplies.

6.3 Additional Planned Future Non-Potable Water Supplies

6.3.1 Recycled Water

In 2002, the City adopted a Recycled and Non-Potable Water Ordinance requiring all new subdivisions, to the extent practicable, to install the required infrastructure (such as dual-distribution pipelines) to provide recycled water to meet non-potable water demands at parks, golf courses,

DRAFT

athletic fields, schools, median island landscapes, and industrial sites. The ordinance was codified into the Tracy Municipal Code as Chapter 11.30 "Recycled and Non-Potable Water".

In 2012, the Citywide Water System Master Plan and Tracy Wastewater Master Plan were completed. Both plans included recommended capital improvement projects for the development of the City's recycled water system, including facilities to deliver recycled water to the Proposed Project. To date, the City has spent approximately $85 million on improvements to the City's Wastewater Treatment Plant to allow for the plant to produce tertiary-treated wastewater meeting Title 22 requirements for recycled water use for landscape irrigation and other non-potable uses. In December 2013, the City adopted Development Impact Fees to fund recycled water infrastructure improvements. In 2015, the City received a $18 million Proposition 84 grant funding from DWR to fund construction of pump stations and pipelines to distribute recycled water.

In March 2013, the City adopted Ordinance 1183 amending Chapter 11.30 of the Tracy Municipal Code to update the City's recycled water requirements to be consistent with State, regional and local standards, including the California Water Conservation Act of 2009 (SBx7-7), 2010 California Green Building Standards Code, California Model Water Efficient Landscape Ordinance, and the City of Tracy Sustainability Action Plan. One of the key provisions of the new ordinance provides that untreated surface water supplies may be used in lieu of recycled water supplies to meet non-potable demands on an interim basis, but only until December 31, 2020.

In the City's 2015 UWMP, the City is projecting recycled water demands of 4,814 af/yr in 2040 and 7,696 af/yr at buildout of the recycled water system. Recycled water will be treated to a tertiary level in accordance with Title 22 requirements at the City's WWTP and will be distributed to recycled water use areas within the City's SOI. It is anticipated that adequate recycled water supplies will be available to meet the projected recycled water demands associated with the Proposed Project. Approvals and permits for the production, distribution and use of recycled water will be required from the RWQCB and the SWRCB Division of Drinking Water.

If recycled water infrastructure is not initially available to deliver recycled water to meet the landscape irrigation and lake demands associated with the Proposed Project, potable water supplies, if available, may be used in the interim period before recycled water becomes available.

6.4 Summary of Existing and Additional Planned Future Water Supplies

Table 6-4 provides a summary of the City's existing and additional planned future water supply entitlements. Table 6-5 provides a summary of the historical water deliveries from each of the City's water supplies. A discussion of the future anticipated availability of these existing and additional planned future water supplies during dry years is provided in the next section.

DRAFT

Table 6-4. Summary of Existing and Additional Planned Future Water Supplies

Supply	Water Supply Entitlement, af/yr	Supply Ever Used by City
Existing Water Supplies		
USBR CVP - Tracy Contract[a]	10,000	Yes
USBR CVP - BCID Contract[b]	5,000	Yes
USBR CVP - WSID Contract[c]	5,000	Yes
South County Water Supply Project (pre-1914)[d]	11,120	Yes
Groundwater[e]	2,500	Yes
BBID (pre-1914)[f]	2,430	No
Dry Year Supplies		
Semitropic Water Storage Bank[g]	3,500	Yes
Groundwater[e]	6,500	Yes
Aquifer Storage and Recovery	1,000	Yes
Additional Planned Future Water Supplies		
Additional USBR CVP (BBID contract)[h]	8,800	No
Additional SCWSP (pre-1914)[i]	1,880	No
Recycled Water[j]	7,696	No

[a] Assumes the terms of the long-term renewal contract with the USBR are consistent with those of the interim renewal contract entered into between the City and USBR in February 2016.

[b] In June 2001, the USBR approved the assignment of 5,000 af/yr of BCID's contractual entitlement to Ag-reliability CVP water.

[c] In August 2001, the USBR approved the assignment of 2,500 af/yr of WSID's contractual entitlement to Ag-reliability CVP water, with the option to purchase an additional 2,500 af/yr in the future. In December 2013, the City and WSID approved the additional assignment; the City's current assignment of WSID CVP water is 5,000 af/yr.

[d] Includes the 10,000 af/yr allocation and the additional 1,120 af/yr obtained through the 2013 Lathrop-Tracy Purchase, Sale, and Amendment Agreement.

[e] The City can sustainable extract up to 9,000 AF of groundwater on a continuous basis. During multiple dry years, the City anticipates increasing its normal year groundwater production of 2,500 af/yr by 6,500 af/yr (i.e., the City's dry year supply), providing a total groundwater supply of 9,000 af/yr.

[f] The City anticipates that up to 4,500 af/yr of BBID pre-1914 water will be available to serve the Tracy Hills development. This water is only available for use in the portion of Tracy Hills that lies within BBID Raw Water Service Area 2 the CVP Consolidated Place of Use, so the quantity of supply is equal to potable water demand in this area. Therefore, the maximum BBID supply delivered to this area is 2,430 af/yr.

[g] The City has purchased 10,500 AF of water storage in the Stored Water Recovery Unit, which allows the City to withdraw up to 3,500 af/yr for three consecutive years.

[h] The City anticipates that up to 8,800 af/yr of BBID's Ag-reliability CVP water will be available as agricultural lands are converted to other uses.

[i] The City anticipates that an additional 1,880 AF of treated water supplies will be available from the SCWSP in the future through a Conserved Water Amendment Agreement.

[j] Based on the total projected recycled water production at buildout of the City (Table 3-5 in the City's 2015 UWMP)

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Table 6-5. Historical Potable Water Supplies, af/yr[(a)]

Supply	1980	1985	1990	1995	2000	2005	2010	2015[(a)]
CVP Supplies	5,676	5,734	4,968	8,387	7,785	8,920	5,304	3,193
South County Water Supply Project (pre-1914)	0	0	0	0	0	3,146	10,850	10,329
Groundwater	1,980	2,856	5,838	4,310	6,548	5,826	498	519
BBID (pre-1914)	0	0	0	0	0	0	0	0
Semitropic Water Storage Bank	0	0	0	0	0	0	0	0
Aquifer Storage and Recovery	0	0	0	0	0	0	0	315
Total Potable Supplies	7,656	8,590	10,806	12,697	14,333	17,892	16,652	14,356

Sources: Data for 1980 to 1997 based on historical City groundwater pumpage and CVP deliveries. Data for 1998 to 2004 based on City of Tracy Annual Water Delivery Schedule. Data for 2005 to 2010 based on Table 11 of City of Tracy 2010 UWMP, May 2011. Data for 2011-2015 based on City production data.

(a) As part of the City's ASR Program, SCWSP supplies are injected into Well No. 8 for storage and later extraction. In 2015, the net injection was 315 af, so supplies used were 14,356 af – 315 af = 14,041 af.

6.5 Water Supply Availability and Reliability

Water Code section 10910 (c)(4) requires that a WSA include a discussion with regard to "whether total projected water supplies, determined to be available by the city or county for the project during normal, single dry, and multiple dry water years during a 20-year projection, will meet the projected water demand associated with the proposed project, in addition to existing and planned future uses, including agricultural and manufacturing uses." Accordingly, this WSA addresses these three hydrologic conditions through the year 2040.

Also, in response to on-going drought conditions and the State of Emergency proclaimed by Governor Brown, first in January 2014 and most recently in April 2015, this WSA provides a discussion of the availability and reliability of the City's available water supplies to meet the City's water demands in the event that the City's surface water supplies are limited under emergency water supply conditions.

The reliability of each of the City's existing and additional planned water supplies and their projected availability during normal, single dry, and multiple dry years as described in Section 6 of the City's 2015 UWMP, is described below and summarized in Table 6-6.

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Table 6-6. Water Supply Reliability in Normal, Single Dry and Multiple Dry Years

Supply Source	Anticipated Reliability (% of Entitlement)		
	Normal Years	Single Dry Years	Multiple Dry Years
Existing Water Supplies			
USBR CVP			
M&I Reliability Water (Tracy Contract)	75%	25%	40%
Ag Reliability Water (BCID & WSID Contract)	50%	0%	0%
South County Water Supply Project (pre-1914)	100%	85%	85%
Groundwater[a]	100%	100%	100%
BBID (pre-1914)	100%	85%	85%
Semitropic Water Storage Bank[b]	--	0%	67%
Aquifer Storage and Recovery	--	100%	100%
Additional Planned Future Water Supplies			
USBR CVP (BBID contract) (Ag Reliability Water)	50%	0%	0%
Additional SCWSP (pre-1914)	100%	85%	85%
Recycled Water[c]	100%	100%	100%

[a] Although the City can sustainably extract up to 9,000 af/yr of groundwater on a continuous basis, the City is planning to scale back its groundwater extraction in normal years to increase the overall quality of its water supply. With these reduced supply volumes, the groundwater resource is considered 100 percent reliable.

[b] Due to the difficulties experienced by the City in accessing stored water via the DMC, the City has conservatively assumed that 0% of the City's Semitropic water supply will be available in the first year of a multiple dry year period and 100% will be available in the second and third year. The 67% presented in this table for multiple dry years is the average value for a three-year period.

[c] Although recycled water supplies are currently available from the City's WWTP, required recycled water pipelines and pump stations to convey and deliver the recycled water to the recycled water use areas has not yet been constructed. See Section 6.3.1 of this WSA for additional information regarding the City's plan for implementation of its recycled water system.

6.5.1 Normal Years

Normal or wet water years are those water years that match or exceed median rainfall and runoff levels. The following describes the availability and reliability of the City's existing and additional planned future water supplies under normal year conditions:

- The City's contract with the USBR for 10,000 af/yr of CVP water is subject to M&I reliability. Based on the historical record, the City's long-term average allocation of DMC/CVP water pursuant to this contract is anticipated to be at least 85 percent of the total entitlement. However, due to recent environmental concerns in the Delta and potential future impacts due to climate change, the normal year reliability of CVP M&I water is assumed to be 75 percent, or 7,500 af/yr.

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- The City has received acquired assignments from BCID (5,000 af/yr) and WSID (5,000 af/yr) for a total entitlement of 10,000 af/yr of DMC/CVP water. These contracts are subject to Ag-reliability. The City is conservatively estimating that it will receive 50 percent of its Ag-reliability contractual entitlement, or 5,000 af/yr, in normal years.
- The City has a total contractual entitlement of 11,120 af/yr of Stanislaus River water provided through the SCWSP, including 10,000 af/yr from its original contract with SSJID and 1,120 af/yr purchased from Lathrop's supply entitlement. During a normal water year, the City expects to receive 100 percent, or 11,120 af/yr, of its SCWSP water supply allocation.
- The City has acquired up to 4,500 af/yr of pre-1914 appropriative water rights water from BBID. These supplies are restricted in their place of use, and therefore the total maximum use is anticipated to be 2,430 af/yr. The City anticipates being able to receive 100 percent of this supply in normal years.
- The City is able to withdraw up to 9,000 af/yr of groundwater from the Subbasin. However, due to high TDS and hardness in the City's groundwater supplies, the City is projecting to withdraw up to 2,500 af/yr in normal years.
- By 2040, up to approximately 8,800 af/yr of Ag-reliability water from BBID's DMC/CVP contract is expected to be available to the City. This additional DMC/CVP supply is expected to carry the same reliability as the City's other CVP Ag-reliability supplies. Therefore, the City projects to receive 50 percent, or 4,400 af/yr, of its additional BBID CVP water supply in normal years.
- By 2035, the City expects to receive an additional allocation of 1,880 af/yr of SCWSP water. The City expects this water to carry the same reliability as its current SCWSP water supply, and therefore projects to receive 100 percent of its additional SCWSP water supply allocation in normal years.
- The City does not anticipate using its dry year supplies of Semitropic water and ASR water in normal years.

The reliability of each of the City's existing and additional planned future water supplies and their projected availability during normal years is shown in Table 6-7. Figure 6-3 shows the City's projected future supply versus demand in normal years.

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Figure 6-3. City of Tracy Future Potable Water Supply vs. Demand in Normal Years

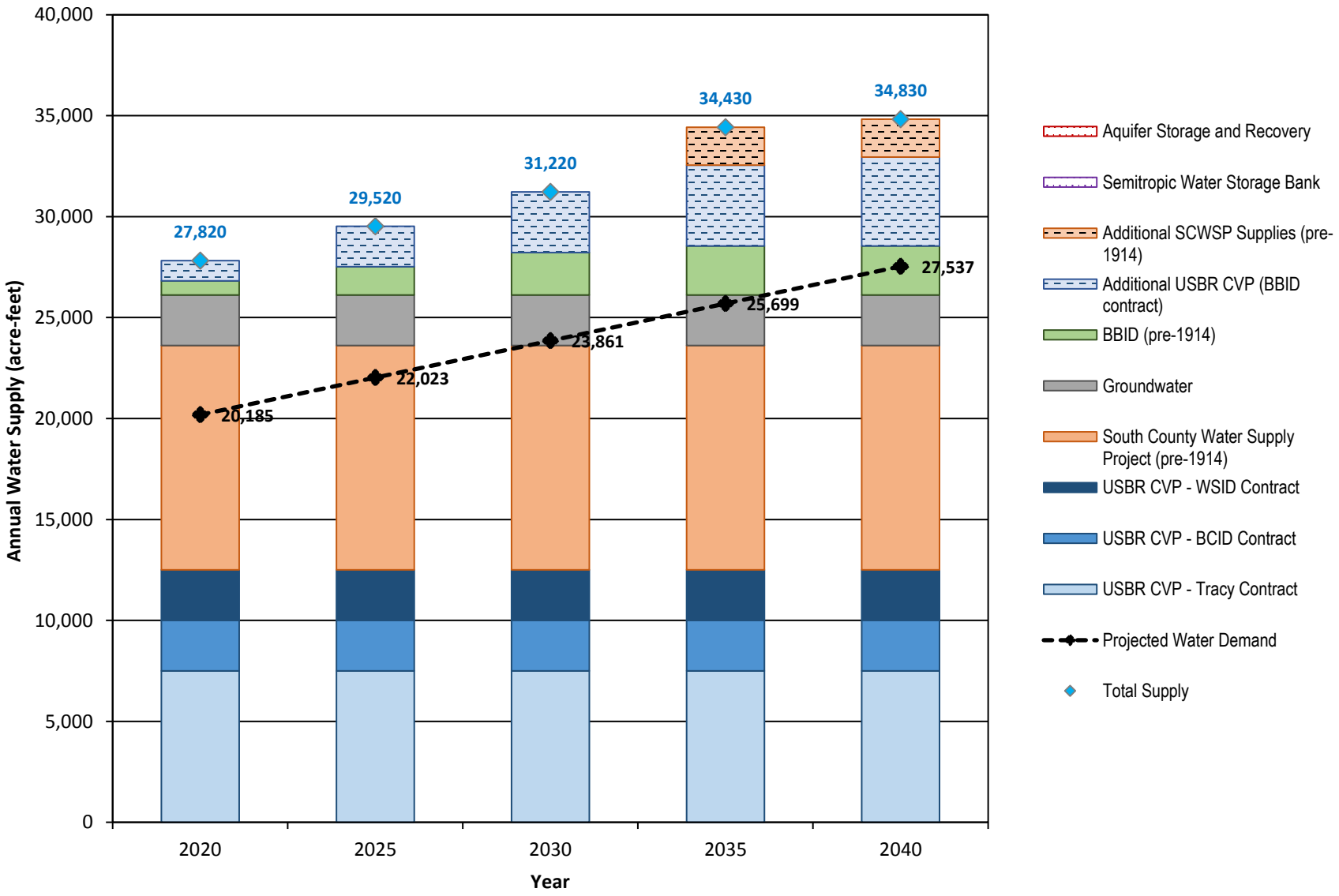


Table 6-7. Projected Existing and Additional Planned Future Water Supplies Available in Normal Years

Supply	Percent of Entitlement	Projected Future Available Supplies, af/yr				
		2020	2025	2030	2035	2040
Existing Water Supplies[a]						
USBR CVP - Tracy Contract	75%	7,500	7,500	7,500	7,500	7,500
USBR CVP - BCID Contract	50%	2,500	2,500	2,500	2,500	2,500
USBR CVP - WSID Contract	50%	2,500	2,500	2,500	2,500	2,500
Total CVP Supplies		12,500	12,500	12,500	12,500	12,500
South County Water Supply Project (pre-1914)	100%	11,120	11,120	11,120	11,120	11,120
Groundwater	100%	2,500	2,500	2,500	2,500	2,500
BBID (pre-1914)	100%	700	1,400	2,100	2,430	2,430
Semitropic Water Storage Bank	0%	0	0	0	0	0
Aquifer Storage and Recovery	0%	0	0	0	0	0
Total Existing Potable Supplies		26,820	27,520	28,220	28,550	28,550
Additional Planned Future Water Supplies[a]						
Additional USBR CVP (BBID contract)	50%	1,000	2,000	3,000	4,000	4,400
Additional SCWSP Supplies (pre-1914)	100%	0	0	0	1,880	1,880
Recycled Water (non-potable)[b]	100%	963	1,926	2,889	3,851	4,814
Total Additional Planned Future Potable Supplies		1,000	2,000	3,000	5,880	6,280
Total Potable Supplies		27,820	29,520	31,220	34,430	34,830
Total Additional Planned Future Non-Potable Supplies		963	1,926	2,889	3,851	4,814

[a] Potable water supplies from Table 6-1 of the City of Tracy 2015 UWMP, May 2016.
[b] Recycled (non-potable) water supplies from Table 3-5 of the City of Tracy 2015 UWMP, May 2016.

6.5.2 Single Dry Years

During a single dry year, or when the CVP flows must be reduced due to hydrologic and/or environmental impacts, all of the City's existing surface water allotments are subject to some level of reduction. The actual reductions will vary with the severity of the regional water supply shortage and climatic conditions, and the consideration of water and contract rights.

The following describes the availability and reliability of the City's existing and additional planned future water supplies under single dry year conditions:

- The City's contract with the USBR for 10,000 af/yr of CVP water is subject to M&I reliability. For single dry year reliability, the City has relied upon the City's actual allocations in 2015. The City anticipates receiving 25 percent, or 2,500 af/yr, of its CVP M&I reliability water in single dry years.

- The City has a total entitlement of 10,000 af/yr of CVP Ag-reliability water. For single dry year reliability in this Plan, the City has relied upon the City's actual allocations in 2015. The City anticipates receiving 0 percent of its CVP Ag-reliability water in single dry years.
- The City has a total contractual entitlement of 11,120 af/yr of Stanislaus River water provided through the SCWSP. Based on the City's experience in 2014, the City anticipates receiving 85 percent, or 9,452 af/yr, of its contractual entitlement to SCWSP water in single dry years.
- The City has acquired up to 4,500 af/yr of pre-1914 appropriative water rights water from BBID. These supplies are restricted in their place of use, and therefore the total maximum use is anticipated to be 2,430 af/yr. While the City anticipates being able to receive 85 percent of its contractual entitlement in single dry years, or 3,825 af/yr, this reduction does not result in a reduction to actual amount of water used. Therefore, the City projects that 2,430 af/yr will be available for use in single dry years.
- The City is able to withdraw up to 9,000 af/yr of groundwater from the Subbasin. During single dry years, the City anticipates increasing its normal year groundwater production of 2,500 af/yr by 6,500 af/yr (i.e., the City's dry year supply), providing a total groundwater supply of 9,000 af/yr.
- By 2040, the City expects to receive up to approximately 8,800 af/yr of CVP Ag-reliability from BBID. This additional CVP supply is expected to carry the same reliability as the City's other CVP Ag-reliability supplies. Therefore, the City projects to receive 0 percent of its additional BBID CVP water supply in single dry years.
- By 2035, the City expects to receive an additional allocation of 1,880 af/yr of SCWSP water. The City expects this water to carry the same reliability as its current SCWSP water supply, and therefore projects to receive 85 percent, or 1,598 af/yr, of its additional SCWSP water supply allocation in single dry years.
- The City anticipates that 1,000 af/yr of water will be available for use in single dry years through operation of its ASR program. This water supply is considered to be 100 percent reliable.
- The City has acquired 10,500 af/yr of storage in Semitropic, which allows the City to withdraw up to 3,500 af/yr for three consecutive years. Due to the difficulties experienced by the City in accessing stored water via the DMC, the City has conservatively assumed that 0 percent of Semitropic water will be available in single dry years.

The reliability of each of the City's existing and additional planned future water supplies and their projected availability during a single dry year is shown in Table 6-8. Figure 6-4 shows the City's projected future supply versus demand in single dry years.

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Figure 6-4. City of Tracy Future Potable Water Supply vs. Demand in a Single Dry Year

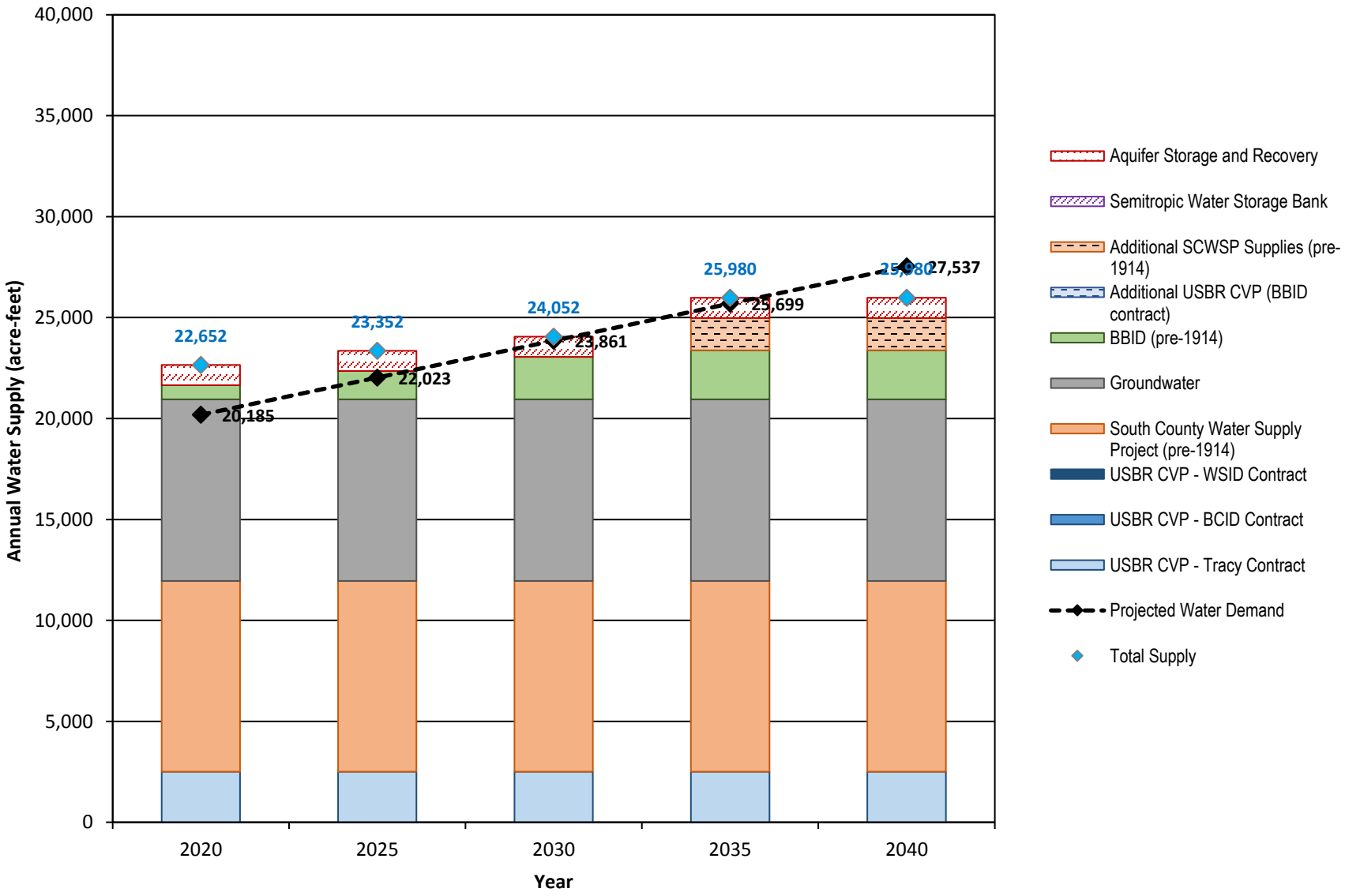


Table 6-8. Projected Existing and Additional Planned Future Water Supplies Available in Single Dry Years

Supply	Percent of Entitlement	Projected Future Available Supplies, af/yr				
		2020	2025	2030	2035	2040
Existing Water Supplies						
USBR CVP - Tracy Contract	25%	2,500	2,500	2,500	2,500	2,500
USBR CVP - BCID Contract	0%	0	0	0	0	0
USBR CVP - WSID Contract	0%	0	0	0	0	0
Total CVP Supplies		2,500	2,500	2,500	2,500	2,500
South County Water Supply Project (pre-1914)	85%	9,452	9,452	9,452	9,452	9,452
Groundwater	100%	9,000	9,000	9,000	9,000	9,000
BBID (pre-1914)	85%	700	1,400	2,100	2,430	2,430
Semitropic Water Storage Bank	0%	0	0	0	0	0
Aquifer Storage and Recovery	100%	1,000	1,000	1,000	1,000	1,000
Total Existing Potable Supplies		22,652	23,352	24,052	24,382	24,382
Additional Planned Future Water Supplies						
Additional USBR CVP (BBID contract)	0%	0	0	0	0	0
Additional SCWSP Supplies (pre-1914)	85%	0	0	0	1,598	1,598
Recycled Water (non-potable)	100%	963	1,926	2,889	3,851	4,814
Total Additional Planned Future Potable Supplies		0	0	0	1,598	1,598
Total Potable Supplies		22,652	23,352	24,052	25,980	25,980
Total Additional Planned Future Non-Potable Supplies		963	1,926	2,889	3,851	4,814

(a) Potable water supplies from Table 6-2 of the City of Tracy 2015 UWMP, May 2016.
(b) Recycled (non-potable) water supplies from Table 3-5 of the City of Tracy 2015 UWMP, May 2016.

6.5.3 Multiple Dry Years

If there are multiple dry years, the City's surface water allotments, especially from the CVP, may be significantly reduced. Thus, in the event of drought, the City will have to depend more heavily on conservation efforts, groundwater, SCWSP supplies and other drought contingency supplies (previously banked water). As an example, in 1991, due to prolonged drought, the USBR reduced the City's CVP surface water allotment by 50 percent, such that the City's 1991 allocation was reduced to 5,000 acre-feet. As a result, the City implemented a water conservation program consistent with its Water Shortage Contingency Plan and relied on its groundwater supply to satisfy a larger portion of the City's water demand. The City now has a broader portfolio of water supplies, so even with 0 percent deliveries from the City's USBR CVP agricultural supplies in 2014, the diversity of the City's water supply portfolio together with water conservation efforts by the City's customers has allowed for the City to meet all water demands.

The following describes the availability and reliability of the City's existing and additional planned future water supplies under multiple dry year conditions:

- The City's contract with the USBR for 10,000 af/yr of CVP water is subject to M&I reliability. For multiple dry year reliability, the City has relied upon the average of the City's actual allocations in 2014 and 2015 and its initial allocation for 2016. The City anticipates receiving 40 percent, or 4,000 af/yr, of its CVP M&I-reliability water in multiple dry years.
- The City has a total entitlement of 10,000 af/yr of CVP Ag-reliability water. For multiple dry year reliability, the City has relied upon the average of the City's actual allocations in 2014 and 2015 and its initial allocation for 2016. The City anticipates receiving 0 percent of its CVP Ag-reliability water in multiple dry years.
- The City has a total contractual entitlement of 11,120 af/yr of Stanislaus River water provided through the SCWSP. Based on the City's experience during the recent drought, the City conservatively projects to receive 85 percent, or 9,452 af/yr, of its contractual entitlement to SCWSP water in multiple dry years.
- The City has acquired up to 4,500 af/yr of pre-1914 appropriative water rights water from BBID. These supplies are restricted in their place of use, and therefore the total maximum use is anticipated to be 2,430 af/yr. While the City anticipates being able to receive 85 percent of its contractual entitlement in multiple dry years, or 3,825 af/yr, this reduction does not result in a reduction to actual amount of water used. Therefore, the City projects that 2,430 af/yr will be available for use in multiple dry years.
- The City is able to withdraw up to 9,000 af/yr of groundwater from the Subbasin. During multiple dry years, the City anticipates increasing its normal year groundwater production of 2,500 af/yr by 6,500 af/yr (i.e., the City's dry year supply), providing a total groundwater supply of 9,000 af/yr.
- By 2040, the City expects to receive up to approximately 8,800 af/yr of CVP Ag-reliability from BBID. This additional CVP supply is expected to carry the same reliability as the City's other CVP Ag-reliability supplies. Therefore, the City projects to receive 0 percent of its additional BBID CVP water supply in multiple dry years.
- By 2035, the City expects to receive an additional allocation of 1,880 af/yr of SCWSP water. The City expects this water to carry the same reliability as its current SCWSP water supply, and therefore projects to receive 85 percent, or 1,598 af/yr, of its additional SCWSP water supply allocation in multiple dry years.
- The City anticipates that 1,000 af/yr of water will be available for use in multiple dry years through operation of its ASR program. This water supply is considered to be 100 percent reliable.

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- The City has acquired 10,500 af/yr of storage in Semitropic, which allows the City to withdraw up to 3,500 af/yr for three consecutive years. Due to the difficulties experienced by the City in accessing stored water via the DMC, the City has conservatively the 0 percent of the City's Semitropic water supply will be available in the first year of a multiple dry year period, and 100 percent will be available in the second and third year.

The reliability of each of the City's existing and additional planned future water supplies and their projected availability during a multiple dry year period is shown in Table 6-9. Figure 6-5 shows the City's projected future supply versus demand in the first year of a multiple dry year. Figure 6-6 shows the City's projected future supply versus demand in the second or third year of a multiple dry year.

6.5.4 Emergency Water Supply Conditions

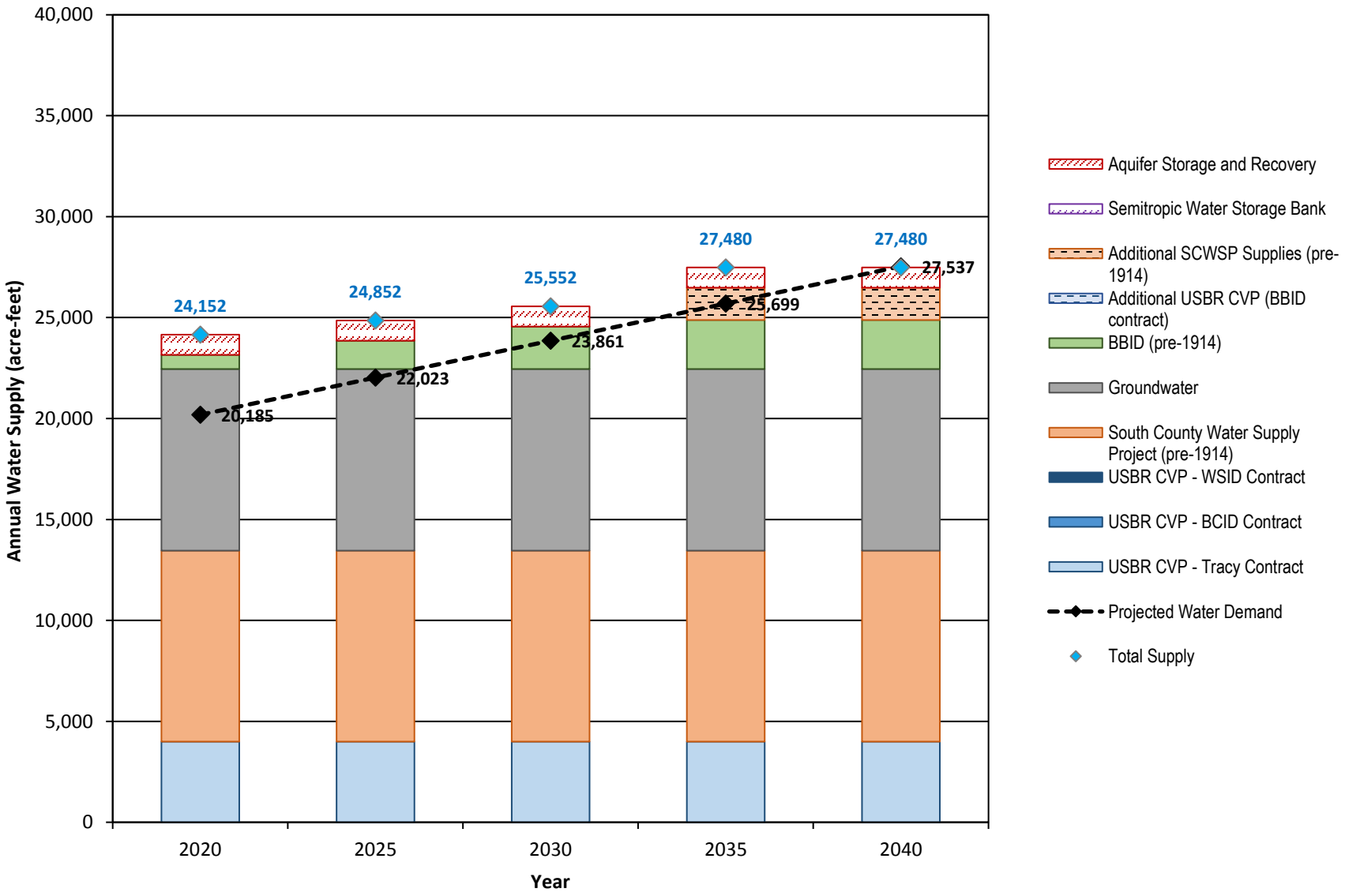
With the current on-going drought conditions in California, water supply deliveries from the SWP and CVP (and other surface water supply sources throughout California) have been severely reduced and even the availability of pre-1914 water rights has been challenged. The impact of these current drought conditions on long-term water supply reliabilities is currently not known. Many water supply agencies, including the City, have implemented their Water Shortage Contingency Plans, including mandatory water conservation measures, to reduce water use during this time. Even with 0 percent deliveries from the City's USBR CVP agricultural supplies in 2014, the diversity of the City's water supply portfolio together with water conservation efforts by the City's customers have allowed for the City to meet all water demands. If the current drought should continue, and deliveries of surface water supplies are reduced further, additional stages of the City's Water Shortage Contingency Plan will be enacted as needed. The City's Water Shortage Contingency Plan includes a five-phase plan describing specific actions to reduce water demand by up to 50 percent in the event of a water supply shortage or emergency. The City's Water Shortage Contingency Plan is included in Appendix P of the City's 2015 UWMP and is discussed further in Section 8.3 of this WSA.

Furthermore, as described in Section 6.1.3.10, in the event of a water supply emergency where surface water supplies may be limited or unavailable, based upon current groundwater basin conditions, the City would be able to meet its water demands using only groundwater supplies in any single year without causing any long-term impacts to the groundwater basin. If water supply conditions were such that no surface water supplies were available, the City would implement its Water Shortage Contingency Plan to reduce water demands as needed. A groundwater supply of 22,000 af/yr would be adequate to meet the City's projected 2040 water demands with demand reductions of about 20 percent (27,537 af/yr – 20 percent demand reduction = 22,029 af/yr).

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Figure 6-5. City of Tracy Future Potable Water Supply vs. Demand in a Multiple Dry Year 1



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Figure 6-6. City of Tracy Future Potable Water Supply vs. Demand in a Multiple Dry Year 2 and 3

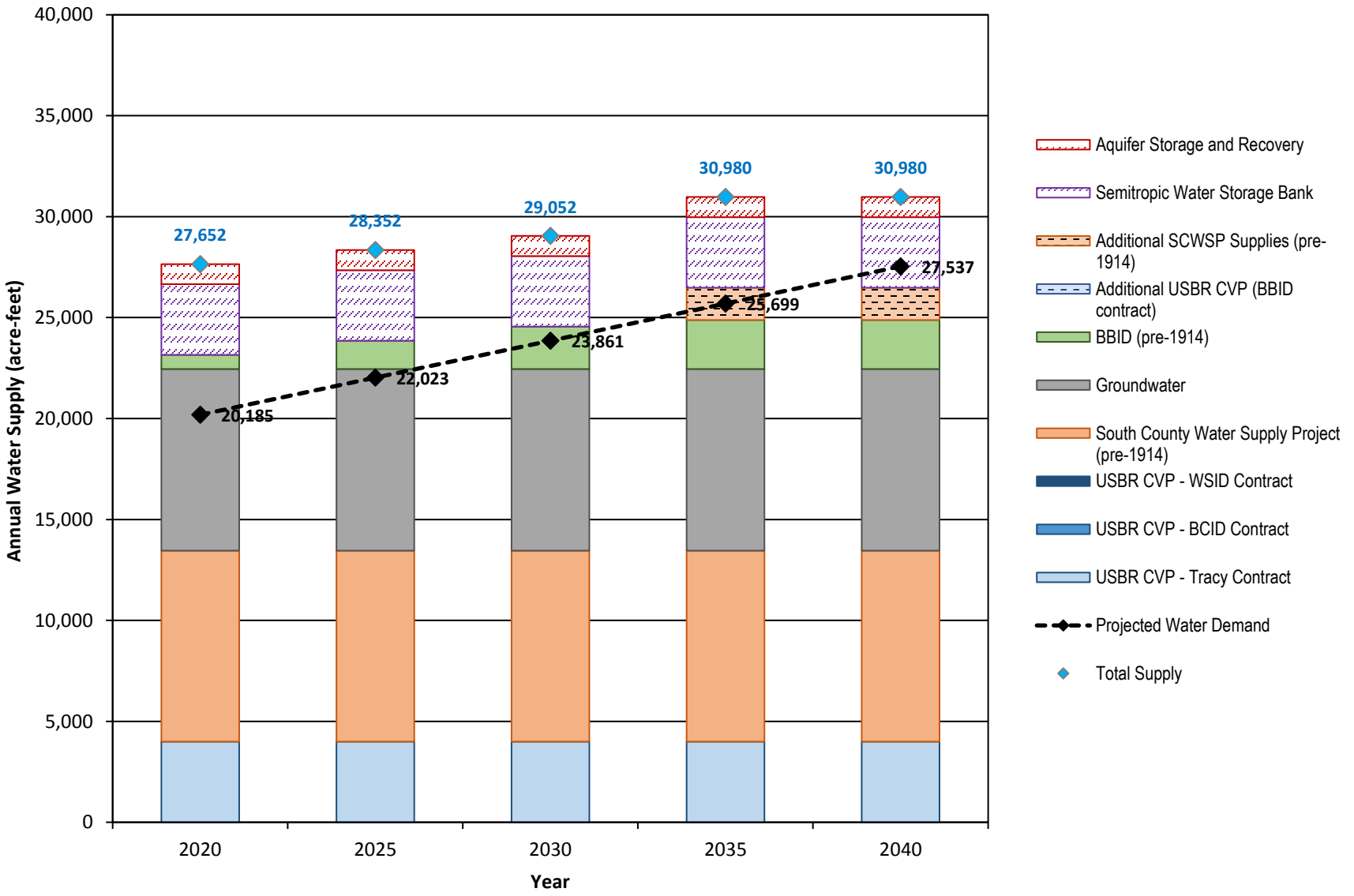


Table 6-9. Projected Existing and Additional Planned Future Water Supplies Available in Multiple Dry Years

Supply	Percent of Allocation	Projected Future Available Supplies, af/yr				
		2020	2025	2030	2035	2040
First Year Supply						
Existing Water Supplies						
USBR CVP - Tracy Contract	40%	4,000	4,000	4,000	4,000	4,000
USBR CVP - BCID Contract	0%	0	0	0	0	0
USBR CVP - WSID Contract	0%	0	0	0	0	0
Total CVP Supplies		3,300	3,300	3,300	3,300	3,300
South County Water Supply Project (pre-1914)	85%	9,452	9,452	9,452	9,452	9,452
Groundwater	100%	9,000	9,000	9,000	9,000	9,000
BBID (pre-1914)	85%	700	1,400	2,100	2,430	2,430
Semitropic Water Storage Bank	0%	0	0	0	0	0
Aquifer Storage and Recovery	100%	1,000	1,000	1,000	1,000	1,000
Total Existing Potable Supplies		24,152	24,852	25,552	25,882	25,882
Additional Planned Future Water Supplies						
Additional USBR CVP (BBID contract)	0%	0	0	0	0	0
Additional SCWSP Supplies (pre-1914)	85%	0	0	0	1,598	1,598
Recycled Water (non-potable)	100%	963	1,926	2,889	3,851	4,814
Total Additional Planned Future Potable Supplies		0	0	0	1,598	1,598
Total Potable Supplies		24,152	24,852	25,552	27,480	27,480
Total Additional Planned Future Non-Potable Supplies		963	1,926	2,889	3,851	4,814
Second Year and Third Year Supply						
Existing Water Supplies						
USBR CVP - Tracy Contract	40%	4,000	4,000	4,000	4,000	4,000
USBR CVP - BCID Contract	0%	0	0	0	0	0
USBR CVP - WSID Contract	0%	0	0	0	0	0
Total CVP Supplies		3,300	3,300	3,300	3,300	3,300
South County Water Supply Project (pre-1914)	85%	9,452	9,452	9,452	9,452	9,452
Groundwater	100%	9,000	9,000	9,000	9,000	9,000
BBID (pre-1914)	85%	700	1,400	2,100	2,430	2,430
Semitropic Water Storage Bank	100%	3,500	3,500	3,500	3,500	3,500
Aquifer Storage and Recovery	100%	1,000	1,000	1,000	1,000	1,000
Total Existing Potable Supplies		27,652	28,352	29,052	29,382	29,382
Additional Planned Future Water Supplies						
Additional USBR CVP (BBID contract)	0%	0	0	0	0	0
Additional SCWSP Supplies (pre-1914)	85%	0	0	0	1,598	1,598
Recycled Water (non-potable)	100%	963	1,926	2,889	3,851	4,814
Total Additional Planned Future Potable Supplies		0	0	0	1,598	1,598
Total Potable Supplies		27,652	28,352	29,052	30,980	30,980
Total Additional Planned Future Non-Potable Supplies		963	1,926	2,889	3,851	4,814

(a) Potable water supplies from Table 6-3 of the City of Tracy 2015 UWMP, May 2016.
(b) Recycled (non-potable) water supplies from Table 3-5 of the City of Tracy 2015 UWMP, May 2016.

7.0 DETERMINATION OF WATER SUPPLY SUFFICIENCY BASED ON THE REQUIREMENTS OF SB 610

Water Code section 10910 states:

> *10910(c)(4) If the city or county is required to comply with this part pursuant to subdivision (b), the water supply assessment for the project shall include a discussion with regard to whether the total projected water supplies, determined to be available by the city or county for the project during normal, single dry, and multiple dry water years during a 20-year projection, will meet the projected water demand associated with the proposed project, in addition to existing and planned future uses, including agricultural and manufacturing uses.*

Pursuant to Water Code section 10910(c)(4), and based on the technical analyses described in this Water Supply Assessment, the City finds that the total projected water supplies determined to be available for the Proposed Project during Normal, Single Dry, and Multiple Dry water years during a 20-year projection will meet the projected water demand associated with the Proposed Project, in addition to existing and planned future uses.

Table 7-1 summarizes the projected availability of the City's existing and planned future potable water supplies and the City's projected water demands in normal, single dry and multiple dry years through 2040. As shown in Table 7-1, demand within the City's service area is not expected to exceed the City's supplies in any normal year between 2020 and 2040.

As shown in Table 7-1, the second and third year of the City's Multiple Dry Year supplies are adequate to meet projected demands through 2040. The total water supply shortfall that occurs during the first year of a Multiple Dry Year is less than 1 percent (57 AF). However, due to changes in the Proposed Project's land use, the potable water demand for the Proposed Project is actually 196 af/yr lower than what is included in the City's demand projections. Therefore, the 57 AF of potential shortfall that is defined in Table 7-1 will likely not produce supply deficiencies[17].

For purposes of this WSA, the City has chosen to assume no demand reductions during dry years. With this assumption, potential deficits in water supply occur in 2040 during a Single Dry Year. During a Single Dry Year in 2040, the City's total annual water demand is estimated to exceed total annual supply by 1,557 AF, which results in a total water supply shortfall of 6 percent. To mitigate these potential deficits, the City may need to implement minimal short term demand reductions (water conservation). To prevent water supply deficits during a Single Dry Year, the City may need to reduce demands by 6 percent. This demand reduction is well within the 10 percent demand reduction defined in Phase 1 of the City's Water Shortage Contingency Plan. During dry years, the City expects to meet the shortfalls shown in Table 7-1 through implementation of its Water Shortage Contingency Plan.

[17] If the Proposed Project were to develop its 600 dwelling units as low density residential units instead of age-qualified residential units, the potable water demand for the Proposed Project would be 26 af/yr lower than what is included in the City's 2015 UWMP. Therefore, during the first year of a Multiple Dry Year, the City may need to implement minimal short term demand reductions (water conservation) to mitigate the potential water supply shortfall of 31 AF (57 AF minus 26 AF). This demand reduction (less than 1 percent) is well within the 10 percent demand reduction defined in Phase 1 of the City's Water Shortage Contingency Plan.

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Figure 7-1 shows the City's existing and planned future potable water supplies and the City's projected water demands in normal, single dry and multiple dry years based on projected water demands in 2040.

As described in this WSA, approximately 108 af/yr (normal year demand) to 135 af/yr (dry year demand) of recycled water is needed to meet the landscape irrigation and lake demands at buildout of the Proposed Project. The planned future recycled water supplies shown in Tables 6-6, 6-7, and 6-8 are sufficient to meet these recycled water demands. If recycled water infrastructure is not initially available to deliver recycled water to meet the landscape irrigation demands associated with initial phases of the Proposed Project, potable water supplies, if available, may be used in the interim period before recycled water becomes available.

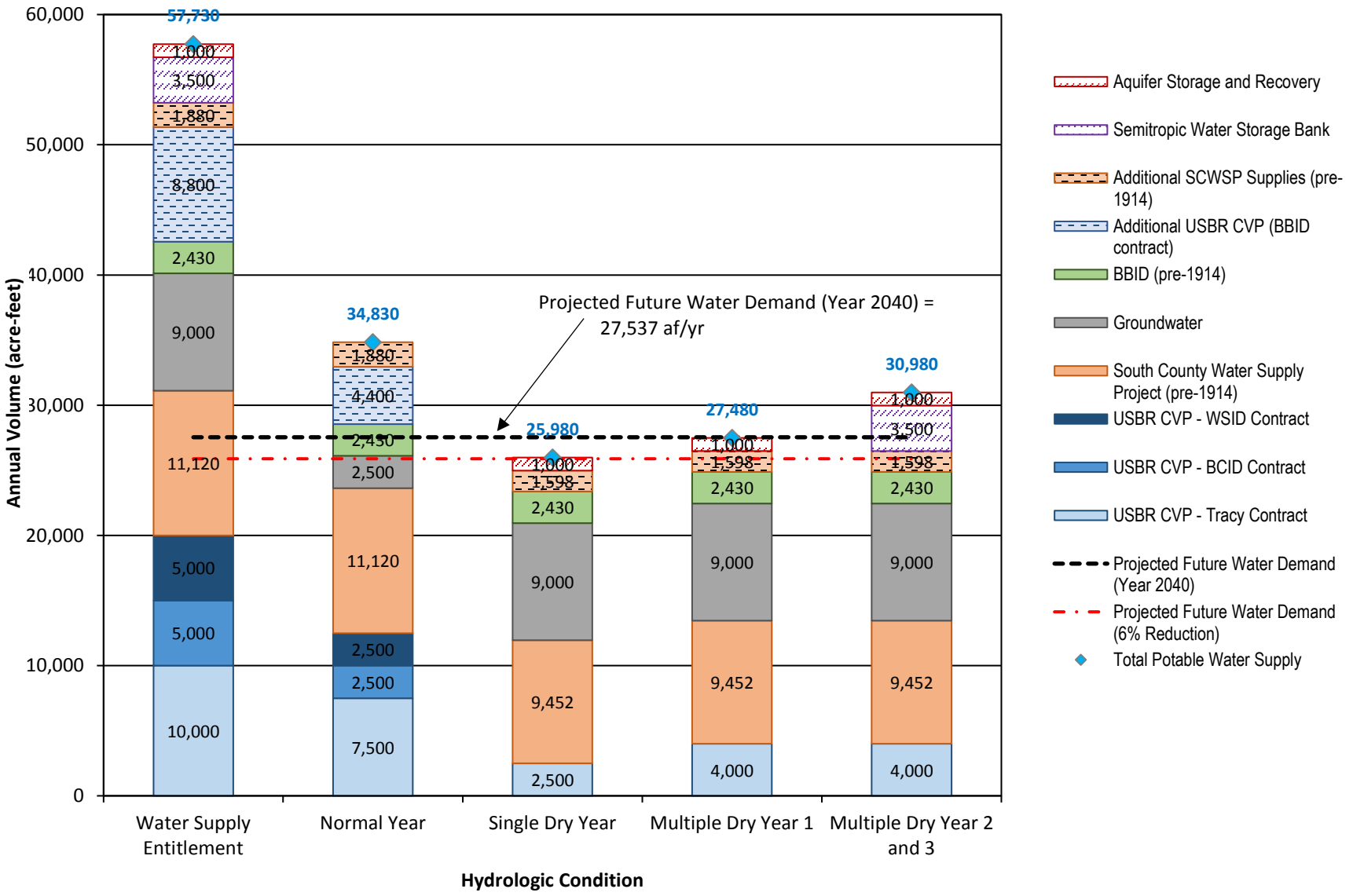
Table 7-1. Summary of Potable Water Demand Versus Supply During Hydrologic Normal, Single Dry, and Multiple Dry Years[a]

Hydrologic Condition		Supply and Demand Comparison, af/yr				
		2020	2025	2030	2035	2040
Normal Year[b]						
Available Potable Water Supply		27,820	29,520	31,220	34,430	34,830
Total Potable Water Demand (with Proposed Project)		20,185	22,023	23,861	25,699	27,537
	Potential Surplus (Deficit)	7,635	7,497	7,359	8,731	7,293
	Percent Shortfall of Demand	-	-	-	-	-
Single Dry Year[c]						
Available Potable Water Supply		22,652	23,352	24,052	25,980	25,980
Total Potable Water Demand (with Proposed Project)		20,185	22,023	23,861	25,699	27,537
	Potential Surplus (Deficit)	2,467	1,329	191	281	(1,557)
	Percent Shortfall of Demand	-	-	-	-	6%
Multiple Dry Years[d]						
Multiple-Dry Year 1	Available Potable Water Supply	24,152	24,852	25,552	27,480	27,480
	Total Potable Water Demand (with Proposed Project)	20,185	22,023	23,861	25,699	27,537
	Potential Surplus (Deficit)	3,967	2,829	1,691	1,781	(57)
	Percent Shortfall of Demand	-	-	-	-	0.2%
Multiple-Dry Year 2	Available Potable Water Supply	27,652	28,352	29,052	30,980	30,980
	Total Potable Water Demand (with Proposed Project)	20,185	22,023	23,861	25,699	27,537
	Potential Surplus (Deficit)	7,467	6,329	5,191	5,281	3,443
	Percent Shortfall of Demand	-	-	-	-	-
Multiple-Dry Year 3	Available Potable Water Supply	27,652	28,352	29,052	30,980	30,980
	Total Potable Water Demand (with Proposed Project)	20,185	22,023	23,861	25,699	27,537
	Potential Surplus (Deficit)	7,467	6,329	5,191	5,281	3,443
	Percent Shortfall of Demand	-	-	-	-	-

[b] Water demands are from Table 5-2
[c] Normal Year supplies are from Table 6-6
[d] Single Dry Year supplies are from Table 6-7
[e] Multiple Dry Year supplies are from Table 6-8

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Figure 7-1. City of Tracy Existing and Planned Future Potable Water Supplies at Year 2040 vs. Projected Demand at Year 2040



8.0 VERIFICATION OF SUFFICIENT WATER SUPPLY BASED ON THE REQUIREMENTS OF SB 221

The Proposed Project, with up to 600 residential dwelling units, is also subject to the requirements of SB 221 (Government Code section 66473.7). SB 221 applies to residential development projects of more than 500 dwelling units (such as the Proposed Project) and requires that the water supplier (City of Tracy) provide a written verification that the water supply for the Proposed Project is sufficient.

Verification must demonstrate supply sufficiency by showing that water supplies available during Normal, Single Dry and Multiple Dry years within a 20-year projection will meet the projected demand associated with the Proposed Project, in addition to existing and planned future uses, including, but not limited to, agriculture and industrial uses. Per the requirements of SB 221, the following must be considered:

- Historical water deliveries for the previous 20 years;
- Urban water shortage contingency analysis prepared for the UWMP;
- Supply reduction for specific water use sectors; and
- Amount of water expected from specified supply projects.

The City's 2015 UWMP and this WSA for the Proposed Project provide the documentation required to comply with SB 221 and demonstrate that the City's supplies are sufficient to meet the projected demand associated with the Proposed Project, in addition to existing and planned future uses. The specific considerations to be evaluated for the SB 221 verification are described below and reference applicable sections of the City's 2015 UWMP and this WSA.

8.1 Historical Water Deliveries

The City's water supplies are described in Section 6.0 of this WSA and Section 5 of the City's 2015 UWMP. Table 6-5 of this WSA presented the City's historical use of these supplies over the past 20 years. The use of these supplies will continue into the future as described in Section 6.0 of this WSA and as shown in Table 6-7 of this WSA.

The availability and historical and projected use of groundwater supplies is described in Section 6.1.3 of this WSA. Groundwater production in normal years is anticipated to be approximately 2,500 af/yr. The City will continue to rely on groundwater for peaking, drought, and emergency supplies, and may pump up to 9,000 af/yr on a continuous basis, as needed, to meet demands when surface water supplies may be limited.

Water supply availability and reliability during Normal, Single Dry and Multiple Dry years is described in Section 6.0 of this WSA.

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8.2 Projected Water Demand by Customer Sector

Projected potable and recycled water demands in the City's water service area are described in Section 5.0 of this WSA based on information provided in Section 3 of the City's 2015 UWMP. Projected water demand by customer sector within the City's water service area is documented in the City's 2015 UWMP and is summarized in Table 8-1.

Table 8-1. Actual and Projected Water Demands by Customer Sector

Water Source	2015 (actual)[a]	2020[b]	2025[b]	2030[b]	2035[b]	2040[b]
Potable Water, af/yr						
Single Family Residential	6,556	11,618	12,126	12,633	13,141	13,649
Multi-Family Residential	908	1,277	1,365	1,454	1,542	1,630
Commercial	1,177	1,506	1,749	1,993	2,236	2,479
Industrial	808	1,578	2,380	3,181	3,983	4,785
Institutional	404	674	710	746	781	817
Irrigation	1,417	1,764	1,764	1,764	1,764	1,764
Total Water Consumption	11,270	18,417	20,094	21,771	23,447	25,124
Unaccounted-for-water[c]	2,771	1,768	1,929	2,090	2,252	2,413
Total Potable Water Demand	14,041	20,185	22,023	23,861	25,699	27,537
Recycled Water, af/yr						
Recycled Water Total[d]	0	963	1,926	2,889	3,851	4,814

[a] Table 3-2 in the City's 2015 UWMP
[b] Table 3-4 in the City's 2015 UWMP
[c] Unaccounted-for-water from 2020 through 2040 is 9.6 percent of the Total Projected Water Consumption as shown in Table 3-4 of the City's 2015 UWMP
[d] Table 3-5 in the City's 2015 UWMP

As described above in Section 3.4 of this WSA, the water demands currently calculated for the Proposed Project are different than those included in the City's 2015 UWMP. Table 3-2 of this WSA presented a comparison of the projected water demands for the Proposed Project with those included in the City's 2015 UWMP. As shown, the potable water demand for the Proposed Project is 196 af/yr lower than what was included in the City's 2015 UWMP, and the recycled water demand for the Proposed Project is 70 af/yr higher than what was included in the City's 2015 UWMP.

8.3 Water Shortage Contingency Analysis

The City's 2015 UWMP includes a Water Shortage Contingency Plan (WSCP) to address situations when catastrophic water supply interruptions occur due to regional power outage, earthquake, or other disasters; and when drought occurs.

The City established its WSCP in 1992, following a period of severe drought, to provide City staff and City water customers with guidelines for reducing water consumption in the event of another drought. The City's WSCP includes an analysis of existing and projected water demands and supplies, a water conservation and rationing plan with mandatory prohibitions and penalties, and an analysis of projected revenues and expenditures.

The Stages outlined in the City's WSCP was incorporated as Phases of the Water Management Chapter of the Tracy Municipal Code as codified in Chapter 11.28, Article 5 – Drought and Other Water Emergency, and Article 6 – Water Conservation and Rationing Plan, Water Emergency Plan, Variances and Appeals (WCRP). The WCRP sections of the Tracy Municipal Code have since been amended to incorporate changes in rate schedules, penalties, among others. Because the WCRP sections of the Tracy Municipal Code incorporate the amendments to the WSCP, for the purposes of this WSA, all water conservation and water emergency/drought mandates reference the WCRP sections of the Tracy Municipal Code rather than the WSCP.

Implementation of the WCRP can be triggered by four different scenarios:

1. Decline of groundwater basin level to 30 feet below sea level;
2. Cutback of CVP water supplies;
3. Drought declaration by the Governor of California; and
4. Any unusual situation that affects the quantity or quality of the City's water supply.

In the event that any of the aforementioned triggers occur, the City Council is granted the authority to declare a drought and direct the City Manager to implement the WCRP. Transitions between the conservation phases outlined in the WCRP are implemented by resolution of the City Council.

The five Stages of Action outlined in the City's WSCP are intended to promote the proper management and distribution of water supplies during a drought or emergency situation. Each of the five stages describes specific actions to be taken by individual water customer sectors to achieve the water conservation requirement of that particular stage. All of the stages allow for adequate water to protect public health and safety and satisfy the fire protection needs of the City. Each of the five stages corresponds to a specific City-wide potable water demand reduction goal. These potable water demand reduction goals are based on the City's potential supply cutbacks during times of drought, with up to a 50 percent supply reduction as mandated by the UWMP Act.

If an emergency were to occur, or if drought conditions occurred, requiring the City to implement its WSCP/WCRP, all of the City's customers, including those within the Proposed Project, would be subject to the same water conservation measures and water use restrictions as included in City's WSCP/WCRP.

As described previously, in May 2016, the City's water demand was 32.6 percent less than in May 2013, and the City's cumulative savings from June 2015 to May 2016 was 27.2 percent as compared to 2013. This has been in response to the Governor's April 2015 Executive Order B-29-15 mandating 25 percent water conservation statewide. To reduce water use by 25 percent statewide, the SWRCB adopted a regulation which placed each urban water supplier into one of eight tiers which are assigned a conservation standard, ranging between 4 percent and 36 percent.

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Each month, the SWRCB will compare every urban water suppliers' water use with their use for the same month in 2013 to determine if they are on track for meeting their conservation standard. The City of Tracy was initially placed into Tier 7 with a water conservation standard of 28 percent as compared to 2013 use (the City's conservation standard was reduced to 25 percent in early 2016). In June 2015, City Council authorized the implementation and amendment of the City's Phase III and IV water restrictions (as defined in Chapter 11.28 of the Tracy Municipal Code) in order to meet SWRCB emergency drought regulations.

8.4 Future Water Supplies to Serve Water Demands Associated with Buildout of the Proposed Project

As described in this WSA, the following water supplies will be used to serve the water demands associated with buildout of the Proposed Project:

- Surface water from the Delta-Mendota Canal (Central Valley Project);
- Surface water from the Stanislaus River via the South County Water Supply Project (delivered by the South San Joaquin Irrigation District (SSJID));
- Groundwater pumped from nine groundwater wells located within the City;
- Additional Semitropic Water Storage District storage and Aquifer Storage and Recovery supplies to offset reduced deliveries of surface water supplies in dry years; and
- Recycled Water.

The availability and reliability of these supplies and the City's other existing and future supplies are described in Section 6.0 of this WSA.

8.5 Verification of Sufficient Water Supply

As described in Section 7.0 of this WSA, the City's existing and projected potable water supplies and recycled water supply are sufficient to meet the projected demands associated with the Proposed Project, in addition to the City's existing and planned future uses, including, but not limited to, agricultural and industrial uses.

10910 (g)(1) Subject to paragraph (2), the governing body of each public water system shall submit the assessment to the city or county not later than 90 days from the date on which the request was received. The governing body of each public water system, or the city or county if either is required to comply with this act pursuant to subdivision (b), shall approve the assessment prepared pursuant to this section at a regular or special meeting.

10911 (b) The city or county shall include the water supply assessment provided pursuant to Section 10910, and any information provided pursuant to subdivision (a), in any environmental document prepared for the project pursuant to Division 13 (commencing with Section 21000) of the Public Resources Code.

The Tracy City Council must approve this WSA at a regular or special meeting. Furthermore, the City must include this WSA in the Draft Environmental Impact Report (EIR) being prepared for the Proposed Project.

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9.0 WATER SUPPLY ASSESSMENT APPROVAL PROCESS

10910 (g)(1) Subject to paragraph (2), the governing body of each public water system shall submit the assessment to the city or county not later than 90 days from the date on which the request was received. The governing body of each public water system, or the city or county if either is required to comply with this act pursuant to subdivision (b), shall approve the assessment prepared pursuant to this section at a regular or special meeting.

10911 (b) The city or county shall include the water supply assessment provided pursuant to Section 10910, and any information provided pursuant to subdivision (a), in any environmental document prepared for the project pursuant to Division 13 (commencing with Section 21000) of the Public Resources Code.

The Tracy City Council must approve this WSA at a regular or special meeting. Furthermore, the City must include this WSA in the Draft Environmental Impact Report (EIR) being prepared for the Proposed Project.

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10.0 REFERENCES

Erler & Kalinowski, Inc., *City of Tracy 2015 Urban Water Management Plan*, prepared for the City of Tracy, May 2016.

City of Tracy, *General Plan Amendment*, adopted by City Council on February 1, 2011.

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GEI Consultants. *Summary of Groundwater Conditions*, October 2011 through September 2013, prepared for the City of Tracy, November 25, 2014.

GEI Consultants, *Groundwater Assessment for Drought Emergency Conditions Requiring Groundwater to be Used as the Sole Source of Potable Water Supply*, prepared for City of Tracy, August 10, 2015.

Kennedy/Jenks/Chilton, *Tracy Area Groundwater Yield Evaluation*, Appendix B, Table B-2, 1990.

Pacific Municipal Consultants, *Groundwater Management Policy Mitigated Negative Declaration*, prepared for the City of Tracy, dated December 7, 2011.

Sorenson, S.K., *Chemical Quality of Groundwater in San Joaquin and Part of Contra Costa Counties, California*, Water Resources Investigation 81-26, USGS, 1981.

Stoddard & Associates, *Groundwater Management Plan for the Northern Agencies in the Delta-Mendota Canal Service Area and a Portion of San Joaquin County*, revised April 1996.

Tracy Village, Draft Specific Plan, August 2016.

West Yost Associates, *Citywide Water System Master Plan*, Final Report, prepared for City of Tracy, December 2012.

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APPENDIX A

Detailed Landscape Demand Projections

- Landscape Quantity Take-Offs (Water budget worksheet_07 2016.pdf provided by Ponderosa Homes 07/20/16)
- Tracy Lakes – Lake Water Balance (Three Lakes with Normal Conditions) (A255-Water Balance (Normal 2002-2006).pdf provided by PACE 03/28/16)
- Tracy Lakes – Lake Water Balance (Three Lakes with Drought Conditions) (A255-Water Balance (Drought 2013).pdf provided by PACE 03/28/16)

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TRACY VILLAGES
DATE: 7/20/16
JOB #: 08413

PLANT WATER USE
ZONE 1: HIGH
ZONE 2: MODERATE
ZONE 3: LOW

LANDSCAPE AREA	HYDROZONE	AREA (SF)	TOTAL (SF)
STREETSCAPES	ZONE 2	9,759	
		1,970	
		80,890	
		9,489	
	ZONE 3	24,963	
		30,923	
			157,994
PASEOS	ZONE 3	2,861	
		3,240	
		5,537	
		2,029	
		5,318	
			18,985
PARK SPACE (MEADOW GRASSES & SHRUBS)	ZONE 2	39,103	
		3,965	
		3,680	
		4,570	
		4,950	
	ZONE 3	35,279	
			91,547
PARK SPACE (TURF)	ZONE 1	9,671	
		7,577	
		13,619	
		14,151	
			45,018
SOUTH ENTRY	ZONE 2	28,909	
		12,032	
		7,824	
			48,765
NORTH ENTRY NEIGHBORHOOD	ZONE 3	96,802	
			96,802
NEIGHBORHOOD POOL LANDSCAPE AREA	ZONE 3	17,209	
			17,209
COMMUNITY CENTER	ZONE 2	84,898	
		3,108	
		18,523	
		12,814	
		4,013	
			123,356
LOTS (FRONT YARDS)	ZONE 2 (BUNGALOWS, ESTATES, CLASSICS, VILLAS, CASITAS)	76,560	
		57,915	
		62,595	
		46,545	
		82,110	
			325,725
POOLS	ZONE 1	4,175	4,175
TOTALS:			929,576

Maximum Applied Water Allowance Calculations for New and Rehabilitated Residential Landscapes

TRACY VILLAGES IN TRACY, CALIFORNIA

	Tracy	Name of City
ET_o of City from Appendix A	**48.50**	**ET_o** (inches/year)
	45018	Overhead Landscape Area (ft^2)
	880383	Drip Landscape Area (ft^2)
	4175	SLA (ft^2)
Total Landscape Area	**929,576.00**	
Results:		
(ET_o) x (0.62) x [(0.55 xLA) + (1.0 - 0.55) X SLA)]	**15,430,286.69**	Gallons
	2,062,736.15	Cubic Feet
	20,627.36	HCF
	47.35	Acre-feet
	15.43	Millions of Gallons
MAWA calculation incorporating Effective Precipitation (Optional)		
Precipitation (Optional)		
ET_o of City from Appendix A	**48.50**	ET_o (inches/year)
Total Landscape Area	**929,576.00**	LA (ft^2)
Special Landscape Area	**4,175.00**	SLA (ft^2)
		Total annual precipitiation (inches/year)
Enter Effective Precipitation	**0.00**	Eppt (in/yr)(25% of total annual precipitation)
Results:		
MAWA = [(ET_o - Eppt) x (0.62)] x [(0.55 x LA) + ((1.0 - 0.55) x SLA)]	-	Gallons
	-	Cubic Feet
	-	HCF
	-	Acre-feet
	-	Millions of Gallons

Estimated Total Water Use

Equation: ETWU = ET_o x 0.62 x [((PF x HA)/IE) + SLA]; Considering precipitation ETWA =(ETo-Eppt) x 0.62 x [((PF x HA)/IE) +SLA]

TRACY VILLAGES IN TRACY, CALIFORNIA

Irrigation Efficiency Default Value for overhead 0.75 and drip 0.81.

Plant Water Use Type	Plant Factor
Very Low	0 - 0.1
Low	0.2 - 0.3
Medium	0.4 - 0.6
High	0.7 - 1.0
SLA	1

Hydrozone	Select System From the Dropdown List click on cell below	Plant Water Use Type (s) (low, medium, high)	Plant Factor (PF)	Hydrozone Area (HA) (ft^2) Without SLA	Enter Irrigation Efficiency (IE)	(PF x HA (ft^2))/IE
Zone 1	Overhead Spray	High	0.80	45,018	0.75	**48,019**
Zone 2	Drip	Medium	0.40	656,222	0.81	**324,060**
Zone 3	Drip	Low	0.20	224,161	0.81	**55,348**
Zone 4						
Zone 5						
Zone 6						
Zone 7						
Zone 8						
Zone 9						
Zone 10						
Zone 11						
Zone 12						
Zone 13						
Zone 14						
Zone 15						
Zone 16						
Zone 17						
Zone 18						
Zone 19						
Zone 20						
Zone 21						
Zone 22						
Zone 23						
Zone 24						
Zone 25						
Zone 26						
Zone 27						
Zone 28						
Zone 29						
Zone 30						
Zone 31						
						427,428
		SLA		4,175		**4,175**
			Sum	929,576		

Results

MAWA = 15,430,287

ETWU=	12,978,624	Gallons
	1,734,995	Cubic Feet
	17,350	HCF
	40	Acre-feet
	13	Millions of Gallons

ETWU complies with MAWA

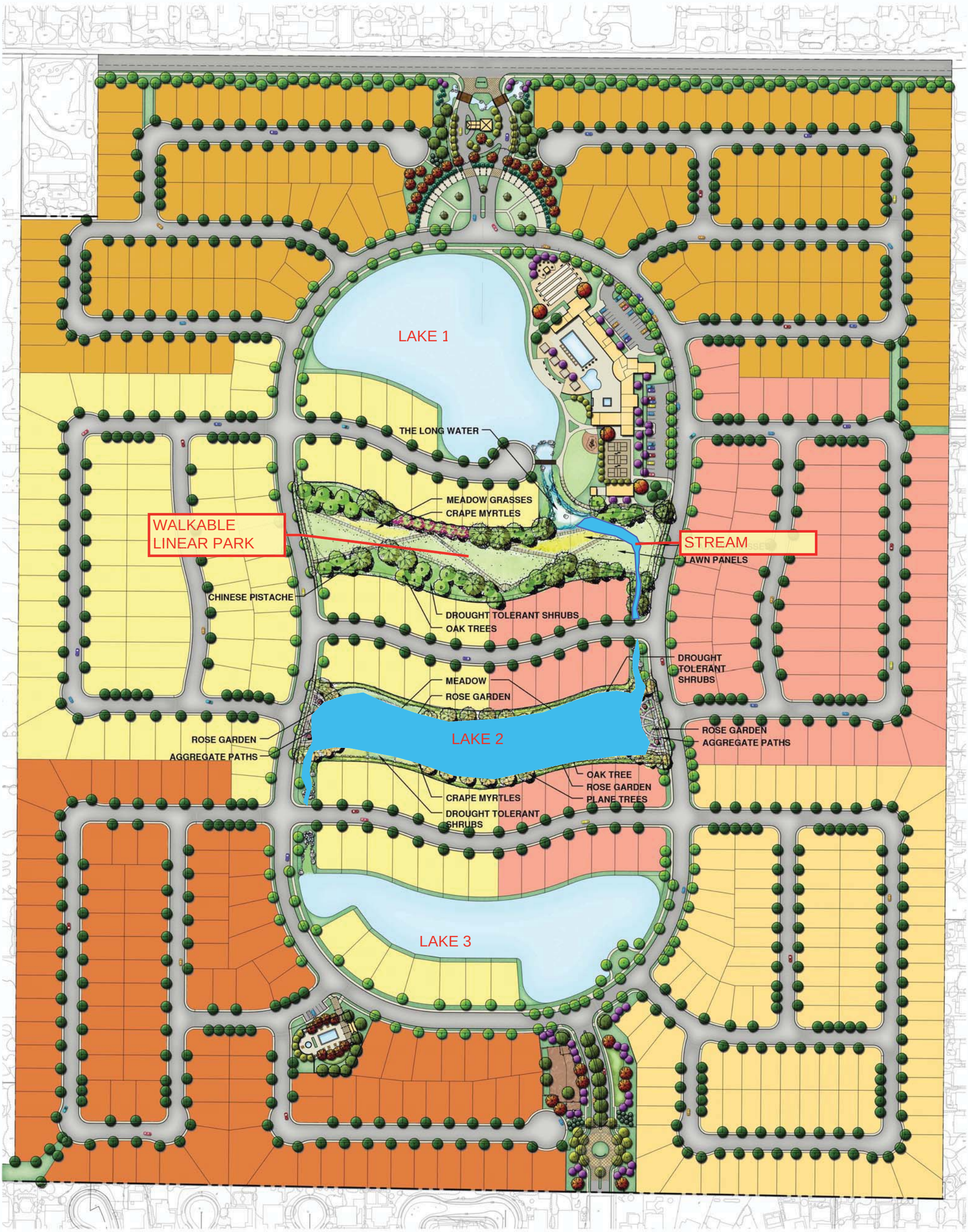
Maximum Applied Water Allowance Calculations for New and Rehabilitated Special Landscapes

Enter value in Pale Blue Cells

Tan Cells Show Results

Messages and Warnings

Click on the blue cell on right to Pick City Name	Tracy	Name of City
ET_o of City from Appendix A	48.50	ET_o (inches/year)
Enter SLA	4,175.00	SLA (ft^2)
Results:		
MAWA = (ET_o) x (0.62) x [SLA)]	125,542.25	Gallons
	16,782.61	Cubic Feet
	167.83	HCF
	0.39	Acre-feet
	0.13	Millions of Gallons
MAWA calculation incorporating Effective Precipitation (Optional)		
ET_o of City from Appendix A	48.50	ET_o (inches/year)
Speical Landscape Area	4,175.00	SLA (ft^2)
	0.00	
Enter Effective Precipitation	0.00	Eppt (in/yr)
Results:		
MAWA=(ET_o - Eppt) x (0.62) x [SLA)]	-	Gallons
	-	Cubic Feet
	-	HCF
	-	Acre-feet
	-	Millions of Gallons



Scale: 1" = 100'-0" AUGUST 2014

PONDEROSA HOMES
6130 Stoneridge Mall Road
Suite 185
Pleasanton, CA 94588

TRACY LAKES

Tracy, California

Tracy Lake - Lake Water Balance
3 Lakes w/ Normal Conditions

28-Mar-16

	INPUTS				OUTPUT					NET DEMANDS	
					LAKE	IRRIGATION			TOTAL		
	Direct Precipitation (3)	Non Irrigated Runoff (4)	Irrigated Runoff (5)	Total Input per Month (6)	Lake Evaporation (7)	High Irrigation (8)	Medium Irrigation (8)	Low Irrigation (8)	Total Output per Month (10)	Lake (11)	Overflow per Month (12)
	(Ac-ft)	(Ac-ft)	(Ac-ft)	(Ac-ft)	(Ac-ft)	(Ac-ft)	(Ac-ft)	(Ac-ft)	(Ac-ft)	(Ac-ft)	(Ac-ft)
Runoff Coefficient	1	0.3	0.1	-	-	-	-	-	-	-	-
Irrigation Efficiency	-	-	-	-	-	0.75	0.81	0.81	-	-	-
Plant Factor	-	-	-	-	-	0.8	0.4	0.2	-	-	-
Area (Ac)	9.7	102.6	21.2	-	9.70	1	15	5	-	-	-

MONTH	PREC (in) (1)	ET (in) (2)	VOLUME (AC-FT)										
JAN.	1.25	1.02	1.01	3.22	0.22	4.45	0.82	0.00	0.00	0.00	0.82	0.00	3.63
FEB.	1.36	1.99	1.10	3.50	0.24	4.84	1.61	0.08	0.00	0.00	1.69	0.00	3.15
MARCH	1.23	3.76	0.99	3.14	0.22	4.35	3.04	0.28	1.56	0.00	4.88	0.53	0.00
APRIL	0.90	4.95	0.73	2.32	0.16	3.21	4.00	0.44	2.50	0.43	6.94	3.73	0.00
MAY	0.36	7.51	0.29	0.92	0.06	1.28	6.07	0.78	4.41	0.76	11.27	9.99	0.00
JUNE	0.03	8.90	0.02	0.08	0.01	0.11	7.20	0.96	5.48	0.94	13.63	13.53	0.00
JULY	0.00	6.66	0.00	0.00	0.00	0.00	5.38	0.72	4.11	0.71	10.21	10.21	0.00
AUGUST	0.01	7.79	0.00	0.01	0.00	0.02	6.30	0.84	4.81	0.82	11.95	11.93	0.00
SEPT.	0.11	6.06	0.09	0.27	0.02	0.38	4.90	0.65	3.67	0.63	9.22	8.84	0.00
OCT.	0.40	3.99	0.32	1.03	0.07	1.42	3.22	0.39	2.21	0.38	5.83	4.41	0.00
NOV.	1.08	1.84	0.87	2.77	0.19	3.83	1.49	0.09	0.00	0.00	1.58	0.00	2.25
DEC.	2.48	1.09	2.01	6.37	0.44	8.82	0.88	0.00	0.00	0.00	0.88	0.00	7.93
SUM	**9.21**	**55.56**	**7.45**	**23.63**	**1.63**	**32.70**	**44.91**	**5.24**	**28.75**	**4.67**	**78.90**	**63.17**	**16.97**

Notes:

(1) Average Monthly Precipitation in inches over a 4-yr span (2002-2006) in City of Tracy.

(2) Average Evapotranspiration Rate in inches over a 4-yr span (2002-2006) in City of Tracy.

(3) Direct Precipitation equals the area of the lakes multiplied by Precipitation (1)

(4) Non Irrigated (Storm) Runoff equals the sum of all the non irrigated land use areas of the project (not including the lakes) multiplied by the Precipitation (1) and the runoff coefficient.

(5) Irrigated (Storm) Runoff equals the sum of all the irrigated land use areas of the project (not including the lakes) multiplied by the Precipitation (1) and the runoff coefficient.

(6) Total Input per month equals the sum of (3), (4), and (5).

(7) Direct Evaporation equals the monthly Evapotranspiration Rate (2) multiplied by the area of the lakes.

(8) Total irrigation volume demand for turf land use = (ET - Precipitation) x (plant factor / irrigation efficiency) x irrigation turf area divide by 12 to get AC-ft. ETWU = 39.4 AF per Vandertoolen 03/17/2016

(9) Not Used

(10) Total Output per month equals sum of (7) and (8).

(11) Lake Demand is the difference in Lake Inputs (6) and Outputs (7), equal to zero if Inputs exceed Outputs.

(12) Sum of the total input per month (6) minus the total output per month (10). If the total output (10) is greater than the input (6), the cell reads zero, if not the total input - total output is entered.

Tracy Lake - Lake Water Balance
3 Lakes w/ Drought Conditions

28-Mar-16

	INPUTS				OUTPUT					NET DEMANDS	
					LAKE	IRRIGATION			TOTAL		
	Direct Precipitation (3)	Non Irrigated Runoff (4)	Irrigated Runoff (5)	Total Input per Month (6)	Lake Evaporation (7)	High Irrigation (8)	Medium Irrigation (8)	Low Irrigation (8)	Total Output per Month (10)	Lake (11)	Overflow per Month (12)
	(Ac-ft)	(Ac-ft)	(Ac-ft)	(Ac-ft)	(Ac-ft)	(Ac-ft)	(Ac-ft)	(Ac-ft)	(Ac-ft)	(Ac-ft)	(Ac-ft)
Runoff Coefficient	1	0.3	0.1	-	-	-	-	-	-	-	-
Irrigation Efficiency	-	-	-	-	-	0.75	0.81	0.81	-	-	-
Plant Factor	-	-	-	-	-	0.8	0.4	0.2	-	-	-
Area (Ac)	9.7	102.6	21.2	-	9.7	1	15	5	-	-	-

MONTH	PREC (in) (1)	ET (in) (2)	VOLUME (AC-FT)										
JAN.	0.74	1.62	0.60	1.90	0.13	2.63	1.31	0.08	0.54	0.00	1.94	0.00	0.69
FEB.	0.15	2.56	0.12	0.38	0.03	0.53	2.07	0.22	1.49	0.26	3.77	3.24	0.00
MARCH	0.64	4.14	0.52	1.64	0.11	2.27	3.35	0.31	2.16	0.37	5.82	3.55	0.00
APRIL	0.39	6.64	0.32	1.00	0.07	1.38	5.37	0.56	3.86	0.66	9.78	8.40	0.00
MAY	0.03	8.28	0.02	0.08	0.01	0.11	6.69	0.73	5.09	0.87	12.52	12.41	0.00
JUNE	0.19	8.62	0.15	0.49	0.03	0.67	6.97	0.75	5.20	0.89	12.92	12.25	0.00
JULY	0.00	8.75	0.00	0.00	0.00	0.00	7.07	0.78	5.40	0.93	13.25	13.25	0.00
AUGUST	0.00	7.80	0.00	0.00	0.00	0.00	6.31	0.69	4.81	0.83	11.81	11.81	0.00
SEPT.	0.21	5.88	0.17	0.54	0.04	0.75	4.75	0.51	3.50	0.60	8.76	8.01	0.00
OCT.	0.00	4.17	0.00	0.00	0.00	0.00	3.37	0.37	2.57	0.44	6.32	6.32	0.00
NOV.	1.11	2.27	0.90	2.85	0.20	3.94	1.83	0.11	0.72	0.00	2.66	0.00	1.28
DEC.	0.14	1.80	0.11	0.36	0.02	0.50	1.46	0.15	1.02	0.18	2.63	2.13	0.00
SUM	**3.60**	**62.53**	**2.91**	**9.23**	**0.64**	**12.78**	**50.55**	**5.26**	**36.38**	**6.03**	**92.18**	**81.37**	**1.97**

Notes:

(1) Average Monthly Precipitation in inches over a 1-yr span (2013) in City of Tracy. 2013 Represents the lowest Precipitation year during the last 4 drought years.

(2) Average Evapotranspiration Rate in inches over a 1-yr span (2013) in City of Tracy.

(3) Direct Precipitation equals the area of the lakes multiplied by Precipitation (1)

(4) Non Irrigated (Storm) Runoff equals the sum of all the non irrigated land use areas of the project (not including the lakes) multiplied by the Precipitation (1) and the runoff coefficient.

(5) Irrigated (Storm) Runoff equals the sum of all the irrigated land use areas of the project (not including the lakes) multiplied by the Precipitation (1) and the runoff coefficient.

(6) Total Input per month equals the sum of (3), (4), and (5).

(7) Direct Evaporation equals the monthly Evapotranspiration Rate (2) multiplied by the area of the lakes.

(8) Total irrigation volume demand for turf land use = (ET - Precipitation) x (plant factor / irrigation efficiency) x irrigation turf area divide by 12 to get AC-ft. ETWU = 39.4 AF per Vandertoolen 03/17/2016

(9) Not Used

(10) Total Output per month equals sum of (7) and (8).

(11) Lake Demand is the difference in Lake Inputs (6) and Outputs (7), equal to zero if Inputs exceed Outputs.

(12) Sum of the total input per month (6) minus the total output per month (10). If the total output (10) is greater than the input (6), the cell reads zero, if not the total input - total output is entered.

APPENDIX B

Groundwater Management Plan

DRAFT

Groundwater Management Plan for the Northern Agencies in the Delta-Mendota Canal Service Area

Groundwater Management Plan Update



San Luis & Delta-Mendota Water Authority

July 2011

Revised November 7, 2011

http://www.sldmwa.org/OHTDocs/pdf_documents/Groundwater/GroundwaterManagementPlanNorthernApproved11_2011.pdf

AECOM 1120 West "I" Street, Suite C Los Banos, CA 93635

Appendix J:
Public Service Letters and Responses

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FIRSTCARBON SOLUTIONS™

December 5, 2016

Randall Bradley, Fire Chief
Tracy Fire Department
835 Central Avenue
Tracy, CA 95376

Subject: **Tracy Lakes Project- Information Request**

Dear Chief Bradley:

An Environmental Impact Report (EIR) is being prepared in accordance with the California Environmental Quality Act (CEQA) to evaluate the potential environmental impacts associated with implementation and development of the proposed Tracy Lakes Project in Tracy, California. The following is a description of the proposed project.

Tracy Lakes Project

The proposed Tracy Lakes development site is located on 134 acres in unincorporated San Joaquin County, adjacent to the Tracy city limits. The project boundaries are located on the U.S. Geological Survey (USGS) Tracy 7.5-minute quadrangle in the northwest quadrant of Section 5, Township 3 South, Range 5 East of the Mt. Diablo Meridian (Assessor's Parcel Number 244-04-001). The project site is located on the south side of West Valpico Road, just east of Corral Hollow Road. Corral Hollow Road is the main north-south collector on the west side of the City of Tracy, and Valpico Road is an important east-west collector.

The Tracy Lakes Project is a proposed active adult, age-restricted and gated community consisting of up to 600 single-family detached residential homes. The Tracy Village Specific Plan would utilize the Tracy General Plan land use designation of Residential Low, and providing for an Active Adult Residential land use. The Specific Plan serves as pre-zoning to meet the requirements for future development. **The Specific Plan for Tracy Lakes is twofold, it includes both the development of up to 600 lots that would support dwelling units ranging from 1,450 square feet to 3,000 square feet.** The project would feature three man-made lakes totaling approximately ten acres, along with a community recreation center with pool, spa and bocce courts, open space, parks, and trails. **Secondly, for EIR evaluation and annexation/prezoning purposes, the Project also includes an additional 21 residential properties fronting Corral Hollow Road, and 21 residential properties along the north side of Valpico Road and an adjoining drainage canal north of Valpico Road. Of these 42 lots, 39 are developed with residences.**

Preparation of the EIR requires a clear and documented understanding of the level of service provided by various organizations and public agencies. It is our understanding that the Tracy Fire Department would

serve the proposed project. Therefore, we would appreciate a response to this letter, either via email or standard mail. For your convenience, a location map has been attached. In order to adequately address future public service needs, please answer the following questions:

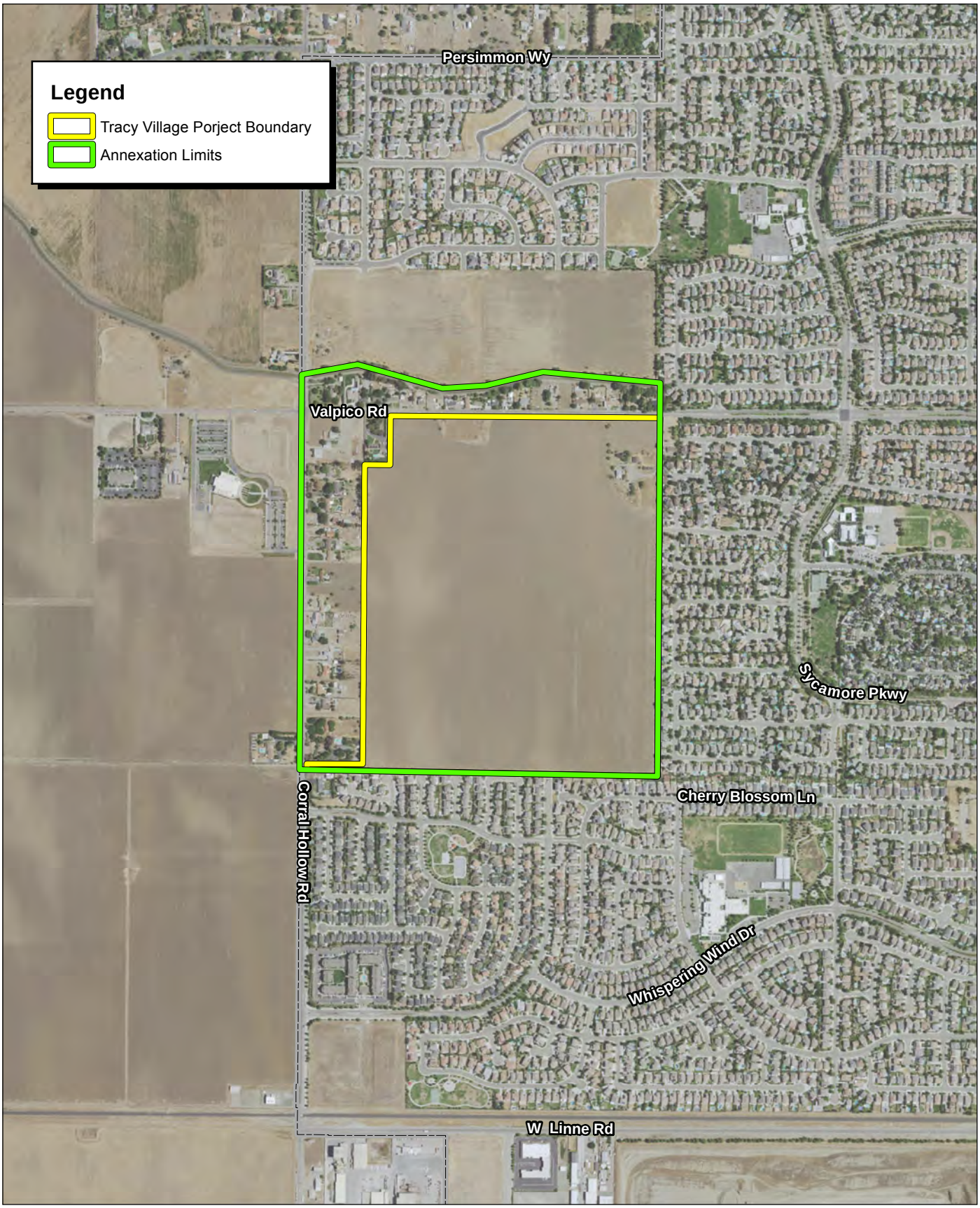
1) It is our understanding that the Tracy Fire Department currently serves the project site. In your professional opinion, would development of the proposed project result in the need for new or expanded Fire Department facilities in order to maintain acceptable service ratios, response times, or other performance objectives?
2) What is the Tracy Fire Department's response time goal for emergency calls? What is the approximate response time of fire companies in the City of Tracy?
3) What service ratio does the Tracy Fire Department use? Is it based on number of residents in a particular service area, or some other metric?
4) What specific Tracy Fire Department station would typically serve the proposed project? How many personnel, and what types of vehicles and equipment, does this station currently house?

Thank you in advance for your timely response. A response by December 23rd, 2016 via either email or standard mail would be most appreciated. If you have any questions or require additional information, please contact me at 925.357.2562 x 1115(office) or email rcarroll@fcs-intl.com.

Sincerely,

Robert Carroll, Environmental Analyst
FirstCarbon Solutions
Treat Boulevard, Suite 380
Walnut Creek, CA, 94597

Enclosures: Location Map



Source: ESRI Imagery, 2015

FIRSTCARBON SOLUTIONS™

1,000 500 0 1,000 Feet

Exhibit 2
Local Vicinity Map
Aerial Base

December 5, 2016

Larry Esquivel, Chiefof Police
Tracy Police Department
100 Civic Center Drive
Tracy, CA 95376

Subject: **Tracy Lakes Project- Information Request**

Dear Chief Esquivel:

An Environmental Impact Report (EIR) is being prepared in accordance with the California Environmental Quality Act (CEQA) to evaluate the potential environmental impacts associated with implementation and development of the proposed Tracy Lakes Project in Tracy, California. The following is a description of the proposed project.

Blanchard Road Industrial Project

The proposed Tracy Lakes development site is located on 134 acres in unincorporated San Joaquin County, adjacent to the Tracy city limits. The project boundaries are located on the U.S. Geological Survey (USGS) Tracy 7.5-minute quadrangle in the northwest quadrant of Section 5, Township 3 South, Range 5 East of the Mt. Diablo Meridian (Assessor's Parcel Number 244-04-001). The project site is located on the south side of West Valpico Road, just east of Corral Hollow Road. Corral Hollow Road is the main north-south collector on the west side of the City of Tracy, and Valpico Road is an important east-west collector.

The Tracy Lakes Project is a proposed active adult, age-restricted and gated community consisting of up to 600 single-family detached residential homes. The Tracy Village Specific Plan would utilize the Tracy General Plan land use designation of Residential Low, and providing for an Active Adult Residential land use. The Specific Plan serves as pre-zoning to meet the requirements for future development. **The Specific Plan for Tracy Lakes is twofold, it includes the development of up to 600 lots that would support dwelling units ranging from 1,450 square feet to 3,000 square feet.** The project would feature three man-made lakes totaling approximately ten acres, along with a community recreation center with pool, spa and bocce courts, open space, parks, and trails. **Secondly, for EIR evaluation and annexation/prezoning purposes, the Project also includes an additional 21 residential properties fronting Corral Hollow Road, and 21 residential properties along the north side of Valpico Road and an adjoining drainage canal north of Valpico Road. Of these 42 lots, 39 are developed with residences.**

Preparation of the EIR requires a clear and documented understanding of the level of service provided by various organizations and public agencies. It is our understanding that the Tracy Police Department

would serve the proposed project. Therefore, we would appreciate a response to this letter, either via email or standard mail. For your convenience, a location map has been attached. In order to adequately address future public service needs, please answer the following questions:

1) It is our understanding that the Tracy Police Department currently serves the project site. In your professional opinion, would development of the proposed project result in the need for new or expanded Police Department facilities in order to maintain acceptable service ratios, response times, or other performance objectives?

2) What is the Tracy Police Department's response time goal for emergency calls? What is the approximate response time of patrol units in the City of Tracy?

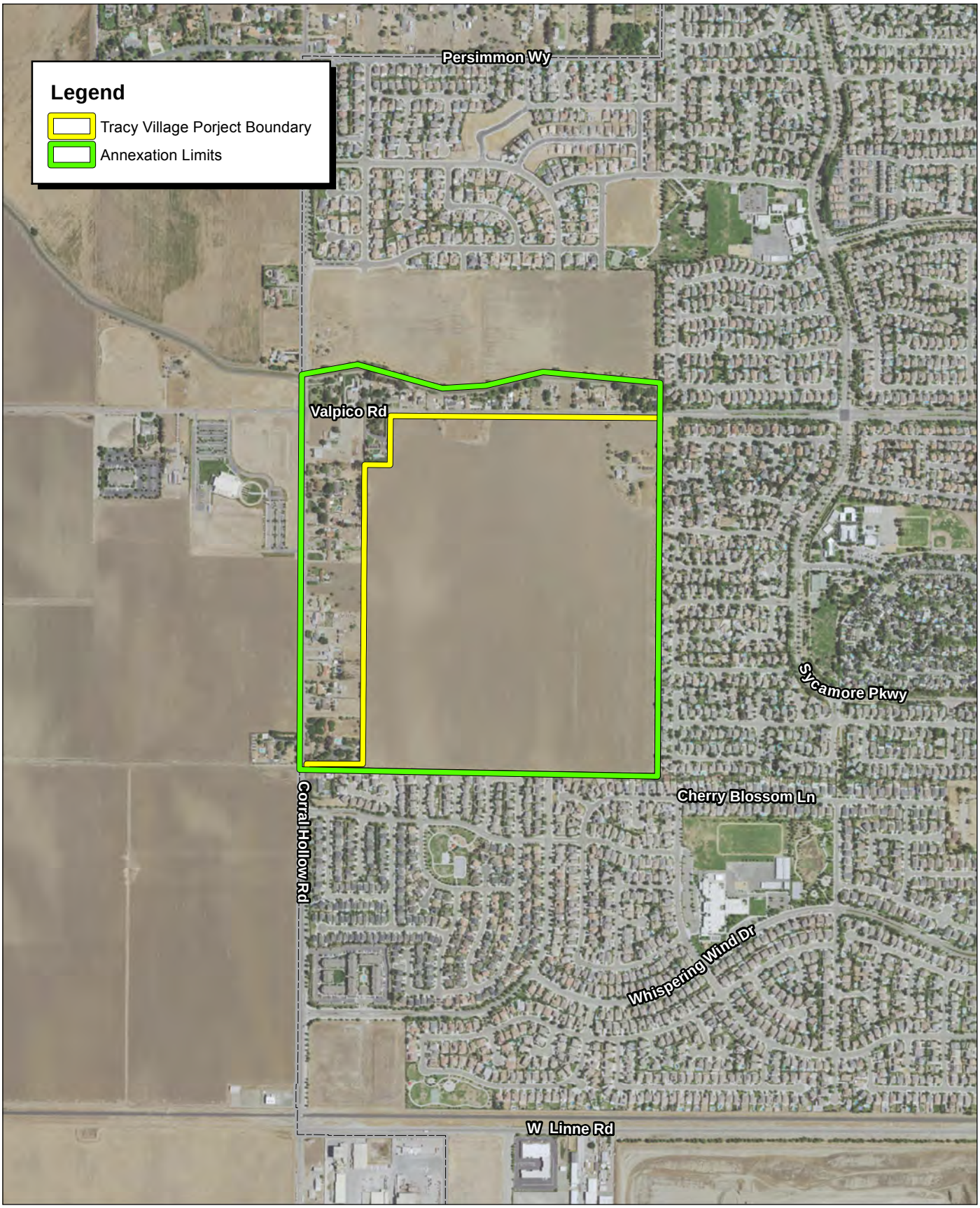
3) What service ratio does the Tracy Police Department use? Is it based on number of residents in a particular service area, or some other metric?

Thank you in advance for your timely response. A response by December 23rd, 2016 via either email or standard mail would be most appreciated. If you have any questions or require additional information, please contact me at 925.357.2562 x 1115 (office) or email rcarroll@fcs-intl.com.

Sincerely,

Robert Carroll, Environmental Analyst
FirstCarbon Solutions
Treat Boulevard, Suite 380
Walnut Creek, CA, 94597

Enclosures: Location Map



Source: ESRI Imagery, 2015

FIRSTCARBON SOLUTIONS™

1,000 500 0 1,000 Feet

Exhibit 2
Local Vicinity Map
Aerial Base

December 5, 2016

Tracy Utilities Department
3900 Holly Drive
Tracy, CA 95304

Subject: **Tracy Lakes Project- Information Request**

An Environmental Impact Report (EIR) is being prepared in accordance with the California Environmental Quality Act (CEQA) to evaluate the potential environmental impacts associated with implementation and development of the proposed Tracy Lakes Project in Tracy, California. The following is a description of the proposed project.

Tracy Lakes Project

The proposed Tracy Lakes development site is located on 134 acres in unincorporated San Joaquin County, adjacent to the Tracy city limits. The project boundaries are located on the U.S. Geological Survey (USGS) Tracy 7.5-minute quadrangle in the northwest quadrant of Section 5, Township 3 South, Range 5 East of the Mt. Diablo Meridian (Assessor's Parcel Number 244-04-001). The project site is located on the south side of West Valpico Road, just east of Corral Hollow Road. Corral Hollow Road is the main north-south collector on the west side of the City of Tracy, and Valpico Road is an important east-west collector.

The Tracy Lakes Project is a proposed active adult, age-restricted and gated community consisting of up to 600 single-family detached residential homes. The Tracy Village Specific Plan would utilize the Tracy General Plan land use designation of Residential Low, and providing for an Active Adult Residential land use. The Specific Plan serves as pre-zoning to meet the requirements for future development. **The Specific Plan for Tracy Lakes is twofold, it includes both the development of up to 600 lots that would support dwelling units ranging from 1,450 square feet to 3,000 square feet.** The project would feature three man-made lakes totaling approximately ten acres, along with a community recreation center with pool, spa and bocce courts, open space, parks, and trails**. Secondly, for EIR evaluation and annexation/prezoning purposes, the Project also includes an additional 21 residential properties fronting Corral Hollow Road, and 21 residential properties along the north side of Valpico Road and an adjoining drainage canal north of Valpico Road. Of these 42 lots, 39 are developed with residences.**

Preparation of the EIR requires a clear and documented understanding of the level of service provided by various organizations and public agencies. It is our understanding that the Tracy Utilites Department would serve the proposed project. Therefore, we would appreciate a response to this letter, either via email or standard mail. For your convenience, a preliminary site plan and location map has been

attached. In order to adequately address future public service needs, please answer the following question:

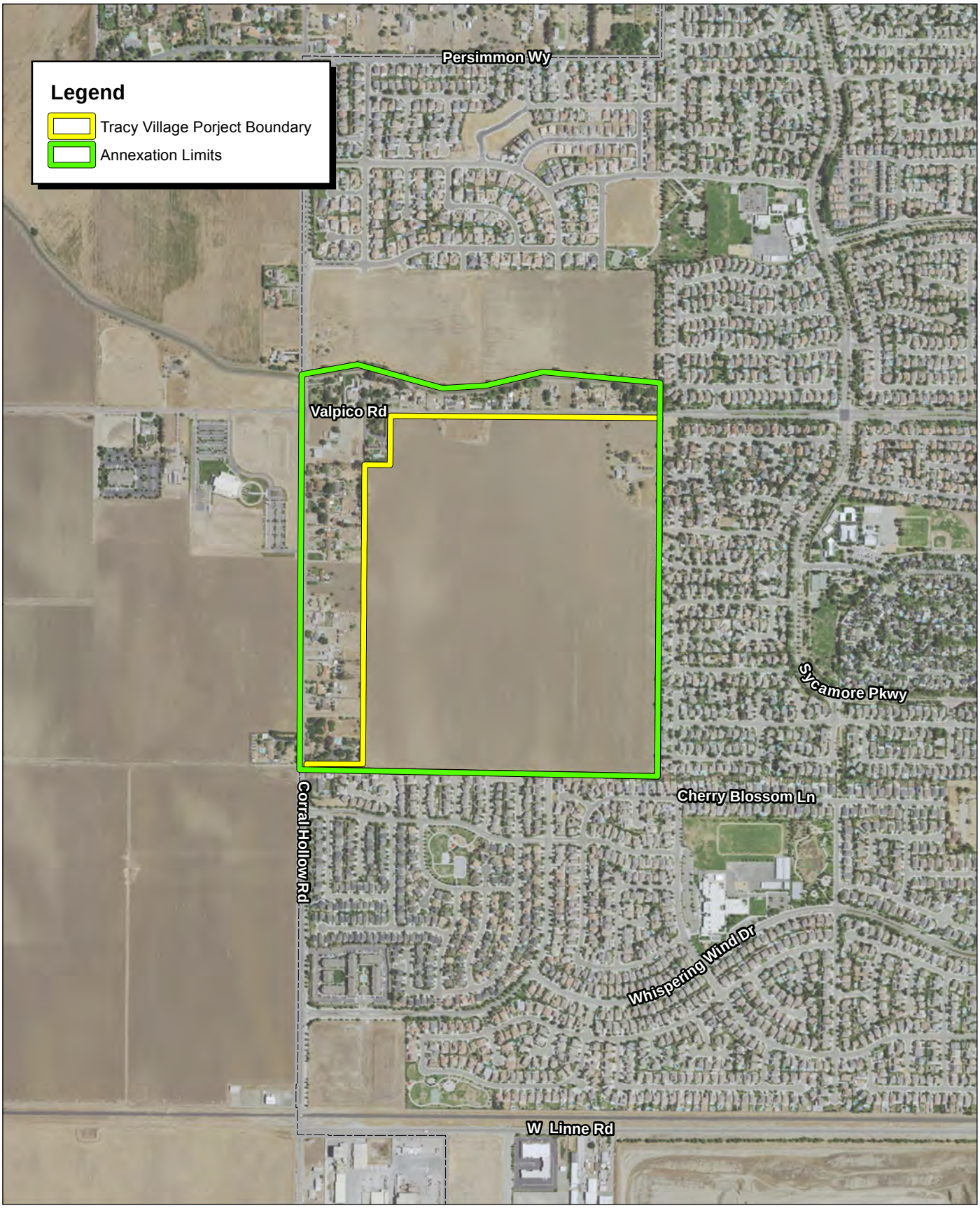
1) It is our understanding that the Tracy Utilities Department currently serves the project site. In your professional opinion, would development of the proposed project result in the need for new or expanded facilities in order to maintain performance objectives?

Thank you in advance for your timely response. A response by December 23rd, 2016 via either email or standard mail would be most appreciated. If you have any questions or require additional information, please contact me at 925.357.2562 x 1115 (office) or email rcarroll@fcs-intl.com.

Sincerely,

Robert Carroll, Environmental Analyst
FirstCarbon Solutions
Treat Boulevard, Suite 380
Walnut Creek, CA, 94597

Enclosures: Location Map



Source: ESRI Imagery, 2015

FIRSTCARBON SOLUTIONS™

1,000 500 0 1,000 Feet

Exhibit 2
Local Vicinity Map
Aerial Base

From: Randall Bradley
Sent: Thursday, July 06, 2017 11:19 AM
To: William Dean
Cc: Andrew Malik; Troy Brown
Subject: Tracy Village DEIR

Bill,

As we discussed in our meeting yesterday the Fire Department has analyzed the fire protection impacts of the proposed housing development "Tracy Village" in the vicinity of the southeast corner of Valpico Road and Corral Hollow Road. The analysis was based on an assumption of 600 homes on .2 square miles with an average number of persons per household of 3.41. If you have better assumptions (less number of persons per household due to retirement community status?) let me know. Based on the assumptions Fire Station 97 can meet the established response time goals of 4:00 minutes from its current location on the corner of Tracy Blvd. and Central Avenue and from its proposed location on Valpico Road .5 miles east of Tracy Blvd. We estimate that the increased population will increase population will increase the station 97 call volume by approximately 114 incidents. Based on Fire Station 97's call current call volume, Station 97 will have enough capacity to handle the additional 114 incidents without requiring the inclusion of additional fire protection resources.

Due to a concern about project sequencing, we also evaluated the call volume impact of Station 97 with an additional 2,000 homes that are proposed between the Ellis Project and the Avenues project. We estimate that these two projects, at build out, will add an additional 378 incidents per year. Even at complete buildout of all three projects (Ellis, The Avenues and Tracy Village) Station 97 will have the capacity to handle the additional call volume. With that said, and this is very important, a large portion of the proposed Ellis project and a portion of the proposed Avenue's project is outside of Station 97's (current and proposed location) 4:00 minute response time and I plan to condition the next phase of the Ellis and the initial phase of the Avenues with a new fire station. We can discuss the actual timing and specific triggers but I do not believe it will be in the best interest of the community to create additional communities that are outside our response time goals.

Please let me know if you require additional information or if you require a this information on official letterhead.

Randy

Let me know if you require additional information. Also, let me know if you need this on official letterhead with signature. Randy

Randall Bradley

Fire Chief

Tracy Fire Department/South County Fire Authority

835 Central Avenue

Tracy, California 95376

Phone: (209) 831-6702

Email: randall.bradley@ci.tracy.ca.us

Website: ci.tracy.ca.us

Google

Mail

More

1 of 1,387

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Nick Mitrovich
Paul Smallman
Robert Carroll
Andrew Hill
Janna Waligorski
Maya Tjahjadi
Philip Vuong
Alive!
Hannah Carney
Elizabeth Johnson

fyi

From: Jeremy Watney
Sent: Monday, December 05, 2016 3:23 PM
To: 'rcarroll@fcs-intl.com'
Cc: William Dean; Larry Esquivel
Subject: Information Request- Tracy Lakes Project

Hi Robert. Here is the information in regards to your three questions.

1) Currently the Tracy Police Department does not serve the project site as it has not been incorporated into the City yet. Once the project is within the City limits of Tracy we would not need to expand our police facilities solely due to your development. There are plans to expand our police facilities in the future due to all of the future City growth which would include your development.

2) The Tracy Police Department's response time goals for emergency calls is 7 minutes. Our current response time for 2016 is 7:07 minutes.

3) A recent study determined our service level should be at 1.5 officer and .5 non-sworn personnel per thousand residents (2015 Goodwin fiscal impact analysis). Currently our staffing level is approximately 1 officer and .5 non-sworn personnel per thousand. Other numbers we use when it comes to triggering additional officers/resources needed is our permits issued. Each single family residence permit equals 3.3 people so approximately every 300th permit issued triggers an officer if you use the 1 per thousand ratio.

Let me know if you need any further information. Thank you.

Jeremy Watney, Captain

TRACY POLICE DEPARTMENT
Bureau of Investigations

jeremy.watney@tracypd.com
www.tracypd.com
www.facebook.com/tracypolice

Robert Carroll
rcarroll@fcs-intl.com
Show details

Robert Carroll

Appendix K:
City of Tracy Measure K

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Exhibit A

RECEIVED
CITY CLERK'S OFFICE

2015 JUN -4 PM 1:44

CITY OF TRACY
TRACY, CA

We, the People of the City of Tracy, do hereby find, determine, resolve, adopt and ordain as follows:

SECTION 1. Purpose, Intent, Findings and Declarations.

(a) We, the undersigned, registered, qualified voters of California, residents of the City of Tracy, hereby propose resolution, ordinance and related actions relating to active adult residential development, and petition you to immediately submit this Initiative Measure to the City Council for submission to the voters of the City of Tracy at a special election pursuant to Elections Code section 9214, or the next regular municipal election for which it qualifies.

(b) For individuals aged 55 and older, very few residential opportunities currently exist in Tracy with on-site amenities, the ability to connect with peers in a social setting and a recreation-at-home lifestyle. This Initiative Measure is intended to facilitate the development of quality, safe, senior / active adult housing (also referred to in this Initiative Measure as "Active Adult Residential" or "AAR") communities within Tracy, which will promote a lifestyle, a "place," and welcoming community for those older individuals encompassed by the protections of California Civil Code Sections 51.2, 51.3 and 51.4, the Federal Fair Housing Act, and Title 24 of the California Code of Regulations (hereinafter referred to as "Active Adults"). This Initiative Measure also amends the General Plan, Tracy Municipal Code and other controlling local laws to adopt a process whereby proponents of Active Adult Residential projects (the property) may obtain Active Adult Residential Allotments, separate from the City's Growth Management Ordinance, but only when all of the following take place: (i) the Active Adult Residential Allotments are approved (adopted) through a ballot measure (in accordance with the Elections Code, including without limitation, sections 9214, 9215, 9222) for a particular piece of property, (ii) City-involved planning decisions are made approving the project (with full City discretion), and (iii) the project is restricted by the property developer to Active Adult residents. Finally, this Initiative Measure reclassifies a vacant property, known as Urban Reserve 9, as an Area of Special Consideration under Tracy's General Plan intended for low-density residential uses, and sets up a program by which a limited number of Active Adult Residential Allotments could be issued to this area if: (i) Approval by the City of a specific plan for the property (with the City retaining full discretion and authority over that specific plan process and approval) takes place; and (ii) Restriction of the property by the owner to Active Adult development, as encompassed by California Civil Code Sections 51.2, 51.3 and 51.4, the Federal Fair Housing Act, and Title 24 of the California Code of Regulations, takes place.

(c) The growing number of older citizens present a unique and important housing opportunity for any community: Many are still active in the workplace, some are retired, and some are employed but not part of traditional work patterns (including traditional workforce commute patterns). This diversity of retirement timelines has caused significant housing shifts from patterns established by previous generations. Active Adult communities often have a population density (occupants per dwelling unit) of approximately half that of typical, market-rate, single family detached residential subdivisions. Consistent with such higher retirement levels and reduced population counts, these communities generally have fewer vehicular trips (particularly during peak employment-related commute periods), and hence create fewer impacts on traffic and the local transportation network. Likewise, such communities generally do not have resident school-aged children and therefore impose fewer burdens on local public school systems. Further, these age-restricted developments have lower water and sewer demands, and overall lower impacts on public services and facilities. In short, Active Adult communities do not result in the same impacts as typical residential subdivisions. Finally, Active Adult communities create positive benefits for the community, including providing new sources of skilled and experienced workers for local businesses, volunteers for civic organizations and nonprofits, and new consumers desirous of supporting local businesses.

(d) Consistent with controlling law, promoting Active Adult housing will help to satisfy projected regional housing needs. In the future, qualifying senior/Active Adult Residential projects could be developed as small, medium or large master planned communities which may consist of a mix of residential densities and housing types at low, medium and high densities, or residential mixed-use developments. This measure is intended to facilitate planned residential developments at a range of affordability and housing type levels in order to accommodate the growing housing needs of older citizens, and provide new land for open space, trails, and recreational amenities. It also ensures that the development of AAR communities occurs in an approved and orderly fashion by limiting the number of Active Adult Residential Allotments that can occur separate from the City's Growth Management Ordinance.

(e) Under this Initiative Measure, new development on the property within the area formerly known as Urban Reserve 9, as well as future properties that qualify for Active Adult Residential Allotments through a ballot measure (in accordance with the Elections Code, including without limitation, sections 9214, 9215, 9222), will be subject to environmental review under the California Environmental Quality Act, will be subject to discretionary processes under Planning and Zoning law, the Subdivision Map Act, and all other controlling federal, state and local law, will require developer restriction on the property comprising the residential development to Active Adult in order to operate separate from the City's Growth Management Ordinance, will require public review and input, and involve and require discretionary City consideration through the City's normal entitlement and approval processes.

(f) This Initiative Measure is not intended to impede the provision of new Active Adult housing on property that does not wish to secure Active Adult Residential Allotments, is not intended to provide the exclusive means of providing new Active Adult housing, and shall not be construed as imposing any new restrictions or requirements on the development of senior housing that is otherwise conforming to California Civil Code Sections 51.2, 51.3 and 51.4, the Federal Fair Housing Act, and Title 24 of the California Code of Regulations, the City's General Plan, Municipal Code, Growth Management Ordinance and all other applicable rules and regulations. In other words, this Initiative Measure only seeks to facilitate generally the development of property for communities for Active Adults within Tracy, to reclassify a specific identified piece of vacant property as an Area of Special Consideration where Active Adult development could be encouraged, and establishes a program by which a limited number of Active Adult Residential Allotments could be issued to the property comprising this area if a Specific Plan for development of that property is approved by the City and the property and its development are age-restricted by the property developer. This Initiative Measure does not change the status quo for other properties or for developers of other types of age-qualified housing on other properties in Tracy, which shall remain regulated by the City's Growth Management Ordinance.

SECTION 2. General Plan Amendments.

(a) We, the people of the City of Tracy, do hereby amend the City of Tracy General Plan, as set forth in this Section 2. This Initiative Measure neither amends nor deletes existing General Plan text by implication; all amendments are made expressly as follows: when new text is added to the General Plan by this Initiative Measure, that new text is shown as underscored (i.e., new text). When existing General Plan text is deleted by this Initiative Measure, that deleted text is shown as struck through (i.e., ~~deleted text~~). Additionally, amendments to the General Plan effectuated by this Initiative Measure are cited by Element or other relevant major section of the General Plan, and then the particular Exhibits, Figures, Objectives, Goals, Policies, and/or Actions that are being added, deleted or revised, and the approximate page in the existing General Plan where the text before revision resides. Inaccuracies in citation shall not nullify the amendments effectuated by this Initiative measure.

(b) The following amendments are hereby made to the City of Tracy General Plan:

(1) The first paragraph of Section A.2 of the Land Use Element at page 2-9, "Growth Management Ordinance," is hereby amended to read as follows:

> The City of Tracy adopted a residential Growth Management Ordinance (GMO) in 1987, which was amended in 2000 by the voter-initiated Measure A. In general terms, the goal of the GMO is to achieve a steady and orderly growth rate that allows for the adequate provision of services and community facilities, and includes a balance of housing opportunities. Under the GMO, builders must obtain a Residential Growth Allotment (RGA) in order to secure a residential building permit. The GMO limits the number of RGAs and building permits to an average of 600 housing units per year for market rate housing, with a maximum of 750 units in any single year. There are exceptions for affordable housing.[1] The GMO shall not apply to Active Adult Residential (AAR) property that has secured "Active Adult Residential Allotments" through a ballot measure, in accordance with the Elections Code, including without limitation, sections 9214, 9215, 9222, and pursuant to Chapter 10.18 of the City's Municipal Code. The initiative measures that sets such Active Adult Residential Allotments for a particular property may set the annual number of building permits that may be issued for such particular property, thereby setting the maximum annual rate of potential development of such property's senior housing that is otherwise conforming to California Civil Code Sections 51.2, 51.3 and 51.4, the Federal Fair Housing Act, and Title 24 of the California Code of Regulations and the City's General Plan. Active Adult development that does not seek Active Adult Residential Allotments pursuant to Chapter 10.18 of the Municipal Code shall be subject to the GMO.
>
> Implementation of the GMO to meet the goals and policies of the General Plan, including concentrated growth, infill development, and affordable housing as high priorities, is through the Growth Management Ordinance Guidelines, which are adopted by resolution of the City Council. The GMO Guidelines include a map that establishes an "RGA Eligibility Area" showing the area where property owners are eligible to apply for RGAs. The Guidelines also include specific qualitative and quantitative criteria for the allocation of RGAs with said criteria periodically updated as provided by the resolution.

(2) Section A.2 of the Land Use Element at page 2-9, "Growth Management Ordinance," footnote 1, second paragraph, is hereby amended to read as follows:

> [FN1] Through implementation of this General Plan and the GMO, Tracy is projected to have a population of approximately 109,000 people in the year 2025. This number is based on an estimate of the number of residential units allowed per year multiplied by the number of years multiplied by the

number of people per residential unit (units x years x people per unit), and adding that to the population of Tracy in 2000, which was approximately 57,000 people, according to the US Census.

Between the years 2000 and 2025, the number of residential units allowed under the City's Growth Management Ordinance is 15,000 units (600 per year times 25 years). Exceptions to allow for additional affordable housing ~~is~~ are included. The General Plan Housing Element also has a target of 1,200 affordable units during this same time period, which in addition to the number of units allowed under the Growth Management Ordinance would bring~~ing~~ the total number of units to 16,200, resulting in an additional 52,000 people (using a multiplier of 3.21 persons per household), or a total population of 109,000 in the year 2025. Finally, the General Plan recognizes and authorizes Chapter 10.18 of the City's Municipal Code to exempt from the Growth Management Ordinance Active Adult Residential property that has received Active Adult Residential Allotments through a ballot measure (in accordance with the Elections Code, including without limitation, sections 9214, 9215, 9222). Because Active Adult Residential units are generally of lower density than non-Active Adult market-rate housing (to be conservative, an assumption of 2.0 persons per household is used) and because currently 600 Active Adult Residential Allotments have been authorized through a ballot measure for the property/area formerly known as Urban Reserve 9 (and is now referred to as the Tracy Village property), which is designated "Residential Low" under the General Plan, these additional units would result in an additional 1,200 people, for a total projected population of 110,200 in the year 2025.

(3) Table 2-2 of the Land Use Element at page 2-14, "General Plan Land Use Designations (City Limits and SOI)" is hereby amended to re-designate land from Urban Reserve to Residential Low as follows:

Table 2-2 **General Plan Land Use Designations (City Limits and SOI)**

Land Use Designation	City Limits (Acres)	SOI (Acres)	Total
Residential Very Low	193	266	459
Residential Low	3,583	~~296~~430	~~3,879~~4,013
Residential Medium	1,503	29	1,532
Residential High	217	31	248
TR – Ellis	-	287	287
Commercial	766	498	1,263
Office	544	--	544
Downtown	116	--	116
Village Center	123	8	131
Industrial	2,282	1,733	4,015
Urban Reserve	172	~~3,872~~ 3,738	~~4,044~~ 3,910
Public Facilities	990	66	1,057
Park	251	516	767
Open Space	81	3,469	3,551
Aggregate	10	163	172
Agriculture	-	916	916

1. Acreages have been rounded.
2. Information about the land use mix envisioned for areas with Urban Reserve designations are provided in the descriptions and statistical profiles on pp. 54-87.
3. Table has been updated under Amendment.

(4) Figure 2-2 of the Land Use Element at page 2-15 (General Plan Land Use Designations) is hereby amended by this Initiative Measure to reflect the re-designation of "Urban Reserve 9" to "Residential Low." An enlarged portion of Figure 2-2 of the Land Use Element at page 2-15 (General Plan Land Use Designations), as amended by this Initiative Measure, is attached to this Initiative Measure as *Attachment A*, and is incorporated herein by this reference as if set forth herein in full, in order to show in diagram form the location and re-designation of "Urban Reserve 9" to "Residential Low."

(5) Section C of the Land Use Element at page 2-38 is hereby amended to add Policy P8 under Objective LU-1.4, as follows:

P8. The City shall encourage Active Adult communities to meet the needs of an aging population and to offer a variety of housing and recreational choices as part of its efforts to promote equal housing opportunities in the City's housing market for all age ranges.

(6) Figure 2-4 of the Land Use Element at page 2-52 (Areas of Special Consideration) is hereby amended by this Initiative Measure to include a new Area of Special Consideration No. 11, Tracy Village Specific Plan Area, located as more particularly shown on *Attachment B* to this Initiative Measure, which is attached hereto and is incorporated herein by this reference as if set forth herein in full.

(7) Section D of the Land Use Element (Areas of Special Consideration) at page 2-59 is hereby amended to include the following new Area of Special Consideration No. 11, Tracy Village Specific Plan Area, as follows:

11. Tracy Village Specific Plan Area.

The Tracy Village Specific Plan Area property is a single rectangular shaped parcel comprising approximately 134 acres located on Valpico Road just east of Corral Hollow Road, and is the area formerly known as Urban Reserve 9. The property is currently outside of the City's territorial limits, but is within its sphere of influence, and is adjacent to the City on two sides. The property is currently undeveloped and used for agricultural uses, and is surrounded on three sides by existing residential neighborhoods. The vision for this property is a low-density, master planned residential community. This property has the potential to facilitate and promote an "active adult" lifestyle, a "place" for our older citizens, a welcoming community for those individuals encompassed by the protections of California Civil Code Sections 51.2, 51.3 and 51.4, the Federal Fair Housing Act, and Title 24 of the California Code of Regulations. It is anticipated that future development on the site will be governed by the Tracy Village Specific Plan (when adopted by City), which will establish specific zoning criteria and permitted uses, including the creation of park and recreational amenities, consistent with the goals and policies of the General Plan. This General Plan allows and encourages but does not require active adult development. The property was alloted six hundred (600) Active Adult Residential Allotments by initiative measure, subject to certain prerequisites. Two primary prerequisites to the availability and use of those 600 Active Adult Residential Allotments on the Tracy Village Specific Plan Area property set by that initiative measure are: (i) Approval by the City of a specific plan for the property (with the City retaining full discretion and authority over that specific plan process and approval); and (ii) Restriction of the property by the owner to active adult development encompassed by California Civil Code Sections 51.2, 51.3 and 51.4, the Federal Fair Housing Act, and Title 24 of the California Code of Regulations. Pursuant to that initiative measure, if either of those prerequisites are not satisfied, the six hundred (600) Active Adult Residential Allotments shall not be available to the Tracy Village Specific Plan Area property, and instead the Tracy Village Specific

Plan Area property shall be subject to the City's Growth Management Ordinance (GMO). Additionally, that initiative measure set a maximum annual issuance of two-hundred (200) building permits for habitable structures.

(8) Section E.9 of the Land Use Element at page 2-78 is hereby amended to read as follows:

[The Urban Reserve 9 General Plan designation has been deleted and replaced with the "Residential Low" General Plan designation, as shown in Figure 2-2, General Plan Land Use Designations.]

~~9. Urban Reserve 9~~

~~This area, located to the east of Corral Hollow Road is approximately 130 acres. The land use envisioned for this area is predominantly residential at a mixture of densities with some neighborhood park uses. When development occurs, the following additional General Plan policies apply:~~

~~9a. The acreages assigned to land uses in the statistical profile for this Urban Reserve are intended as guidelines; the overall distribution and mixture of residential densities may change.~~

~~9b. Future development in this Urban Reserve should strive for a goal of creating neighborhoods that have a well-integrated mixture of housing types with an average density of six dwelling units per acre.~~

~~9c. Consideration should be given to the relationship between the location, intensity of land uses and site layout along the boundary shared by this Urban Reserve and adjacent areas, including the surrounding residential uses.~~

(9) Table 2-11 of the Land Use Element at page 2-79, "Statistical Profile: Urban Reserve 9," is hereby deleted in its entirety:

~~TABLE 2-11 STATISTICAL PROFILE: URBAN RESERVE 9~~

~~Land Use Designation[a]~~	~~Acres~~	~~Adjusted Gross Acres~~	~~% of Total Land~~	~~Assumed Density[b]~~	~~Approximate # of Homesites[c]~~
~~Residential Low~~	~~57~~	~~48~~	~~44%~~	~~4.35~~	~~210~~
~~Residential Medium~~	~~43~~	~~37~~	~~34%~~	~~9~~	~~330~~
~~Residential High~~	~~17~~	~~14~~	~~13%~~	~~18.75~~	~~260~~
~~Park~~	~~13~~		~~10%~~		
~~Total Acres~~	~~130~~	~~110~~			~~800 du~~

~~[a] Does not include land for Public Facility or Open Space designations. Distribution of land uses may change as a result. These uses will be determined at the time of a Zoning District, Specific Plan or PUD.~~
~~[b] Assumed density (du/acre) is less than maximum allowed in a particular land use designation.~~
~~[c] Dwelling units (du) numbers have been rounded to the nearest 10.~~
~~Note: Table has been updated under Amendment.~~

SECTION 3. Amendments to the City of Tracy's Municipal Code and Zoning Ordinance.

(a) We, the people of the City of Tracy, do hereby amend the City of Tracy's Municipal Code, as set forth in this Section 3. This Initiative Measure neither amends nor deletes existing City of Tracy Municipal Code text by implication; all amendments are made expressly as follows: when new text is added to the City of Tracy Municipal Code by this Initiative, that new text is shown as underscored (i.e., new text). When existing Municipal Code text is deleted by this Initiative that deleted text is shown as struck through (i.e., ~~deleted text~~). Additionally, amendments to the City of Tracy Municipal Code effectuated by this Initiative are cited by chapter, section and/or other relevant demarcation in the City of Tracy Municipal Code, and then the particular Exhibits, Figures, Objectives, Goals, Policies, and/or Actions that are being added, deleted or revised. Inaccuracies in citation shall not nullify the amendments effectuated by this Initiative Measure.

(b) We, the people of the City of Tracy, do hereby adopt the following new Section 10.12.021, added to Chapter 10.12, Residential Growth Management Plan, of the City of Tracy's Municipal Code, to read as follows:

10.12.021 – Exemption For Certain Active Adult Residential Uses.

(a) Residential development on property that has obtained Active Adult Residential Allotments pursuant to Chapter 10.18 of the Municipal Code is unlike typical residential property in important ways. The senior housing development on such property generates fewer vehicular trips resulting in improved air quality over typical residential subdivisions, imposes fewer burdens on local public school systems and public services, creates lower demand for athletic fields, and has lower water and sewer demands. Such AAR communities are also recognized as providing a new source of skilled and experienced volunteers for civic organizations and nonprofits, as well as supporting local businesses and creating additional community benefits such as parks and other recreational amenities.

(b) For these reasons, the development of property that has been allocated "Active Adult Residential Allotments" through a ballot measure (in accordance with the Elections Code, including without limitation, sections 9214, 9215, 9222) are not subject to this GMO or the GMO Guidelines and shall not require any residential growth allotment under the GMO. In addition, new AAR units constructed with Active Adult Residential Allotments shall not be counted against the annual residential growth allotment allotments under this chapter. Finally, the term "residential building permits" as set forth in section 10.12.110 of this chapter shall be construed as meaning only residential building permits for residential units which have not been allotted Active Adult Residential Allotments through the initiative process and chapter 10.18 of the Tracy Municipal Code.

(c) We, the people of the City of Tracy, do hereby adopt the following new Chapter 10.18, Active Adult Residential Allotments, to the City of Tracy Municipal Code, to read as follows:

Chapter 10.18. Active Adult Residential Allotments

Article 1. General Provisions

10.18.010 - Authority and reference to chapter.

This chapter 10.18 of the Tracy Municipal Code may be referred to as "Active Adult Residential Allotments Ordinance" (also referred to as "AAR Allotments").

10.18.020 - Purpose.

The purpose and intent of this chapter is to facilitate the General Plan goal of developing Active Adult Residential communities within the City of Tracy by creating a process whereby Active Adult Residential Allotments (AAR Allotments) may be allocated to specific properties within the City of Tracy through the initiative process, separate from the City's Growth Management Ordinance.

10.18.030 – Definitions

Unless otherwise provided in this chapter, the definitions set forth in chapter 10.08 (Zoning Regulations), chapter 12.08 (Subdivision Ordinance), and title 9 (Building Regulations) of this Code shall apply to this chapter. In the event that the definitions or provisions of the Zoning Regulations, the Subdivision Ordinance, or the Building Regulations, or any other provisions of this Code conflict with any provisions of this chapter, then this chapter shall control to the extent necessary to administer and effectuate the purpose of this chapter.

Article 2. Active Adult Residential Allotments.

10.18.040 – Limitations

AAR Allotments shall be allocated in accordance with this chapter and through a ballot measure (in accordance with the Elections Code, including without limitation, sections 9214, 9215, 9222), as required by this chapter. Once allotted through such initiative process to a particular property, such AAR shall not be transferred to any other property.

Article 3. Implementation.

10.18.050 – Requirements

(a) An Active Adult Residential Allotment (or residential growth allotment, for projects which do not have Active Adult Residential Allotments) shall be required for any dwelling unit to be constructed on property as a condition of issuance of building permits. Prior to the issuance of building permits for the development of AAR units pursuant to this chapter, applicants shall demonstrate to the satisfaction of the City of Tracy's Director of Development and Engineering Services that such units are subject to a Specific Plan or Planned Unit Development Permit that establish dwelling unit and population density, design, and neighborhood compatibility standards, including but not limited to the following: (1) the maximum and minimum number of residential units allowed and the average number of people per unit; (2) the density ranges allowed in terms of dwelling units per acre, and the maximum and minimum numbers of each such residential housing type; (3) the criteria that will be used to establish the location/mix of residential design and housing types; and (4) the park and recreational uses. In addition, in order for a property awarded AAR Allotments through a ballot measure (in accordance with the Elections Code, including without limitation, sections 9214, 9215, 9222) to use such AAR Allotments pursuant to the AAR Allotment process set forth in this chapter, residential occupancy of said property shall be limited by the property developer (through deed restriction, condition of land development approval, lease, and/or other enforceable manner) to Active Adults (persons qualifying under California Civil Code Sections 51.2, 51.3 and 51.4, the Federal Fair Housing Act, Title 24 of the California Code of Regulations, and related controlling law).

(b) "Active Adult Residential Allotments" is the phrase used to denote the approval through a ballot measure (in accordance with the Elections Code, including without limitation, sections 9214, 9215, 9222) of a specific maximum number of AAR residential units allowed for a named property. Once such specific Active Adult Residential Allotments are approved through such initiative process, then such approved Active Adult Residential Allotments may be used only on the AAR property named through such initiative process. In other words, through such initiative process, the maximum number of Active Adult Residential Allotments shall be determined, and shall be assigned only to that property designated by such initiative measure. Because of such initiative-process-determined AAR Allotments, AAR properties that have received such Active Adult Allotments are not subject to the City's Growth Management Ordinance (GMO), as explained in the City's General Plan and Municipal Code, including without limitation, this chapter.

10.18.060 – Other Senior Housing

This Active Adult Residential Allotments Ordinance does not provide the exclusive means of providing new Active Adult housing, and shall not be construed as imposing any new restrictions or requirements on the development of senior housing that is otherwise conforming to California Civil Code Sections 51.2, 51.3 and 51.4, the Federal Fair Housing Act, and Title 24 of the California Code of Regulations, the City's General Plan, Municipal Code, Growth Management Ordinance and all other applicable rules and regulations. This Active Adult Residential Allotments Ordinance only applies to those properties identified in a ballot measure (in accordance with the Elections Code, including without limitation, sections 9214, 9215, 9222) as being qualified to secure Active Adult Residential Allotments, if the requirements of the General Plan, this chapter, and said initiative measure are satisfied. This chapter provides for, and does not change the status quo for properties and developments of other types of age-qualified housing in Tracy. For those properties and developers who do not wish to avail themselves of the Active Adult Residential Allotments this chapter provides for, all of the other relevant controlling law shall apply, including without limitation California Civil Code Sections 51.2, 51.3 and 51.4, the Federal Fair Housing Act, and Title 24 of the California Code of Regulations, the City's General Plan, the Tracy Municipal Code, and the Growth Management Ordinance (GMO).

Article 4. Urban Reserve Area 9/ Tracy Village Specific Plan Area.

10.18.070 – Allocation of Active Adult Allotments.

(a) By a ballot measure (this Initiative Measure), Six hundred (600) Active Adult Residential Allotments are allocated to the property/area formerly known as Urban Reserve 9, now referenced as the Tracy Village Specific Plan property, located at the southeast corner of Corral Hollow and Valpico Roads. This Article 4 and its sections were included in a ballot measure (this Initiative Measure) and provide the details of that allocation of Active Adult Allotments to the Tracy Village Specific Plan property.

(b) An individual (one (1)) Active Adult Residential Allotment shall be required for each individual dwelling unit to be developed as an AAR residential unit on the Tracy Village Specific Plan property, and possession of such an Active Adult Residential Allotment shall be a condition of building permit issuance.

(c) No more than two-hundred (200) residential building permits may be issued by City for the Tracy Village Specific Plan property in any given calendar year.

10.18.080 – Exclusive Use/No Transfers of AAR Allotments Allowed.

(a) All or any part of said six hundred (600) Active Adult Residential Allotments allocated to the Tracy Village Specific Plan property by this Initiative Measure shall only be used on the Tracy Village Specific Plan property, and shall not be transferred (in whole or part) to any other project or property.

(b) Said six hundred (600) Active Adult Residential Allotments allocated to said Tracy Village Specific Plan property shall not expire.

10.18.090 – Application of Articles 1, 2, 3 and 4.

The general provisions of Articles 1, 2 and 3 of this Chapter 10.18, Active Adult Residential Allotments, shall apply to the six hundred (600) Active Adult Residential Allotments allocated to the Tracy Village Specific Plan property by this Article 4.

SECTION 4. Implementation.

(a) Nothing in this Initiative Measure shall be construed to preclude, prohibit or limit the City from complying with any requirements under state housing law. To the extent that any provision of this Initiative Measure can be read to conflict with state housing law, it shall be interpreted to allow for compliance with state housing law, consistent with the effectuation of all the purposes and provisions of this Initiative Measure.

(b) Once adopted by this Initiative Measure, and upon application by the then-relevant owner(s) of the property (or portion of property) in question, the General Plan amendment, zoning and pre-zoning provisions of this Initiative Measure may be revised by the City without a subsequent vote of the people of the City of Tracy, provided such proposed revision(s) is conducted pursuant to controlling California law, including without limitation the California Environmental Quality Act and the Planning and Zoning law.

(c) Additional approvals and permits outside of the scope of this Initiative Measure (e.g., subdivision maps, building permits, etc.) will be necessary or desirous to the development of the Tracy Village Specific Plan property. Such approvals and permits may be approved, issued, revised and otherwise acted upon without a subsequent vote of the people of the City of Tracy. Additionally, nothing in this Initiative Measure is intended to remove the legal requirement that the City and all responsible agencies fully comply with the California Environmental Quality Act, Planning and Zoning Law, the Subdivision Map Act, and any and all other relevant laws prior to taking action on such subsequent approvals and permits for the Tracy Village Specific Plan property.

(d) In accordance with the ruling in *L.I.F.E. Committee v. City of Lodi* (1989) 213 Cal.App.3d 1139, this Initiative Measure does not pass judgment on whether or not the annexation of the Tracy Village Specific Plan property to the City is required, and does not say "yea" or "nay" to such annexation. However, in order to effectuate the implementation of this Initiative Measure, we the people of the City of Tracy hereby express our desire that the City of Tracy take all steps necessary to process and submit requests to the San Joaquin County Local Agency Formation Commission ("LAFCO") (which steps include without limitation, CEQA compliance, pre-zoning and other pre-approvals for all related parcels) for LAFCO's action on, and approval of, the annexation of the Tracy Village Specific Plan property to the City of Tracy in order to effectuate the development of this property as proposed and authorized in this Initiative Measure. This Initiative Measure does not and cannot increase or decrease the discretion of the City and LAFCO to determine those actions. However, we the people absolutely desire that such actions take place, and trust that the City and LAFCO will consider our voices when they act.

(e) This Initiative Measure envisions and supports future City, LAFCO and other public agency actions that will implement this Initiative Measure (for example, annexation of the Tracy Village Specific Plan property to the City, etc.), including those actions that may result in future amendments to the General Plan, Tracy Municipal Code and all other local laws and approvals.

SECTION 5. Conflicting Measures.

(a) This Initiative Measure shall be deemed to conflict with any other initiative measure appearing on the same ballot if such other initiative measure(s) address(es) any of the following subjects, whether it does so by specific application or as a more general enactment that could otherwise be applied in a manner that addresses any of the following subjects: age-restricted development, active adult development, GMO inclusions and exclusions addressing age-restricted/active adult development.

(b) In the event that this Initiative Measure and any other initiative measure are approved by the voters at the same election, and this Initiative Measure receives a greater number of affirmative votes than any other such measure or measures, this measure shall control in its entirety and the other measure or measures shall be rendered void and without any legal effect. If this Initiative Measure is approved by a majority of the voters but does not receive a greater number of affirmative votes than any other conflicting initiative measure, this Initiative Measure shall take effect to the extent permitted by law.

SECTION 6. Construction.

(a) This Initiative Measure shall be liberally construed to effectuate its purposes.

(b) This Initiative Measure shall be interpreted so as to be consistent with all federal, state and City of Tracy laws, rules and regulations.

SECTION 7. Severability, Cure and Re-Approval.

(a) If any portion, section, phrase, sentence or word (collectively, "portion") of this Initiative Measure, or a portion's application to a particular situation, is held invalid by a court of competent jurisdiction, then that portion shall be considered severed from this Initiative Measure and the remaining portions of this Initiative Measure shall remain in legal force and effect. We, the people of the City of Tracy, declare that we would have adopted this Initiative Measure, and each portion of it, irrespective of the fact that any other portion, or application to a situation, be held invalid.

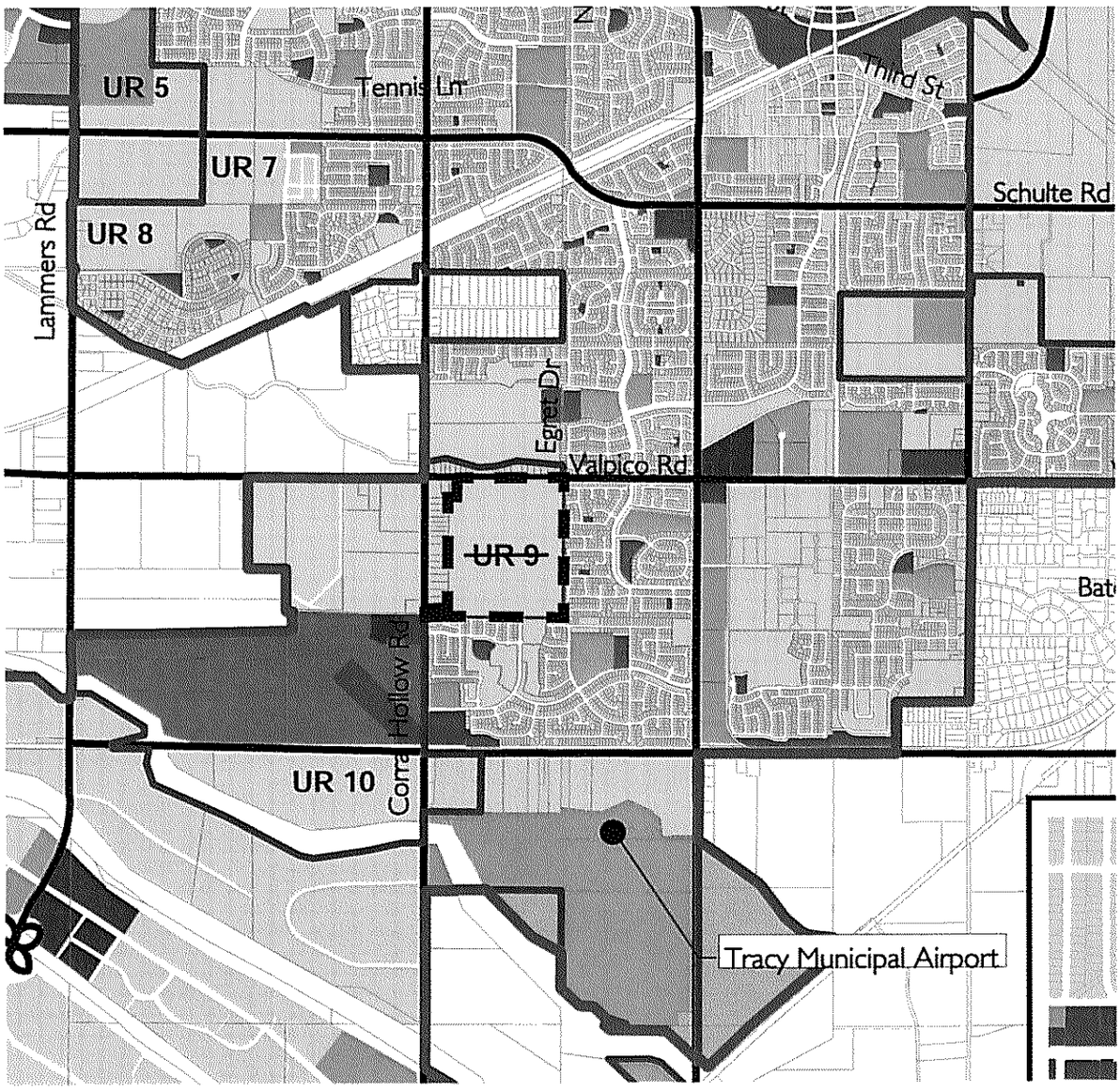
(b) If any portion of this Initiative Measure is held by a court of competent jurisdiction to be invalid, we the people indicate our strong desire that: (1) the City Council shall use its best efforts to sustain and reenact that portion; and (2) the Council shall implement this Initiative Measure by taking all steps possible to cure any inadequacies or deficiencies identified by the court in a manner consistent with the express and implied intent of this Initiative Measure.

SECTION 8. Adopted Date; Effective Date; Statute of Limitations.

(a) If a majority of the voters vote in favor of this Initiative Measure, then this Initiative Measure shall be considered adopted, and shall be considered to go into effect, in accordance with the provisions of Elections Code section 9217. If, instead, this Initiative Measure is adopted without alteration by a majority of the City Council in accordance with the provisions of Elections Code sections 9214 or 9215, then this Initiative Measure shall be considered adopted and effective upon such date of adoption by such City Council majority.

(b) Unless a shorter statute is enacted by the State Legislature, all provisions of this Initiative Measure shall be deemed subject to Government Code Section 65009(c), and no action or proceeding challenging all or any part of this Initiative Measure shall be maintained unless commenced and service made upon the City of Tracy within 90 days of this Initiative Measure's adoption, either by the voters or by the City Council, as provided above.

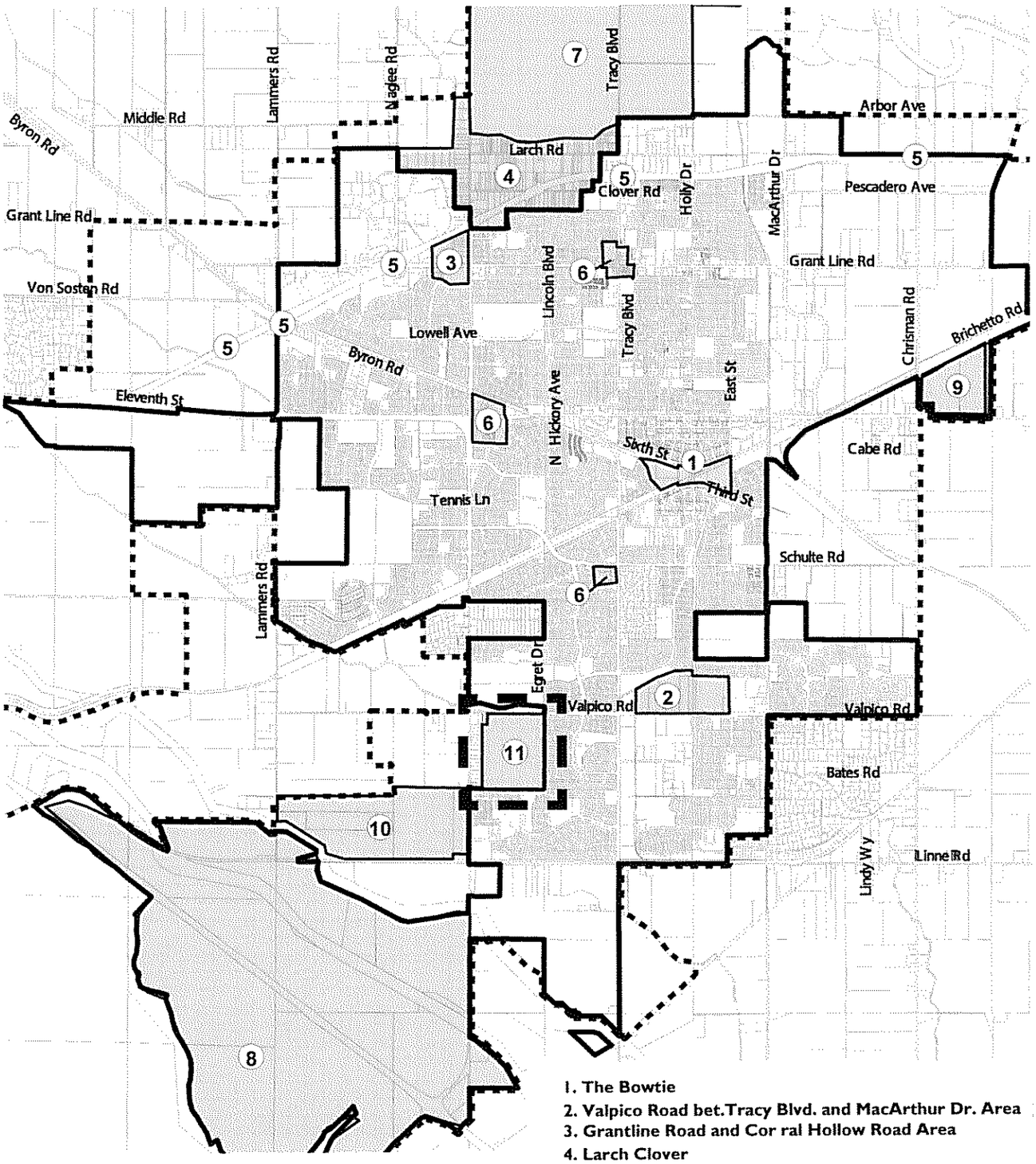
Attachment A: Tracy General Plan Land Use Designations, Figure 2-2



Legend

- Sphere of Influence
- City Limits
- Residential Very Low
- Residential Low
- Residential Medium
- Residential High
- Traditional Residential - Ellis
- Commercial
- Office
- Industrial
- Downtown
- Village Center
- Public Facilities
- Park
- Open Space
- Agriculture
- Aggregate
- UR — Urban Reserve
- Major Arterial/Expressway/Boulevard
- ~~UR 9~~ Former "UR 9" is now "Residential Low"

Attachment B: Tracy General Plan Areas of Special Consideration, Figure 2-4



NORTH 0 0.5 1 Miles

City Limits

Sphere of Influence

Areas of Special Consideration

1. The Bowtie
2. Valpico Road bet.Tracy Blvd. and MacArthur Dr. Area
3. Grantline Road and Cor ral Hollow Road Area
4. Larch Clover
5. I-205 Entryways
6. Potential Village Centers
7. Holly Sugar Agricultural Area
8. Tracy Hills Specific Plan
9. Chrisman Road Property
10. Ellis/Tracy Airport Outer Approach Zone Property
11. Tracy Village

FIGURE 2-4

AREAS OF SPECIAL CONSIDERATION

CITY OF TRACY

GENERAL PLAN
LAND US E ELEMENT