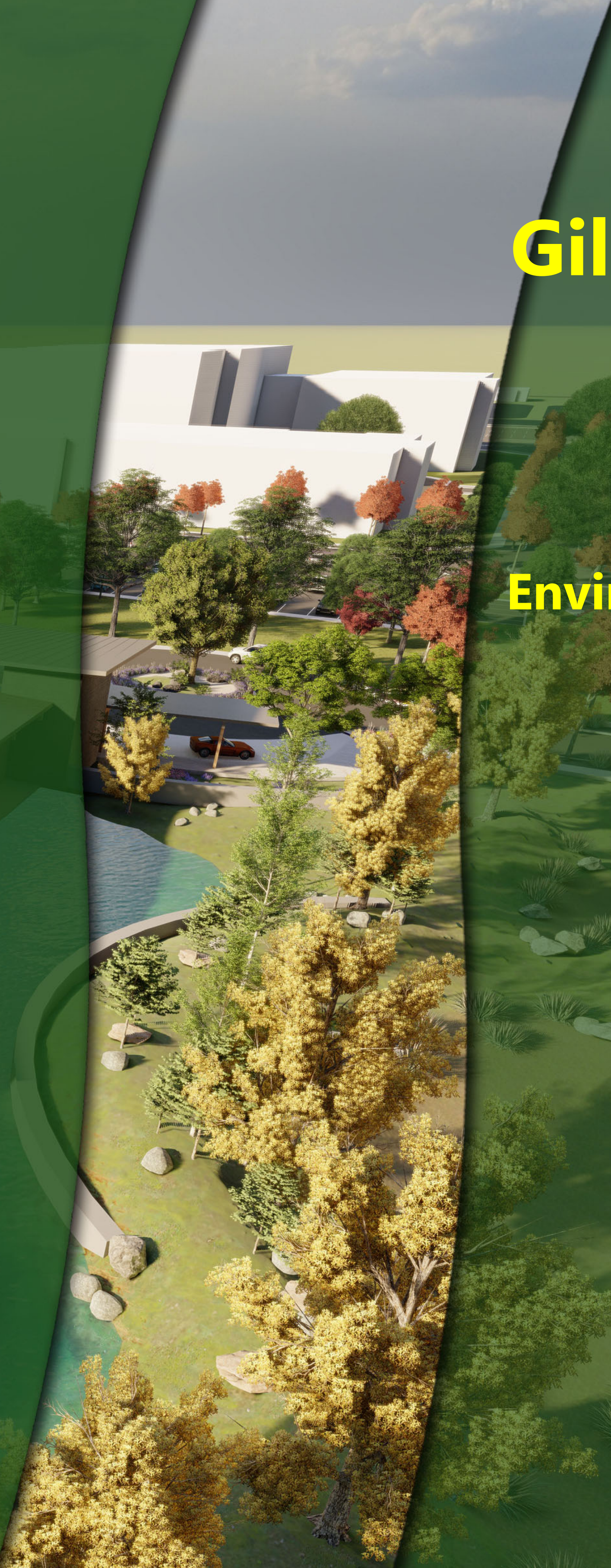


APPENDICES

Gill Medical Center Project

Draft

Environmental Impact Report

SCH# 2020010176

Lead Agency:

County of San Joaquin
1810 East Hazelton Avenue
Stockton, California 95205

June 2022

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

LIST OF APPENDICES

APPENDIX A

Initial Study/Notice of Preparation and Scoping Comments
January 13, 2020 -
San Joaquin County Community Development Department

SAN JOAQUIN COUNTY
NOTICE OF PREPARATION
ENVIRONMENTAL IMPACT REPORT
AND NOTICE OF PUBLIC
SCOPING MEETING

GILL WOMEN'S MEDICAL CENTER, LLC
WOMEN'S HEALTH FACILITY &
HOSPITAL PROJECT

Date: January 13, 2020

To: Responsible Agencies, Trustee Agencies, & Interested Persons

Re: Notice of Preparation of a Draft Environmental Impact Report for the Gill Women's Medical Center

Project Number(s): PA-1900240 (SA) & PA-2000014 (ER)
Property Owner(s): Jasbir S. Gill Family LTD PTP
Applicant(s): Gill Women's Medical Center, LLC

Lead Agency: San Joaquin County

Contact: Stephanie Stowers, Senior Planner
1810 E. Hazelton Avenue
Stockton, CA 95205
sstowers@sjgov.org
(209) 468-9653

Comment Period: January 15, 2020 to February 14, 2020

In accordance with the provisions of the California Environmental Quality Act (CEQA), San Joaquin County (County) has determined that the proposed Gill Women's Medical Center will require the preparation of an Environmental Impact Report (EIR). The purpose of this Notice of Preparation (NOP) is to provide sufficient information describing the proposed project and the potential environmental effects to enable meaningful input related to the scope and content of the information to be included in the EIR.

This NOP initiates the CEQA scoping process. The County will be the lead agency for the preparation of the EIR.

Documents related to the project and EIR will be available for review on the County's website at:

https://www.sjgov.org/commdev/cgi-bin/cdyn.exe?grp=planning&htm=actlist&typ=apd

PUBLIC REVIEW PERIOD

This NOP is being circulated for public review and comment for a period of thirty (30) days, beginning January 15, 2020 and concluding on February 14, 2020. The County, as the lead agency, requests that responsible and trustee agencies, and the Office of Planning and Research, respond in a manner consistent with CEQA Guidelines § 15082(b). Responsible and trustee agencies, and the Office of Planning and Research must submit any comments in response to this notice no later than 30 days after receipt. In the event that the County does not receive a response or request for additional review time from a responsible or trustee agency by the end of the review period, the County may presume that the agency has no response to make.

PROVIDING COMMENTS ON THIS NOTICE OF PREPARATION

Comments on how the proposed project may affect the environment are welcomed. Please contact Ms. Stowers if you have any comments regarding the project or questions about the environmental review process. Comments in response to this notice must be submitted in writing.

Written and/or email comments on the NOP should be provided at the earliest possible date, but must be received no later than 5:00 p.m. on February 14, 2020.

Comments should include the name and mailing address (email or physical) of the commenter in the body of the response. Please provide the name of an applicable contact person if you are providing comments on behalf of an agency.

SCOPING MEETING

The County will hold two (2) scoping meetings to provide an opportunity for agency representatives and the public to assist the County in determining the scope and content of the EIR.

Agency Scoping Meeting:
Wednesday, February 5, 2020
3:30-5:00 PM
Public Health Auditorium
1601 East Hazelton Avenue
Stockton, CA 95205

Public Scoping Meeting:
Wednesday, February 5, 2020
5:30-7:00 PM
Public Health Auditorium
1601 East Hazelton Avenue
Stockton, CA 95205

FOCUS OF INPUT

The County relies on responsible and trustee agencies to provide information relevant to the analysis of resources falling within its jurisdiction. The County encourages input for the proposed EIR, with a focus on the following topics:

Scope of Environmental Analysis: Guidance on the scope of analysis for this EIR, including identification of specific issues that will require closer study due to the location, scale, and character of the proposed project;

Mitigation Measures: Ideas for feasible mitigation that could potentially be imposed by the County to avoid, eliminate, or reduce potentially significant or significant impacts;

Alternatives: Suggestions for alternatives to the Gill Women's Medical Center that could potentially reduce or avoid potentially significant or significant impacts; and

Interested Parties: Identification of public agencies, public and private groups, and individuals the County should notice regarding the Gill Women's Medical Center and the accompanying EIR.

PROJECT LOCATION

The proposed Gill Women's Medical Center is located at 11000 N. West Lane, within unincorporated San Joaquin County, approximately one (1) mile north of the City of Stockton. The project encompasses three (3) parcels, totaling 60.83 acres; APNs: 059-080-07, -29, & -30 (See attached, Exhibit A for a detailed project location map). The site is currently primarily planted in vineyards, with one existing residence (Address: 11013 N. Ham Lane). Surrounding land uses are primarily agricultural with scattered residences; detailed surrounding land uses are as follows:

North of the project site: Pixley Slough (one half [½] mile north), City of Lodi (two and a half [2 ½] miles north)

East of the project site: Union Pacific Railroad (Fresno) (one half [½] mile east), City of Stockton (one half [½] of a mile east), State Route 99 (one and a half [1 ½] miles east)

South of the project site: Industrial development (500 feet south), Bear Creek (one [1] mile south), City of Stockton (one [1] mile south)

West of the project site: City of Stockton (three quarter [¾] mile west), Union Pacific Railroad (Sacramento) (one and a half [1 ½] miles west)

PROJECT DESCRIPTION

The proposed project is a Site Approval application to establish a medical facility, including a women's health facility and hospital with heliport, in two (2) phases (Use Types: Public Services – Essential). The proposed project includes a Development Agreement application, which, if approved, will permit Phase 1 improvements to be constructed over five (5) years, and Phase 2 improvements to be constructed over ten (10) years (See attached, Exhibit B for site plan).

Phase 1 includes the construction of a 36,000 square foot single story women's health facility, which will provide labor, delivery, emergent medicine, and outpatient surgery center services (OSHPD-3 "Alternative Birthing Center" as designated by Health & Safety Code §1204[b][4] including accessory urgent care medicine and outpatient surgery). On-site improvements including encroachment from West Lane, parking, and private facilities for wastewater, water, and stormwater will be provided with Phase 1.

Phase 2 includes the construction of a 28,000 square foot medical office building, a 140,000 square foot hospital with 100 beds, an emergency heliport landing area, and a 6,000 square foot physical plant building (Level III Trauma Center designation from EMS pursuant to 22 Cal. Code Regs. § 100263). On-site improvements including encroachment from Ham Lane and Eight Mile Road, parking expansion, and expansion of private facilities for wastewater, water, and stormwater will also be provided with Phase 2.

The project site encompasses three (3) parcels, and a Lot Line Adjustment is proposed to result in Phase 1 and Phase 2 development to be located on stand-alone parcels.

RESPONSIBLE AGENCIES

For the purposes of CEQA, the term "Responsible Agency" includes all public agencies (other than federal agencies) beyond the Lead Agency that have discretionary approval power over the project (CEQA Guidelines Section 15381). Discretionary approval power may include such actions as issuance of a permit, authorization, or easement needed to complete some aspect of the proposed project. Responsible Agencies may include, but are not limited to, the following:

- **California Department of Transportation (Caltrans):** Encroachment permits for placement of encroachments within, under, or over the state highway rights of way if improvements are required at freeway interchanges

- **California Department of Transportation (Caltrans) – Division of Aeronautics:** Approval of heliport-related permits

- **California Office of Statewide Health Planning and Development (OSHPD):** Approval and construction inspection of hospital buildings

- **California Department of Public Health, Licensing, and Certification:** Licensing and certification of healthcare facilities

- **Central Valley Regional Water Quality Control Board (CVRWQCB):** Clean water quality certification, National Pollutant Discharge Elimination System permit

- **San Joaquin Valley Air Pollution Control District (SJVAPCD):** Authority to construct, permit to operate

- **San Joaquin Council of Governments:** Approval of participation and certificate of payment confirming participation in the San Joaquin Multi-Species and Habitat Conservation Plan

- **Union Pacific Railroad (UPRR):** Encroachment permit for placement of encroachments within, under, or over the UPRR rights-of-way

POTENTIAL ENVIRONMENTAL EFFECTS

The County has determined that the proposed project may have a significant effect on the environment and, therefore, an EIR should be prepared. As required by CEQA, the EIR will describe the existing conditions and evaluate the potential for environmental effects of the proposed project and a reasonable range of alternatives, including the no-project alternative. It will address direct, indirect, and cumulative effects. The EIR will also discuss potential growth-inducing impacts and summarize significant and unavoidable environmental effects. The EIR will identify feasible mitigation measures, if available, to reduce potentially significant impacts. The EIR will focus on the potentially significant environmental impacts of the project. At this time, the County has identified a potential for environmental impact in the areas identified below:

Aesthetics: The analysis will address the alteration of visual characteristics from the development of the proposed hospital facility, and the potential for increases in light and glare in within the vicinity of the project site.

Agriculture and Forestry Resources: The analysis will evaluate potential direct and indirect effects on the existing surrounding agricultural uses that could result from implementation of the proposed project.

Air Quality: The analysis will address short-term construction-related and long-term operations-related increases in criteria air pollutants and precursors (e.g., reactive organic gases [ROG], oxides of nitrogen [NOX], respirable particulate matter [PM10], and fine particulate matter [PM2.5]). The analysis will also assess the potential for construction- and operations-related toxic air contaminants (TACs) to result in levels of health risk exposure at off-site sensitive receptors.

The analysis will focus on diesel particulate emitted by heavy equipment during project construction, and any additional trucks serving the project during operations.

Biological Resources: The analysis will evaluate potential direct and indirect impacts on biological resources, including riparian habitat, special-status fish, and other terrestrial and aquatic resources, that could result from implementation of the proposed project.

Cultural Resources and Tribal Cultural Resources: A record search will be conducted at the Central California Information Center and pedestrian surveys of areas proposed for ground disturbance will be conducted by a qualified archaeologist. Any tribal or other cultural resources that are known or have the potential to occur on the project site will be assessed, and the potential impacts that may occur to known and unanticipated resources because of project implementation will be evaluated. The EIR will also document the results of required consultation and any agreements on mitigation measures for California Tribal Cultural Resources.

Energy: The levels of electricity, natural gas, propane, gasoline, and diesel consumed in the construction and operation of the project will be estimated, and whether the project would result in the wasteful use of energy will be determined.

Geology and Soils: The analysis will evaluate the potential for project-related construction and operations to cause impacts related to geology and soils, including mineral resources, which could result from the development of the proposed project.

Greenhouse Gases and Climate Change: The analysis will evaluate the project's consistency with California's GHG reduction goals and related regulations and policies, and will determined whether project-generated GHG emissions would be cumulatively considerable contribution to the global impact of climate change.

Growth Inducement: The analysis will evaluate the project's direct and indirect impacts on economic and/or population growth including the construction of additional housing, in the project vicinity.

Hazards and Hazardous Materials: The analysis will address the potential for project-related construction and operations to create significant hazards to the public of the environment through use of hazardous materials, or cause reasonably foreseeable upset and accident conditions involving the release of hazardous materials.

Hydrology and Water Quality: The analysis will describe the existing drainage and water quality conditions of the site, and provide a description of the applicable regulatory environment, and evaluate the project's hydrology and water quality impacts including" short-term construction-related effects; permanent stormwater changes' impacts to surface water quality' impacts to groundwater quality and quantity; and cumulative on- and off-site impacts.

Land Use: The analysis will describe the existing and proposed land uses in the project area and evaluate the potential inconsistencies between the proposed project and the applicable General Plan and zoning. The analysis will focus on changes in land use, land use compatibility, and general plan consistency, to the extent that potential General Plan conflicts may lead to physical impacts on the environment.

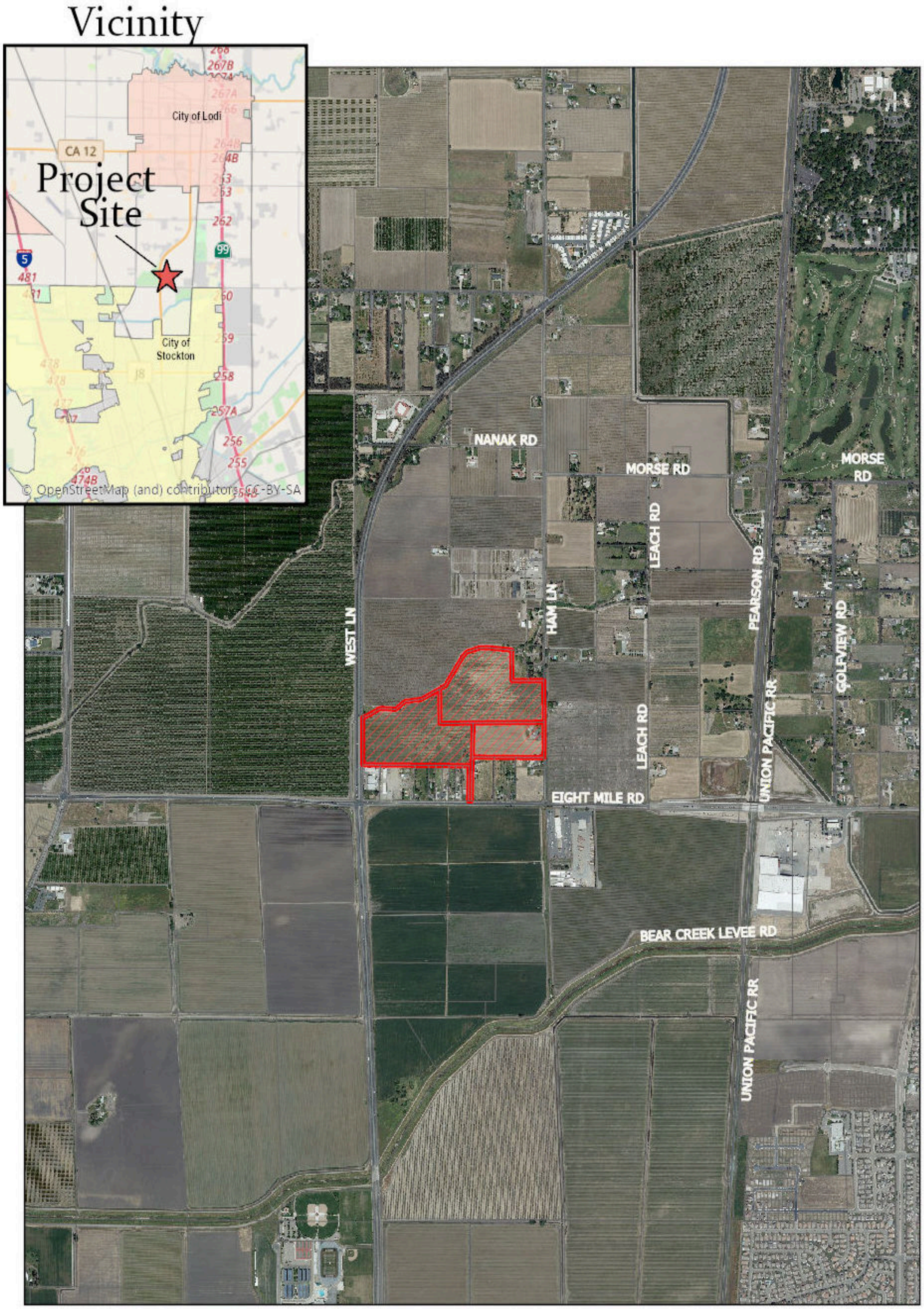
Noise and Vibration: The analysis will include information on the location of existing sensitive receptors, ambient noise levels, and natural factors that relate to the attenuation thereof. Noise and vibration impacts that would be anticipated to occur with construction and operational activities associated with the proposed project will be assessed.

Public Services and Recreation: The analysis will address the potential impacts on public services as a result of the proposed project. Public services include fire protection, law enforcement, schools, parks and recreation, and libraries.

Transportation: The analysis will include a Traffic Study. The traffic study will analyze the increase in vehicle traffic, and Level of Service and Vehicle Miles Travelled impacts to streets and intersections potentially impacted by the project, including West Lane, Eight Mile Road, and Ham Lane, and other surrounding roads.

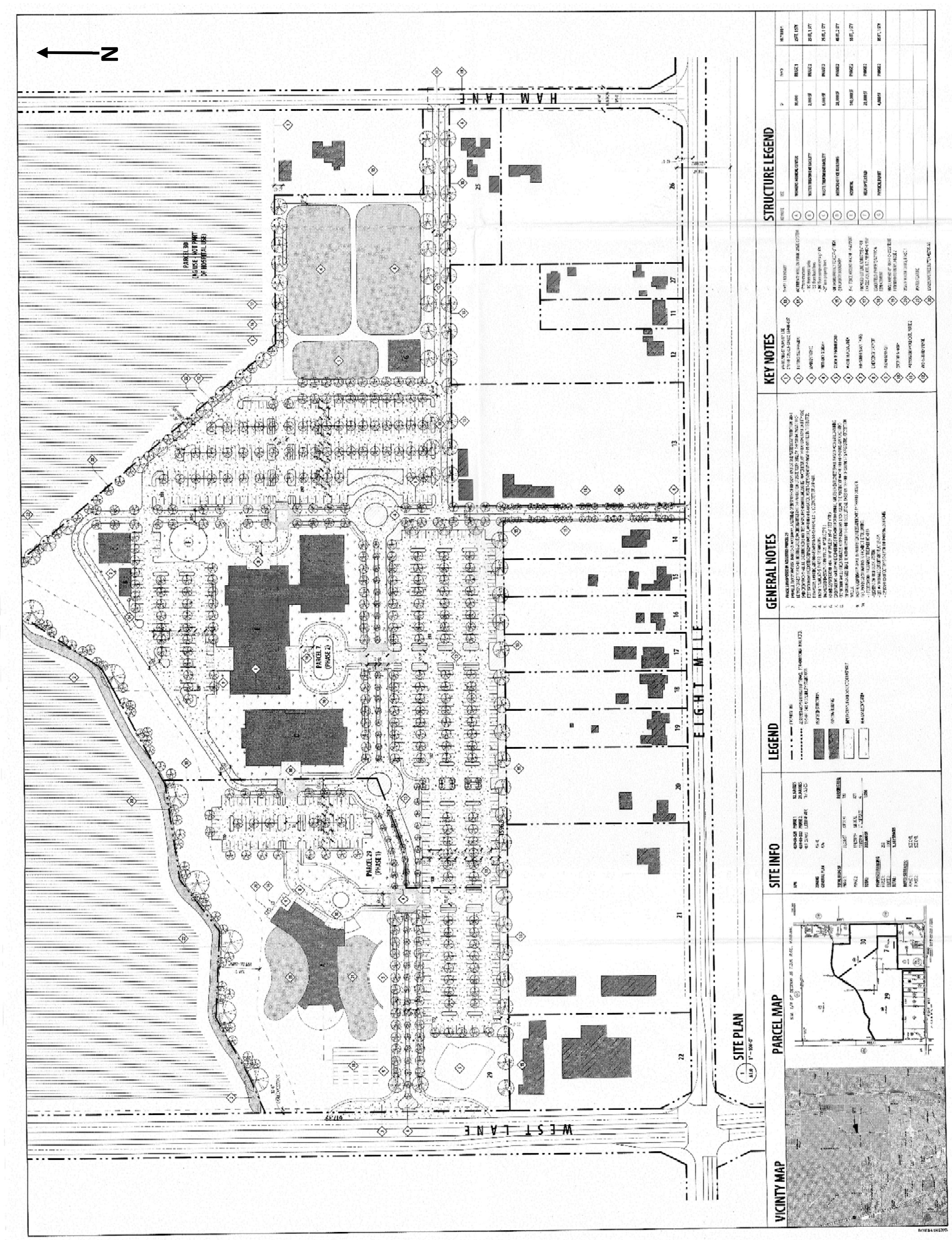
Utilities and Service Systems: The analysis will address the potential for environmental affects as a result of the proposed project's increased impact on water supply, distribution, and treatment; wastewater collection, conveyance, and treatment; solid waste collection and disposal; and electricity and natural gas.

EXHIBIT A



Project Location

EXHIBIT B



Site Plan

S J C O G, 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)

SJMSCP RESPONSE TO LOCAL JURISDICTION (RTLJ)
ADVISORY AGENCY NOTICE TO SJCOG, Inc.

To: Stephanie Stowers, San Joaquin County, Community Development Department

From: Laurel Boyd, SJCOG, Inc.

Date: January 16, 2020

Local Jurisdiction Project Title: Gill Women's Medical Center, LLC Women's Health Facility & Hospital Project

Assessor Parcel Number(s): 059-080-07, -29, -30

Local Jurisdiction Project Number: PA-1900240 (SA), PA-2000014 (ER)

Total Acres to be converted from Open Space Use: Unknown

Habitat Types to be Disturbed: Agricultural Habitat Land

Species Impact Findings: Findings to be determined by SJMSCP biologist.

Dear Ms. Stowers:

SJCOG, Inc. has reviewed the application referral for the Gill Women's Medical Center, LLC, Women's Health Facility & Hospital Project - PA-1900240 (SA), PA-2000014 (ER). This project consists of a Notice of Preparation of a Draft Environmental Impact Report for the Gill Women's Medical Center Project. The proposed project is a Site Approval application to establish a medical facility, including a women's health facility and hospital with heliport, in two (2) phases :e Types: Public Services – Essential). The proposed project includes a Development Agreement application, which is approved, will permit Phase 1 improvements to be constructed over five (5) years, and Phase 2 improvements to be constructed over ten (10) years.

Phase 1 includes the construction of a 36,000 square foot single story women's health facility, which will provide labor, deliver, emergent medicine, and outpatient surgery center services (OSHPD-3 "Alternative Birthing Center" as designated by Health & Safety Code 1204[b][4] including accessory urgent care medicine and outpatient surgery). On-site improvements including encroachment from West Lane, parking, and private facilities for wastewater, water, and stormwater will be provided in Phase 1.

Phase 2 includes the construction of a 28,000 square foot medical office building, a 140,000 square foot hospital with 100 beds, an emergency heliport landing area, and a 6,000 square foot physical plant building (Level III Trauma Center designation from EMS pursuant to 22 Cal. Code Regs. 100263). On-site improvements including encroachment from ham Lane and Eight Mile Road, parking expansion, and expansion of private facilities for wastewater, water, and stormwater will also be provided with Phase 2.

The project site encompasses three (3) parcels, and a Lot Line Adjustment is proposed to result in Phase 1 and Phase 2 development to be located on stand-alone parcels. The project site is on the east side of West Lane, 460 feet north of Eight Mile Road, north of Stockton (APN/Address: 059-080-07, -29, -30/11105 North Ham Lane, Lodi).

San Joaquin County is a signatory to San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP). Participation in the SJMSCP satisfies requirements of both the state and federal endangered species acts, and ensures that the impacts are mitigated below a level of significance in compliance with the California Environmental Quality Act (CEQA). The LOCAL JURISDICTION retains responsibility for ensuring that the appropriate Incidental Take Minimization Measure are properly implemented and monitored and that appropriate fees are paid in compliance with the SJMSCP. Although participation in the SJMSCP is voluntary, Local Jurisdiction/Lead Agencies should be aware that if project applicants choose against participating in the SJMSCP, they will be required to provide alternative mitigation in an ount and kind equal to that provided in the SJMSCP.

This project is subject to the SJMSCP and is located within the unmapped land use area. Per requirements of the SJMSCP, unmapped projects are subject to case-by-case review. This can be a 90 day process and it is recommended that the project applicant contact SJMSCP staff as early as possible. It is also recommended that the project applicant obtain an information package. http://www.sjcog.org

After this project is approved by the Habitat Technical Advisory Committee and the SJCOG Inc. Board, the following process must occur to participate in the SJMSCP:

- Schedule a SJMSCP Biologist to perform a pre-construction survey ***prior to any ground disturbance***
- SJMSCP Incidental take Minimization Measures and mitigation requirement:

1. Incidental Take Minimization Measures (ITMMs) will be issued to the project and must be signed by the project applicant prior to any ground disturbance but no later than six (6) months from receipt of the ITMMs. If ITMMs are not signed within six months, the applicant must reapply for SJMSCP Coverage. Upon receipt of signed ITMMs from project applicant, SJCOG, Inc. staff will sign the ITMMs. This is the effective date of the ITMMs.
2. Under no circumstance shall ground disturbance occur without compliance and satisfaction of the ITMMs.
3. Upon issuance of fully executed ITMMs and prior to any ground disturbance, the project applicant must:
   a. Post a bond for payment of the applicable SJMSCP fee covering the entirety of the project acreage being covered (the bond should be valid for no longer than a 6 month period); or
   b. Pay the appropriate SJMSCP fee for the entirety of the project acreage being covered; or
   c. Dedicate land in-lieu of fees, either as conservation easements or fee title; or
   d. Purchase approved mitigation bank credits.
4. Within 6 months from the effective date of the ITMMs or issuance of a building permit, whichever occurs first, the project applicant must:
   a. Pay the appropriate SJMSCP for the entirety of the project acreage being covered; or
   b. Dedicate land in-lieu of fees, either as conservation easements or fee title; or
   c. Purchase approved mitigation bank credits.

Failure to satisfy the obligations of the mitigation fee shall subject the bond to be called.

- Receive your Certificate of Payment and release the required permit

It should be noted that if this project has any potential impacts to waters of the United States [pursuant to Section 404 Clean Water Act], it would require the project to seek voluntary coverage through the unmapped process under the SJMSCP which could take up to 90 days. It may be prudent to obtain a preliminary wetlands map from a qualified consultant. If waters of the United States are confirmed on the project site, the Corps and the Regional Water Quality Control Board (RWQCB) would have regulatory authority over those mapped areas [pursuant to Section 404 and 401 of the Clean Water Act respectively] and permits would be required from each of these resource agencies prior to grading the project site.

If you have any questions, please call (209) 235-0600.

S J C O G, Inc.

San Joaquin County Multi-Species Habitat Conservation & Open Space Plan

555 East Weber Avenue • Stockton, CA 95202 • (209) 235-0600 • FAX (209) 235-0438

SJMSCP HOLD

TO: Local Jurisdiction: Community Development Department, Planning Department, Building Department, Engineering Department, Survey Department, Transportation Department, Other: ____________

FROM: Laurel Boyd, SJCOG, Inc.

DO NOT AUTHORIZE SITE DISTURBANCE
DO NOT ISSUE A BUILDING PERMIT
DO NOT ISSUE __________ FOR THIS PROJECT

The landowner/developer for this site has requested coverage pursuant to the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP). In accordance with that agreement, the Applicant has agreed to:

1) SJMSCP Incidental Take Minimization Measures and mitigation requirement:

1. Incidental Take Minimization Measures (ITMMs) will be issued to the project and must be signed by the project applicant prior to any ground disturbance but no later than six (6) months from receipt of the ITMMs. If ITMMs are not signed within six months, the applicant must reapply for SJMSCP Coverage. Upon receipt of signed ITMMs from project applicant, SJCOG, Inc. staff will sign the ITMMs. This is the effective date of the ITMMs.
2. Under no circumstance shall ground disturbance occur without compliance and satisfaction of the ITMMs.
3. Upon issuance of fully executed ITMMs and prior to any ground disturbance, the project applicant must:
   a. Post a bond for payment of the applicable SJMSCP fee covering the entirety of the project acreage being covered (the bond should be valid for no longer than a 6 month period); or
   b. Pay the appropriate SJMSCP fee for the entirety of the project acreage being covered; or
   c. Dedicate land in-lieu of fees, either as conservation easements or fee title; or
   d. Purchase approved mitigation bank credits.
4. Within 6 months from the effective date of the ITMMs or issuance of a building permit, whichever occurs first, the project applicant must:
   a. Pay the appropriate SJMSCP for the entirety of the project acreage being covered; or
   b. Dedicate land in-lieu of fees, either as conservation easements or fee title; or
   c. Purchase approved mitigation bank credits.

   Failure to satisfy the obligations of the mitigation fee shall subject the bond to be called.

Project Title: NOP of an EIR for the Gill Women's Health Facility Project (PA-1900240, PA-2000014)

Landowner: Jasbir S. Gill Family, LTD PTP   Applicant: Gill Women's Medical Center, LLC

Assessor Parcel #s: 059-080-07, -29, 30

T _______, R______, Section(s): _____

Local Jurisdiction Contact: Stephanie Stowers

The LOCAL JURISDICTION retains responsibility for ensuring that the appropriate Incidental Take Minimization Measures are properly implemented and monitored and that appropriate fees are paid in compliance with the SJMSCP.

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January 28, 2020

State Clearinghouse
State.Clearinghouse@opr.ca.gov
PO Box 3044
Sacramento, CA 95812-3044

CEQA Project:	**SCH # 2020010176**
Lead Agency:	**San Joaquin County**
Project Title:	**PA-1900240 & PA-2000014 (ER) Gill Women's Medical Center**

The California Geologic Energy Management Division (CalGEM) oversees the drilling, operation, maintenance, and plugging and abandonment of oil, natural gas, and geothermal wells. Our regulatory program emphasizes the wise development of oil, natural gas, and geothermal resources in the state through sound engineering practices that protect the environment, prevent pollution, and ensure public safety. Northern California is known for its rich gas fields. CalGEM staff have reviewed the documents depicting the proposed project.

The proposed project is a Site Approval application to establish a medical facility, including a women's health facility and hospital with heliport, in two (2) phases (Use Types: Public Services - Essential). The proposed project includes a Development Agreement application, which, if approved, will permit Phase 1 improvements to be constructed over five (5) years, and Phase 2 improvements to be constructed over ten (10) years. Phase 1 includes the construction of a 36,000 square foot women's health center. Phase 2 includes the construction of a 140,000 square foot hospital facility, a 28,000-medical office building, a 6,000 square foot waste treatment facility, a 4,000 square foot physical plant, a 2,000 square foot water treatment facility, and a heliport.

The attached maps show the location of a known gas well that was converted to a water well in July of 1962. This well is referred to as the "North Stockton Unit A" 1 well, API:0407700519. Based on the project map submitted, the well could be within the construction area. No other wells impact or are impacted by the proposed work. Note that the Division has not verified the actual location of the well nor does it make specific statements regarding the adequacy of abandonment procedures with respect to current standards.

For future reference, you can review wells located on private and public land at CalGEM's website: https://maps.conservation.ca.gov/doggr/wellfinder/#close

The local permitting agencies and property owner should be aware of, and fully understand, that significant and potentially dangerous issues may be associated with development near oil and gas wells. These issues are non-exhaustively identified in the following comments and are provided by CalGEM for consideration by the local permitting agency, in conjunction with the property owner and/or developer, on a parcel-by-parcel or well-by-well basis. As stated above, CalGEM provides the above well review information solely to facilitate decisions made by the local permitting agency regarding potential development near a gas well.

1. It is recommended that access to a well located on the property be maintained in the event abandonment of the well becomes necessary in the future. Impeding access to a well could result in the need to remove any structure or obstacle that prevents or impedes access. This includes, but is not limited to, buildings, housing, fencing, landscaping, trees, pools, patios, sidewalks, and decking.

2. Nothing guarantees that a well abandoned to current standards will not start leaking oil, gas, and/or water in the future. It always remains a possibility that any well may start to leak oil, gas, and/or water after abandonment, no matter how thoroughly the well was plugged and abandoned. CalGEM acknowledges that wells abandoned to current standards have a lower probability of leaking oil, gas, and/or water in the future, but makes no guarantees as to the adequacy of this well's abandonment or the potential need for future re-abandonment.

3. Based on comments **1** and **2** above, CalGEM makes the following general recommendations:
   a. Maintain physical access to any gas well encountered.
   b. Ensure that the abandonment of gas well(s) is to current standards.

   If the local permitting agency, property owner, and/or developer chooses not to follow recommendation "**b**" for a well located on the development site property, CalGEM believes that the importance of following recommendation "**a**" for the well located on the subject property increases. If recommendation "**a**" cannot be followed for the well located on the subject property, then CalGEM advises the local permitting agency, property owner, and/or developer to consider any and all alternatives to proposed construction or development on the site (see comment **4** below).

4. Sections 3208 and 3255(a)(3) of the Public Resources Code give CalGEM the authority to order the abandonment or re-abandonment of any well that is hazardous, or that poses a danger to life, health, or natural resources. Responsibility for abandonment and or re-abandonment costs for any well may be affected by the choices made by the local permitting agency, property owner, and/or developer in considering the general recommendations set forth in this letter. (Cal. Public Res. Code, § 3208.1.)

5. Maintaining sufficient access to a gas well may be generally described as maintaining "rig access" to the well. Rig access allows a well servicing rig and associated necessary equipment to reach the well from a public street or access way, solely over the parcel on which the well is located. A well servicing rig, and any necessary equipment, should be able to pass unimpeded along and over

the route, and should be able to access the well without disturbing the integrity of surrounding infrastructure.

6. If, during development of this proposed project, any unknown well(s) is/are discovered, CalGEM should be notified immediately so that the newly-discovered well(s) can be incorporated into the records and investigated. CalGEM recommends that any well(s) found in the course of this project, and any pertinent information obtained after the issuance of this letter, be communicated to the appropriate county recorder for inclusion in the title information of the subject real property. This is to ensure that present and future property owners are aware of (1) the well(s) located on the property, and (2) potentially significant issues associated with any improvements near oil or gas wells.

No well work may be performed on any oil or gas well without written approval from CalGEM in the form of an appropriate permit. This includes, but is not limited to, mitigating leaking fluids or gas from abandoned wells, modifications to well casings, and/or any other re-abandonment work. (NOTE: CalGEM regulates the depth of any well below final grade (depth below the surface of the ground). Title 14, Section 1723.5 of the California Code of Regulations states that all well casings shall be cut off at least 5 feet but no more than 10 feet below grade. If any well needs to be lowered or raised (i.e. casing cut down or casing riser added) to meet this grade regulation, a permit from CalGEM is required before work can start.)

Sincerely,

DocuSigned by:
Charlene L Wardlow
067E7BD5EA114A7...

Charlene L Wardlow
Northern District Deputy

Attachments: Well Location Map
Well Location Map 2

cc: sstowers@sjgov.org

DocuSign Envelope ID: 4894CB25-F973-4AB9-9EDE-9CD7727884F1

Well Status & Type

Active	Oil & Gas	Observation
Idle	Gas	Multi-purpose
New	Dry Hole	Water Source
Plugged	Injection	Unknown
Canceled	Cyclic Steam	Core Hole
Unknown	Gas Storage	

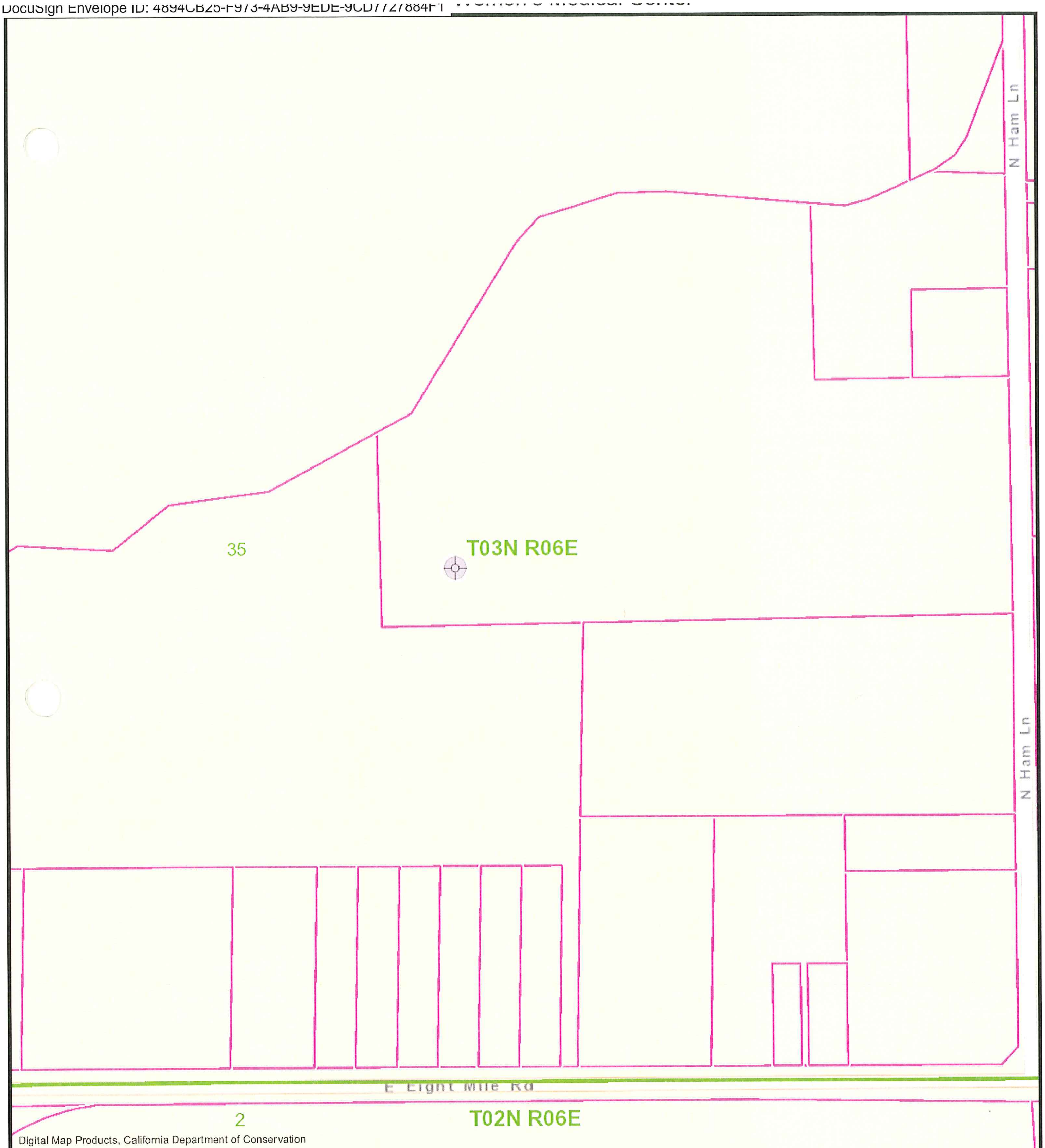
0 580 1,160 ft

0 130 260 m

Powered by WellSTAR

1/27/2020

Division of Oil, Gas, & Geothermal Resources
801 K Street, MS 18-05
Sacramento, CA 95814-3530
Phone: (916) 445-9686
Email: DOGGR@conservation.ca.gov
www.conservation.gov/dog



Well Status & Type

Status	Type	Type
Active	Oil & Gas	Observation
Idle	Gas	Multi-purpose
New	Dry Hole	Water Source
Plugged	Injection	Unknown
Canceled	Cyclic Steam	Core Hole
Unknown	Gas Storage	

0 580 1,160 ft

0 130 260 m

Powered by WellSTAR

1/27/2020

Division of Oil, Gas, & Geothermal Resources
801 K Street, MS 18-05
Sacramento, CA 95814-3530
Phone: (916) 445-9686
Email: DOGGR@conservation.ca.gov
www.conservation.gov/dog

Stowers, Stephanie

om: Grundy, Farl@DOC <Farl.Grundy@conservation.ca.gov>
Sent: Thursday, February 6, 2020 11:42 AM
To: Stowers, Stephanie
Subject: Comments regarding Gill Women's Medical Center Project, SCH# 2020010176

Ms. Stowers,

I have reviewed the Notice of Preparation (SCH# 2020010176), and have a few comments/questions.

According to the project description in the Notice of Preparation, the proposed project is a site approval application to establish a medical facility, including a women's health facility and hospital with heliport, in two phases.

Currently the project site is zoned for Agriculture. As medical services are not an allowable use in any of the Agricultural Zones, can it be assumed that the project will also involve a zoning reclassification? A zoning reclassification that changes the permitted uses from agriculture to a nonagricultural use would be subject to the County's Agricultural Mitigation Requirement as outline in San Joaquin County Title, Division 10, Chapter 9-1080.3. The County's implementation of this mitigation requirement should be discuss further in the Environment Impact Report.

Sincerely,

Farl Grundy
Associate Environmental Planner
Division of Land Resource Protection

California Department of Conservation
801 K Street, MS 14-15, Sacramento, CA 95814
T: (916) 324-7347
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Jared Blumenfeld
Secretary for
Environmental Protection

Department of Toxic Substances Control

Meredith Williams, Ph.D., Director
8800 Cal Center Drive
Sacramento, California 95826-3200

Gavin Newsom
Governor

January 28, 2020

Ms. Stephanie Stowers
San Joaquin County
Community Development Department
1810 E. Hazelton Avenue
Stockton, California 95205

NOTICE OF PREPARATION FOR THE PA-1900240 & PA-2000014 (ER) GILL WOMEN'S MEDICAL CENTER DRAFT ENVIRONMENTAL IMPACT REPORT – DATED JANUARY 13, 2020 (STATE CLEARINGHOUSE NUMBER: 2020010176)

Dear Ms. Stowers:

The Department of Toxic Substances Control (DTSC) received a Notice of Preparation (NOP) for a Draft Environmental Impact Report (EIR) for PA-1900240 & PA-2000014 (ER) Gill Women's Medical Center.

The proposed project is a Site Approval application to establish a medical facility, including a women's health facility and hospital with heliport, in two phases. The proposed project includes a Development Agreement application, which, if approved, will permit Phase 1 improvements to be constructed over five years, and Phase 2 improvements to be constructed over ten years. Phase 1 includes construction of a 36,000 square foot women's health center. Phase 2 includes the construction of a 140,000 square foot hospital facility, a 28,000 square foot medical office building, a 6,000 square foot waste treatment facility, a 4,000 square foot physical plant, a 2,000 square foot water treatment facility, and a heliport.

DTSC recommends that the following issues be evaluated in the EIR, Hazards and Hazardous Materials section:

1. The EIR should acknowledge the potential for project site activities to result in the release of hazardous wastes/substances. In instances in which releases may occur, further studies should be carried out to delineate the nature and extent of the contamination, and the potential threat to public health and/or the environment should be evaluated. The EIR should also identify the mechanism(s) to initiate any required investigation and/or remediation and the government agency who will be responsible for providing appropriate regulatory oversight.

2. If buildings or other structures are to be demolished on any project sites included in the proposed project, surveys should be conducted for the presence of lead-based paints or products, mercury, asbestos containing materials, and polychlorinated biphenyl caulk. Removal, demolition and disposal of any of the above-mentioned chemicals should be conducted in compliance with California environmental regulations and policies. In addition, sampling near current and/or former buildings should be conducted in accordance with DTSC's 2006 *Interim Guidance Evaluation of School Sites with Potential Contamination from Lead Based Paint, Termiticides, and Electrical Transformers* (https://dtsc.ca.gov/wpcontent/uploads/sites/31/2018/09/Guidance_Lead_Contamination_050118.pdf).

3. If any projects initiated as part of the proposed project require the importation of soil to backfill any excavated areas, proper sampling should be conducted to ensure that the imported soil is free of contamination. DTSC recommends the imported materials be characterized according to *DTSC's 2001 Information Advisory Clean Imported Fill Material* (https://dtsc.ca.gov/wp-content/uploads/sites/31/2018/09/SMP_FS_Cleanfill-Schools.pdf).

4. If any sites included as part of the proposed project have been used for agricultural, weed abatement or related activities, proper investigation for organochlorinated pesticides should be discussed in the EIR. DTSC recommends the current and former agricultural lands be evaluated in accordance with DTSC's 2008 *Interim Guidance for Sampling Agricultural Properties (Third Revision)* (https://dtsc.ca.gov/wp-content/uploads/sites/31/2018/09/Ag-Guidance-Rev-3-August-7-2008-2.pdf).

DTSC appreciates the opportunity to review the EIR. Should you need any assistance with an environmental investigation, please submit a request for Lead Agency Oversight Application, which can be found at: https://dtsc.ca.gov/wp-content/uploads/sites/31/2018/09/VCP_App-1460.doc. Additional information regarding voluntary agreements with DTSC can be found at: https://dtsc.ca.gov/brownfields/.

If you have any questions, please contact me at (916) 255-3710 or via email at Gavin.McCreary@dtsc.ca.gov.

Sincerely,

Gavin McCreary

Gavin McCreary
Project Manager
Site Evaluation and Remediation Unit
Site Mitigation and Restoration Program
Department of Toxic Substances Control

cc: (via email)

Governor's Office of Planning and Research
State Clearinghouse
State.Clearinghouse@opr.ca.gov

Ms. Lora Jameson, Chief
Site Evaluation and Remediation Unit
Department of Toxic Substances Control
Lora.Jameson@dtsc.ca.gov

Mr. Dave Kereazis
Office of Planning & Environmental Analysis
Department of Toxic Substances Control
Dave.Kereazis@dtsc.ca.gov

Central Valley Regional Water Quality Control Board

28 January 2020

Stephanie Stowers
San Joaquin County
Community Development Department
1810 East Hazelton Avenue
Stockton, CA 95205

CERTIFIED MAIL
7019 0700 0002 0111 6616

COMMENTS TO REQUEST FOR REVIEW FOR THE NOTICE OF PREPARATION FOR THE DRAFT ENVIRONMENTAL IMPACT REPORT, PA-1900240 AND PA-2000014 (ER) GILL WOMEN'S MEDICAL CENTER PROJECT, SCH#2020010176, SAN JOAQUIN COUNTY

Pursuant to the State Clearinghouse's 14 January 2020 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 Environmental Impact Report* for the PA-1900240 and PA-2000014 (ER) Gill Women's Medical Center 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 Implementation Policy is available on page 74 at:
https://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/sacsjr_201805.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 (USACE). If a Section 404 permit is required by the USACE, 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 drainage realignment, the applicant is advised to contact the Department of Fish and Game for information on

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[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.

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 USACE at (916) 557-5250.

Clean Water Act Section 401 Permit – Water Quality Certification
If an USACE 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. For more information on the Water Quality Certification, visit the Central Valley Water Board website at:
https://www.waterboards.ca.gov/centralvalley/water_issues/water_quality_certification/

Waste Discharge Requirements – Discharges to Waters of the State
If USACE 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 Waste Discharges to Surface Water NPDES Program and WDR processes, visit the Central Valley Water Board website at:https://www.waterboards.ca.gov/centralvalley/water_issues/waste_to_surface_water/

Projects involving excavation or fill activities impacting less than 0.2 acre or 400 linear feet of non-jurisdictional waters of the state and projects involving dredging activities impacting less than 50 cubic yards of non-jurisdictional waters of the state may be eligible for coverage under the State Water Resources Control Board Water Quality Order No. 2004-0004-DWQ (General Order 2004-0004). For more information on the General Order 2004-0004, visit the State Water Resources Control Board website at:
https://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2004/wqo/wqo2004-0004.pdf

Waste Discharge Requirements – Discharges to Land
The discharge of wastewater and solids to land is subject to regulation under individual WDRs, Central Valley Water Board Waivers, or State Water Board General Orders.

In accordance with California Water Code Section 13260, the project proponent is required to submit a Report of Waste Discharge (RWD) to apply for individual

WDRs. We recommend that the RWD be submitted 12 to 18 months before the expected startup date.

For more information on waste discharges to land, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/water_issues/waste_to_land/index.shtml

Pursuant to the State Board's Onsite Wastewater Treatment Systems Policy, the regulation of septic systems with design flows less than 10,000 gpd may be regulated under the local agency's management program.

For more information on septic system regulations, visit the Central Valley Water Board's website at:

http://www.waterboards.ca.gov/centralvalley/water_issues/owts/sb_owts_policy.pdf

Domestic wastewater treatment systems with flows greater than 10,000 gpd or that use ponds as part of the treatment system may be eligible for coverage under State Water Resources Control Board Order WQ 2014-0153-DWQ (General Order 2014-0153-DWQ). For more information on the General Order, visit the Central Valley Water Board's website at:

https://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/general_orders/wq-2014-0153-dwq.pdf

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 Threat General Order) 2003-0003 or the Central Valley Water Board's Waiver of Report of Waste Discharge and Waste Discharge Requirements (Low Threat Waiver) R5-2018-0085. 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 Threat 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 Threat Waiver and the application process, visit the Central Valley Water Board website at:
https://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/waivers/r5-2018-0085.pdf

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 *Limited Threat Discharges to Surface Water* (Limited Threat General Order). A complete Notice of Intent must be submitted to the Central Valley Water Board to obtain coverage under the Limited Threat General Order. For more information regarding the Limited Threat General Order and the application process, visit the Central Valley Water Board website at:
https://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/general_orders/r5-2016-0076-01.pdf

NPDES Permit

If the proposed project discharges waste that could affect the quality of surface 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:
https://www.waterboards.ca.gov/centralvalley/help/permit/

If you have questions regarding these comments, please contact me at (916) 464-4856 or Nicholas.White@waterboards.ca.gov.

Nic White

Nicholas White
Water Resource Control Engineer

cc: State Clearinghouse unit, Governor's Office of Planning and Research, Sacramento (via email)

February 4, 2020

Attn: Stephanie Stowers
San Joaquin County Community Development Department
Development Services Division
1810 East Hazelton Avenue
Stockton, CA 95205
Re: PA-1900240 (SA), PA-2000014 (ER)

Dear Ms. Stowers:

The San Joaquin Farm Bureau Federation is a private, not for profit organization dedicated to the advancement of the agricultural industry within San Joaquin County. The protection of our increasingly threatened agricultural land remains one of our highest priorities. Because of the unique nature of this invaluable resource, we oppose the use of agricultural land for a women's health facility and hospital.

Uses that are open daily to the general public are not agricultural in nature and are disruptive to adjacent agricultural uses because of traffic and parking, setbacks, and trash concerns. Non-agricultural uses on agriculturally zoned property presents many challenges and conflicts for existing, commercially productive agricultural operations that neighbor these sites. Agricultural operations vary with different times of the year, which non-rural visitors may not be use to and find inconvenient to themselves without regard to the necessity of the timing and procedure for the grower to produce quality and safe food. Growers are under tremendous pressure from various regulatory agencies because of the integration of public uses in rural, agricultural areas. Greater buffer zones on the subject parcel are needed to avoid any restrictions on agricultural practices for surrounding properties. Traffic in this small area will greatly impact and hinder the agricultural operations and community residents.

Should this project move forward, the applicants must acknowledge the Right to Farm ordinance and minimize disruption to the commercial agricultural production in the vicinity of the project site. In addition, adequate setbacks should be required to limit potential impacts to those neighboring agricultural production in regard to food safety and restrictions on normal farming practices.

We appreciate the opportunity to comment on this application, please keep us apprised of its status.

Sincerely,

David Strecker
President

3290 NORTH AD ART ROAD • (209) 931-4931 • STOCKTON, CALIFORNIA 95215

APPENDIX B

Gill Medical Center Heliport Design and Operations Memorandum
21 October, 2021
Heliplanners, Aviation Planning Consultants – Heliport Specialists

Gill Medical Center
Heliport Design and Operations Assumptions
21 October 2021

1. Introduction

The Gill Medical Center (GMC) project will include a heliport for rapid transport of patients to facilities with more critical care facilities when needed. It could also be used for incoming helicopters with at-risk mothers on board. Therefore, the heliport would result in a community benefit in rapidly transporting patients in need. The heliport would be built as part of the second phase of campus development.

Note 1: Helicopter landing facilities are commonly referred to by a variety of names including heliport, helistop, helipad, landing zone (LZ), etc. All meet the Federal Aviation Administration (FAA) definition of "heliport": "The area of land, water, or a structure used or intended to be used for the landing and takeoff of helicopters, together with appurtenant buildings and facilities." It is important to understand that a "helistop" is simply a low intensity heliport that does not include helicopter maintenance, rental, refueling, flight training, etc., activities that might occur at a more comprehensive heliport. For example, a hospital "helistop" is typically a facility for helicopters to drop off or pick up passengers (patients, medical teams, etc.) and/or cargo (live organs or medical equipment). However, a helistop still meets FAA's definition of a heliport. The term "heliport" is therefore used herein as an all-inclusive term for *all* helicopter landing facilities.

Note 2: All directions used herein are referenced to true north

2. Basic Heliport Design Assumptions

2.1. Heliport Location

The heliport would be located on the northern half of the campus near the Emergency Department. Due to airspace obstruction-clearance requirements, the heliport would be elevated above grade on a berm or a free-standing structure, as will be described later.

2.1.1. <u>Proximity to Emergency Department</u>

In most hospitals, outgoing patients are prepped in the Emergency Department (ED) in preparation for gurney transfer to the heliport. By the same token, patients can be transported to the ED via helicopter. The heliport would be within easy gurney transport of the heliport but far enough from the ED entrance so that rotorwash will not blow debris into the ED when doors are opened.

2.1.2. <u>Design Helicopter Model</u>

FAA's heliport design criteria are based on helicopter size, under the principal that larger helicopters need more room to operate than do smaller helicopters. Therefore, the proposed heliport is sized, as described below, to accommodate helicopters used by regional emergency medical services (EMS) who might be called to transport patients to or from the hospital. Helicopters used at this facility would be similar in size to those used at other nearby hospitals including:

- Kaiser Permanente Manteca
- Mercy San Juan Hospital, Carmichael
- St. Joseph's Medical Center, Stockton

Operators using helicopters within this size include:

- REACH/CALSTAR
- SkyLife of Central California
- Air George, based at Valley Children's Hospital in Madera
- Stanford Life Flight.

The worst case (largest) helicopter generally used by such operators is the Airbus Helicopters H145 (previously Eurocopter EC145). The newest version of the H145 weighs under 9,000 pounds. Other helicopters in this class generally weigh less than 7,000 pounds. At this point, the heliport is envisioned to be ground-based. Should that change (i.e., an elevated structure or a rooftop heliport) it would be designed to support at least 9,000 pounds static load and 13,500 pounds (50% safety factor) for dynamic (impact) loading.

2.1.3. Non-trauma

GMC would not have a trauma designation. Therefore, there would be no need to design for larger helicopters such as the Sikorsky UH-60 Blackhawk or its Firehawk variant used by agencies such as the National Guard or Cal Fire. Such helicopters might be used in natural disasters, widespread mass casualty events, etc. They are significantly larger and heavier (22,000 pounds) than helicopters envisioned for use at GMC.

2.1.4. Long-range assumptions

Expectations are that the size and weight of helicopter using the GMC heliport will remain relatively constant over time. Therefore, the small, light-weight helicopters currently envisioned should be sufficient for the hospital's long-term needs.

2.2. Flightpath alignments

Helicopter flightpaths are determined by a number of factors including prevailing winds, airspace obstruction-clearance criteria, land use compatibility needs including noise abatement, etc.

2.2.1. Prevailing winds

Helicopters, like airplanes, realize safety and performance advantages by taking off and landing into the wind. Headwinds are preferable. Moderate crosswinds are acceptable within reason. Strong tailwinds can cause safety issues during landings and takeoffs, resulting in a dangerous aerodynamic condition known as "loss of tailrotor effectiveness" and should be avoided. Therefore, approach and departure flightpaths should be designed as closely as possible to align with local prevailing winds. Prevailing winds in the Lodi-Stockton area appear to be from the west through northwest. This is in keeping with runway alignments at nearby airports (Stockton Metro Airport, Kingdon Airport, Lodi Airport, etc.) which are typically laid out with prevailing winds and general wind behavior in the northern San Joaquin Valley.

2.2.2. Airspace Obstruction Clearance

Part 77, *Safe, Efficient Use, and Preservation of the Navigable Airspace*, of the Federal Aviation Regulations (FARs) stipulates a series of obstruction-clearance surfaces in the airspace surrounding airports and heliports. Their purpose is to provide a framework to ensure obstruction-free airspace in which pilots can safely operate, especially under low visibility conditions such as dusk and nighttime. The heliport owner's obligation, as well as that of regulatory agencies, is to maintain the airspace clear of obstructions per FAR Part 77 criteria. The criteria specific to heliports are depicted generically in Exhibit A-1 and described below.

- A TLOF (touchdown and liftoff area) is the physical landing pad. It is the area upon which a pilot lands and from which he/she takes off.
- A FATO (final approach and takeoff area) represents an area that is clear of obstructions above TLOF elevation to provide maneuvering room for pilots while executing a landing or takeoff.
- The Safety Area represents an additional margin surrounding the FATO. It must also be kept clear of obstructions above TLOF elevation.
- Approach/Departure Surfaces slope up and out from the FATO edges along each designated flightpath. They are sloped surfaces (8 feet horizontal to one foot vertical). No object may penetrate an Approach Departure Surfaces.
- Transitional Surfaces slope up and out to the sides of each designated flightpath. They start at the Approach/Departure Surface and FATO edges and extend laterally to 250 feet from flightpath centerlines. Ideally, no object should penetrate a Transitional Surface.

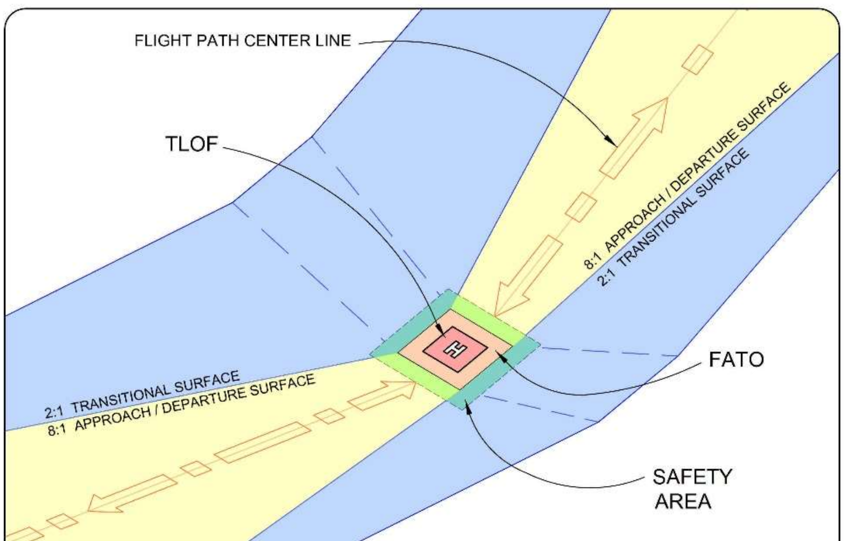

Exhibit A-1
FAA Airspace Obstruction-Clearance Surfaces
Isometric View

2.2.3. Land Use Compatibility

See Exhibit 1. The property is adjacent to existing rural residential properties to the south (along East 8 Mile Road) and to the east (along North Ham Lane). These land uses may be sensitive from a helicopter noise standpoint. Other nearby uses (agricultural and light industrial) appear could be considered compatible with heliport operations. There do not appear to be schools, houses of worship, areas of public assembly or other noise sensitive uses nearby. The closest house of worship appears to be The Home Church, approximately three fourths of a mile to the north-northwest from the proposed heliport site. The closest school appears to be George Mosher Lincoln Elementary School approximately 1.4 miles to the southeast.

Given the above factors, the heliport is assumed to have a *preliminary* southeast/northwest flightpath alignment as shown in Exhibit 1. Other factors could affect flightpath layout at the actual time of heliport design during development Phase 2.

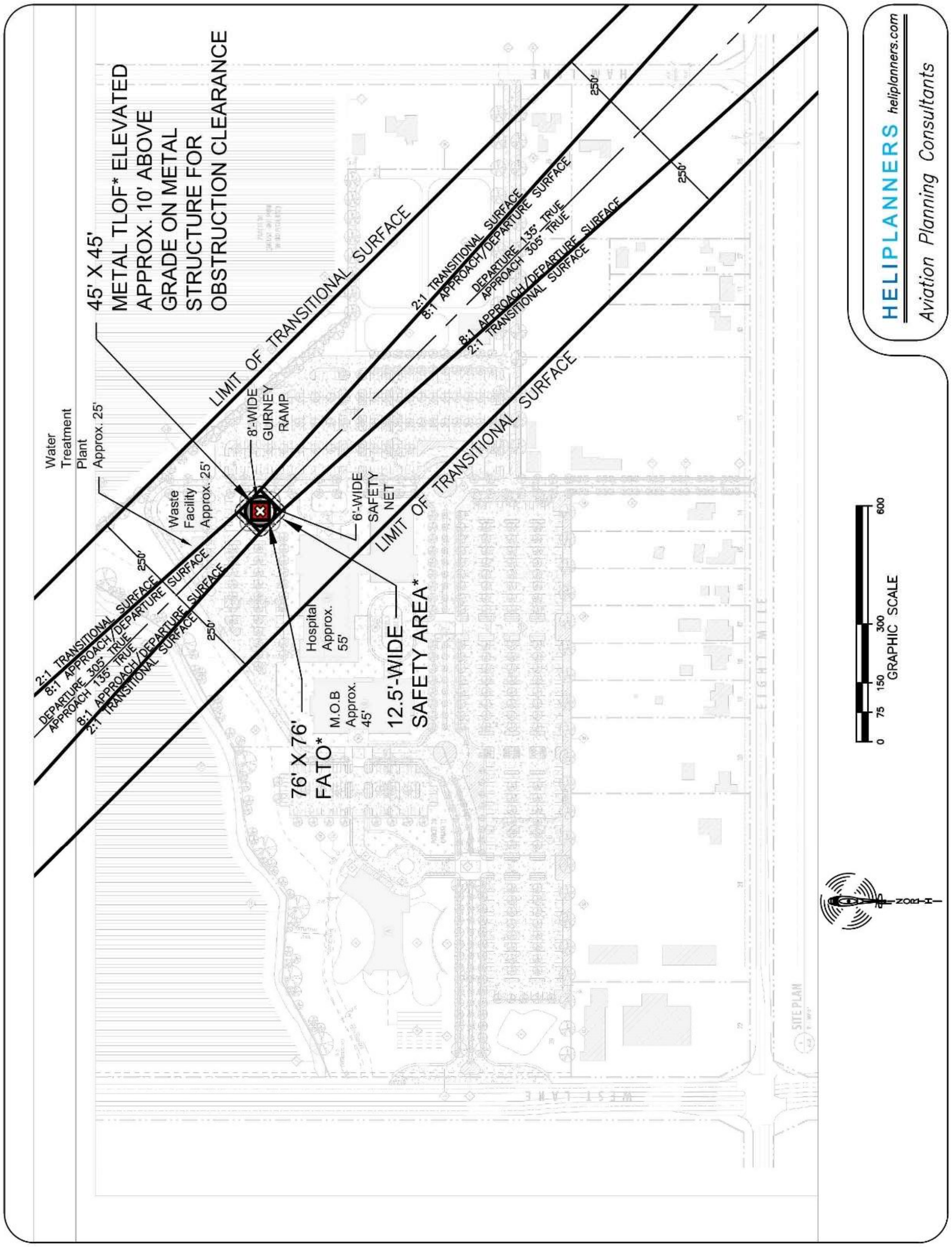

Exhibit 1: Preliminary heliport and flightpath alignment layout

2.2.4. Preliminary Heliport Layout (Exhibit 1)

The heliport has not been designed at this early stage. It has only been planned in conceptual terms. It is expected to be ground-based, although not at grade due to proposed nearby on-campus driveways and parking areas. Cars, ambulances, etc. must be considered when applying the FAR Part 77 airspace obstruction-clearance criteria. A heliport in its currently proposed location would need to be elevated on a berm or on a free-standing structure sufficiently to provide specified clearance above grade for vehicles. The maximum elevation would likely be ten feet and may be less, especially if the currently proposed automobile circulation could be adjusted. A berm heliport is considered ground-based and the dimensions to accommodate the design helicopter size would be 40 feet by 40 feet (or 40 feet in diameter). This represents FAA's minimum design size for a hospital heliport TLOF and is sufficient to accommodate the design helicopter size. A free-standing structure would be considered an "elevated" heliport. The FAA and Caltrans Division of Aeronautics, when permitting a heliport, apply more restrictive criteria for elevated heliports (on free-standing structures or rooftops). Therefore, a heliport on a free-standing structure would be slightly larger, at 45 feet by 45 feet.

3. Basic Helicopter Operational Assumptions

3.1. Monthly Helicopter Operational Estimates

At this point, helicopter operational levels can only be based on the writer's educated judgement based on many heliport development projects. There is obviously no historical record of helicopter activity at the site from which to make estimates. And there will be no way of knowing until the Medical Center is built and operational. Helicopter activity at a hospital is driven entirely be medical emergency needs, not by schedule. Seasonal or weather-related variations can be experienced as well. It is reasonable to assume an average of one landing and one takeoff per week (or an average of 1/7 landing and 1/7 takeoff per day). This is an assumed average. There may be no landings for two or three weeks and then one week may experience two or three landings.

3.2. Daytime/Evening/Nighttime Breakdown

Transportation-related noise analysis in California uses the Community Noise Equivalent Level (CNEL) metric. The CNEL methodology breaks a 24-hour day into three distinct sections as listed below. Acoustics analysis is prepared by others. However, again using an "educated guess" approach, the following estimates appear to be reasonable for a general analysis:

- Daytime (7:00 a.m. – 7:00 p.m.) 75% (0.11 landings per day during this time period)
- Evening (7:00 p.m. – 10:00 p.m.) 12.5% (0.18 landings per day during this time period)
- Nighttime (10:00 p.m. – 7:00 a.m.) 12.5% (0.18 landings per day during this time period)

3.3. Descent/Ascent Profiles

Helicopters would descend to and climb from the GMC heliport on different vertical profiles that may vary according to the pilot, weather, helicopter loading characteristics, etc. In general, it is assumed for noise analysis purposes that default vertical flight profiles as included in computer noise models would be used.

4. Aviation Safety Analysis

A number of documents provide safety-related heliport design criteria. Key documents described below would be used during the heliport design process to help ensure operational safety.

4.1. <u>FAR Part 77</u>

Discussed above, this document lays out airspace obstruction-clearance surfaces to provide clear airspace for a pilot to conduct approaches and departures. FAR Part 77 criteria extend 4,000 feet from the FATO edges along designated fligthpaths. Therefore, they not only protect the airspace immediately surrounding the heliport but also provide enhanced safety over nearby properties. The heliport would be designed to comply with FAR Part 77 to Caltrans Division of Aeronautics' (state permitting agency) satisfaction in order to qualify for the State's Heliport Permit. This is common with virtually all hospital heliports. Maintaining the areas clear of obstructions is the responsibility of the owner, not the FAA or Caltrans Division of Aeronautics. Only the local jurisdiction (County of San Joaquin) can provide legal protection against erection of obstructions through its zoning powers. However, meeting FAR Part 77 criteria does not typically result in the establishment of or requirement for avigation easements over neighboring properties.

4.2. FAR Part 157
FAR Part 157, *Notice of Construction, Alteration, Activation and Deactivation of Airports*, specifies requirements for requesting FAA staff to conduct an "airspace study" for a proposed new landing facility. (A heliport is defined as an airport under Federal regulations.) FAA's airspace study includes a site visit by a helicopter pilot Aviation Safety Inspector assigned to the local (Oakland) Flight Standards District Office. That inspector reviews the site and campus development plans and sends his or her comments to FAA's San Francisco Airports District Office for inclusion in the Heliport Airspace Analysis Determination. The Determination can include any conditions that FAA's inspector considers pertinent to enhance operational safety.

4.3. Caltrans Division of Aeronautics Heliport Permit
When granting its Heliport Permit, Caltrans Aeronautics staff conducts a final inspection to ensure that the completed heliport and surrounding airspace environment fully comply with its safety-related design criteria. Additionally, Caltrans Aeronautics' Aviation Safety Officer conducts annual inspections of all hospital heliports to ensure ongoing compliance. Should he or she find discrepancies, they notify the hospital in writing of steps to be taken to remedy the situation. Caltrans Aeronautics has the authority to order helicopter operations to cease if discrepancies identified in its annual inspections are not corrected.

4.4. NFPA 418, *Standard for Heliports*
The National Fire Protection Association publishes its *Standard for Heliports*. The document provides guidance on fire protection, emergency access, etc. The heliport would be designed to comply with NFPA 418 criteria.

4.5. Beyond the above documents, EMS helicopter operators are responsible for operating the helicopters that would land at GMC. All commercial helicopter pilots are licensed by the Federal Aviation Administration (FAA). A fully equipped EMS helicopter costs several million dollars and is staffed by a pilot with at least 1500 hours of flight time (frequently several thousand hours) as well as, typically, a flight nurse and a flight paramedic. Helicopter accidents at or near a hospital, while not unheard of, are extremely rare.

5. Heliport Regulatory Compliance Process

Heliports in California must undergo regulatory compliance processes at several governmental levels, as summarized below.

FEDERAL
Federal Aviation Administration (FAA): Part 157 of the Federal Aviation Regulations requires that the proponent submit a proposed landing area to FAA for an "airspace study". The study results in an "Heliport Airspace Analysis Determination" (HAAD) stating that FAA "does not object" to the project. Therefore, it is not an "approval" per se. The process is initiated with an online "Landing Area Proposal" with an explanatory cover letter and exhibits. The process normally takes three to eight months, during which time a helicopter specialist with FAA's local Flight Standards District Office (FSDO) visits the site and then sends his/her comments back to the Airports District Office for inclusion in the HAAD.

STATE
Caltrans Division of Aeronautics: Caltrans Aeronautics' approval is required for all heliports in California (with certain exceptions). Caltrans' process normally involves three parts:

1. "Conditional Plan Approval" represents Caltrans' agreement with the design concept
2. "Heliport Site Approval Permit" is issued once we can provide documentation of all other agency processes (FAA, Airport Land Use Commission, CEQA and County Board of Supervisors). This approval authorizes heliport construction.
3. "Heliport Permit", which authorizes startup of flight operations, following Caltrans Aeronautics' final inspection.

COUNTY
Airport Land Use Commission (ALUC): California's PUC mandates ALUC review; normally a finding of consistency with the County's Airports Comprehensive Land Use Plan (ACLUP). The San Joaquin County planning staff tasks one person with ALUC liaison responsibilities. Application procedures, fees and review procedures vary from county to county. It is important to check a county's current procedures and fees, as they can change over time.

County Planning and Environmental: The local jurisdiction (San Joaquin County in this case, because the project site lies outside Lodi city boundaries) will require that the project comply with its zoning ordinance. While a project may occasionally be either "permitted" or "prohibited" in a parcel's specific zoning classification, most fall under the "conditional" category, requiring a conditional use permit, (or similar terminology). It also requires compliance with applicable environmental review as outlined in the California Environmental Quality Act (CEQA).

San Joaquin County Board of Supervisors: California's PUC requires that a county's Board of Supervisors approve the plans to build and operate a heliport when it falls outside city boundaries.

APPENDIX C

California Agricultural Land Evaluation and Site Assessment Model (LESA)
1997
California Department of Conservation, Office of Land Conservation

California Agricultural

Land Evaluation and Site Assessment Model

Calculation Tables

Table 1A.
Land Evaluation Worksheet

Land Capability Classification (LCC) and Storie Index Scores

A Soil Map Unit	B Project Acres	C Proportion of Project Area	D LCC	E LCC Rating	F LCC Score	G Storie Index	H Storie Index Score
180	33.11	100%	3s	60	60	11	11
Totals	33.11	(Must Sum to 1.0)		***LCC Total***	60	***Storie Index Total***	11

Table 1B.
Site Assessment Worksheet 1.

Project Size Score

	I LCC Class I - II	J LCC Class III	K LCC Class IV - VIII
		33.11	
Total Acres		33.11	
Project Size Scores		30	

Highest Project Size Score 30

Table 4. Site Assessment Worksheet 2 - Water Resources Availability

A	B	C	D	E
Project Portion	Water Source	Proportion of Project Area	Water Availability Score	Weighted Availability Score (C x D)
1	Groundwater	100%	100	100
2				
3				
4				
5				
6				
		(Must Sum to 1.0)	***Total Water Resource Score***	100

Table 8. Final LESA Scoresheet

A	B		C		D
Factor Name	Factor Rating (0-100 points)	X	Factor Weighting (Total = 1.00)	=	Weighted Factor Rating
<u>Land Evaluation</u>					
1. Land Capability Classification	<Line 1> 60	X	0.25	=	15
2. Storie Index Rating	<Line 2> 11	X	0.25	=	2.75
<u>Site Assessment</u>					
1. Project Size	<Line 3> 30	X	0.15	=	4.5
2. Water Resource Availability	<Line 4> 100	X	0.15	=	15
3. Surrounding Agricultural Lands	<Line 5> 90	X	0.15	=	13.5
4. Protected Resource Lands	<Line 6> 0	X	0.05	=	0
			Total LESA Score (sum of weighted factor ratings)		<Line 7> 50.75

ATTACHMENT A

LESA Instructions

CALIFORNIA AGRICULTURAL

LAND EVALUATION AND SITE ASSESSMENT MODEL

Instruction Manual

For further information, please contact:

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CALIFORNIA AGRICULTURAL

LAND EVALUATION AND SITE ASSESSMENT MODEL

Instruction Manual
1997

Department of Conservation
Office of Land Conservation

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EXECUTIVE SUMMARY

Land Evaluation and Site Assessment (LESA) is a term used to define an approach for rating the relative quality of land resources based upon specific measurable features. The formulation of a California Agricultural LESA Model is the result of Senate Bill 850 (Chapter 812 /1993), which charges the Resources Agency, in consultation with the Governor's Office of Planning and Research, with developing an amendment to Appendix G of the California Environmental Quality Act (CEQA) Guidelines concerning agricultural lands. Such an amendment is intended "to provide lead agencies with an optional methodology to ensure that significant effects on the environment of agricultural land conversions are quantitatively and consistently considered in the environmental review process" (Public Resources Code Section 21095).

The California Agricultural LESA Model is composed of six different factors. Two Land Evaluation factors are based upon measures of soil resource quality. Four Site Assessment factors provide measures of a given project's size, water resource availability, surrounding agricultural lands, and surrounding protected resource lands. For a given project, each of these factors is separately rated on a 100 point scale. The factors are then weighted relative to one another and combined, resulting in a single numeric score for a given project, with a maximum attainable score of 100 points. It is this project score that becomes the basis for making a determination of a project's potential significance, based upon a range of established scoring thresholds. This Manual provides detailed instructions on how to utilize the California LESA Model, and includes worksheets for applying the Model to specific projects.

INTRODUCTION

Defining the LESA System

The Land Evaluation and Site Assessment (LESA) system is a point-based approach that is generally used for rating the relative value of agricultural land resources. In basic terms, a given LESA model is created by defining and measuring two separate sets of factors. The first set, Land Evaluation, includes factors that measure the inherent soil-based qualities of land as they relate to agricultural suitability. The second set, Site Assessment, includes factors that are intended to measure social, economic, and geographic attributes that also contribute to the overall value of agricultural land. While this dual rating approach is common to all LESA models, the individual land evaluation and site assessment factors that are ultimately utilized and measured can vary considerably, and can be selected to meet the local or regional needs and conditions for which a LESA model is being designed to address. In short, the LESA methodology lends itself well to adaptation and customization in individual states and localities. Considerable additional information on LESA may be found in *A Decade with LESA - the Evolution of Land Evaluation and Site Assessment* (8).

Background on LESA Nationwide

In 1981, the federal Natural Resources Conservation Service (NRCS), known then as the Soil Conservation Service, released a new system that was designed to provide objective ratings of the agricultural suitability of land compared to demands for nonagricultural uses of lands. The system became known as Land Evaluation and Site Assessment, or LESA. Soon after it was designed, LESA was adopted as a procedural tool at the federal level for identifying and addressing the potential adverse effects of federal programs (e.g., funding of highway construction) on farmland protection. The Farmland Protection Policy Act of 1981 (5) spells out requirements to ensure that federal programs, to the extent practical, are compatible with state, local, and private programs and policies to protect farmland, and calls for the use of LESA to aid in this analysis. Typically, staff of the NRCS is involved in performing LESA scoring analyses of individual projects that involve other agencies of the federal government.

Since its inception, the LESA approach has received substantial attention from state and local governments as well. Nationwide, over two hundred jurisdictions have developed local LESA methodologies (7). One of the attractive features of the LESA approach is that it is well suited to being modified to reflect regional and local conditions. Typical local applications of LESA include assisting in decision making concerning the sitting of projects, changes in zoning, and spheres of influence determinations. LESA is also increasingly being utilized for farmland protection programs, such as the identification of priority areas to concentrate conservation easement acquisition efforts.

Because of the inherent flexibility in LESA model design, there is a broad array of factors that a given LESA model can utilize. Some LESA models require the measurement of as many as twenty different factors. Over the past 15 years, the body of knowledge concerning LESA model development and application has begun to indicate that LESA models utilizing only several basic factors can capture much of the variability associated with the determination of the relative value of agricultural lands. In fact, LESA models with many factors are increasingly viewed as having redundancies, with different factors essentially measuring the same features, or being highly correlated with one another. Additional information on the evolution and development of the LESA approach is provided in, A *Decade with LESA -The Evolution of Land Evaluation and Site Assessment* (8).

Development of the California Agricultural LESA Model

In 1990 the Department of Conservation commissioned a study to investigate land use decisions that affect the conversion of agricultural lands in California. The study, conducted by Jones and Stokes Associates, Inc., was prepared in response to concerns about agricultural land conversion identified in the *California Soil Conservation Plan* (1) (developed by the ad hoc Soil Conservation Advisory Committee serving the Department of Conservation in 1987). Among these concerns was the belief that there was inadequate information available concerning the socioeconomic and environmental implications of farmland conversions, and that the adequacy of current farmland conversion impact analysis under the California Environmental Quality Act (CEQA) was not fully known. The findings of this study are included in the publication, *The Impacts of Farmland Conversion in California* (2).

Currently, neither CEQA nor the State CEQA Guidelines contains procedures or specific guidance concerning how agencies should address farmland conversion impacts of projects. The only specific mention of agricultural issues is contained in Appendix G of the State CEQA Guidelines, which states that a project will normally have a significant effect on the environment if it will “convert prime agricultural land to non-agricultural use or impair the agricultural productivity of prime agricultural land”.

Among the conclusions contained in *The Impacts of Farmland Conversion in California* study was that the lack of guidance in how lead agencies should address the significance of farmland conversion impacts resulted in many instances of no impact analysis at all. A survey of environmental documents sent to the Governor's Office of Planning and Research (OPR) between 1986 and 1988 was performed. The survey showed that among projects that affected at least 100 acres of land and for which agriculture was a project issue, nearly 30 percent received Negative Declarations, and therefore did not did not receive the environmental impact analysis that would be provided by an Environmental Impact Report (EIR).

Of those projects involving the conversion of agricultural lands and being the subject of an EIR, the study found a broad range of approaches and levels of detail in describing the environmental setting, performing an impact analysis, and providing alternative mitigation measures. The only agricultural impacts found to be significant in the EIRs were those involving the direct removal of prime agricultural lands from production by the project itself. The focus on prime farmland conversion in the projects surveyed was deemed to be related to the narrow direction provided in Appendix G of the State CEQA Guidelines.

The formulation of a California LESA Model is the result of Senate Bill 850 (Chapter 812 /1993), which charges the Resources Agency, in consultation with the Governor's Office of Planning and Research, to develop an amendment to Appendix G of the California Environmental Quality Act (CEQA) Guidelines. Such an amendment is intended "to provide lead agencies with an optional methodology to ensure that significant effects on the environment of agricultural land conversions are quantitatively and consistently considered in the environmental review process" (Public Resources Code Section 21095). This legislation authorizes the Department of Conservation to develop a California LESA Model, which can in turn be adopted as the required amendment to Appendix G of the CEQA Guidelines.

Presentation of the California LESA Model

The California LESA Model is presented in this Manual in the following sections:

Section I. provides a listing of the information and tools that will typically be needed to develop LESA scores for individual projects.

Section II. provides step-by-step instructions for scoring each of the six Land Evaluation and Site Assessment factors that are utilized in the Model, with an explanation of the rationale for the use of each factor.

Section III. defines the assignment of weights to each of the factors relative to one another, and the creation of a final LESA score for a given project.

Section IV. assigns scoring thresholds to final LESA scores for the purpose of determining the significance of a given project under CEQA where the conversion of agricultural lands is a project issue.

Additionally:

Appendix A. provides an abridged set of step-by-step LESA scoring instructions that can be used and reproduced for scoring individual projects.

Appendix B. demonstrates the application of the California LESA Model to the scoring of a hypothetical project.

The California Agricultural LESA Model

Section I. Required Resources and Information

The California Land Evaluation and Site Assessment (LESA) Model requires the use and interpretation of basic land resource information concerning a given project. A series of measurements and calculations is also necessary to obtain a LESA score. Listed below are the materials and tools that will generally be needed to make these determinations.

Land Evaluation and Site Assessment calculations will require:

1. A calculator or other means of tabulating numbers

2. An accurately scaled map of the project area, such as a parcel map

3. A means for making acreage determinations of irregularly shaped map units. Options include, from least to most technical:

    - A transparent grid-square or dot-planimeter method of aerial measurement

    - A hand operated electronic planimeter

    - The automatic planimetry capabilities of a Geographic Information System (GIS)

4. A modern soil survey, generally produced by the USDA Natural Resources Conservation Service, which delineates the soil-mapping units for a given project. [Note: If modern soil survey information is not available for a given area of study, it may be necessary to draw upon the services of a professional soil scientist to perform a specific project survey].

5. Maps that depict land uses for parcels including and surrounding the project site, such as the Department of Conservation's Important Farmland Map series, the Department of Water Resources Land Use map series, or other appropriate information.

6. Maps or information that indicate the location of parcels including and surrounding the project site that are within agricultural preserves, are under public ownership, have conservation easements, or have other forms of long term commitments that are considered compatible with the agricultural use of a given project site.

Section II. Defining and Scoring the California Land Evaluation and Site Assessment Model Factors

This section provides detailed step-by-step instructions for the measurement and scoring of each of the Land Evaluation and Site Assessment factors that are utilized in the California Agricultural LESA Model, and is intended to serve as an introduction to the process of utilizing the Model. Once users are familiar with the Model, a more streamlined set of instructions and scoring sheets is available in Appendix A. In addition, the scoring of a hypothetical project is presented using these scoring sheets in Appendix B.

Scoring of Land Evaluation Factors

The California LESA Model includes two Land Evaluation factors that are separately rated:

1. The Land Capability Classification Rating
2. The Storie Index Rating

The information needed to make these ratings is typically available from soil surveys that have been conducted by the federal Natural Resources Conservation Service (formerly known as the Soil Conservation Service). Consultation should be made with NRCS staff (field offices exist in most counties) to assure that valid and current soil resource information is available for the project site. Copies of soil surveys are available at local field offices of the NRCS, and may also be available through libraries, city and county planning departments, the Cooperative Extension, and other sources. In addition, a Certified Professional Soil Scientist (CPSS) may also be consulted to obtain appropriate soil resource information for the project site. A directory of CPSS registered soil consultants is available through the Professional Soil Scientists Association of California, P.O. Box 3213, Yuba City, CA 95992-3213; phone: (916) 671-4276.

1) The USDA Land Capability Classification (LCC) - The LCC indicates the suitability of soils for most kinds of crops. Groupings are made according to the limitations of the soils when used to grow crops, and the risk of damage to soils when they are used in agriculture. Soils are rated from Class I to Class VIII, with soils having the fewest limitations receive the highest rating (Class I). Specific subclasses are also utilized to further characterize soils. An expanded explanation of the LCC is included in most soil surveys.

2) The Storie Index - The Storie Index provides a numeric rating (based upon a 100 point scale) of the relative degree of suitability or value of a given soil for intensive agriculture. The rating is based upon soil characteristics only. Four factors that represent the inherent characteristics and qualities of the soil are

considered in the index rating. The factors are: profile characteristics, texture of the surface layer, slope, and other factors (e.g., drainage, salinity).

In some situations, only the USDA Land Capability Classification information may be currently available from a given published soil survey. However, Storie Index ratings can readily be calculated from information contained in soil surveys by qualified soil scientists. Users are encouraged to seek assistance from NRCS staff or Certified Professional Soil Scientists to derive Storie Index information for the soils as well. If, however, limitations of time or resources restrict the derivation of Storie Index ratings for the soils within a region, it may be possible to adapt the Land Evaluation by relying solely upon the LCC rating. Under this scenario the LCC rating would account for 50 percent of the overall LESA factor weighting.

Identifying a Project's Soils

In order to rate the Land Capability Classification and Storie Index factors, the evaluator must identify the soils that exist on a given project site and determine their relative proportions. A **Land Evaluation Worksheet** (Table 1A.) is used to tabulate these figures, based upon the following:

Step 1.
Locate the project on the appropriate map sheet in the Soil Survey.

Step 2.
Photocopy the map sheet and clearly delineate the project boundaries on the map, paying close attention to the map scale.

Step 3.
Identify all of the soil mapping units existing in the project site (each mapping unit will have a different map unit symbol) and enter the each mapping unit symbol in **Column A** of the **Land Evaluation Worksheet** (Table 1A).

Step 4.
Calculate the acreage of each soil mapping unit present within the project site using any of the means identified in **Section 1**, **Required Resources and Information**, and enter this information in **Column B**.

Step 5.

Divide the acres of each soil mapping unit by the total project acreage to determine the proportion of each unit that comprises the project, and enter this information in Column C.

1. Land Evaluation - The Land Capability Classification Rating

Step 1.
In the Guide to Mapping Units typically found within soil surveys, identify the Land Capability Classification (LCC) designation (e.g., IV-e) for each mapping unit that has been identified in the project and enter these designations in **Column D** of the **Land Evaluation Worksheet** (Table 1A.).

Step 2.
From Table 2., **The Numeric Conversion of Land Capability Classification Units**, obtain a numeric score for each mapping unit, and enter these scores in **Column E**.

Step 3.
Multiply the proportion of each soil mapping unit (**Column C**) by the LCC points for each mapping unit (**Column E**) and enter the resulting scores in **Column F**.

Step 4.
Sum the LCC scores in **Column F** to obtain a single LCC Score for the project. Enter this LCC Score in **Line 1** of the **Final LESA Worksheet** (Table 8)

Table 2. Numeric Conversion of Land Capability Classification Units

Land Capability Classification	LCC Point Rating
I	100
IIe	90
IIs,w	80
IIIe	70
IIIs,w	60
IVe	50
IVs,w	40
V	30
VI	20
VII	10
VIII	0

Table 1A.
Land Evaluation Worksheet

Land Capability Classification (LCC) and Storie Index Scores

A	B	C	D	E	F	G	H
Soil Map Unit	Project Acres	Proportion of Project Area	LCC	LCC Rating	LCC Score	Storie Index	Storie Index Score
Totals		(Must Sum to 1.0)		***LCC Total***		***Storie Index Total***	

Table 1B.
Site Assessment Worksheet 1.

Project Size Score

	I	J	K
	LCC Class I - II	LCC Class III	LCC Class IV - VIII
Total Acres			
Project Size Scores			
Highest Project Size Score			

2. Land Evaluation - The Storie Index Rating Score

Step 1.
From the appropriate soil survey or other sources of information identified in Appendix C, determine the Storie Index Rating (the Storie Index Rating is already based upon a 100 point scale) for each mapping unit and enter these values in **Column G** of the **Land Evaluation Worksheet** (Table 1A.).

Step 2.
Multiply the proportion of each soil mapping unit found within the project (**Column C**) by the Storie Index Rating (**Column G**), and enter these scores in **Column H**.

Step 3.
Sum the Storie Index Rating scores in **Column H** to obtain a single Storie Index Rating score for the project. Enter this Storie Index Rating Score in **Line 2** of the **Final LESA Worksheet** (Table 8)

Scoring of Site Assessment Factors

The California LESA Model includes four Site Assessment factors that are separately rated:

1. **The Project Size Rating**
2. **The Water Resources Availability Rating**
3. **The Surrounding Agricultural Land Rating**
4. **The Surrounding Protected Resource Land Rating**

1. Site Assessment - The Project Size Rating

The Project Size Rating relies upon acreage figures that were tabulated under the Land Capability Classification Rating in Table 1A. The Project Size rating is based upon identifying acreage figures for three separate groupings of soil classes within the project site, and then determining which grouping generates the highest Project Size Score.

Step 1.
Using information tabulated in **Columns B** and **D** of the **Land Evaluation Worksheet** (Table 1A), enter acreage figures in **Site Assessment Worksheet 1. - Project Size** (Table 1B) using either **Column I, J,** or **K** for each of the soil mapping units in a given project.

Step 2.
Sum the entries in **Column I** to determine the total acreage of Class I and II soils on the project site.

Sum the entries in **Column J** to determine the total acreage of Class III soils on the project site.

Sum the entries in **Column K** to determine the total acreage of Class IV and lower rated soils on the project site.

Step 3.
For each of the three columns, apply the appropriate scoring plan provided in Table 3, **Project Size Scoring**, and enter the **Project Size Score** for each grouping in the **Site Assessment Worksheet 1. - Project Size** (Table 1B). Determine which column generates the highest score. The highest score becomes the overall **Project Size Score**. Enter this number in **Line 3** of the **Final LESA Scoresheet** (Table 8).

Table 3. Project Size Scoring

LCC Class I or II soils		LCC Class III soils		LCC Class IV or lower	
Acres	***Score***	***Acres***	***Score***	***Acres***	***Score***
80 or above	100	160 or above	100	320 or above	100
60-79	90	120-159	90	240-319	80
40-59	80	80-119	80	160-239	60
20-39	50	60-79	70	100-159	40
10-19	30	40-59	60	40-99	20
fewer than 10	0	20-39	30	fewer than 40	0
		10-19	10		
		fewer than 10	0		

Explanation of the Project Size Factor

The Project Size factor in the California Agricultural LESA Model was developed in cooperation with Nichols-Berman, a consulting firm under contract with the Department of Conservation. A thorough discussion of the development of this rating is presented by Nichols-Berman in a report to the Department entitled, *Statewide LESA Methodologies Report - Project Size and Water Resource Availability Factors* (3).

The inclusion of the measure of a project's size in the California Agricultural LESA Models is a recognition of the role that farm size plays in the viability of commercial agricultural operations. In general, larger farming operations can provide greater flexibility in farm management and marketing decisions. Certain economies of scale for equipment and infrastructure can also be more favorable for larger operations. In addition, larger operations tend to have greater impacts upon the local economy through direct employment, as well as impacts upon support industries (e.g., fertilizers, farm equipment, and shipping) and food processing industries.

While the size of a given farming operation may in many cases serve as a direct indicator of the overall economic viability of the operation, The California Agricultural LESA Model does not specifically consider the issue of economic viability. The variables of economic viability for a specific farm include such factors as the financial management and farming skills of the operator, as well as the debt load and interest rates being paid by an individual operator, which are issues that cannot readily be included in a statewide LESA model.

In terms of agricultural productivity, the size of a farming operation can be considered not just from its total acreage, but the acreage of different quality lands that comprise the operation. Lands with higher quality soils lend themselves to greater management and cropping flexibility and have the potential to provide a greater economic return per unit acre. For a given project, instead of relying upon a single acreage figure in the Project Size rating, the project is divided into three acreage groupings based upon the Land Capability Classification ratings that were previously determined in the Land Evaluation analysis. Under the Project Size rating, relatively fewer acres of high quality soils are required to achieve a maximum Project Size score. Alternatively, a maximum score on lesser quality soils could also be derived, provided there is a sufficiently large acreage present. Acreage figures utilized in scoring are the synthesis of interviews that were conducted statewide for growers of a broad range of crops. In the interviews growers were queried as to what acreage they felt would be necessary in order for a given parcel to be considered attractive for them to farm.

The USDA LCC continues to be the most widely available source of information on land quality. Project Size under this definition is readily measurable, and utilizes much of the same information needed to score a given project under the Land Evaluation component of the methodology. This approach also complements the LE determination, which, while addressing soil quality, does not account for the total acreage of soils of given qualities within a project.

This approach allows for an accounting of the significance of high quality agricultural land as well as lesser quality agricultural lands, which by virtue of their large area can be considered significant agricultural resources. In this way, no single acreage figure for a specific class of soils (e.g., soils defined as “prime”) is necessary.

2. Site Assessment - The Water Resources Availability Rating

The Water Resources Availability Rating is based upon identifying the various water sources that may supply a given property, and then determining whether different restrictions in supply are likely to take place in years that are characterized as being periods of drought and non-drought. **Site Assessment Worksheet 2. - Water Resources Availability Worksheet** (Table 4) is used to tabulate the score.

Step 1.
Identify the different water resource types that are used to supply the proposed project site (for example, irrigation district water, ground water, and riparian water are considered to be three different types of water resources). Where there is only one water source identified for the proposed project, skip to Step 4.

Step 2.
Divide the proposed project site into portions, with the boundaries of each portion being defined by the irrigation water source(s) supplying it. A site that is fully served by a single source of water will have a single portion, encompassing the entire site. A site that is fully served by two or more sources that are consistently merged together to serve a crop's needs would also have a single portion. (e.g., a portion of the proposed project may receive both irrigation district and groundwater). If the project site includes land that has no irrigation supply, consider this acreage as a separate portion as well. Enter the water resource portions of the project in **Column B** of Table 4, **Site Assessment Worksheet 2. - Water Resources Availability**.

[As an example, a hypothetical project site is determined to have four separate water supply portions:

Portion 1 is served by irrigation district water only;
Portion 2 is served by ground water only;
Portion 3 is served by *both* irrigation district water and ground water;
Portion 4 is not irrigated at all.**]**

Step 3.
Calculate the proportion of the total project area that is represented by each water resource portion, and enter these figures in **Column C** of **Site Assessment Worksheet 2. - Water Resources Availability**, verifying that the sum of the proportions equals 1.0.

Table 4. Site Assessment Worksheet 2. - Water Resources Availability

A	B	C	D	E
Project Portion	Water Source	Proportion of Project Area	Water Availability Score	Weighted Availability Score (C x D)
1				
2				
3				
4				
5				
6				
		(Must Sum to 1.0)	***Total Water Resource Score***	

Step 4.

For each water resource supply portion of the project site, determine whether irrigated and dryland agriculture is *feasible*, and if any *physical* or *economic restrictions* exist, during both *drought* and *non-drought* years. These italicized terms are defined below:

- A *physical restriction* is an occasional or regular interruption or reduction in a water supply, or a shortened irrigation season, that forces a change in agricultural practices -- such as planting a crop that uses less water, or leaving land fallow. (This could be from cutbacks in supply by irrigation and water districts, or by ground or surface water becoming depleted or unusable. Poor water quality can also result in a physical restriction -- for example by requiring the planting of salt-tolerant plants, or by effectively reducing the amount of available water.)

- An *economic restriction* is a rise in the cost of water to a level that forces a reduction in consumption. (This could be from surcharge increases from water suppliers as they pass along the cost of finding new water supplies, the extra cost of pumping more ground water to make up for losses in surface water supplies, or the extra energy costs of pumping the same amount of ground water from deeper within an aquifer.)

- Irrigated agricultural production is *feasible* when:

  1) There is an existing irrigation system on the project site that can serve the portion of the project identified in Step 2;

  2) *Physical* and/or *economic restrictions* are not severe enough to halt production; and

  3) It is possible to achieve a viable economic return on crops though irrigated production.

(A major question that should be considered is, if there is an irrigated crop that can be grown within the region, can it actually be grown on the project site? Depending upon the jurisdiction, some typical crops that have a large water demand may not be feasible to grow on the project site, while others that require less water are feasible. Information to aid in making this determination can be obtained from county agricultural commissioners, the UC Cooperative Extension, irrigation districts, and other sources.)

- *Dryland production* is *feasible* when rainfall is adequate to allow an economically viable return on a nonirrigated crop.

- A *drought year* is a year that lies within a defined drought period, as defined by the Department of Water Resources or by a local water agency. Many regions of the state are by their arid nature dependent upon imports of water to support irrigated agriculture. These regions shall not be considered under periods of drought unless a condition of drought is declared for the regions that typically would be providing water exports.

Step 5.
Each of the project's water resource supply portions identified in **Step 2** is scored separately. Water Resources Availability scoring is performed by identifying the appropriate condition that applies to each portion of the project, as identified in Table 5., **Water Resource Availability Scoring**. Using Table 5, identify the option that best describes the water resource availability for that portion and its corresponding water resource score. Option 1 defines the condition of no restrictions on water resource availability and is followed progressively with increasing restrictions to Option 14, the most severe condition, where neither irrigated nor dryland production is considered feasible. Enter each score into **Column D** of Table 4.

Step 6.
For each portion of the project site, determine the section's weighted score by multiplying the portion's score (**Column D**), by its proportion of the project area (**Column C**), and enter these scores in **Column E**, the weighted Water Availability Score. Sum the **Column E** scores to obtain the total Water Resource Availability Score, and enter this figure in **Line 4** of the **Final LESA Score Sheet** (Table 8).

Table 5. Water Resource Availability Scoring

Option	Non-Drought Years			Drought Years			WATER RESOURCE SCORE
	RESTRICTIONS			RESTRICTIONS			
	Irrigated Production Feasible?	Physical Restrictions ?	Economic Restrictions ?	Irrigated Production Feasible?	Physical Restrictions ?	Economic Restrictions ?	
1	YES	NO	NO	YES	NO	NO	100
2	YES	NO	NO	YES	NO	YES	95
3	YES	NO	YES	YES	NO	YES	90
4	YES	NO	NO	YES	YES	NO	85
5	YES	NO	NO	YES	YES	YES	80
6	YES	YES	NO	YES	YES	NO	75
7	YES	YES	YES	YES	YES	YES	65
8	YES	NO	NO	NO	-- --	-- --	50
9	YES	NO	YES	NO	-- --	-- --	45
10	YES	YES	NO	NO	-- --	-- --	35
11	YES	YES	YES	NO	-- --	-- --	30
12	Irrigated production not feasible, but rainfall adequate for dryland production in both drought and non-drought years						25
13	Irrigated production not feasible, but rainfall adequate for dryland production in non-drought years (but not in drought years)						20
14	Neither irrigated nor dryland production feasible						0

Explanation of the Water Resource Availability Rating

The Water Resource Availability factor in the California Agricultural LESA Model was developed in cooperation with Nichols-Berman, a consulting firm under contract with the Department of Conservation. A thorough discussion of the development of this rating is presented by Nichols-Berman in a report to the Department entitled, *Statewide LESA Methodologies Report - Project Size and Water Resource Availability Factors* (3). During the development of this factor it became apparent that certain conditions unique to California would need to be represented in this system.

First, it was decided to classify water reliability based upon the *effects* on agricultural production (such as being forced to change to lower-value crops, putting in groundwater pumps, or cutting back on the acreage farmed) rather than the actual *type* of limitation (such as a limitation on the quantity, frequency, or duration of water delivery). LESA systems have traditionally focused on the latter. However, it was found that the many types of limitations are too varied in California to adequately represent in the LESA system. In the Statewide LESA system, these effects are referred to as *restrictions*.

Second, the factor had to include an interrelation with cost. The historical shortages and unreliability of California water use has led to the establishment of various interconnected and dual systems. Probably more than any other state, reliability is related with cost -- a more reliable water supply can sometimes be obtained, but at a greater cost. Therefore, *restrictions* were classified into two major categories -- *physical* and *economic*. These are separated because, generally, a physical restriction is more severe than an economic restriction and this should be reflected in the LESA system.

Third, the factor had to include the effects of the drought cycle in California. During the drought of 1987 to 1992, many agricultural areas of the state experienced water shortages. The impact of these shortages resulted in a number of different actions. Some areas were able to avoid the worst effects of the drought simply by implementing water conservation measures. Other areas were able to obtain additional water supplies, such as by securing water transfers or simply pumping more groundwater, but at an increase in the overall price of water. Other options included shifting crops, replanting to higher value crops to offset the increase in water prices, or leaving land fallow. A project site that experiences restrictions during a drought year should not be scored as high as a similar project site that does not.

The easiest way to make determinations of irrigation feasibility and the potential restrictions of water sources is to investigate the cropping history of the project site. For instance, was the water supply to the project site reduced by the local irrigation district during the last drought? If the site has a ground water supply, do area ground water levels sometimes drop to levels that force markedly higher energy costs to pump the water?

If the history of the project site is unavailable (including when the site has recently installed an irrigation system), look at the history of the general area. However, remember that the project site may have different conditions than the rest of the region. For instance, the project site could have an older water right than others in the region. Although certain areas of the state had severe restrictions on water deliveries during the last drought, some parcels within these areas had very secure deliveries due to more senior water rights. If this was the case in the region of the project site, check the date of water right and compare it with parcels that received their total allotment during the last drought. The local irrigation district should have information on water deliveries.

The scoring of water resource availability for a project site should not just reflect the adequacies of water supply in the past -- it should be a *prediction* of how the water system will perform in the future. For instance, a local jurisdiction might find that the allocation of flows to stream and river systems has been recently increased for environmental reasons, which will decrease the future available surface water supply. In this case, the past history of the site is not an adequate representation of future water supply and water system performance.

3. Site Assessment - The Surrounding Agricultural Land Rating

Determination of the surrounding agricultural land use rating is based upon the identification of a project's "Zone of Influence" (ZOI), which is defined as that land near a given project, both directly adjoining and within a defined distance away, that is likely to influence, and be influenced by, the agricultural land use of the subject project site. The determination of the ZOI is described below, and is illustrated with an example in Figure 1.

Defining a Project's "Zone of Influence"

Step 1.
Locate the proposed project on an appropriate map and outline the area and dimensions of the proposed project site.

Step 2.
Determine the smallest rectangle that will completely contain the project site (Rectangle A).

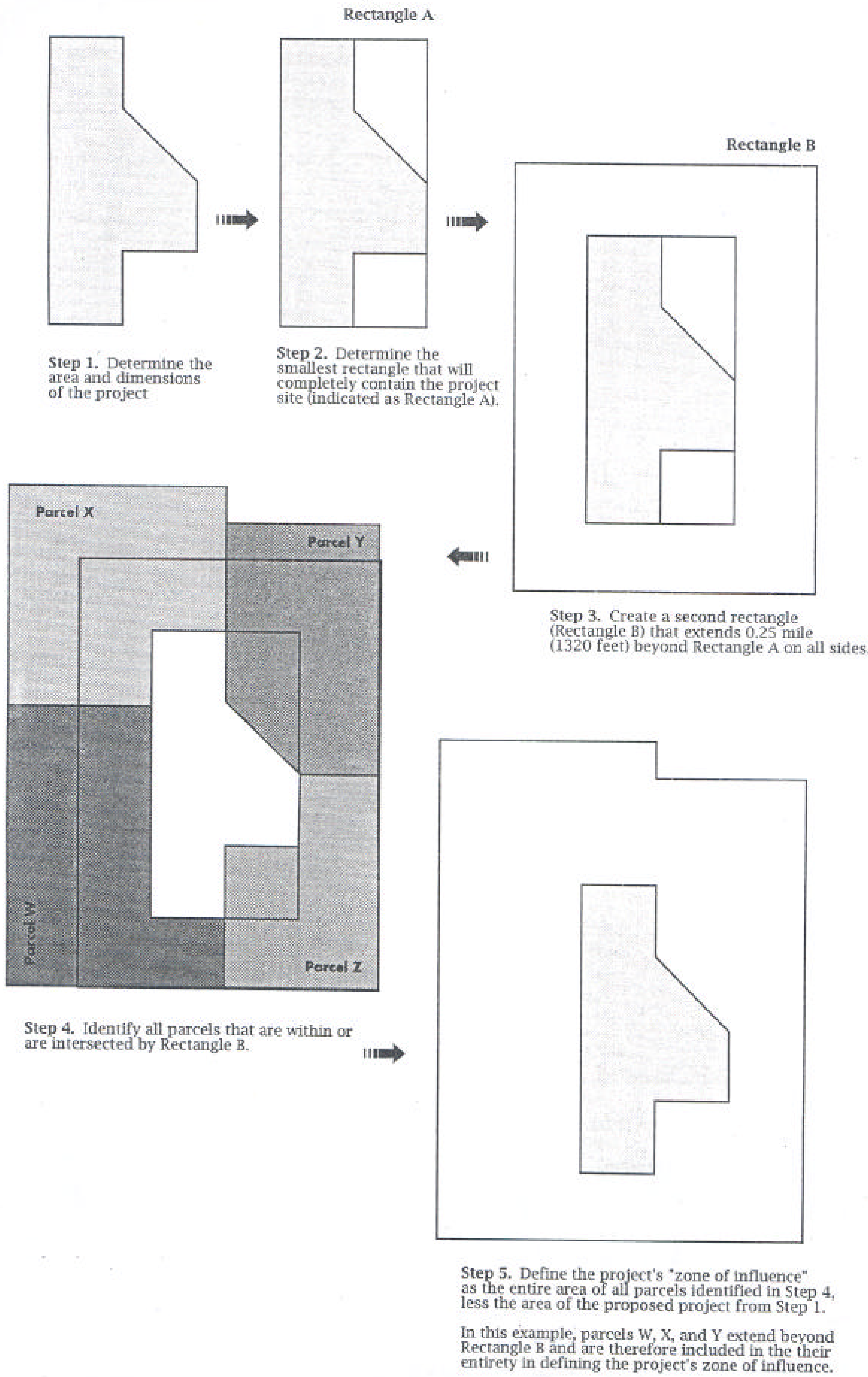
Step 3.
Create a second rectangle (Rectangle B) that extends 0.25 mile (1320 feet) beyond Rectangle A on all sides.

Step 4.
Identify all parcels that are within or are intersected by Rectangle B.

Step 5.
Define the project site's "zone of influence" as the entire area of all parcels identified in Step 4, less the area of the proposed project from Step 1.

[In the illustration provided in Figure 1, Parcels W, X, and Y extend beyond Rectangle B and are therefore included in their entirety in defining the project site's Zone of Influence.**]**

Figure 1: Defining a Project's Zone of Influence



Measuring Surrounding Agricultural Land

Step 1.
Calculate the percentage of the project's Zone of Influence that is currently producing agricultural crops. **[**This figure can be determined using information from the Department of Conservation's Important Farmland Map Series, the Department of Water Resources' Land Use Map Series, locally derived maps, or direct site inspection. For agricultural land that is currently fallowed, a determination must be made concerning whether the land has been fallowed as part of a rotational sequence during normal agricultural operations, or because the land has become formally "committed" to a nonagricultural use. Land that has become formally committed, whether fallow or not, should not generally be included in determining the proportion of the Zone of Influence that is agricultural land. For further information on the definition of Committed Land, refer to the following Explanation of the Surrounding Agricultural Land Rating.**]**

Step 2.
Based on the percentage of agricultural land in the ZOI determined in Step 1, assign a Surrounding Agricultural Land score to the project according to Table 6, and enter this score in **Line 5** of the **Final LESA Scoresheet** (Table 8) .

Table 6. Surrounding Agricultural Land Rating

Percent of Project's Zone of Influence in Agricultural Use	Surrounding Agricultural Land Score
90 - 100%	100 Points
80 - 89	90
75 - 79	80
70 - 74	70
65 - 69	60
60 - 64	50
55 - 59	40
50 - 54	30
45 - 49	20
40 - 44	10
40 <	0

Explanation of the Surrounding Agricultural Land Rating

The Surrounding Agricultural Land Rating is designed to provide a measurement of the level of agricultural land use for lands in close proximity to a subject project. The California Agricultural LESA Model rates the potential significance of the conversion of an agricultural parcel that has a large proportion of surrounding land in agricultural production more highly than one that has a relatively small percentage of surrounding land in agricultural production. The definition of a "Zone of Influence" that accounts for surrounding lands up to a minimum of one quarter mile from the project boundary is the result of several iterations during model development for assessing an area that will generally be a representative sample of surrounding land use. In a simple example, a single one quarter mile square project (160 acres) would have a Zone of Influence that is a minimum of eight times greater (1280 acres) that the parcel itself.

Land within a Zone of Influence that is observed to be fallow will require a case by case determination of whether this land should be considered agricultural land. The Department of Conservation's Important Farmland Maps may be of assistance in making this determination. In addition, land currently in agricultural production may be designated as being "committed" to future nonagricultural development. The Department of Conservation's Farmland Mapping and Monitoring Program has a land use designation of Land Committed to Nonagricultural Use, and is defined as "land that is permanently committed by local elected officials to nonagricultural development by virtue of decisions which cannot be reversed simply by a majority vote of a city council or county board of supervisors. The "committed" land must be so designated in an adopted local general plan, and must also meet the requirements of either (a) or (b) below:

(a). It must have received one of the following final discretionary approvals:

1. Tentative subdivision map (approved per the Subdivision Map Act);
2. Tentative or final parcel map (approved per the Subdivision Map Act);
3. Recorded development agreement (per Government Code §65864);
4. Other decisions by a local government which are analogous to items #1-3 above and which exhibit an element of permanence. Zoning by itself does not qualify as a permanent commitment.

Or

(b) It must be the subject of one of the final fiscal commitments to finance the capital improvements specifically required for future development of the land in question as shown below:

1. Recorded Resolution of Intent to form a district and levy an assessment;
2. Payment of assessment;
3. Sale of bonds;
4. Binding contract, secured by bonds, guaranteeing installation of infrastructure;
5. Other fiscal commitments which are analogous to items #1-4 above and exhibit an element of permanence."

Lead agencies are encouraged to identify Land Committed to Nonagricultural Use within a project's ZOI and make the determination whether this land, while still in agricultural production, be considered nonagricultural land for the purposes of the calculation performed here.

4. Site Assessment - The Surrounding Protected Resource Land Rating

The Surrounding Protected Resource Land Rating is essentially an extension of the Surrounding Agricultural Land Rating, and is scored in a similar manner. Protected resource lands are those lands with long term use restrictions that are compatible with or supportive of agricultural uses of land. Included among them are the following:

- Williamson Act contracted lands
- Publicly owned lands maintained as park, forest, or watershed resources
- Lands with agricultural, wildlife habitat, open space, or other natural resource easements that restrict the conversion of such land to urban or industrial uses.

Instructions for the Surrounding Protected Resource Land Rating

Step 1.
Utilizing the same "Zone of Influence" (ZOI) area calculated for a project under the Surrounding Agricultural Land Rating, calculate the percentage of the ZOI that is Protected Resource Land, as defined above.

Step 2.
Assign a Surrounding Protected Resource Land score to the project according to Table 7, and enter this score on **Line 6** of the **Final LESA Scoresheet** (Table 8).

Table 7. Surrounding Protected Resource Land Rating

Percent of Project's Zone of Influence Defined as Protected	Surrounding Protected Resource Land Score
90 - 100%	100 Points
80 - 89	90
75 - 79	80
70 - 74	70
65 - 69	60
60 - 64	50
55 - 59	40
50 - 54	30
45 - 49	20
40 - 44	10
40 <	0

Section III. Weighting of Factors and Final LESA Scoring

The California LESA Model is weighted so that 50 percent of the total LESA score of a given project is derived from the Land Evaluation factors, and 50 percent from the Site Assessment factors. Individual factor weights are listed below, with the sum of the factor weights required to equal 100 percent.

Land Evaluation Factors

Land Capability Classification	25%
Storie Index Rating	25%
Land Evaluation Subtotal	**50%**

Site Assessment Factors

Project Size	15%
Water Resource Availability	15%
Surrounding Agricultural Lands	15%
Surrounding Protected Resource Lands	5%
Site Assessment Subtotal	**50%**

Total LESA Factor Weighting **100%**

Each factor is measured separately (each on 100 point scale) and entered in the appropriate line in **Column B** of the **Final LESA Scoresheet** (Table 8). Each factor's score is then multiplied by its respective factor weight, resulting in a weighted factor score in **Column D** as indicated in Table 8. The weighted factor scores are summed, yielding a Total LESA Score (100 points maximum) for a given project, which is entered in **Line 7** of **Column D**.

Table 8. Final LESA Scoresheet

A	B		C		D
Factor Name	Factor Rating (0-100 points)	X	Factor Weighting (Total = 1.00)	=	Weighted Factor Rating
Land Evaluation					
1. Land Capability Classification	<Line 1>________	X	0.25	=	________
2. Storie Index Rating	<Line 2>________	X	0.25	=	________
Site Assessment					
1. Project Size	<Line 3>________	X	0.15	=	________
2. Water Resource Availability	<Line 4>________	X	0.15	=	________
3. Surrounding Agricultural Lands	<Line 5>________	X	0.15	=	________
4. Protected Resource Lands	<Line 6>________	X	0.05	=	________
			Total LESA Score (sum of weighted factor ratings)		<Line 7>________

Section IV. California Agricultural LESA Scoring Thresholds - Making Determinations of Significance Under CEQA

A single LESA score is generated for a given project after all of the individual Land Evaluation and Site Assessment factors have been scored and weighted as detailed in Sections 2 and 3. Just as with the scoring of individual factors that comprise the California Agricultural LESA Model, final project scoring is based on a scale of 100 points, with a given project being capable of deriving a maximum of 50 points from the Land Evaluation factors and 50 points from the Site Assessment factors.

The California Agricultural LESA Model is designed to make determinations of the potential significance of a project's conversion of agricultural lands during the Initial Study phase of the CEQA review process. Scoring thresholds are based upon both the total LESA score as well as the component LE and SA subscores. In this manner the scoring thresholds are dependent upon the attainment of a minimum score for the LE and SA subscores so that a single threshold is not the result of heavily skewed subscores (i.e., a site with a very high LE score, but a very low SA score, or vice versa). Table 9 presents the California Agricultural LESA scoring thresholds.

Table 9. California LESA Model Scoring Thresholds

Total LESA Score	**Scoring Decision**
0 to 39 Points	Not Considered Significant
40 to 59 Points	Considered Significant <u>only</u> if LE <u>and</u> SA subscores are each <u>greater</u> than or equal to 20 points
60 to 79 Points	Considered Significant <u>unless</u> either LE <u>or</u> SA subscore is <u>less</u> than 20 points
80 to 100 Points	Considered Significant

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8. Steiner, F., J. Pease, and R. Coughlin, eds. *A Decade with LESA: The Evolution of Land Evaluation and Site Assessment*. Soil and Water Conservation Society. 1994.

ATTACHMENT B

Soil Report

United States Department of Agriculture

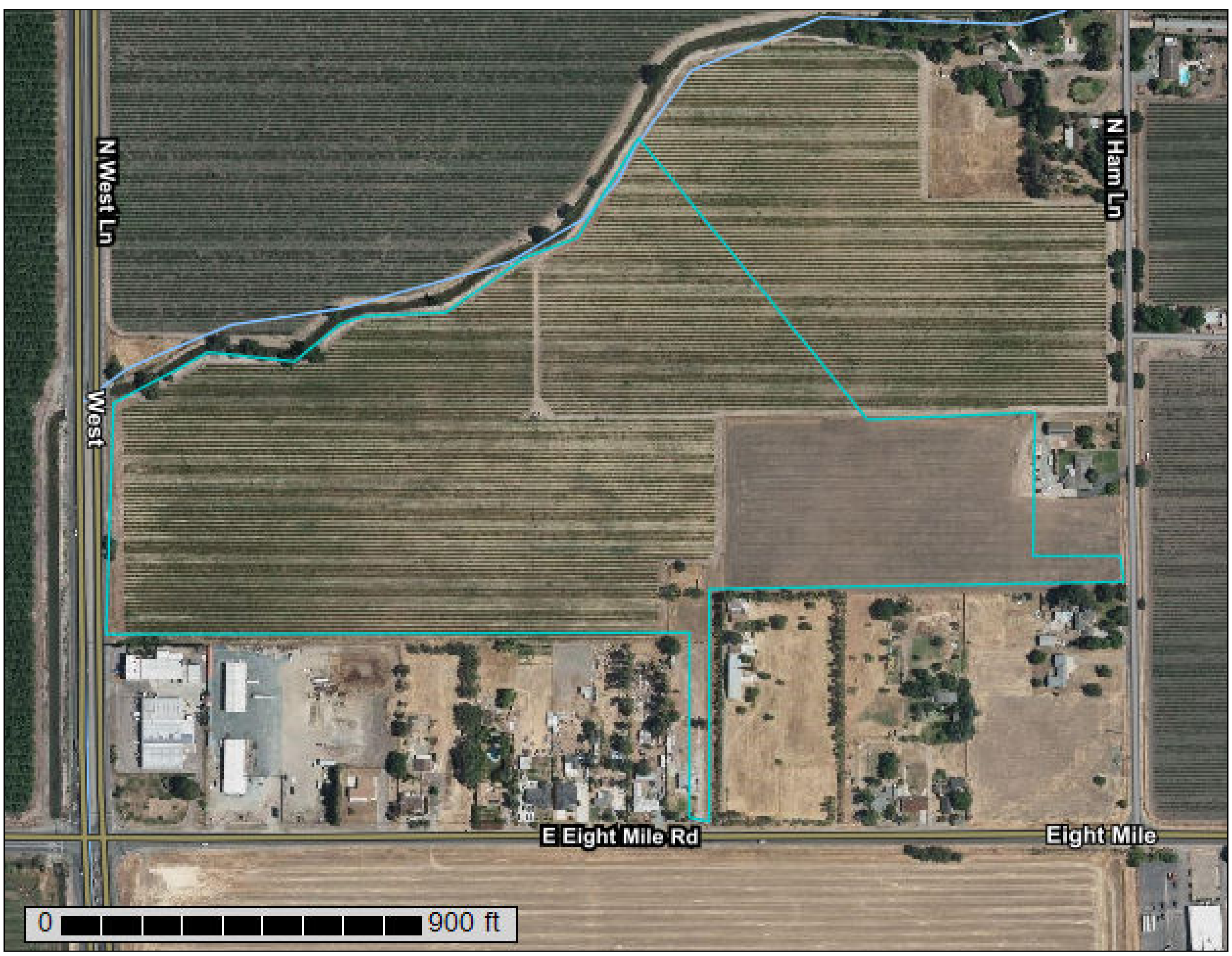
NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for

San Joaquin County, California



September 14, 2021

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

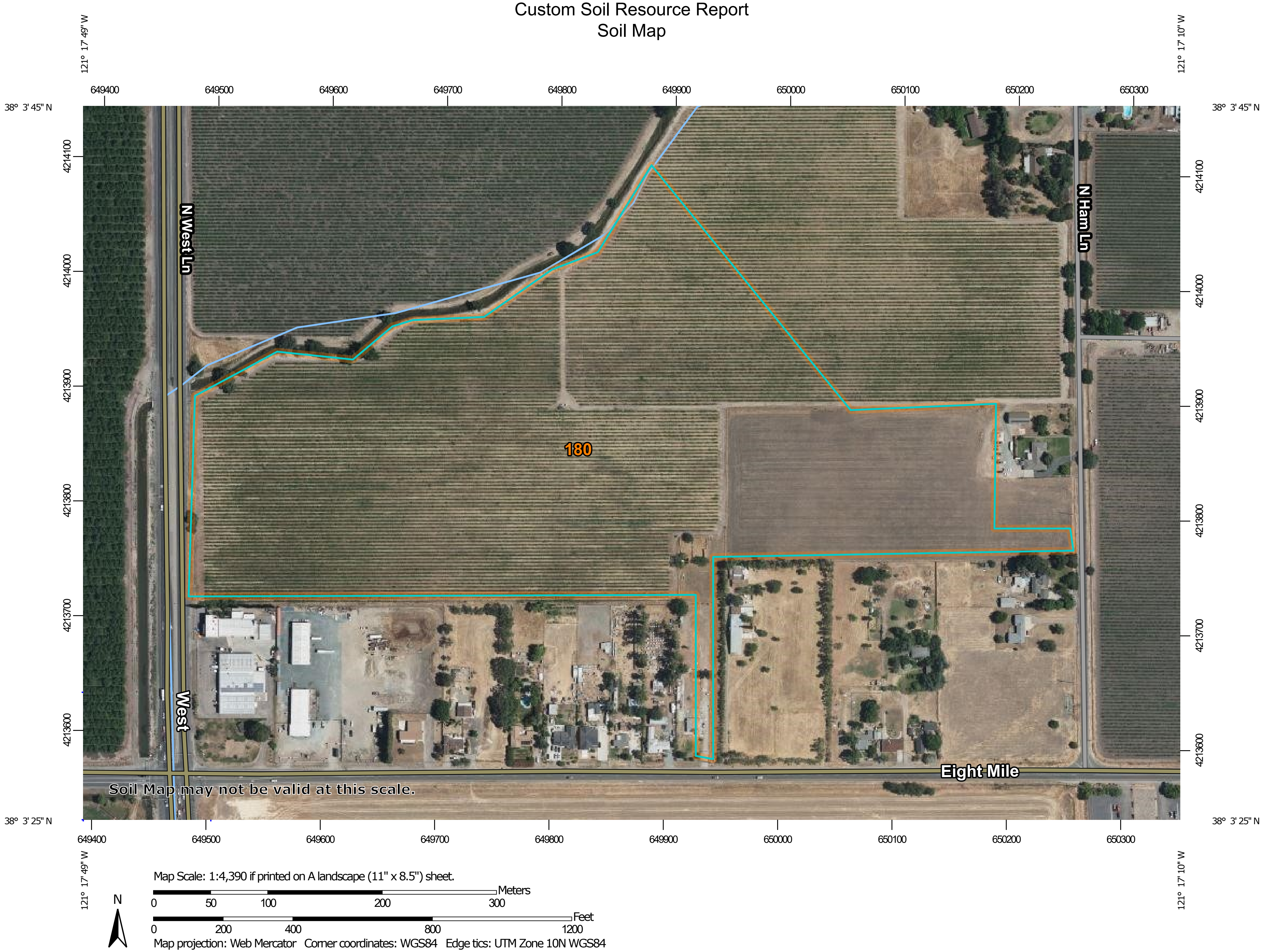
Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Map Unit Polygons

Soil Map Unit Lines

Soil Map Unit Points

Special Point Features

Blowout

Borrow Pit

Clay Spot

Closed Depression

Gravel Pit

Gravelly Spot

Landfill

Lava Flow

Marsh or swamp

Mine or Quarry

Miscellaneous Water

Perennial Water

Rock Outcrop

Saline Spot

Sandy Spot

Severely Eroded Spot

Sinkhole

Slide or Slip

Sodic Spot

Spoil Area

Stony Spot

Very Stony Spot

Wet Spot

Other

Special Line Features

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: San Joaquin County, California
Survey Area Data: Version 14, May 29, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 16, 2020—Jun 19, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
180	Jacktone clay, 0 to 2 percent slopes	39.8	100.0%
Totals for Area of Interest		**39.8**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

San Joaquin County, California

180—Jacktone clay, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: hhtk
Elevation: 0 to 100 feet
Mean annual precipitation: 14 inches
Mean annual air temperature: 61 degrees F
Frost-free period: 270 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Jacktone and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Jacktone

Setting

Landform: Basin floors
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from mixed rock sources

Typical profile

A - 0 to 22 inches: clay
Bk - 22 to 34 inches: clay
2Bkqm - 34 to 37 inches: indurated
2Bk - 37 to 46 inches: stratified sandy loam to clay loam
3Bkq - 46 to 60 inches: cemented

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: 20 to 40 inches to duripan
Drainage class: Somewhat poorly drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: Rare
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 5.1 inches)

Interpretive groups

Land capability classification (irrigated): 3s
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: D
Hydric soil rating: Yes

Minor Components

Archerdale
Percent of map unit: 4 percent
Hydric soil rating: No

Unnamed, mod coarse tex overwash
Percent of map unit: 3 percent
Hydric soil rating: No

Hollenbeck
Percent of map unit: 3 percent
Hydric soil rating: No

Stockton
Percent of map unit: 3 percent
Hydric soil rating: No

Unnamed, saline-sodic
Percent of map unit: 2 percent
Hydric soil rating: No

Soil Information for All Uses

Soil Reports

The Soil Reports section includes various formatted tabular and narrative reports (tables) containing data for each selected soil map unit and each component of each unit. No aggregation of data has occurred as is done in reports in the Soil Properties and Qualities and Suitabilities and Limitations sections.

The reports contain soil interpretive information as well as basic soil properties and qualities. A description of each report (table) is included.

Land Classifications

This folder contains a collection of tabular reports that present a variety of soil groupings. The reports (tables) include all selected map units and components for each map unit. Land classifications are specified land use and management groupings that are assigned to soil areas because combinations of soil have similar behavior for specified practices. Most are based on soil properties and other factors that directly influence the specific use of the soil. Example classifications include ecological site classification, farmland classification, irrigated and nonirrigated land capability classification, and hydric rating.

California Revised Storie Index (CA)

The Revised Storie Index is a rating system based on soil properties that govern the potential for soil map unit components to be used for irrigated agriculture in California.

The Revised Storie Index assesses the productivity of a soil from the following four characteristics:

- Factor A: degree of soil profile development

- Factor B: texture of the surface layer

- Factor C: steepness of slope

- Factor X: drainage class, landform, erosion class, flooding and ponding frequency and duration, soil pH, soluble salt content as measured by electrical conductivity, and sodium adsorption ratio

Revised Storie Index numerical ratings have been combined into six classes as follows:

- Grade 1: Excellent (81 to 100)

- Grade 2: Good (61 to 80)

- Grade 3: Fair (41 to 60)

- Grade 4: Poor (21 to 40)

- Grade 5: Very poor (11 to 20)

- Grade 6: Nonagricultural (10 or less)

Reference:

O'Geen, A.T., Southard, S.B., Southard, R.J. 2008. A Revised Storie Index for Use with Digital Soils Information. University of California Division of Agriculture and Natural Resources. Publication 8355. http://anrcatalog.ucanr.edu/pdf/8335.pdf

Report—California Revised Storie Index (CA)

California Revised Storie Index (CA)–San Joaquin County, California			
Map symbol and soil name	Pct. of map unit	California Revised Storie Index (CA)	
		Rating class	Value
180—Jacktone clay, 0 to 2 percent slopes			
Jacktone	85	Grade 5 - Very Poor	11

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APPENDIX D

Air Quality & Greenhouse Gas Assessment,
Gill Medical Center LLC, Health Facility and Hospital Project
February 2022
ECORP Consulting, Inc.

Air Quality & Greenhouse Gas Assessment

Gill Medical Center LLC
Health Facility and Hospital Project

San Joaquin County, California

Prepared For:

Shore, McKinley, Conger and Jolley, LLP
3031 West March Lane Suite 230
Stockton, CA 95219.

February 2022

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

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List Of Acronyms And Abbreviations

°F	Degrees Fahrenheit
Mg/M^3	Micrograms Per Cubic Meter; Ppm = Parts Per Million
Ab	Assembly Bill
AQMD	Air Quality Management District
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
Caltrans	California Department of Transportation
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CCAA	California Clean Air Act
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CH_4	Methane
CO	Carbon monoxide

List Of Acronyms And Abbreviations

CO_2	Carbon dioxide
CO_2e	Carbon dioxide equivalent
ABC	Alternative Birthing Center
AG	General Agriculture
DPM	Diesel particulate matter
EO	Executive Order
GHG	Greenhouse gas
GWP	Global warming potential
IPCC	Intergovernmental Panel on Climate Change
LOS	Level of service
N_2O	Nitrous oxide
NAAQS	National Ambient Air Quality Standards
NO_2	Nitrogen dioxide
NO_x	Nitric oxides
O_3	Ozone
OEHHA	California Office of Environmental Health Hazard Assessment
OSHPD	Office of State Health Planning and Development
PM	Particulate matter
PM_{10}	Coarse particulate matter
$PM_{2.5}$	Fine particulate matter
ppb	Parts per billion
Project	Gill Medical Center LLC, Health Facility and Hospital Project
RCPG	Regional Comprehensive Plan and Guide
ROGs	Reactive organic gases
SB	Senate Bill
SJVAB	San Joaquin Valley Air Basin
SJVAQMD	San Joaquin Valley Air Pollution Control District
SIP	State Implementation Plan
SO_2	Sulfur dioxide
SO_x	Sulfur oxides
SPWS	Small Public Water System
SR	State Route
SRA	Source receptor area
TACs	Toxic air contaminants
USEPA	U.S. Environmental Protection Agency
VOCs	Volatile organic compounds

1.0 INTRODUCTION

This report documents the results of an Air Quality and Greenhouse Gas (GHG) Emissions Assessment completed for the Gill Medical Center LLC, Health Facility and Hospital Project (Project), which includes the development of an Office of State Health Planning and Development (OSHPD 1) Hospital, a full-service Alternative Birthing Center (ABC) facility, and a Trauma III-designated OSHPD 1 hospital and associated medical office building. This assessment was prepared using methodologies and assumptions recommended by the San Joaquin Valley Air Pollution Control District (SJVAPCD). Regional and local existing conditions are presented, along with pertinent emissions standards and regulations. The purpose of this assessment is to estimate Project-generated criteria air pollutants and GHG emissions attributable to the Project and to determine the level of impact the Project would have on the environment.

1.1 Project Location and Description

The Project site is located approximately one mile north of the City of Stockton in unincorporated San Joaquin County, California (see Figure 1. *Regional Location Map*). As shown in Figure 2. *Local Vicinity Map*, the proposed 42.4-acre Project site is located at 11000 North West Lane and encompasses all or portions of three existing legal parcels totaling 60.8 acres; Assessor's Parcel Numbers (APNs): 059-080-07, 059-080-29, & 059-080-30. The Project area is relatively flat. Existing site topography generally slopes and drains toward the south.

The Project site is currently in agricultural production. One existing residence is located on the property's east side with access from 11013 North Ham Lane. This residence is located on a ±10-acre rectangular-shaped portion of parcel 059-080-30 not currently planted in vineyards. A portion of the existing Woodbridge Irrigation District canal is located along the northern boundary of the Project site. A former gas well that was converted to a water well in July 1962 is located in the approximate center of the property. This well is referred to as the "North Stockton Unit A" 1 well (API: 0407700519). Well operation is by electric pump. An overhead electric line extends approximately 1,430 feet along the south side of an existing farm road from North Ham Lane to the well site. A farm road also extends north from the well site to the northern property boundary, where it connects with a perimeter farm road that runs along the north, east and west site boundaries.

The Project site is designated General Agricultural (AG) by the San Joaquin County General Plan and AG-40 by County Development Title (or zoning). According to the San Joaquin County Development Title, the AG Zone is established to preserve agricultural lands for the continuation of commercial agriculture enterprises. Minimum parcel sizes within the AG Zone are 20, 40, 80 or 160 acres, as specified by the precise zoning. The precise Development Title zone for Project site parcels is AG-40.

The Project site is surrounded by a mixture of agriculture, light industrial, and residential as shown in Table 1-1.

Table 1-1. Surrounding Land Uses

Direction	Description
North	The western half of the Project site's northern boundary is defined by the centerline of the existing Woodbridge Irrigation District (WID) agricultural canal. Active agriculture and scattered low-density rural residences exist north of the Project boundary. Pixley Slough is located approximately 0.5 mile north, and the City of Lodi is located approximately 2.5 miles north of the site.
East	The Project site's eastern boundary is defined by North Ham Lane, with active agriculture and scattered low-density rural residences beyond. The Union Pacific Railroad and Stockton City limits are located approximately 0.5 mile east with State Route (SR) 99 beyond at approximately 1.5 miles east of the site.
South	The Project site's southern boundary abuts the rear of existing industrial and rural residential development that fronts Eight Mile Road between West Lane and North Ham Lane. Eight Mile Road is located approximately 490 feet south of the southern site boundary and provides driveway access to the existing non-conforming industrial uses located north of Eight Mile Road West Lane and Ham Lane. South of Eight Mile Road is active agricultural, followed by Bear Creek and the City of Stockton, both located approximately one mile south of the site. South of the Project site and immediately south of Eight Mile Road, between West Lane on the west and the Union Pacific Railroad on the east, lies the 341-acre recently approved Tra Vigne development project. The Tra Vigne project site is currently located in San Joaquin County, immediately north of the City of Stockton. The Tra Vigne development project proposes annexation to the City of Stockton and a mix of land uses including single-family (1,728 units) and high-density residential (680 units), industrial, commercial, school, and traditional and non-traditional parks sites.
West	West Lane defines the Project site's western boundary. The WID agricultural canal lies immediately west of West Lane, followed by active agriculture. The City of Stockton lies approximately 0.75 miles west, with the Union Pacific Railroad (Sacramento) beyond at approximately 1.5 miles, and Interstate 5 at approximately 4 miles west.

The Project proposes the development of a 36,000+ square foot single story Medical Center designed to OSHPD 1 Hospital standards and equipped with 12 beds to provide labor and delivery focused services, including alternate birthing options, and hospital emergency room services. The facility would provide 24-hour inpatient care, including the basic services. Additionally, the Project would include a 60,000+ square foot medical two-story office building, a 140,000+ square foot, three-story 100 bed hospital expansion designed to OSHPD 1 Hospital standards, and a full-service emergency helipad landing area. In order to support these facilities, a total of 1,282 onsite parking stalls and onsite storm water detention areas would be constructed. Potable water and wastewater collection and treatment would be provided by two proposed onsite wells and septic systems, to be housed in a 2,000 square foot building and 6,000 square foot building, respectively. Another 4,000 square foot building, known as the Physical Plant Building, is also proposed to support onsite water and wastewater treatment processes. Project access is proposed from West Lane via a new entrance drive at the approximate midpoint of the western site boundary. Additionally, driveway entrances from Eight Mile Road and Ham Lane are proposed. (See Figure 3. *Project Site Plan.*)

Table 1-2 summarizes statistics for the primary Project components. As shown, the Project is proposed to be constructed in two phases. Phase 1 improvements could become operational within five years of Project approval; Phase 2 facilities are planned for operation within 10 years. Phase 1 construction is tentatively scheduled to begin 2023 and is expected to take up to 12 months to complete. Phase 2 construction is tentatively scheduled to begin by 2029 and to take up to 20 months to complete.

Table 1-2. Project Components

Site Plan Key Note	Use	Square Feet	Phase	Height/Story
A	Medical Center	36,000	PHASE 1	25FT/1 Story
B	Water Treatment Facility	2,000	PHASE 2	25 FT/1 Story
C	Wastewater Treatment Facility	6,000	PHASE 2	25 FT/1 Story
D	Medical Office Building	60,000	PHASE 2	45 FT/2 Story
E	Hospital	140,000	PHASE 2	55 FT/3 Story
F	Helicopter Pad	20,000	PHASE 2	N/A
G	Physical Plant	4,000	PHASE 2	35 FT/1 Story

As shown, Phase 1 includes the Medical Center Building. Phase 1 would also include the construction of related access, parking, landscaping and utility improvements necessary to support the Medical Center Building. Phase 1 access would be via a 50-foot wide driveway entrance extending east-west through the approximate center of the site, and then turn north along the eastern Phase 1 site boundary. Pedestrian sidewalks would be located on each side of the entrance drive and northern segment. A patient/ emergency drop off and vehicle roundabout would be located in front of the Medical Center Building main entrance with connection to the northern parking lot and entrance drive. A delivery receiving and trash enclosure area would be located north of the roundabout and main entrance. Phase 1 parking lots containing 282 parking spaces would be located east and south of the Medical Center Building. Along the southern site boundary adjacent the existing residential property lines, a solid seven-foot-tall concrete masonry unit (CMU) wall would be constructed, and large trees planted. An onsite small public water system (SPWS), onsite septic, and onsite detention areas for stormwater management would be constructed to serve Phase 1. Specifically, a new well would be drilled and a 768,000-gallon water storage tank would be constructed as part of the SPWS. Additionally, a 5,000-gallon septic tank and 9,525 square feet of leach line is proposed to be installed in addition to a 9.5-acre stormwater detention pond. Phase 1 improvements would span 12.5 acres.

Phase 2 would accommodate a new hospital, medical office building, a second well and water treatment facility, wastewater treatment facility, helicopter pad, physical plant building and related access, parking, landscape and utility improvements necessary to support the second phase of development. would be the focal point of Phase 2 development. The three-story, 140,000-square foot hospital would be the focal point of Phase 2 development, located in the central portion of the property. A two-story, 60,000-square foot office building would be located west of the hospital building and north of the entrance road extension. Additionally, 2,000-square foot water treatment facility would be installed adjacent the onsite well in the north portion of the site, a 6,000-square foot wastewater treatment facility is proposed at the north portion of property, and a 4,000-square foot, single-story physical plant building would be located on the east side of the Project site as part of Phase 2, west of the wastewater disposal pond. The proposed helicopter pad "helistop" would be located northeast of the hospital building. As a "helistop," no fueling or maintenance facilities would be provided as the pad would only be used by helicopters for patient drop off or pick up.

Phase 2 improvements would be supported by two new site access points, extension of the Phase 1 West Lane primary access drive, and construction of new parking lots and pedestrian sidewalks and paths. Specifically, a new eastern access driveway would be constructed from Ham Lane beginning at a point approximately 600 feet north of Eight Mile Road, and a new 30-foot-wide southern access drive would also be constructed from Eight Mile Road, providing access to the mid-southern site boundary. A seven-foot-tall solid CMU wall would be constructed along the south side of the Ham Lane entrance drive and the Eight Mile Road entrance drive would be flanked by small trees and shrubs on each side backed by seven-foot-tall CMU walls. In addition to the above new access drives, the Phase 1 West Lane access drive would be extended westerly and two new roundabouts constructed linking the onsite driveway and service road to create a looped onsite circulation system. A 30-foot-wide service/perimeter road would also be constructed along the site's northern parking lot boundary. New parking lots providing 1,000 additional parking spaces (plus six "utility" spaces) would be constructed north, south and east of the hospital and medical office buildings. This would increase total combined onsite parking to 1,282 spaces. A second new well would be drilled and a 1,266,000-gallon water storage tank would be constructed. Additionally, a 26,000-gallon septic tank and 58,000 square feet of leach line is proposed to be installed in addition to another 9.5-acre stormwater detention pond. Phase 2 improvements would span 29.9 acres.

Once completed, the Medical Center and Hospital would operate 24 hours per day, seven days per week with 10 defined employee "shifts" and slightly reduced staffing levels during the overnight hours. The average number of employees over a 24-hour period is expected to be 50 at the Medical Center and 450 at the Hospital. The average number of customers over a 24-hour period is expected to be 72 at the Medical Center and 400 at the Hospital. The Phase 2 Medical Office Building would operate on a more traditional 8:00 a.m. to 5:00 p.m. Monday through Friday schedule and is expected to accommodate 100 office workers and attract approximately 384 customers Monday through Friday. The following routine daily material/supply deliveries are also expected:

- 2 at the Medical Center
- 12 at the Hospital
- 4 at the Medical Office Building.

The number of onsite staff, medical building occupants, customers, and deliveries are not expected to vary significantly throughout the year.

The "helistop" landing pad would be used by helicopters for transport or pick up of critically ill or injured patients. As a "helistop," no fueling or maintenance facilities would be provided. The anticipated number of daily flights would vary, however on average approximately one landing/take off event is expected per week. The standard helicopter approach and departure flight path would be southeast/northwest, however during emergency events, flight plans could deviate depending on the urgency of the situation.

As previously described, Phase 1 construction is anticipated to begin in late 2021 and take approximately 12 months to complete. The Phase 1 Medical Center Building is expected to begin operations in 2023. Phase 2 construction is scheduled to begin in 2029 and take approximately 20 months to complete. The Phase 2 Hospital and other support uses are expected to begin operation in 2031.

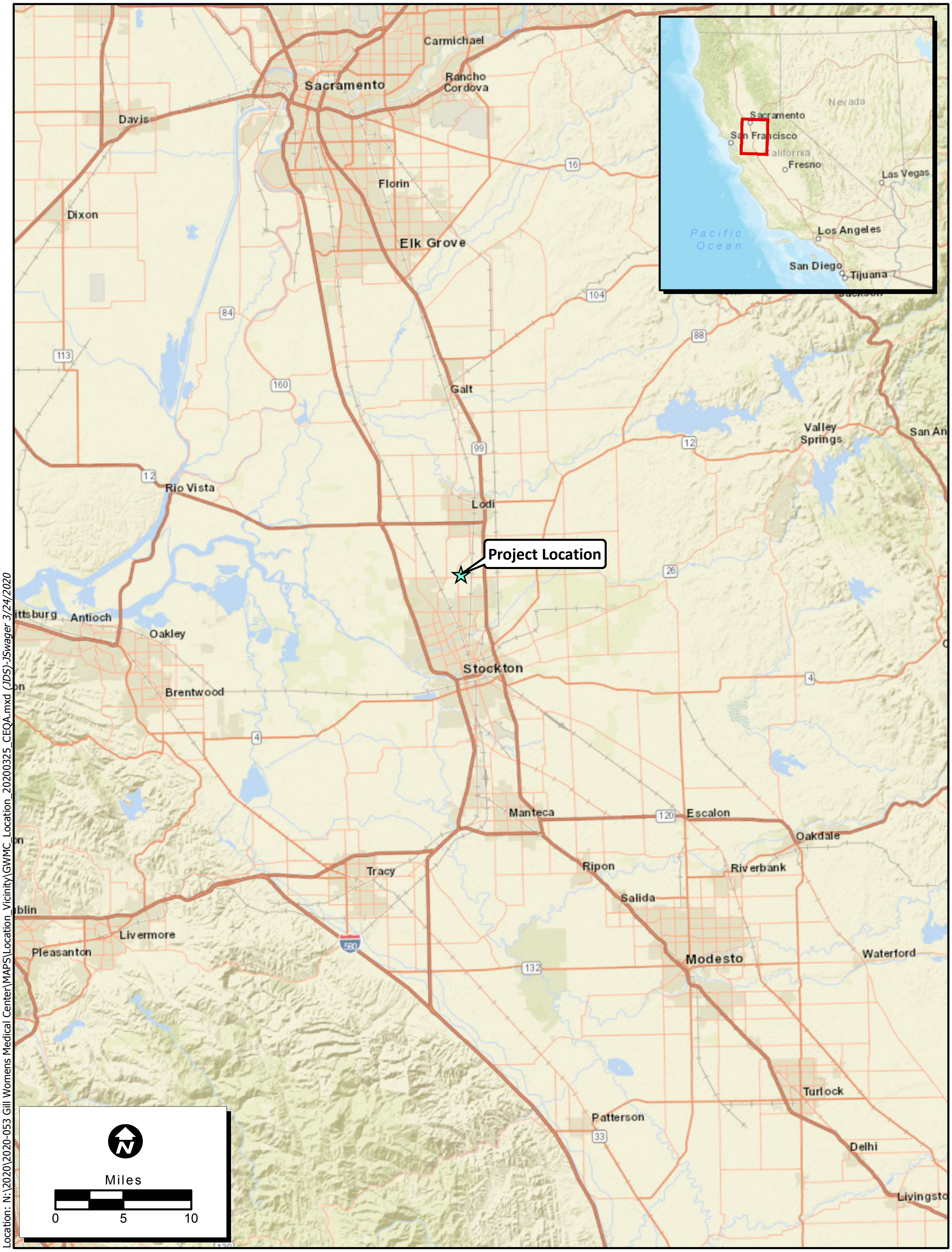
Construction activities would take place between 7:00 a.m. and 7:00 p.m. Monday through Friday and, if necessary, between 8:00 a.m. and 8:00 p.m. Saturday and Sunday.

Grading would consist of cuts and fills to build up development areas and ensure positive drainage. Project grading is expected to be balanced onsite. No import or export of soil is anticipated. It is expected that grading would be accomplished using conventional grading equipment listed in Table 1-3. Scrapers would cut and transport onsite soil within the Project site. Finish grading would be achieved by motor graders (blades) and skip loaders. Material excavation and compaction activities would be required primarily to install roads to meet fire and safety requirements. Consistent with Best Management Practices (BMPs), throughout grading operations, water trucks would provide water to the site to achieve the proper moisture content for compaction and dust suppression. Grading would be stopped to control dust generation during times of excessive wind.

Underground utilities would be installed using standard underground utility trenching methods. Trenches would be excavated by hand or by a backhoe or similar excavation equipment. Underground utility placement would begin immediately following trench excavation, followed by back fill and compaction.

Table 1-3. Construction Equipment Use

Grading, Underground and Road Construction Phase	Building Construction Phase
6 Rubber Tired Dozers	2 Cranes
8 Tractors/Loaders/Backhoes	6 Forklifts
2 Excavators	2 Generator Sets
2 Graders	6 Tractors/Loaders/Backhoes
4 Pavers	2 Welders
4 Paving Equipment	2 Air Compressors
4 Rollers	



Location: N:\2020\2020-053 Gill Womens Medical Center\MAPS\Location_Vicinity\GWMC_Location_20200325_CEQA.mxd (IDS)-JSwager 3/24/2020

Map Date: 3/24/2020

Sources: ESRI, San Joaquin County

Figure 3-1. Regional Location Map

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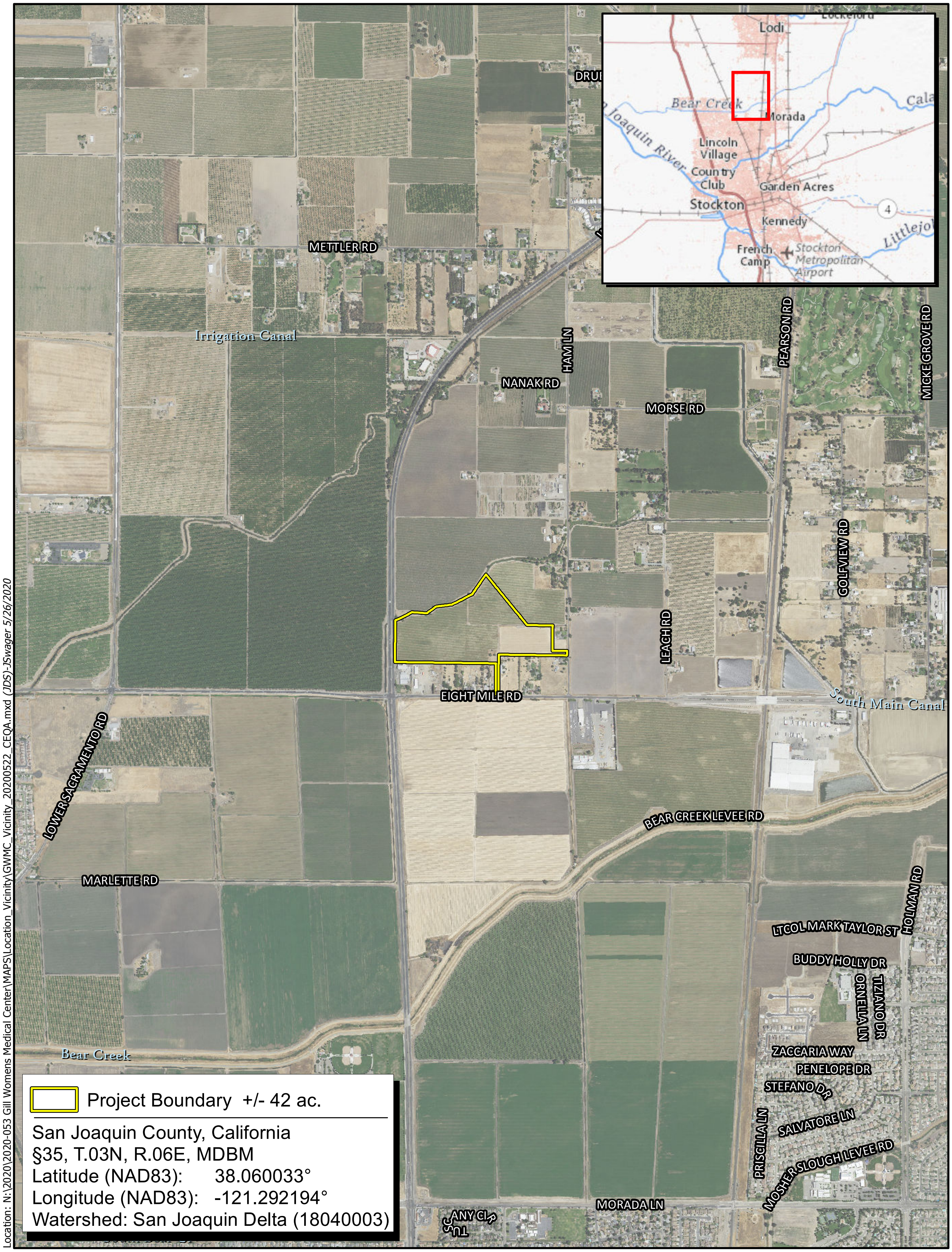
2020-053 Gill Medical Center



Map Date: 5/26/2020

Sources: ESRI, NAIP (2018), San Joaquin County, NJA Architecture

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Figure 3-2. Local Vicinity Map

2020-053 Gill Medical Center

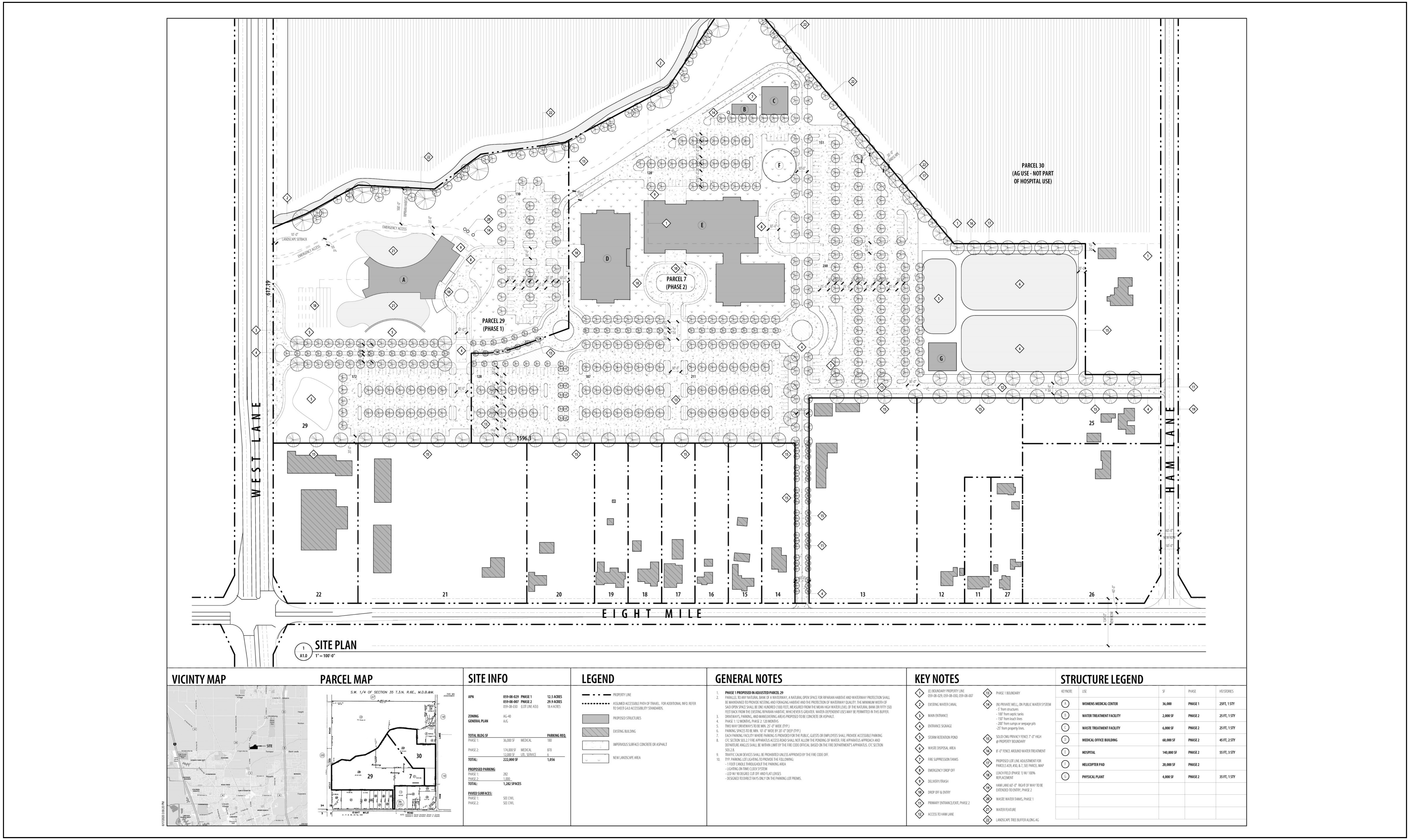

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Figure 3-4. Site Plan

2020-053 Gill Medical Center

2.0 AIR QUALITY

2.1 Air Quality Setting

Ambient air quality is commonly characterized by climate conditions, the meteorological influences on air quality, and the quantity and type of pollutants released. The air basin is subject to a combination of topographical and climatic factors that increase the potential for high levels of regional and local air pollutants. These factors are discussed below, along with the current regulatory structure that applies to the San Joaquin Valley Air Basin (SJVAB), which encompasses the Project site, pursuant to the regulatory authority of the SJVAPCD.

2.1.1 San Joaquin Valley Air Basin

The California Air Resources Board (CARB) divides the state into air basins that share similar meteorological and topographical features. The SJVAB occupies the southern two-thirds of the Central Valley and includes the Project site. The SJVAB is mostly flat, less than 1,000 feet in elevation, and is surrounded on three sides by the Sierra Nevada, Tehachapi, and Coast Range mountains. This bowl-shaped feature forms a natural barrier to the dispersion (spreading over an area) of air pollutants. As a result, the SJVAB is highly susceptible to pollutant accumulation over time (CARB 2003).

Climate and Meteorology

The climate in the SJVAB is strongly influenced by the presence of mountain ranges. The mountains create a partial rain shadow over the valley and block the free circulation of air, trapping stable air in the valley for extended periods. The climate is semi-arid and is characterized by long, hot, dry summers and cool, wet, and foggy winters. Based on historical data obtained from the meteorological station located in Bakersfield, ambient temperatures range from an average minimum of 39˚F in January to an average maximum of 98˚F in July. The average monthly precipitation is approximately 6.24 inches per year, with January and February averaging 1.35 inches. The average daily wind speed is 5.9 miles per hour (mph). The air flow patterns are characterized by one of four directions depending on the season. For example, during the summer, winds are predominantly northwestern (upvalley), while winters typically feature a prevailing stagnant condition that leads to high incidence of valley fog.

Atmospheric Stability and Inversions

Stability describes the relative resistance of the atmosphere to vertical motion, which in turn mixes the air. The stability of the atmosphere is dependent on the vertical distribution of temperature with height. Unstable conditions often occur during daytime hours when solar heating warms the lower atmospheric layers while the upper layers remain cold. In contrast, an inversion is a layer of warmer air over a layer of cooler air. Inversions influence the mixing depth of the atmosphere, which is the vertical depth available for diluting air pollution near the ground. The SJVAB experiences both surface-based and elevated inversions. The shallow surface-based inversions can be present in the morning but are often broken by daytime heating of the air layers near the ground. The deep, elevated inversions occur less frequently than the surface-based inversions but generally result in more severe air stagnation. The surface-based inversions occur more frequently in the fall, and the stronger elevated inversions usually occur during

December and January. These naturally occurring conditions can make local air quality significantly worse than they would be without the inversions and the stagnation created by regional weather and topography.

2.1.2 Criteria Air Pollutants

Criteria air pollutants are defined as those pollutants for which the federal and state governments have established air quality standards for outdoor or ambient concentrations to protect public health with a determined margin of safety. Ozone (O_3), coarse particulate matter (PM_{10}), and fine particulate matter ($PM_{2.5}$) are generally considered to be regional pollutants because they or their precursors affect air quality on a regional scale. Pollutants such as carbon monoxide (CO), nitrogen dioxide (NO_2), and sulfur dioxide (SO_2) are considered to be local pollutants because they tend to accumulate in the air locally. PM is also considered a local pollutant. Health effects commonly associated with criteria pollutants are summarized in Table 2-1.

Table 2-1. Criteria Air Pollutants- Summary of Common Sources and Effects

Pollutant	Major Manmade Sources	Human Health & Welfare Effects
CO	An odorless, colorless gas formed when carbon in fuel is not burned completely; a component of motor vehicle exhaust.	Reduces the ability of blood to deliver oxygen to vital tissues, effecting the cardiovascular and nervous system. Impairs vision, causes dizziness, and can lead to unconsciousness or death.
NO_2	A reddish-brown gas formed during fuel combustion for motor vehicles, energy utilities and industrial sources.	Respiratory irritant; aggravates lung and heart problems. Precursor to ozone and acid rain. Causes brown discoloration of the atmosphere.
O_3	Formed by a chemical reaction between reactive organic gases (ROGs) and nitrous oxides (N_2O) in the presence of sunlight. Common sources of these precursor pollutants include motor vehicle exhaust, industrial emissions, solvents, paints and landfills.	Irritates and causes inflammation of the mucous membranes and lung airways; causes wheezing, coughing and pain when inhaling deeply; decreases lung capacity; aggravates lung and heart problems. Damages plants; reduces crop yield.
PM_{10} & $PM_{2.5}$	Power plants, steel mills, chemical plants, unpaved roads and parking lots, wood-burning stoves and fireplaces, automobiles and others.	Increased respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing; aggravated asthma; development of chronic bronchitis; irregular heartbeat; nonfatal heart attacks; and premature death in people with heart or lung disease. Impairs visibility (haze).
SO_2	A colorless, nonflammable gas formed when fuel containing sulfur is burned. Examples are refineries, cement manufacturing, and locomotives.	Respiratory irritant. Aggravates lung and heart problems. Can damage crops and natural vegetation. Impairs visibility.

Source: California Air Pollution Control Officers Association (CAPCOA 2013)

Carbon Monoxide

CO in the urban environment is associated primarily with the incomplete combustion of fossil fuels in motor vehicles. CO combines with hemoglobin in the bloodstream and reduces the amount of oxygen that can be circulated through the body. High CO concentrations can cause headaches, aggravate cardiovascular disease and impair central nervous system functions. CO concentrations can vary greatly over comparatively short distances. Relatively high concentrations of CO are typically found near crowded intersections and along heavy roadways with slow moving traffic. Even under the most severe meteorological and traffic conditions, high concentrations of CO are limited to locations within relatively short distances of the source. Overall CO emissions are decreasing as a result of the Federal Motor Vehicle Control Program, which has mandated increasingly lower emission levels for vehicles manufactured since 1973.

Nitrogen Oxides

Nitrogen gas comprises about 80 percent of the air and is naturally occurring. At high temperatures and under certain conditions, nitrogen can combine with oxygen to form several different gaseous compounds collectively called nitric oxides (NO_x). Motor vehicle emissions are the main source of NO_x in urban areas. NO_x is very toxic to animals and humans because of its ability to form nitric acid with water in the eyes, lungs, mucus membrane, and skin. In animals, long-term exposure to NO_x increases susceptibility to respiratory infections, and lowering resistance to such diseases as pneumonia and influenza. Laboratory studies show that susceptible humans, such as asthmatics, who are exposed to high concentrations can suffer from lung irritation or possible lung damage. Precursors of NO_x, such as NO and NO_2, attribute to the formation of O_3 and $PM_{2.5}$. Epidemiological studies have also shown associations between NO_2 concentrations and daily mortality from respiratory and cardiovascular causes and with hospital admissions for respiratory conditions.

Ozone

O_3 is a secondary pollutant, meaning it is not directly emitted. It is formed when volatile organic compounds (VOCs) or ROGs and NO_x undergo photochemical reactions that occur only in the presence of sunlight. The primary source of ROG emissions is unburned hydrocarbons in motor vehicle and other internal combustion engine exhaust. NO_x forms as a result of the combustion process, most notably due to the operation of motor vehicles. Sunlight and hot weather cause ground-level O_3 to form. Ground-level O_3 is the primary constituent of smog. Because O_3 formation occurs over extended periods of time, both O_3 and its precursors are transported by wind and high O_3 concentrations can occur in areas well away from sources of its constituent pollutants.

People with lung disease, children, older adults, and people who are active can be affected when O_3 levels exceed ambient air quality standards. Numerous scientific studies have linked ground-level O_3 exposure to a variety of problems including lung irritation, difficult breathing, permanent lung damage to those with repeated exposure, and respiratory illnesses.

Particulate Matter

PM includes both aerosols and solid particulates of a wide range of sizes and composition. Of concern are those particles smaller than or equal to 10 microns in diameter size (PM_{10}) and smaller than or equal to 2.5 microns in diameter ($PM_{2.5}$). Smaller particulates are of greater concern because they can penetrate deeper into the lungs than larger particles. PM_{10} is generally emitted directly as a result of mechanical processes that crush or grind larger particles or form the resuspension of dust, typically through construction activities and vehicular travel. PM_{10} generally settles out of the atmosphere rapidly and is not readily transported over large distances. $PM_{2.5}$ is directly emitted in combustion exhaust and is formed in atmospheric reactions between various gaseous pollutants, including NO_x, sulfur oxides (SO_x) and VOCs. $PM_{2.5}$ can remain suspended in the atmosphere for days and/or weeks and can be transported long distances.

The principal health effects of airborne PM are on the respiratory system. Short-term exposure of high $PM_{2.5}$ and PM_{10} levels are associated with premature mortality and increased hospital admissions and emergency room visits. Long-term exposure is associated with premature mortality and chronic respiratory disease. According to the U.S. Environmental Protection Agency (USEPA), some people are much more sensitive than others to breathing PM_{10} and $PM_{2.5}$. People with influenza, chronic respiratory and cardiovascular diseases, and the elderly may suffer worse illnesses; people with bronchitis can expect aggravated symptoms; and children may experience decline in lung function due to breathing in PM_{10} and $PM_{2.5}$. Other groups considered sensitive include smokers and people who cannot breathe well through their noses. Exercising athletes are also considered sensitive because many breathe through their mouths.

2.1.3 Toxic Air Contaminants

In addition to the criteria pollutants discussed above, toxic air contaminants (TACs) are another group of pollutants of concern. TACs are considered either carcinogenic or noncarcinogenic based on the nature of the health effects associated with exposure to the pollutant. For regulatory purposes, carcinogenic TACs are assumed to have no safe threshold below which health impacts would not occur, and cancer risk is expressed as excess cancer cases per one million exposed individuals. Noncarcinogenic TACs differ in that there is generally assumed to be a safe level of exposure below which no negative health impact is believed to occur. These levels are determined on a pollutant-by-pollutant basis.

There are many different types of TACs, with varying degrees of toxicity. Sources of TACs include industrial processes such as petroleum refining and chrome plating operations, commercial operations such as gasoline stations and dry cleaners, and motor vehicle exhaust. Additionally, diesel engines emit a complex mixture of air pollutants composed of gaseous and solid material. The solid emissions in diesel exhaust are known as diesel particulate matter (DPM). In 1998, California identified DPM as a TAC based on its potential to cause cancer, premature death, and other health problems (e.g., asthma attacks and other respiratory symptoms). Those most vulnerable are children (whose lungs are still developing) and the elderly (who may have other serious health problems). Overall, diesel engine emissions are responsible for the majority of California's known cancer risk from outdoor air pollutants. Diesel engines also contribute to California's $PM_{2.5}$ air quality problems. Public exposure to TACs can result from emissions from normal operations, as well as from accidental releases of hazardous materials during upset conditions. The health effects of TACs include cancer, birth defects, neurological damage, and death.

Diesel Exhaust

Most recently, CARB identified DPM as a TAC. DPM differs from other TACs in that it is not a single substance but rather a complex mixture of hundreds of substances. Diesel exhaust is a complex mixture of particles and gases produced when an engine burns diesel fuel. DPM is a concern because it causes lung cancer; many compounds found in diesel exhaust are carcinogenic. DPM includes the particle-phase constituents in diesel exhaust. The chemical composition and particle sizes of DPM vary between different engine types (heavy-duty, light-duty), engine operating conditions (idle, accelerate, decelerate), fuel formulations (high/low sulfur fuel), and the year of the engine (USEPA 2002). Some short-term (acute) effects of diesel exhaust include eye, nose, throat, and lung irritation, and diesel exhaust can cause coughs, headaches, light-headedness, and nausea. DPM poses the greatest health risk among the TACs; due to their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lung.

2.1.4 Ambient Air Quality

Ambient air quality at the Project site can be inferred from ambient air quality measurements conducted at nearby air quality monitoring stations. CARB maintains more than 60 monitoring stations throughout California. O_3, PM_{10} and $PM_{2.5}$ are the pollutant species most potently affecting the Project region. As described in detail below, the region is designated as a nonattainment area for the federal O_3 and $PM_{2.5}$ standards and is also a nonattainment area for the state standards for O_3, $PM_{2.5}$, and PM_{10} (CARB 2018a). The Stockton-Hazelton monitoring station, located at 1593 E. Hazelton Street, Stockton, CA 95205, located approximately 7.6 miles south of the Project site monitors ambient concentrations of O_3, $PM_{2.5}$, and PM_{10}. Ambient emission concentrations will vary due to localized variations in emission sources and climate and should be considered "generally" representative of ambient concentrations in the Project area.

Table 2-2 summarizes the published data concerning O_3, $PM_{2.5}$ and PM_{10} since 2016 for each year that the monitoring data is provided.

Table 2-2. Summary of Ambient Air Quality Data

Pollutant Standards	2016	2017	2018
O_3			
Max 1-hour concentration (ppm)	0.102	0.085	0.088
Max 8-hour concentration (ppm) (state/federal)	0.079 / 0.078	0.080 / 0.079	0.078 / 0.077
Number of days above 1-hour standard (state/federal)	2 / 0	0 / 0	0 / 0
Number of days above 8-hour standard (state/federal)	2 / 2	2 / 2	2 / 1
PM_{10}			
Max 24-hour concentration (µg/m3) (state/federal)	66.5 / 65.9	92.6 / 89.9	198.6 / 187.0
Number of days above 24-hour standard (state/federal)	30.6 / 0	42.9 / 0	31.7 / 13.1
$PM_{2.5}$			
Max 24-hour concentration (µg/m3) (state/federal)	43.7 / 43.7	53.7 / 53.7	188.0 / 188.0
Number of days above federal 24-hour standard	4.0	16.9	25.0

Source: CARB 2019a
$\mu g/m^3$ = micrograms per cubic meter; ppm = parts per million
* = Insufficient data available

The USEPA and CARB designate air basins or portions of air basins and counties as being in "attainment" or "nonattainment" for each of the criteria pollutants. Areas that do not meet the standards are classified as nonattainment areas. The National Ambient Air Quality Standards (NAAQS) (other than O_3, PM_{10} and $PM_{2.5}$ and those based on annual averages or arithmetic mean) are not to be exceeded more than once per year. The NAAQS for O_3, PM_{10}, and $PM_{2.5}$ are based on statistical calculations over one- to three-year periods, depending on the pollutant. The California Ambient Air Quality Standards (CAAQS) are not to be exceeded during a three-year period. The attainment status for the San Joaquin County portion of the SJVAB, which encompasses the Project site, is included in Table 2-3.

Table 2-3. Attainment Status for the San Joaquin Valley Air Basin

Pollutant	State Designation	Federal Designation
O_3	Nonattainment	Nonattainment
PM_{10}	Nonattainment	Attainment
$PM_{2.5}$	Nonattainment	Nonattainment
CO	Attainment	Unclassified/Attainment
NO_2	Attainment	Unclassified/Attainment
SO_2	Attainment	Unclassified/Attainment

Source: CARB 2018a

The determination of whether an area meets the state and federal standards is based on air quality monitoring data. Some areas are unclassified, which means there is insufficient monitoring data for determining attainment or nonattainment. Unclassified areas are typically treated as being in attainment. Because the attainment/nonattainment designation is pollutant-specific, an area may be classified as nonattainment for one pollutant and attainment for another. Similarly, because the state and federal standards differ, an area could be classified as attainment for the federal standards of a pollutant and as nonattainment for the state standards of the same pollutant. The region is designated as nonattainment area for federal O_3 and $PM_{2.5}$ standards and is also a nonattainment area for the state standards for O_3, PM_{10}, and $PM_{2.5}$ standards (CARB 2018a).

2.1.5 Sensitive Receptors

Sensitive receptors are defined as facilities or land uses that include members of the population who are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples of these sensitive receptors are residences, schools, hospitals, and daycare centers. CARB has identified the following groups of individuals as the most likely to be affected by air pollution: the elderly over 65, children under 14, athletes, and persons with cardiovascular and chronic respiratory diseases such as asthma, emphysema, and bronchitis.

The nearest sensitive receptors to the Project site are existing rural residential properties directly adjacent to the site's southern boundary. These residences front Eight Mile Road between West Lane and North Ham Lane.

2.2 Regulatory Framework

2.2.1 Federal

Clean Air Act

The Clean Air Act (CAA) of 1970 and the CAA Amendments of 1971 required the USEPA to establish the NAAQS, with states retaining the option to adopt more stringent standards or to include other specific pollutants. On April 2, 2007, the Supreme Court found that carbon dioxide (CO_2) is an air pollutant covered by the CAA; however, no NAAQS have been established for CO_2.

These standards are the levels of air quality considered safe, with an adequate margin of safety, to protect the public health and welfare. They are designed to protect those "sensitive receptors" most susceptible to further respiratory distress such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed.

The USEPA has classified air basins (or portions thereof) as being in attainment, nonattainment, or unclassified for each criteria air pollutant, based on whether or not the NAAQS have been achieved. If an area is designated unclassified, it is because inadequate air quality data were available as a basis for a nonattainment or attainment designation. Table 2-3 lists the federal attainment status of the SJVAB for the criteria pollutants.

2.2.2 State

California Clean Air Act

The California Clean Air Act (CCAA) allows the state to adopt ambient air quality standards and other regulations provided that they are at least as stringent as federal standards. CARB, a part of the California Environmental Protection Agency, is responsible for the coordination and administration of both federal and state air pollution control programs within California, including setting the CAAQS. CARB also conducts research, compiles emission inventories, develops suggested control measures, and provides oversight of local programs. CARB establishes emissions standards for motor vehicles sold in California, consumer products (such as hairspray, aerosol paints, and barbecue lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions. CARB also has primary responsibility for the development of California's State Implementation Plan (SIP), for which it works closely with the federal government and the local air districts.

California State Implementation Plan

The federal CAA (and its subsequent amendments) requires each state to prepare an air quality control plan referred to as the SIP. The SIP is a living document that is periodically modified to reflect the latest emissions inventories, plans, and rules and regulations of air basins as reported by the agencies with jurisdiction over them. The CAA Amendments dictate that states containing areas violating the NAAQS revise their SIPs to include extra control measures to reduce air pollution. The SIP includes strategies and control measures to attain the NAAQS by deadlines established by the CAA. The USEPA has the responsibility to review all SIPs to determine if they conform to the requirements of the CAA.

State law makes CARB the lead agency for all purposes related to the SIP. Local air districts and other agencies prepare SIP elements and submit them to CARB for review and approval. CARB then forwards SIP revisions to the USEPA for approval and publication in the Federal Register.

The SJVAPCD is the agency primarily responsible for ensuring that national and state ambient air quality standards are not exceeded and that air quality conditions are maintained in the SJVAB. In an attempt to achieve NAAQS and CAAQS and maintain air quality, the air district has completed the following air quality attainment plans and reports, which together constitute the SIP for the portion of the SJVAB encompassing the Project:

- **2007 Ozone Plan**. The Ozone Plan, approved in 2007, contains a comprehensive list of regulatory and incentive-based measures to reduce emissions and particulate matter with the goal of addressing the USEPA's standards. The 2007 Ozone Plan calls for a 75 percent reduction of ozone-forming NOx emissions (SJVAPCD 2007a). These NO_x reductions are preferred and essential to meeting the new 8-hour ozone and $PM_{2.5}$ standards. The plan calls for new and more stringent rules and regulations for stationary sources, new and more stringent tail-pipe emission standards for mobile sources, emission standards for locomotives, local regulations and voluntary measures to reduce and/or mitigate mobile source emissions, incentive-based measures, and alternative compliance programs.

- **2013 Plan for the Revoked 1-Hour Ozone Standard.** The SJVAPCD initially adopted this plan in 2004 to address USEPA's 1-hour ozone standard. Although the USEPA approved the SJVAPCD's 2004 plan in 2010, the USEPA withdrew this approval as a result of a court ruling in November 2012. The SJVAPCD adopted a new plan for the USEPA's revoked 1-hour ozone standard in September 2013 (SJVAPCD 2013).
- **2014 Reasonably Available Control Technology (RACT) Demonstration for the 8-Hour Ozone State Implementation Plan (SIP).** The SJVAPCD adopted the Reasonably Available Control Technology (RACT) Demonstration for the 8-Hour Ozone Standard in 2014. The Clean Air Act requires RACT for certain sources in all nonattainment areas (SJVAPCD 2014).
- **2016 Plan for the 2008 8-Hour Ozone Standard.** The Ozone Plan, approved in 2016, contains a comprehensive list of regulatory and incentive-based measures to reduce emissions and particulate matter with the goal of addressing the USEPA's standards. The plan calls for new and more stringent rules and regulations for stationary sources, new and more stringent tail-pipe emission standards for mobile sources, emission standards for locomotives, local regulations and voluntary measures to reduce and/or mitigate mobile source emissions, incentive-based measures, and alternative compliance programs (SJVAPCD 2016).
- **2020 Reasonably Available Control Technology Demonstration for the 2015 8-Hour Ozone Standard**. The SJVAPCD adopted the RACT Demonstration for the 2015 8-Hour Ozone Standard on June 18, 2020. The Clean Air Act requires RACT for certain sources in all nonattainment areas. The SJVAPCD is required to ensure the USEPA's Control Techniques Guidance (CTG) is being implemented through SJVAPCD regulations. The 43 CTGs were developed to control major sources of emissions (SJVAPCD 2020).
- **2007 PM_{10} Maintenance Plan and Request for Redesignation.** In 2007, the SJVAPCD adopted the 2007 PM_{10} Attainment Plan to ensure the continued attainment of the USEPA's PM_{10} standard. Since the EPA determined that the air basin had attained the federal PM_{10} standards on October 30, 2006, the valley is designated as an attainment area (SJVAPCD 2007b).
- **2018 Moderate Area Plan for the 2012 $PM_{2.5}$ Standard**. In 2018, the SJVAPCD adopted the 2018 $PM_{2.5}$ Plan to address the USEPA's annual and 24-hour standards. The plan utilizes the best available information to develop a strategy to demonstrate attainment of the federal standard for $PM_{2.5}$. A number of local strategies are included in the plan, including regulations to address stationary sources, use of a risk-based approach to prioritize measures to expedite attainment standards, incentive measures, technology advances, policy efforts to shape new legislation, and public outreach (SJVAPCD 2018).

Tanner Air Toxics Act & Air Toxics "Hot Spots" Information and Assessment Act

CARB's Statewide comprehensive air toxics program was established in 1983 with Assembly Bill (AB) 1807, the Toxic Air Contaminant Identification and Control Act (Tanner Air Toxics Act of 1983). AB 1807 created California's program to reduce exposure to air toxics and sets forth a formal procedure for CARB to designate substances as TACs. Once a TAC is identified, CARB adopts an airborne toxics control measure (ATCM) for sources that emit designated TACs. If there is a safe threshold for a substance at which there is no toxic effect, the control measure must reduce exposure to below that threshold. If there is no safe threshold, the measure must incorporate toxics best available control technology to minimize emissions.

CARB also administers the state's mobile source emissions control program and oversees air quality programs established by state statute, such as AB 2588, the Air Toxics "Hot Spots" Information and Assessment Act of 1987. Under AB 2588, TAC emissions from individual facilities are quantified and prioritized by the air quality management district or air pollution control district. High priority facilities are required to perform a health risk assessment (HRA) and, if specific thresholds are exceeded, required to communicate the results to the public in the form of notices and public meetings. In September 1992, the "Hot Spots" Act was amended by Senate Bill (SB) 1731, which required facilities that pose a significant health risk to the community to reduce their risk through a risk management plan.

2.2.3 Local

San Joaquin Valley Air Pollution Control District

The local air quality agency affecting the SJVAB is the SJVAPCD, which is charged with the responsibility of implementing air quality programs and ensuring that national and state ambient air quality standards are not exceeded and that air quality conditions are maintained in the SJVAB. In an attempt to achieve national and state ambient air quality standards and maintain air quality, the air district has completed several air quality attainment plans and reports, which together constitute the SIP for the portion of the SJVAB encompassing the Project.

The SJVAPCD has also adopted various rules and regulations for the control of stationary and area sources of emissions. Provisions applicable to the Proposed Project are summarized as follows:

- **Regulation IV (Visible Emissions), Rule 4101, Nuisance.** The purpose of this rule is to protect the health and safety of the public from source operations that emit or may emit air contaminants or other materials. It prohibits emissions of air contaminants or other materials "which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public."
- **Regulation IV (Visible Emissions), Rule 4601, Architectural Coatings.** The rule limits volatile organic compound (VOC) emissions from architectural coatings and specifies practices for proper storage, cleanup, and labeling requirements. Rule 4601 applies to "any person who supplies, sells, offers for sale, applies, or solicits the application of any architectural coating, or who manufactures, blends or repackages any architectural coating for use within the District." Materials covered by the rule include adhesives, architectural coatings, paints, varnishes, sealers, stains, concrete curing compounds, concrete/masonry sealers, and waterproofing sealers.

- **Regulation IV (Visible Emissions), Rule 4641, Cutback, Slow Curve and Emulsified Asphalt, Paving and Maintenance Operations.** The purpose of this rule is to limit VOC emissions by restricting the application and manufacturing of certain types of asphalt and maintenance operations and applies to the use of these materials. Specifically, certain types of asphalt cannot be used for penetrating prime coat, dust palliative, or other paving: rapid cure and medium cure cutback asphalt, slow cure asphalt that contains more than 0.5 percent of organic compound which evaporates at 500˚F or lower, and emulsified asphalt containing VOC in excess of 3 percent which evaporates at 500˚F or lower.
- **Regulation VIII (Fugitive PM_{10} Prohibitions), Rules 8021–8071, Fugitive PM_{10} Prohibitions.** The purpose of these rules is to limit airborne particulate emissions associated with construction, demolition, excavation, extraction, and other earthmoving activities, as well as with open disturbed land and emissions associated with paved and unpaved roads. Accordingly, these rules include specific measures to be employed to prevent and reduce fugitive dust emissions from anthropogenic sources.
- **Regulation IX (Mobile and Indirect Sources), Rule 9510, Indirect Source Review.** This rule is the result of state requirements outlined in California Health and Safety Code Section 40604 and the SIP. The air district's SIP commitments were originally contained in the SJVAPCD's 2003 PM_{10} Plan and Extreme Ozone Attainment Demonstration Plans, which presented the SJVAPCD's strategy to reduce PM_{10} and NO_x in order to reach the ambient air pollution standards on schedule, which had been 2010. The plans quantify the reduction from current SJVAPCD rules and proposed rules, as well as state and federal regulations, and then model future emissions to determine whether the SJVAPCD may reach attainment for applicable pollutants. This rule will reduce emissions of NO_x and PM_{10} from new development projects that attract or generate motor vehicle trips. In general, new development contributes to the air pollution problem in the SJVAB by increasing the number of vehicles and vehicle miles traveled. Although newer, cleaner technology is reducing per-vehicle pollution, the emissions increase from new development partially offsets emission reductions gained from technology advances.

  Indirect Source Review applies to larger development projects that have not yet gained discretionary approval. A discretionary permit is a permit from a public agency, which requires some amount of deliberation by that agency, including the potential to require modifications or conditions on the project. In accordance with this rule, developers of larger residential, commercial, and industrial projects are required to reduce smog-forming NO_x and PM_{10} emissions from their projects' baselines as follows (SJVAPCD 2017):

  - 20 percent of construction NO_x exhaust
  - 45 percent of construction PM_{10} exhaust
  - 33 percent of operational NO_x over 10 years
  - 50 percent of operational PM_{10} over 10 years

These reductions are intended to be achieved through incorporation of on-site reduction measures. If, after implementation of on-site emissions reduction measures project emissions still exceed the minimum baseline reduction, the Indirect Source Review requires a project applicant to pay an off-site fee to the SJVAPCD, which is then used to fund clean-air projects within the air basin.

2.3 Air Quality Emissions Impact Assessment

2.3.1 Thresholds of Significance

The impact analysis provided below is based on the following California Environmental Quality Act (CEQA) Guidelines Appendix G thresholds of significance. The Project would result in a significant impact to air quality if it would do any of the following:

1) Conflict with or obstruct implementation of any applicable air quality plan.

2) Result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).

3) Expose sensitive receptors to substantial pollutant concentrations.

4) Result in other emissions (such as those leading to odors adversely affecting a substantial number of people).

2.3.2 Methodology

Air quality impacts were assessed in accordance with methodologies recommended by CARB and the SJVAPCD. Onsite construction-related (including worker commutes and vendors), operational area source, and energy source emissions were modeled using the California Emissions Estimator Model (CalEEMod), version 2016.3.2. CalEEMod is a statewide land use emissions computer model designed to quantify potential criteria pollutant emissions associated with both construction and operations from a variety of land use projects. Operational mobile source emissions are calculated with the 2017 version of the EMission FACtor model (EMFAC) developed by CARB. EMFAC 2017 is a mathematical model that was developed to calculate emission rates from motor vehicles that operate on highways, freeways, and local roads in California and is commonly used by CARB to estimate changes in future emissions from on-road mobile sources. The most recent version of this model, EMFAC 2017, incorporates regional motor vehicle data, information and estimates regarding the distribution of vehicle miles traveled by speed, and number of starts per day. The most important improvement in EMFAC 2017 is the integration of the new data and methods to estimate emissions from diesel trucks and buses. The model includes the emissions benefits of the truck and bus rule and the previously adopted rules for other on-road diesel equipment.

As previously described, Phase 1 construction is anticipated to begin in late 2021 and take approximately 12 months to complete. The Phase 1 Medical Center Building is expected to begin operations in 2023. Phase 2 construction is scheduled to begin in 2029 and take approximately 20 months to complete. The

Phase 2 Hospital and other support uses are expected to begin operation in 2031. Project construction-generated air pollutant emissions were calculated based on this timeline and the expected construction equipment provided by the Project applicant and identified in Table 1-3 above.

Operational air pollutant emissions are based on the Project site plans and the estimated traffic trip generation rates and Project fleet mix from KD Anderson and Associates (2020). Helicopter emissions are calculated based on the emission factors identified for a UH-1N with two T400-CP-400 engines contained in the Air Force 2020 Mobile Emissions Calculations Guide (Air Force Civil Engineer Center 2020). The UH-1N was chosen to represent a "worst-case" scenario per its similarity to the Airbus H145 which is the largest aircraft anticipated for transport to the Project site. In order to estimate the highest daily emission rate of helicopter pollutants, three flights daily are assumed. Emissions are calculated using standardized landing and take-off cycle factors generated by the USEPA as presented in the Air Force Mobile Emissions Guidance Documents (Air Force Civil Engineer Center 2020). Emissions are calculated that occur in the "mixing zone" which is from 0 – 3,000 feet above ground level. This approach is consistent with CEQA guidance found in the Aviation Environment Design Tool referenced in CEQA guidance.

See Attachment A for emissions modeling details.

2.3.3 Impact Analysis

Project Construction-Generated Criteria Air Quality Emissions

Construction associated with the Proposed Project would generate short-term emissions of criteria air pollutants, including ROG, CO, NO_X, PM_{10}, and $PM_{2.5}$. The largest amount of ROG, CO, and NO_X emissions would occur during grading activity. PM_{10} and $PM_{2.5}$ emissions would occur from fugitive dust (due to earthwork and excavation) and from construction equipment exhaust. Exhaust emissions from construction activities include emissions associated with the transport of machinery and supplies to and from the Project site, emissions produced on-site as the equipment is used, and emissions from trucks transporting materials to and from the site. Construction-generated emissions are short term and of temporary duration, lasting only as long as construction activities occur, but have the potential to represent a significant air quality impact.

During construction activities, the Project would be required to comply with SJVAPCD Regulation VIII (Fugitive PM_{10} Prohibitions). The purpose of this rule is to limit airborne particulate emissions associated with construction, demolition, excavation, extraction, and other earthmoving activities, as well as with open disturbed land and emissions associated with paved and unpaved roads. Accordingly, these rules include specific measures to be employed to prevent and reduce fugitive dust emissions from anthropogenic sources. For instance, the Project applicant would be required to prepare a dust control plan. Construction activities anywhere within the regulatory jurisdiction of the SJVAPCD, including the Proposed Project site, may not commence until the SJVAPCD has approved or conditionally approved the dust control plan, which must describe all fugitive dust control measures that are to be implemented before, during, and after any dust-generating activity. Regulation VIII specifies the following measures to control fugitive dust:

- Apply water to unpaved surfaces and areas or use nontoxic chemical or organic dust suppressants on unpaved roads and traffic areas.
- Limit or reduce vehicle speed on unpaved roads and traffic areas to a maximum 15 miles per hour.
- Maintain areas in a stabilized condition by restricting vehicle access.
- Install wind barriers.
- During high winds, cease outdoor activities that disturb the soil.
- Keep bulk materials sufficiently wet when handling.
- Store and handle materials in a three-sided structure.
- When storing bulk materials, apply water to the surface or cover the storage pile with a tarp.
- Don't overload haul trucks. Overloaded trucks are likely to spill bulk materials.
- Cover haul trucks with a tarp or other suitable cover. Or, wet the top of the load enough to limit visible dust emissions.
- Clean the interior of cargo compartments on emptied haul trucks prior to leaving a site.
- Prevent trackout by installing a trackout control device.
- Clean up trackout at least once a day. If along a busy road or highway, clean up trackout immediately.
- Monitor dust-generating activities and implement appropriate measures for maximum dust control.

The SJVAPCD's (2015) Guidance for Assessing and Mitigation Air Quality Impacts identifies significance thresholds for ROG, CO, and NO_X, SO_2, PM_{10}, and $PM_{2.5}$. Construction-generated ozone precursor emissions associated with the Proposed Project were calculated using CalEEMod. Predicted maximum annual construction-generated emissions of criteria air pollutants for the Proposed Project are summarized in Table 2-4.

Table 2-4. Construction-Related Emissions

Construction Year	Maximum Pollutants (tons per year)					
	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Annual (Maximum Tons per Year)						
Phase 1 Construction (2023)	1.1	6.3	6.8	0.0	1.3	0.7
Phase 2 Construction (2029)	1.4	5.8	5.8	0.0	2.0	1.o
Phase 2 Construction (2030)	1.3	2.9	4.0	0.0	0.6	0.2
SJVAPCD Potentially Significant Impact Threshold	*10*	*10*	*100*	*27*	*15*	*15*
Exceed SJVAPCD Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Source: CalEEMod version 2016.3.2. Refer to Attachment A for Model Data Outputs.

As shown in Table 2-4, construction-generated emissions would not exceed SJVAPCD significance thresholds.

In addition to the SJVAPCD criteria air pollutant thresholds, SJVAPCD Rule 9510, Indirect Source Review, aims to fulfill the District's emission reduction commitments in the PM_{10} and Ozone Attainment Plans. This rule applies to construction projects within the jurisdiction of the SJVAPCD which upon full build-out will include any one of the following:

- 50 residential units
- 2,000 square feet of commercial space
- 25,000 square feet of light industrial space
- 100,000 square feet of heavy industrial space
- 20,000 square feet of medical office space
- 39,000 square feet of general office space
- 9,000 square feet of educational space
- 10,000 square feet of government space
- 20,000 square feet of recreational space; or
- 9,000 square feet of space not identified above.

This rule also applies to any transportation or transit project where construction exhaust emissions equal or exceed two tons of NO_x or two tons of PM_{10}. The project developers are required to reduce concentrations of NO_x by 20 percent and PM_{10} by 45 percent during construction activities. Development projects that have a mitigated baseline below two tons per year of NOx and two tons per year of PM_{10} shall be exempt from the requirements per Rule 9510 (SJVAPCD 2017).

The Project is proposing the construction of more than 20,000 square feet of medical office space. Thus, adherence to Rule 9510 is required of the Proposed Project. In accordance with Rule 9510, the Project applicant is required to prepare a detailed air impact assessment (AIA) for submittal to the SJVAPCD, which demonstrates reduction of NO_x emissions from the Project's baseline by 20 percent and a reduction of PM_{10} by 45 percent. Therefore, the following mitigation is required.

Mitigation Measures

AQ-1 In accordance with SJVAPCD Rule 9510, a detailed air impact assessment (AIA) shall be prepared detailing the specific construction requirement (i.e., equipment required, hours of use, etc.). In accordance with this rule, emissions of NO_X from construction equipment greater than 50 horsepower used or associated with the development Project shall be reduced by 20 percent from baseline (unmitigated) emissions and PM_{10} shall be reduced by 45 percent. The Project shall demonstrate compliance with Rule 9510, including payment of all applicable fees, before issuance of the first building permit.

While the specific emission reduction measures will be developed to the satisfaction of the SJVAPCD, the following measures would reduce short-term air quality impacts attributable to the Proposed Project consistent with Rule 9510:

- During all construction activities, all diesel-fueled construction equipment including, but not limited to, rubber-tired dozers, graders, scrapers, excavators, asphalt paving equipment, cranes, and tractors shall be California Air Resources Board (CARB) Tier 4 Certified as set forth in Section 2423 of Title 13 of the California Code of Regulations, and Part 89 of Title 40 of the Code of Federal Regulations.
- All construction equipment shall be maintained and properly tuned in accordance with manufacturers' specifications. Equipment maintenance records shall be kept on-site and made available upon request by the SJVAPCD or the County.
- The Project applicant shall comply with all applicable SJVAPCD rules and regulations. Copies of any applicable air quality permits and/or monitoring plans shall be provided to the County.

Timing/Implementation: *Prior to the issuance of grading permits*

Monitoring/Enforcement: *County of San Joaquin Community Development Department*

As demonstrated in Table 2-5, implementation of mitigation measure AQ-1 would reduce annual NO_x emissions by as much as 72 percent during Phase 1 of construction and nearly 53 percent during Phase 2 of construction. Further, mitigation measure AQ-1 would reduce annual PM_{10} emissions by more than 60 percent during Phase 1 of construction and 50 percent during Phase 2 of construction. These reduction values are beyond the reduction needed to achieve the SJVAPCD Rule 9510 target.

Table 2-5. Construction Related NO_x and PM_{10} Emissions- Baseline and Mitigated (tons per Phase)			
Construction Year	**NO_x Baseline**	**NO_x Mitigated**	**Percent Reduction**
Phase 1 Construction (2023)	6.3	0.7	72.69%
Phase 2 Construction (2029-2030)	8.7	4.1	52.87%
SJVAPCD Potentially Significant Impact Threshold			**20%**
Construction Year	**PM_{10} Baseline**	**PM_{10} Mitigated**	**Percent Reduction**
Phase 1 Construction (2023)	1.3	0.5	61.53%
Phase 2 Construction (2029-2030)	2.6	1.3	50.00%
SJVAPCD Potentially Significant Impact Threshold			**45%**

Source: CalEEMod version 2013.2.2. See Attachment A for emission outputs

Notes: Mitigated emissions account for the use of equipment with CARB Tier 4 Certified engines. Emission reduction/credits for construction emissions are also applied based on the required implementation of SJVAPCD Regulation VIII. The specific regulation applied in CalEEMod are watering unpaved surfaces and areas, use of nontoxic chemical or organic dust suppressants on unpaved roads and traffic areas, limiting vehicle speed on unpaved roads and traffic areas to a maximum 15 miles per hour, and the prevention of trackout through installation of a trackout control device.

Percent reduction calculated using ((baseline-mitigated) / baseline) = percent reduction

As previously stated, construction-generated emissions would not exceed SJVAPCD significance thresholds. However, the Project proposes the construction of a medical center over 20,000 square feet, instigating the implementation of Rule 9510. Rule 9510 requires a project to reduce NO_x emissions from the Project's baseline emissions by 20 percent and reduce annual PM_{10} emissions by 45 percent. Mitigation measure AQ-1 would result in a greater than required reduction in NO_x and PM_{10} emissions from baseline for all construction activities. Therefore, with implementation of mitigation measure AQ-1, the Proposed Project would not exceed SJVAPCD thresholds and construction generated emissions would be reduced to less than significant. No health effects from Project criteria pollutants would occur.

Project Operations Criteria Air Quality Emissions

By its very nature, air pollution is largely a cumulative impact. No single project is sufficient in size, by itself, to result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. If a project's individual emissions exceed its identified significance thresholds, the project would be cumulatively considerable. Projects that do not exceed significance thresholds would not be considered cumulative considerable.

Implementation of the Project would result in long-term operational emissions of criteria air pollutants such as PM_{10}, $PM_{2.5}$, CO, and SO_2 as well as O_3 precursors such as ROG and NO_X. Project-generated increases in emissions would be predominantly associated with motor vehicle use. Table 2-6 summarizes operational emissions from the Proposed Project.

The SJVAPCD's (2015) Guidance for Assessing and Mitigation of Air Quality Impacts identifies significance thresholds for ROG, CO, and NO_X, SO_2, PM_{10}, and $PM_{2.5}$. Operational-generated area source and energy source emissions associated with the Proposed Project were calculated using CalEEMod. Operational mobile source emissions are calculated with EMFAC2017. Helicopter emissions are calculated based on the emission factors identified for a ''UH-1N' contained in Air Force 2020 Mobile Emissions Calculations

Guide (Air Force Civil Engineer Center 2020). Predicted maximum annual operational-generated emissions of criteria air pollutants for the Proposed Projects are summarized in Table 2-6.

Table 2-6. Operational Emissions

Emission Source	Maximum Pollutants (tons per year)					
	ROG	**NO_X**	**CO**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
Proposed Project Annual Emissions						
Area	1.32	0.00	0.01	0.00	0.00	0.00
Energy	0.08	0.78	0.65	0.00	0.00	0.00
Mobile (automotive)	2.25	6.97	24.74	0.07	1.11	0.49
Mobile (helicopter operation)	0.02	0.05	0.05	0.01	0.002	0.002
Total	**3.67**	**7.80**	**25.45**	**0.08**	**1.11**	**0.49**
SJVAPCD Significance Threshold	*10*	*10*	*100*	*27*	*15*	*15*
Exceed SJVAPCD Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Source: CalEEMod version 2016.3.2; EMFAC2017. Refer to Attachment A for Model Data Outputs.

Notes: Automobile emissions projections account for an automotive trip generation rate identified in the Traffic Impact Study prepared by KD Anderson and Associates (2020).

As indicated in Table 2-6, operational-generated emissions would not exceed SJVAPCD significance thresholds.

As previously mentioned, SJVAPCD Rule 9510 is intended to fulfill the region's emission reduction commitments in the SJVAPCD PM_{10} and Ozone Attainment Plans. The Proposed Project is subject to Rule 9510 and would be required to consult with the SJVAPCD regarding the specific applicability of Rule 9510 in relation to Project operations. In accordance with Rule 9510, the Project applicant would be required to prepare a detailed air impact assessment for submittal to the SJVAPCD demonstrating the reduction from the Project's baseline of NO_x and PM_{10} emissions. The inability to meet or exceed Rule 9510 required emission reductions would be considered a significant impact. Implementation of Mitigation Measure AQ-2 would reduce this impact to less than significant as discussed below.

The following mitigation is required.

Mitigation Measures

AQ-2 In accordance with SJVAPCD Rule 9510, a detailed air impact assessment shall be prepared detailing the operational characteristics associated with the Proposed Project. In accordance with this rule, operational emissions of NO_x shall be reduced by a minimum of 33.3 percent and operational emissions of PM_{10} must be reduced by a minimum of 50 percent over a period of ten years. (Emissions reductions are in comparison to the Project's operational baseline emissions presented in Table 2-6.) The

Project would demonstrate compliance with Rule 9510, including payment of all applicable fees, before issuance of the first building permit.

Based on the findings of the air impact assessment, the applicant shall pay the SJVAPCD a monetary sum necessary to offset the required operational emissions that are not reduced by the emission reduction measures contained in the air impact assessment. The quantity of operational emissions that need to be offset will be calculated in accordance with the methodologies identified in Rule 9510, Indirect Source Review, and approved by the SJVAPCD. Operational emissions reduction methods will be selected under the direction of the SJVAPCD according to the air impact assessment process detailed in, and required by Rule 9510, Indirect Source Review (see Rule 9510, subsection 5).

Timing/Implementation:	*Prior to the issuance of building permits*
Monitoring/Enforcement:	*County of San Joaquin Community Development Department*

Since the project's emissions do not exceed SJVAPCD thresholds, no exceedance of the ambient air quality standards would occur, and no health effects from Project criteria pollutants would occur. As identified in Table 2-3, the SJVAB is listed as a nonattainment area for federal O_3 and $PM_{2.5}$ standards and is also a nonattainment area for the state standards for O_3, PM_{10}, and $PM_{2.5}$. O_3 is a health threat to persons who already suffer from respiratory diseases and can cause severe ear, nose and throat irritation and increases susceptibility to respiratory infections. Particulate matter can adversely affect the human respiratory system. As shown in Table 2-6, the Proposed Project would result in increased emissions of the O_3 precursor pollutants ROG and NO_x, PM_{10}, and $PM_{2.5}$, however, the correlation between a project's emissions and increases in nonattainment days, or frequency or severity of related illnesses, cannot be accurately quantified. The overall strategy for reducing air pollution and related health effects in the SJVAB is contained in the SJVAPCD's various air quality management plans previously described. These air quality management plans provide control measures that reduce emissions to attain federal ambient air quality standards by their applicable deadlines such as the application of available cleaner technologies, best management practices, incentive programs, as well as development and implementation of zero and near-zero technologies and control methods. The CEQA thresholds of significance established by the SJVAPCD are designed to meet the objectives of regional air quality planning efforts and in doing so achieve attainment status with state and federal standards. As noted above, the Project would increase the emission of these pollutants, but would not exceed the thresholds of significance established by the SJVAPCD for purposes of reducing air pollution and its deleterious health effects.

Conflict with the SJVAPCD Air Quality Attainment Plans

As part of its enforcement responsibilities, the USEPA requires each state with nonattainment areas to prepare and submit a SIP that demonstrates the means to attain the federal standards. The SIP must integrate federal, state, and local plan components and regulations to identify specific measures to reduce pollution in nonattainment areas, using a combination of performance standards and market-based programs. Similarly, under state law, the CCAA requires an air quality attainment plan to be prepared for areas designated as nonattainment with regard to the NAAQS and CAAQS. Air quality attainment plans outline emissions limits and control measures to achieve and maintain these standards by the earliest practical date.

The SJVAPCD prepared the 2007 Ozone Plan, 2013 Plan for the Revoked 1-Hour Ozone Standard, 2016 Plan for the 2008 8-Hour Ozone Standard, 2016 Moderate Area Plan for the 2012 $PM_{2.5}$ Standard, 2020 RACT Demonstration for the 2015 8-Hour Ozone Standard, 2007 PM_{10} Maintenance Plan and Request for Re-designation, and 2018 Moderate Area Plan for the 2012 $PM_{2.5}$ Standard. These plans collectively address the air basin's nonattainment status with the national and state O_3 standards as well as particulate matter by establishing a program of rules and regulations directed at reducing air pollutant emissions and achieving state (California) and national air quality standards. Pollutant control strategies are based on the latest scientific and technical information and planning assumptions. According to the SJVAPCD (2015), the established thresholds of significance for criteria pollutant emissions are based on SJVAPCD New Source Review (NSR) offset requirements for stationary sources. Stationary sources in the SJVAB are subject to some of the most stringent regulatory requirements in the nation. Emission reductions achieved through implementation of SJVAPCD offset requirements are a major component of the District's air quality planning efforts. Thus, projects with emissions below the thresholds of significance for criteria pollutants are determined to "Not conflict or obstruct implementation of the District's air quality plan" (SJVAPCD 2015).

As shown in Table 2-4 and Table 2-6 above, both Project construction and Project operations would not generate emissions that would exceed SJVAPCD significance thresholds. Furthermore, the Project would reduce construction-generated emissions below what is required in Rule 9510 and similarly would reduce operational-generated emissions or offset the emissions with payment of a fee, which is then used to fund clean-air projects within the air basin. Therefore, the Project would be consistent with the emission-reduction goals of the SJVAPCD Attainment Plans.

Exposure of Sensitive Receptors to Toxic Air Contaminants

As previously described, sensitive receptors are defined as facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples of these sensitive receptors are residences, schools, hospitals, and daycare centers. CARB has identified the following groups of individuals as the most likely to be affected by air pollution: the elderly over age 65, children under age 14, athletes, and persons with cardiovascular and chronic respiratory diseases such as asthma, emphysema, and bronchitis. The nearest sensitive receptors to the Project site are the existing rural residential properties directly adjacent to the site's southern boundary. These residences front Eight Mile Road between West Lane and North Ham Lane.

Construction-Generated Air Contaminants

Construction-related activities would result in temporary, short-term Proposed Project-generated emissions of diesel particulate matter (DPM), ROG, NOx, CO, and PM_{10} from the exhaust of off-road, heavy-duty diesel equipment for site preparation (e.g., clearing, grading, underground work); soil hauling truck traffic; paving; and other miscellaneous activities. However, as shown in Table 2-4, the Project would not exceed the SJVAPCD construction emission thresholds. The portion of the SJVAB which encompasses the Project is classified as a nonattainment area for the federal O_3 and $PM_{2.5}$ standards and is also classified as a nonattainment area for the state standards for O_3, $PM_{2.5}$, and PM_{10} (CARB 2018a). Thus, existing O_3, PM_{10}, and $PM_{2.5}$ levels in the SJVAB are at unhealthy levels during certain periods.

The health effects associated with O_3 are generally associated with reduced lung function. Because the Project would not involve construction activities that would result in O_3 precursor emissions (ROG or NOx) in excess of the SJVAPCD thresholds, the Project is not anticipated to substantially contribute to regional O_3 concentrations and the associated health impacts.

CO tends to be a localized impact associated with congested intersections. In terms of adverse health effects, CO competes with oxygen, often replacing it in the blood, reducing the blood's ability to transport oxygen to vital organs. The results of excess CO exposure can include dizziness, fatigue, and impairment of central nervous system functions. The Project would not involve construction activities that would result in CO emissions in excess of the SJVAPCD thresholds. Thus, the Project's CO emissions would not contribute to the health effects associated with this pollutant.

Particulate matter (PM_{10} and $PM_{2.5}$) contains microscopic solids or liquid droplets that are so small that they can get deep into the lungs and cause serious health problems. Particulate matter exposure has been linked to a variety of problems, including premature death in people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, and increased respiratory symptoms such as irritation of the airways, coughing, or difficulty breathing. For construction activity, DPM is the primary toxic air contaminant (TAC) of concern. Particulate exhaust emissions from diesel-fueled engines (i.e., DPM) were identified as a TAC by the CARB in 1998. The potential cancer risk from the inhalation of DPM outweighs the potential for all other health impacts (i.e., non-cancer chronic risk, short-term acute risk) and health impacts from other TACs. Based on the emission modeling conducted, the maximum onsite construction-related daily emissions (mitigated) of exhaust $PM_{2.5}$, considered a surrogate for DPM, would be 0.36 pounds per day during Phase 1 and 0.25 pounds per day during Phase 2 ($PM_{2.5}$ exhaust is considered a surrogate for DPM because more than 90 percent of DPM is less than 1 microgram in diameter and therefore is a subset of particulate matter under 2.5 microns in diameter (i.e., $PM_{2.5}$). Most $PM_{2.5}$ derives from combustion, such as use of gasoline and diesel fuels by motor vehicles.) As with O_3 and NO_x, the Project would not generate emissions of PM_{10} or $PM_{2.5}$ that would exceed the SJVAPCD's thresholds. Additionally, the Project would be required to comply with Regulation VIII, Rules 8021–8071- Fugitive PM_{10} Prohibitions and Rule 9510- Indirect Source Review, as described above, which limit the amount of fugitive dust generated during construction. Accordingly, the Project's PM_{10} and $PM_{2.5}$ emissions are not expected to cause any increase in related regional health effects for these pollutants.

In summary, the Project would not result in a potentially significant contribution to regional or localized concentrations of nonattainment pollutants and would not result in a significant contribution to the adverse health impacts associated with those pollutants.

Valley Fever

Coccidioidomycosis (CM), often referred to as San Joaquin Valley Fever or Valley Fever, is one of the most studied and oldest known fungal infections. Valley Fever most commonly affects people who live in hot dry areas with alkaline soil and varies with the season. This disease, which affects both humans and animals, is caused by inhalation of arthroconidia (spores) of the fungus *Coccidioides immitis* (CI). CI spores are found in the top few inches of soil and the existence of the fungus in most soil areas is temporary. The cocci fungus lives as a saprophyte in dry, alkaline soil. When weather and moisture conditions are favorable, the fungus "blooms" and forms many tiny spores that lie dormant in the soil until they are stirred up by wind, vehicles, excavation, or other ground-moving activities and become airborne. Agricultural workers, construction workers, and other people who work outdoors and who are exposed to wind and dust are more likely to contract Valley Fever. Children and adults whose hobbies or sports activities expose them to wind and dust are also more likely to contract Valley Fever. After the fungal spores have settled in the lungs, they change into a multicellular structure called a spherule. Fungal growth in the lungs occurs as the spherule grows and bursts, releasing endospores, which then develop into more spherules.

Valley fever (Coccidioidomycosis) is found in California, including San Joaquin County. In about 50 to 75 percent of people, valley fever causes either no symptoms or mild symptoms and those infected never seek medical care; when symptoms are more pronounced, they usually present as lung problems (cough, shortness of breath, sputum production, fever, and chest pains). The disease can progress to chronic or progressive lung disease and may even become disseminated to the skin, lining tissue of the brain (meninges), skeleton, and other body areas.

San Joaquin County is considered a highly endemic area for valley fever. When soil containing this fungus is disturbed by ground-disturbing activities such as digging or grading, by vehicles raising dust, or by the wind, the fungal spores get into the air. When people breathe the spores into their lungs, they may get valley fever. Fungal spores are small particles that can grow and reproduce in the body. The highest infection period for valley fever occurs during the driest months in California, between June and November. Infection from valley fever during ground-disturbing activities can be partially mitigated through the control of Project-generated dust. As noted, Project-generated dust would be controlled by adhering to SJVAPCD dust-reducing measures (Regulation VIII), which includes the preparation of a SJVAPCD-approved dust control plan describing all fugitive dust control measures that are to be implemented before, during, and after any dust-generating activity.

With minimal site grading and conformance with SJVAPCD Regulation VIII, dust from the construction of the Project would not add significantly to the existing exposure level of people to this fungus, including construction workers.

<u>Operational Air Contaminants</u>

Operation of the Proposed Project would not result in the development of any substantial sources of air toxics. There are no stationary sources associated with the operations of the Project; nor would the Project attract large numbers of heavy-duty trucks that spend long periods queuing and idling at the site. Onsite Project emissions would not result in significant concentrations of pollutants at nearby sensitive receptors.

Therefore, the Project would not be a source of TACs and there would be no impact as a result of the Project during operations. The Project would not have a high carcinogenic or non-carcinogenic risk during operation.

Carbon Monoxide Hot Spots

It has long been recognized that CO exceedances are caused by vehicular emissions, primarily when idling at intersections. Concentrations of CO are a direct function of the number of vehicles, length of delay, and traffic flow conditions. Under certain meteorological conditions, CO concentrations close to congested intersections that experience high levels of traffic and elevated background concentrations may reach unhealthy levels, affecting nearby sensitive receptors. Given the high traffic volume potential, areas of high CO concentrations, or “hot spots,” are typically associated with intersections that are projected to operate at unacceptable levels of service during the peak commute hours. It has long been recognized that CO hotspots are caused by vehicular emissions, primarily when idling at congested intersections. However, transport of this criteria pollutant is extremely limited, and CO disperses rapidly with distance from the source under normal meteorological conditions. Furthermore, vehicle emissions standards have become increasingly more stringent in the last 20 years. In 1993, much of the state was designated nonattainment under the CAAQS and NAAQS for CO. Currently, the allowable CO emissions standard in California is a maximum of 3.4 grams/mile for passenger cars (there are requirements for certain vehicles that are more stringent). With the turnover of older vehicles, introduction of cleaner fuels, and implementation of increasingly sophisticated and efficient emissions control technologies, CO concentration across the entire state is now designated as attainment. Detailed modeling of Project-specific CO “hot spots” is not necessary and thus this potential impact is addressed qualitatively.

A CO “hot spot” would occur if an exceedance of the state one-hour standard of 20 parts per million (ppm) or the eight-hour standard of 9 ppm were to occur. A study conducted in Los Angeles County by the South Coast Air Quality Management District (SCAQMD) is helpful in showing the amount of traffic necessary to result in a CO Hotspot. The SCAQMD analysis prepared for CO attainment in the SCAQMD’s *1992 Federal Attainment Plan for Carbon Monoxide* in Los Angeles County and a Modeling and Attainment Demonstration prepared by the SCAQMD as part of the 2003 Air Quality Management Plan can be used to demonstrate the potential for CO exceedances of these standards. The SCAQMD conducted a CO hot spot analysis as part of the 1992 CO Federal Attainment Plan at four busy intersections in Los Angeles County during the peak morning and afternoon time periods. The intersections evaluated included Long Beach Boulevard and Imperial Highway (Lynwood), Wilshire Boulevard and Veteran Avenue (Westwood), Sunset Boulevard and Highland Avenue (Hollywood), and La Cienega Boulevard and Century Boulevard (Inglewood). The busiest intersection evaluated was at Wilshire Boulevard and Veteran Avenue, which has a traffic volume of approximately 100,000 vehicles per day. Despite this level of traffic, the CO analysis concluded that there was no violation of CO standards (SCAQMD 1992). To establish a more accurate record of baseline CO concentrations, a CO “hot spot” analysis was conducted in 2003 at the same four busy intersections in Los Angeles at the peak morning and afternoon time periods. This “hot spot” analysis did not predict any violation of CO standards. The highest one-hour concentration was measured at 4.6 ppm at Wilshire Boulevard and Veteran Avenue and the highest eight-hour concentration was measured at 8.4 ppm at Long Beach Boulevard and Imperial Highway.

Similar considerations are also employed by other Air Districts when evaluating potential CO concentration impacts. More specifically, the Bay Area Air Quality Management District (BAAQMD) concludes that under existing and future vehicle emission rates, a given project would have to increase traffic volumes at a single intersection by more than 44,000 vehicles per hour or 24,000 vehicles per hour where vertical and/or horizontal air does not mix—in order to generate a significant CO impact.

According to the Traffic Impact Study prepared for the Project (KD Anderson and Associates 2020), the Project is expected to generate an average of 3,975 trips daily. Thus, the Proposed Project would not generate traffic volumes at any intersection of more than 100,000 vehicles per day, or even 44,000 vehicles per day. There is no likelihood of Project traffic exceeding CO values.

Odors

Typically, odors are regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache).

With respect to odors, the human nose is the sole sensing device. The ability to detect odors varies considerably among the population and overall is quite subjective. Some individuals have the ability to smell minute quantities of specific substances; others may not have the same sensitivity but may have sensitivities to odors of other substances. In addition, people may have different reactions to the same odor; in fact, an odor that is offensive to one person (e.g., from a fast-food restaurant) may be perfectly acceptable to another. It is also important to note that an unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. This is because of the phenomenon known as odor fatigue, in which a person can become desensitized to almost any odor and recognition only occurs with an alteration in the intensity.

Quality and intensity are two properties present in any odor. The quality of an odor indicates the nature of the smell experience. For instance, if a person describes an odor as flowery or sweet, the person is describing the quality of the odor. Intensity refers to the strength of the odor. For example, a person may use the word "strong" to describe the intensity of an odor. Odor intensity depends on the odorant concentration in the air. When an odorous sample is progressively diluted, the odorant concentration decreases. As this occurs, the odor intensity weakens and eventually becomes so low that the detection or recognition of the odor is quite difficult. At some point during dilution, the concentration of the odorant reaches a detection threshold. An odorant concentration below the detection threshold means that the concentration in the air is not detectable by the average human.

Land uses commonly considered to be potential sources of obnoxious odorous emissions include agriculture (farming and livestock), wastewater treatment plants, food processing plants, chemical plants, composting facilities, refineries, landfills, dairies, and fiberglass molding. The Proposed Project does not include any uses considered to be associated with odors.

3.0 GREENHOUSE GAS EMISSIONS

3.1 Greenhouse Gas Setting

Certain gases in the earth's atmosphere, classified as GHGs, play a critical role in determining the earth's surface temperature. Solar radiation enters the earth's atmosphere from space. A portion of the radiation is absorbed by the earth's surface and a smaller portion of this radiation is reflected back toward space. This absorbed radiation is then emitted from the earth as low-frequency infrared radiation. The frequencies at which bodies emit radiation are proportional to temperature. Because the earth has a much lower temperature than the sun, it emits lower-frequency radiation. Most solar radiation passes through GHGs; however, infrared radiation is absorbed by these gases. As a result, radiation that otherwise would have escaped back into space is instead trapped, resulting in a warming of the atmosphere. This phenomenon, known as the greenhouse effect, is responsible for maintaining a habitable climate on earth. Without the greenhouse effect, the earth would not be able to support life as we know it.

Prominent GHGs contributing to the greenhouse effect are CO_2, methane (CH_4), and N_2O. Fluorinated gases also make up a small fraction of the GHGs that contribute to climate change. Fluorinated gases include chlorofluorocarbons, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and nitrogen trifluoride; however, it is noted that these gases are not associated with typical land use development. Human-caused emissions of these GHGs in excess of natural ambient concentrations are believed to be responsible for intensifying the greenhouse effect and leading to a trend of unnatural warming of the earth's climate, known as global climate change or global warming. It is "extremely likely" that more than half of the observed increase in global average surface temperature from 1951 to 2010 was caused by the anthropogenic increase in GHG concentrations and other anthropogenic factors together (Intergovernmental Panel on Climate Change [IPCC] 2014).

Table 3-1 describes the primary GHGs attributed to global climate change, including their physical properties, primary sources, and contributions to the greenhouse effect.

Each GHG differs in its ability to absorb heat in the atmosphere based on the lifetime, or persistence, of the gas molecule in the atmosphere. CH_4 traps over 25 times more heat per molecule than CO_2, and N_2O absorbs 298 times more heat per molecule than CO_2 (IPCC 2014). Often, estimates of GHG emissions are presented in carbon dioxide equivalents (CO_2e), which weight each gas by its global warming potential. Expressing GHG emissions in CO_2e takes the contribution of all GHG emissions to the greenhouse effect and converts them to a single unit equivalent to the effect that would occur if only CO_2 were being emitted.

Climate change is a global problem. GHGs are global pollutants, unlike criteria air pollutants and TACs, which are pollutants of regional and local concern. Whereas pollutants with localized air quality effects have relatively short atmospheric lifetimes (about one day), GHGs have long atmospheric lifetimes (one to several thousand years). GHGs persist in the atmosphere for long enough time periods to be dispersed around the globe. Although the exact lifetime of any particular GHG molecule is dependent on multiple variables and cannot be pinpointed, it is understood that more CO_2 is emitted into the atmosphere than is sequestered by ocean uptake, vegetation, or other forms. Of the total annual human-caused CO_2 emissions, approximately 55 percent is sequestered through ocean and land uptakes every year, averaged over the last 50 years, whereas the remaining 45 percent of human-caused CO_2 emissions remains stored in the atmosphere (IPCC 2013).

Table 3-1. Greenhouse Gases

Greenhouse Gas	Description
CO_2	Carbon dioxide is a colorless, odorless gas. CO_2 is emitted in a number of ways, both naturally and through human activities. The largest source of CO_2 emissions globally is the combustion of fossil fuels such as coal, oil, and gas in power plants, automobiles, industrial facilities, and other sources. A number of specialized industrial production processes and product uses such as mineral production, metal production, and the use of petroleum-based products can also lead to CO_2 emissions. The atmospheric lifetime of CO_2 is variable because it is so readily exchanged in the atmosphere.[1]
CH_4	Methane is a colorless, odorless gas and is the major component of natural gas, about 87 percent by volume. It is also formed and released to the atmosphere by biological processes occurring in anaerobic environments. Methane is emitted from a variety of both human-related and natural sources. Human-related sources include fossil fuel production, animal husbandry (intestinal fermentation in livestock and manure management), rice cultivation, biomass burning, and waste management. These activities release significant quantities of CH_4 to the atmosphere. Natural sources of CH_4 include wetlands, gas hydrates, permafrost, termites, oceans, freshwater bodies, non-wetland soils, and other sources such as wildfires. The atmospheric lifetime of CH_4 is about 12 years.[2]
N_2O	Nitrous oxide is a clear, colorless gas with a slightly sweet odor. Nitrous oxide is produced by both natural and human-related sources. Primary human-related sources of N_2O are agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuels, adipic acid production, and nitric acid production. N_2O is also produced naturally from a wide variety of biological sources in soil and water, particularly microbial action in wet tropical forests. The atmospheric lifetime of N_2O is approximately 120 years.[3]

Sources: [1]USEPA 2016a, [2] USEPA 2016b, [3] USEPA 2016c

The quantity of GHGs that it takes to ultimately result in climate change is not precisely known; it is sufficient to say the quantity is enormous, and no single project alone would measurably contribute to a noticeable incremental change in the global average temperature or to global, local, or microclimates. From the standpoint of CEQA, GHG impacts to global climate change are inherently cumulative.

3.1.1 Sources of Greenhouse Gas Emissions

In 2019, CARB released the 2019 edition of the California GHG inventory covering calendar year 2017 emissions. In 2017, California emitted 424.1 million gross metric tons of CO_2e including from imported electricity. Combustion of fossil fuel in the transportation sector was the single largest source of California's GHG emissions in 2017, accounting for approximately 41 percent of total GHG emissions in the state. This sector was followed by the industrial sector (24 percent) and the electric power sector including both in- and out-of-state sources (15 percent) (CARB 2019b). Emissions of CO_2 are by-products of fossil fuel combustion. CH_4, a highly potent GHG, primarily results from off-gassing (the release of chemicals from nonmetallic substances under ambient or greater pressure conditions) and is largely associated with agricultural practices and landfills. N_2O is also largely attributable to agricultural practices and soil management. CO_2 sinks, or reservoirs, include vegetation and the ocean, which absorb CO_2 through sequestration and dissolution (CO_2 dissolving into the water), respectively, two of the most common processes for removing CO_2 from the atmosphere.

3.2 Regulatory Framework

3.2.1 State

Executive Order S-3-05

Executive Order (EO) S-3-05, signed by Governor Arnold Schwarzenegger in 2005, proclaims that California is vulnerable to the impacts of climate change. It declares that increased temperatures could reduce the Sierra Nevada snowpack, further exacerbate California's air quality problems, and potentially cause a rise in sea levels. To combat those concerns, the EO established total GHG emission targets for the state. Specifically, emissions are to be reduced to the 2000 level by 2010, the 1990 level by 2020, and to 80 percent below the 1990 level by 2050.

While dated, this EO remains relevant because a more recent California Appellate Court decision, *Cleveland National Forest Foundation v. San Diego Association of Governments* (November 24, 2014) 231 Cal.App.4th 1056, examined whether it should be viewed as having the equivalent force of a legislative mandate for specific emissions reductions. While the California Supreme Court ruled that the San Diego Association of Governments did not abuse its discretion by declining to adopt the 2050 goal as a measure of significance in light of the fact that the EO does not specify any plan or implementation measures to achieve its goal, the decision also recognized that the goal of a 40 percent reduction in 1990 GHG levels by 2030 is "widely acknowledged" as a "necessary interim target to ensure that California meets its longer-range goal of reducing GHG emissions 80 percent below 1990 levels by the year 2050.

Assembly Bill 32 Climate Change Scoping Plan and Updates

In 2006, the California legislature passed Assembly Bill (AB) 32 (Health and Safety Code § 38500 et seq., or AB 32), also known as the Global Warming Solutions Act. AB 32 requires CARB to design and implement feasible and cost-effective emission limits, regulations, and other measures, such that statewide GHG emissions are reduced to 1990 levels by 2020 (representing a 25 percent reduction in emissions). AB 32 anticipates that the GHG reduction goals will be met, in part, through local government actions. CARB has identified a GHG reduction target of 15 percent from current levels for local governments and notes that successful implementation relies on local governments' land use planning and urban growth decisions.

Pursuant to AB 32, CARB adopted a Scoping Plan in December 2008, which was re-approved by CARB on August 24, 2011, that outlines measures to meet the 2020 GHG reduction goals. To meet these goals, California must reduce its GHG emissions by 30 percent below projected 2020 business-as-usual emissions levels or about 15 percent from today's levels. The Scoping Plan recommends measures for further study and possible state implementation, such as new fuel regulations. It estimates that a reduction of 174 million metric tons of CO_2e (about 191 million U.S. tons) from the transportation, energy, agriculture, and forestry sectors and other sources could be achieved should the State implement all of the measures in the Scoping Plan.

The Scoping Plan is required by AB 32 to be updated at least every five years. The first update to the AB 32 Scoping Plan was approved on May 22, 2014 by CARB. The 2017 Scoping Plan Update was adopted on December 14, 2017. The Scoping Plan Update addresses the 2030 target established by SB 32 as discussed below and establishes a proposed framework of action for California to meet a 40 percent reduction in GHG emissions by 2030 compared to 1990 levels. The key programs that the Scoping Plan Update builds on include: increasing the use of renewable energy in the state, the Cap-and-Trade Regulation, the Low Carbon Fuel Standard, and reduction of methane emissions from agricultural and other wastes.

Executive Order B-30-15

On April 20, 2015 Governor Edmund (Jerry) Brown, Jr., signed EO B-30-15 to establish a California GHG reduction target of 40 percent below 1990 levels by 2030. The Governor's EO aligns California's GHG reduction targets with those of leading international governments such as the 28-nation European Union, which adopted the same target in October 2014. California is on track to meet or exceed the target of reducing GHG emissions to 1990 levels by 2020, as established in the California Global Warming Solutions Act of 2006 (AB 32, discussed above). California's new emission reduction target of 40 percent below 1990 levels by 2030 will make it possible to reach the ultimate goal of reducing emissions 80 percent below 1990 levels by 2050. This is in line with the scientifically established levels needed in the U.S. to limit global warming below 2˚C, the warming threshold at which major climate disruptions are projected, such as super droughts and rising sea levels.

Senate Bill 32 and Assembly Bill 197 of 2016

In August 2016, Governor Brown signed SB 32 and AB 197, which serve to extend California's GHG reduction programs beyond 2020. SB 32 amended the Health and Safety Code to include § 38566, which contains language to authorize CARB to achieve a statewide GHG emission reduction of at least 40 percent below 1990 levels by no later than December 31, 2030. SB 32 codified the targets established by EO B-30-15 for 2030, which set the next interim step in the State's continuing efforts to pursue the long-term target expressed in EOs S-3-05 and B-30-15 of 80 percent below 1990 emissions levels by 2050.

Senate Bill X1-2 of 2011, Senate Bill 350 of 2015, and Senate Bill 100 of 2018

SB X1-2 of 2011 requires all California utilities to generate 33 percent of their electricity from renewables by 2020. SB X1-2 sets a three-stage compliance period requiring all California utilities, including independently owned utilities, energy service providers, and community choice aggregators, to generate 20 percent of their electricity from renewables by December 31, 2013; 25 percent by December 31, 2016; and 33 percent by December 31, 2020. SB X1-2 also requires the renewable electricity standard to be met increasingly with renewable energy that is supplied to the California grid from sources within, or directly proximate to, California.

In October 2015, SB 350 was signed by Governor Brown, which requires retail sellers and publicly owned utilities to procure 50 percent of their electricity from renewable resources by 2030. In 2018, SB 100 was signed by Governor Brown, codifying a goal of 60 percent renewable procurement by 2030 and 100 percent by 2045 Renewables Portfolio Standard.

2019 Building Energy Efficiency Standards for Residential and Nonresidential Buildings

The Building and Efficiency Standards (Energy Standards) were first adopted and put into effect in 1978 and have been updated periodically in the intervening years. These standards are a unique California asset that have placed the State on the forefront of energy efficiency, sustainability, energy independence and climate change issues. The 2019 Building Energy Efficiency Standards improve upon the 2016 Energy Standards for new construction of, and additions and alterations to, residential and nonresidential buildings. The 2019 update to the Building Energy Efficiency Standards focuses on several key areas to improve the energy efficiency of newly constructed buildings and additions and alterations to existing buildings. The 2019 standards are a major step toward meeting Zero Net Energy. According to the California Energy Commission, single-family homes built with the 2019 standards will use about 7 percent less energy due to energy efficiency measures versus those built under the 2016 standards and nonresidential buildings will use about 30 percent less energy (due mainly to lighting upgrades) (CEC 2018). The most significant efficiency improvement to the residential Standards include the introduction of photovoltaic into the perspective package, improvements for attics, walls, water heating and lighting. Buildings permitted on or after January 1, 2020, must comply with the 2019 Standards. These new standards apply only to certain nonresidential building types, as specified in the requirements.

3.2.2 Local

San Joaquin Valley Air Pollution Control District Climate Change Climate Action Plan

The SJVAPCD has adopted guidance and policy for implementation of the Climate Change Climate Action Plan (CCAP). The guidance and policy rely on the use of performance-based standards, otherwise known as Best Performance Standards (BPS) to assess significance of project specific greenhouse gas emissions on global climate change during the environmental review process, as required by CEQA. Use of BPS is a method of streamlining the CEQA process of determining significance and is not a required emission reduction measure. Projects implementing BPS would be determined to have a less than cumulatively significant impact. Otherwise, demonstration of a 29 percent reduction in GHG emissions, from business-as-usual (BAU), is required to determine that a project would have a less than cumulatively significant impact. The guidance does not limit a lead agency's authority in establishing its own process and guidance for determining significance of project related impacts on global climate change.

However, the BAU portion of the tiered approach is problematic based on the 2015 California Supreme Court Newhall Ranch decision, which stated that an GHG-related impact determination based on the BAU approach is "not supported by a reasoned explanation based on substantial evidence." Additionally, the SJVAPCD thresholds were adopted to achieve statewide GHG-reduction goals for the year 2020, and the Proposed Project would not be built until after the year 2020.

San Joaquin County 2035 General Plan

In order to be consistent with state statutes established by AB 32 and State objectives stated in Executive Order S-3-05 and codified in SB 32, the County has established a GHG reduction target for 2020 and goals for 2035 and 2050. The 2020 target establishes a firm, near-term standard that must be met of 15 percent below 2007 (existing) levels by 2020. In order to establish a current baseline for GHG emission levels in the unincorporated areas of the county, a GHG emissions inventory was developed. The goals for 2035 and 2050 establish the County's commitment to achieving long-term, ambitious GHG reductions of 80 percent below 1990 levels by 2050, with an interpolated reduction for 2035.

Implementation of policies, programs, and reduction strategies in the San Joaquin County 2035 General Plan would assist in county-wide GHG reductions. GHG reduction policies include: incorporation of sustainable building practices (Policy LU-2.2); supporting carbon offsets (Policy ED-4.10); smart growth to reduce VMT (Policy TM-1.13); preference to contractors that use energy efficient equipment for County construction projects (Policy PFS-3.9); encouraging energy consumption reduction strategies into new development (Policy PHS-5.14); establishing municipal (Policy PHS-6.1) and community GHG reduction targets (Policy PHS-6.2); promotion of GHG reduction strategies (Policy PHS-6.3); incorporation of all feasible mitigation to reduce GHG emissions in new development (Policy PHS-6.6); development of alternative energy sources (Policy NCR-5.2); encourage green building practices in new construction (Policy NCR-5.11); and supporting of energy efficient industrial processes (Policy NCR-5.12).

San Joaquin Council of Governments 2018 Regional Transportation Plan/Sustainable Communities Strategy

The San Joaquin Council of Governments (San Joaquin COG) region, which encompasses the Project site, must achieve specific federal air quality standards and is required by state law to lower regional GHG emissions. Specifically, the region has been tasked by CARB to achieve a 12 percent and a 16 percent per capita reduction by the end of 2020 and 2035, respectively (CARB 2018b). The San Joaquin COG Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) charts a course for closely integrating land use and transportation so that the region can grow smartly and sustainably. The 2018 RTP/SCS contains projects, policies, and strategies to achieve environmental sustainability and integrated planning. The 2018 RTP/SCS is a plan for improving the quality of life for residents of San Joaquin County by planning for wise transportation investments and informed land use choices. The Plan includes strategies to generally improve air quality, improve health, and reduce GHG emissions consistent with state requirements. The plan achieves its overall objectives by combining transportation investment and policies with integrated land use strategies that reduce per capita vehicle miles traveled (VMT) and emissions. These land use strategies include:

- Focusing new growth and development in areas well served by transit,
- Promoting a better fit between jobs and housing,
- Redirecting future housing growth toward more compact unit types, and
- Promoting a mix of uses and neighborhood design that enables more walk and bike trips.

The 2018 RTP/SCS is based on a preferred land use and transportation scenario which defines a pattern of future growth and transportation system investment for the region emphasizing a transit-oriented development and compact infill approach to land use and housing. Population and job growth are allocated principally within existing urban areas near public transit. Allocation of future growth directly addresses jobs-housing balance issues. The preferred scenario consists of an intensified land use distribution approach that concentrates the forecasted population and employment growth in existing urban areas. This focus intends to minimize impacts on rural areas which contain the majority of agricultural land throughout the County. The transportation network includes additional highway, local street, active transportation, and transit investments to serve a more concentrated urban growth pattern. The preferred scenario also shifts investment towards bicycle and pedestrian improvements that complement public transit and other non-vehicle alternatives.

The SCS element of the RTP/SCS provides future land-use assumptions upon which the SCS is constructed. San Joaquin COG staff met with each jurisdiction in San Joaquin County to identify changes to current planning assumptions, or potential changes to the location of future development since the previous RTP/SCS was developed (2014). The scenarios presented for consideration varied in the location and intensity of future growth. These assumptions are guided in each scenario by local general plans, including the San Joaquin 2035 General Plan. The SCS consists of the preferred land use and transportation scenario selected by San Joaquin COG as best capable of meeting RTP goals.

The 2018 RTP/SCS simultaneously addresses the region's transportation needs and encourages infill development near transit investments to reduce VMT and overall GHG emissions. This strategy selectively invests in transportation systems that complement compact growth within transit corridors in existing urban areas. The SCS focuses on the general land use growth pattern for the region because the geographic relationships between land uses—including density and intensity— help determine travel demand. Thus, the SCS:

- Identifies existing and future land use patterns;
- Establishes a future land use pattern to meet GHG emission reduction targets;
- Considers statutory housing goals and objectives;
- Considers resource areas and farmland.

These requirements, as outlined in California Government Code Section 65080(b)(2)(B), do not mean that the SCS creates a mandate for certain land use policies at the local level. In fact, SB 375 specifically states that the SCS cannot dictate local General Plan policies (see Government Code Section 65080(b)(2)(J)). Rather, the SCS is intended to provide a regional policy foundation that local governments may build upon as they choose and generally includes quantitative growth projections.

3.3 Greenhouse Gas Emissions Impact Assessment

3.3.1 Thresholds of Significance

The impact analysis provided below is based on the following CEQA Guidelines Appendix G thresholds of significance. The Project would result in a significant impact related to its generation of GHG emissions if it would:

1) Conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases or

2) Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.

The Appendix G thresholds for GHG emissions do not prescribe specific methodologies for performing an assessment, do not establish specific thresholds of significance, and do not mandate specific mitigation measures. Rather, the CEQA Guidelines emphasize the lead agency's discretion to determine the appropriate methodologies and thresholds of significance consistent with the manner in which other impact areas are handled in CEQA. With respect to GHG emissions, the CEQA Guidelines Section 15064.4(a) states that lead agencies "shall make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate" GHG emissions resulting from a project. The CEQA Guidelines note that an agency has the discretion to either quantify a project's GHG emissions or rely on a "qualitative analysis or other performance-based standards." (14 CCR 15064.4(b)). A lead agency may use a "model or methodology" to estimate GHG emissions and has the discretion to select the model or methodology it considers "most appropriate to enable decision makers to intelligently take into account the project's incremental contribution to climate change." (14 CCR 15064.4(c)). Section 15064.4(b) provides that the lead agency should consider the following when determining the significance of impacts from GHG emissions on the environment:

1. The extent a project may increase or reduce GHG emissions as compared to the existing environmental setting.
2. Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.
3. The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions (14 CCR 15064.4(b)).

In addition, Section 15064.7(c) of the CEQA Guidelines specifies that "[w]hen adopting or using thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies, or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence" (14 CCR 15064.7(c)). The CEQA Guidelines also clarify that the effects of GHG emissions are cumulative and should be analyzed in the context of CEQA's requirements for cumulative impact analysis (see CEQA Guidelines Section 15130(f)). As a note, the CEQA Guidelines were amended in response to Senate Bill 97. In particular, the CEQA Guidelines were amended to specify that compliance with a GHG emissions reduction plan renders a cumulative impact insignificant.

Per CEQA Guidelines Section 15064(h)(3), a project's incremental contribution to a cumulative impact can be found not cumulatively considerable if the project would comply with an approved plan or mitigation program that provides specific requirements that would avoid or substantially lessen the cumulative problem within the geographic area of the project. To qualify, such plans or programs must be specified in law or adopted by the public agency with jurisdiction over the affected resources through a public review process to implement, interpret, or make specific the law enforced or administered by the public agency. Examples of such programs include a "water quality control plan, air quality attainment or maintenance plan, integrated waste management plan, habitat conservation plan, natural community conservation plans [and] plans or regulations for the reduction of greenhouse gas emissions." Put another way, CEQA Guidelines Section 15064(h)(3) allows a lead agency to make a finding of less than significant for GHG emissions if a project complies with adopted programs, plans, policies and/or other regulatory strategies to reduce GHG emissions.

The local air quality agency regulating the SJVAB is the SJVAPCD, the regional air pollution control officer for the basin. As previously stated, the SJVAPCD has adopted guidance and policy for analyzing GHG emissions from land use development projects under CEQA. Specifically, demonstration of a 29 percent reduction in GHG emissions, from a BAU scenario is required to determine that a project would have a less than cumulatively significant impact. However, as previously described the BAU portion of the tiered approach is problematic based on the 2015 California Supreme Court Newhall Ranch decision, which stated that an GHG-related impact determination based on the BAU approach is "not supported by a reasoned explanation based on substantial evidence." Additionally, the SJVAPCD thresholds were adopted to achieve statewide GHG-reduction goals for the year 2020, and the Proposed Project would not be built until after the year 2020.

The significance of the Project's GHG emissions is evaluated consistent with CEQA Guidelines § 15064.4(b)(2) by considering whether the Project complies with applicable plans, policies, regulations and requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions. The San Joaquin County 2035 General Plan has established GHG reduction goals for 2035 and 2050. To achieve these goals the County has adopted policies, programs, and reduction strategies in the 2035 General Plan. Additionally, the projected regional development pattern in the San Joaquin COG RTP/SCS, including location of land uses and residential densities in local general plans, when integrated with the proposed regional transportation network identified in the RTP/SCS, would reduce per capita vehicular travel–related GHG emissions and achieve state-mandated GHG reduction per capita targets for the San Joaquin COG region. Thus, the Project is compared for consistency with both the San Joaquin County 2035 General Plan and San Joaquin COG RTP/SCS in order to determine its GHG-related impact.

3.3.2 Methodology

Onsite construction-related (including worker commutes and vendors), operational area source, and energy source, water/wastewater pumping, and solid waste hauling and decomposition emissions were modeled using CalEEMod. As previously described, CalEEMod is a statewide land use emissions computer model designed to quantify potential GHG emissions associated with both construction and operations from a variety of land use projects. Operational mobile source GHG emissions are calculated with EMFAC2017. EMFAC 2017 is a mathematical model that was developed to calculate emission rates from motor vehicles that operate on highways, freeways, and local roads in California and is commonly used by CARB to estimate changes in future emissions from on-road mobile sources.

As previously described, Phase 1 construction is anticipated to begin in late 2021 and take approximately 12 months to complete. The Phase 1 Medical Center Building is expected to begin operations in 2023. Phase 2 construction is scheduled to begin in 2029 and take approximately 20 months to complete. The Phase 2 Hospital and other support uses are expected to begin operation in 2031. Project construction-generated GHG emissions were calculated based on this timeline and the expected construction equipment provided by the Project applicant and identified in Table 1-3 above.

Operational GHG emissions are based on the Project site plans and the estimated traffic trip generation rates and Project fleet mix from KD Anderson and Associates (2020). Helicopter-generated GHG emissions are calculated based on the emission factors identified for a UH-1N with two T400-CP-400 engines contained in the Air Force 2020 Mobile Emissions Calculations Guide (Air Force Civil Engineer Center 2020). The UH-1N was chosen to represent a "worst-case" scenario per its similarity to the Airbus H145 which is the largest aircraft anticipated for transport to the Project site. In contrast to helicopter related criteria pollutant emissions, GHG emissions are calculated for the duration of the flight. Per analysis conducted for heliport design and operations (Heliplanners 2021), one flight per week with a 3.5-hour duration were assumed to estimate GHG emissions. As with criteria pollutants, GHG emissions from each flight were calculated for a standard landing and takeoff cycle.

See Attachment B for GHG emissions modeling details.

3.3.3 Project Emissions

In view of the above considerations in Sections 3.3.1 and 3.3.2, this assessment quantifies the Project's total annual GHG emissions.

Construction

Construction-related activities that would generate GHG emissions include worker commute trips, haul trucks carrying supplies and materials to and from the Project site, and off-road construction equipment (e.g., dozers, loaders, excavators). Table 3-2 illustrates the specific construction generated GHG emissions that would result from construction of the Project.

Table 3-2. Construction-Related Greenhouse Gas Emissions

Emissions Source	CO_2e (Metric Tons/ Year)
Phase 1 Construction (2023)	1,325
Phase 2 Construction (2029)	1,454
Phase 2 Construction (2030)	1,204
Total Emissions	**3,983**

Source: CalEEMod version 2016.3.2. Refer to Attachment B for Model Data Outputs.

As shown in Table 3-2, Project construction would result in the generation of approximately 3,983 metric tons of CO_2e over the course of construction. Once construction is complete, the generation of these GHG emissions would cease.

Operations

Operation of the Project would result in GHG emissions predominantly associated with motor vehicle use. Long-term operational GHG emissions attributable to the Project are identified in Table 3-3.

Table 3-3. Operational-Related GHG Emissions

Emissions Source	CO_2e (Metric Tons/ Year)
Area Source Emissions	0
Energy Source Emissions	978
Mobile (automotive)	7,099
Mobile (helicopter operation)	152
Solid Waste Emissions	1,282
Water Emissions	58
Total Emissions	**9,569**

Source: CalEEMod version 2016.3.2; EMFAC2017. Refer to Attachment B for Model Data Outputs.

Notes: Automobile emissions projections account for an automotive trip generation rate identified in the Traffic Impact Study prepared by KD Anderson and Associates (2020).

As shown in Table 3-3, Project operations would generate 9,569 metric tons of CO_2e annually.

3.3.4 Impact Analysis

Contribution of Greenhouse Gas Emissions at a Level that would Conflict with an Applicable Plan, Policy, or Regulation of an Agency Adopted for the Purpose of Reducing the Emissions of Greenhouse Gases

As previously stated, the San Joaquin County 2035 General Plan has established GHG reduction goals for 2035 and 2050. To achieve the GHG reduction goals the County has adopted policies, programs, and reduction strategies in the 2035 General Plan. In order to establish a current and projected baseline for GHG emission levels in the unincorporated areas of the county, a GHG emissions inventory was developed. Both the existing and the projected County-wide GHG inventories in the San Joaquin County 2035 General Plan were derived based on the land use designations and associated designations defined in the General Plan.

Similarly, the strategy to achieve the mandated 16 percent per capita reduction in mobile-source GHG emissions by 2035 promulgated by the San Joaquin COG RTP/SCS is based on a land use and transportation scenario which defines a pattern of future growth and transportation system investment for the region. The assumptions surrounding the assumed pattern of future growth are guided by the land use designations contained in local general plans, including the San Joaquin County 2035 General Plan. The projected regional development pattern in the San Joaquin COG RTP/SCS, including location of land uses and residential densities in local general plans, when integrated with the proposed regional transportation network identified in the RTP/SCS, would reduce per capita vehicular travel–related GHG emissions and achieve state-mandated GHG reduction per capita targets for the San Joaquin COG region. The 2018 RTP/SCS is based on a land use and transportation scenario which defines a pattern of future growth for the region.

The Project site is designated AG by the San Joaquin County 2035 General Plan. This designation provides for large-scale agricultural production and associated processing, sales, and support uses. The General Agriculture Designation generally applies to areas outside areas planned for urban development where soils are capable of producing a wide variety of crops and/or support grazing. Typical building types include low-intensity structures associated with farming and agricultural processing and sales. However, the Proposed Project involves construction and operation of a hospital and medical center. As previously discussed, according to the San Joaquin County Development Title Section 9-115.525, the proposed use is properly classified under the Public Services-Essential use type. Because the Proposed Project is consistent with the Public Services-Essential use it is allowed within the General Agricultural zone and no Development Title or zone change is required to implement the project.

Nonetheless, while hospital and medical centers are allowed uses on lands designated AG, this is to allow for flexibility in accommodating such essential uses. It is not the expectation that all lands designated AG in the county will be developed with hospitals and medical centers. Thus, the Project's proposed uses would not be consistent with the anticipated types, intensity, and patterns of land use envisioned for the site in the San Joaquin County 2035 General Plan. Therefore, the Project could potentially conflict with the population or job growth projections used by the County to develop the GHG emissions inventory in the County General Plan.

Similarly, the Project could potentially conflict with the assumptions used by the San Joaquin COG to develop the land use and transportation scenario, which defines a pattern of future growth for the region, used in the RTP/SCS. The Project potential to conflict with the types, intensity, and patterns of land use assumed to develop both the GHG emissions inventory in the San Joaquin County 2035 General Plan and mobile-source GHG-reduction strategies contained in the RTP/SCS is articulated by the projected increase in regional VMT identified for the Project. According to the Traffic Impact Study prepared for the Project (KD Anderson and Associates 2020), the current VMT per Service Population in the San Joaquin County 2035 General Plan Planning Area is 24.16 VMT per Service Population and the Proposed Project is expected to result in 85.98 VMT per Service Population. The Proposed Project is considered to have a significant impact on its contribution to regional VMT (KD Anderson and Associates 2020). Vehicular VMT is a substantial source of GHG emissions. As previously described, San Joaquin County 2035 General Plan Policy TM-1.13 mandates smart growth to reduce VMT. Similarly, the RTP/SCS seeks to reduce GHG emissions through land use strategies that reduce per capita VMT. The RTP/SCS preferred scenario consists of an intensified land use distribution approach that concentrates the forecasted population and employment growth in existing urban areas (infill development). This focus intends to minimize impacts on rural areas which contain the majority of agricultural land throughout the County.

Since the Project would potentially conflict with the land use assumptions used by the County and San Joaquin COG to develop the GHG emissions inventory in the San Joaquin County 2035 General Plan and mobile-source GHG-reduction strategies contained in the RTP/SCS, respectively, a significant impact would occur. All development in the County, including the Project, is required to adhere to all County-adopted policy provisions, including those contained in the adopted General Plan. The County ensures all provisions of the San Joaquin County 2035 General Plan are incorporated into projects and their permits through development review and applications of mitigation measures and/or conditions of approval as applicable. San Joaquin County 2035 General Plan policy provisions directly applicable to the Project include Policy PHS-5.14, which encourages energy consumption reduction strategies into new development, Policy NCR-5.11, which encourage green building practices in new construction, and Policy PHS-6.6, which requires the incorporation of all feasible mitigation to reduce GHG emissions in new development.

The majority of Project pollutant emissions would be generated by mobile sources, which is an emission source that cannot be regulated by the County of San Joaquin. A reduction in vehicle trips to and from the Proposed Project would reduce the amount of mobile emissions. Methods for reducing personal vehicle trips include carpooling, transit, cycling, and pedestrian connections. Roadway improvements along the frontage of Eight Mile Road, North Ham Lane, and West Lane would include sidewalks and be consistent with the County road standards. As required by the California Building Code, areas to secure bicycles would be provided within the Proposed Project. However, even with the connectivity provided by the roadway improvements and the areas to secure bicycles, there is no way to know if employees or patients would cycle to the Proposed Project. According to the Alliance for Biking and Hiking (2016), 1.1 percent of Californians commute to work via bicycling and/or walking. Furthermore, the San Joaquin COG reports that 1,611 San Joaquin residents consistently biked to work in 2017, while 2,907 residents consistently walked to work (San Joaquin COG undated). However, it is unlikely that a large number of patients and employees would ride bikes or walk to the medical services provided by the Project, although some may. Thus, the source of Project GHG emissions most able to be mitigated includes energy consumption. Thus, consistent with Policies PHS-5.14, NCR-5.11, and PHS-6.6, mitigation measures GHG-1 and GG-2 are required.

Mitigation Measures

GHG-1 The Project shall provide onsite renewable energy production generation comprising at least 20 percent of the Project energy demand. The County shall verify compliance with this measure within the Project building plans and site designs prior to the issuance of building permit(s) and/or site plans (as applicable). The County shall verify implementation of this measure prior to the issuance of Certificate(s) of Occupancy.

Timing/Implementation: *During the construction period*

Monitoring/Enforcement: *County of San Joaquin Community Development Department*

GHG-2 The Project shall meet the charging installation/charging ready requirements of the CALGreen Code. The Project Proponent shall include EV charging accommodations as specified in the CALGreen Code in building plans for review and approval by the County, prior to commencement of Project construction.

Timing/Implementation: *During the construction period*

Monitoring/Enforcement: *County of San Joaquin Community Development Department*

Following implementation of mitigation measures GHG-1 and GHG-2, the Project would be consistent with the San Joaquin County 2035 General Plan Policies PHS-5.14, NCR-5.11, and PHS-6.6. Nonetheless, the Project would still conflict with the land use assumptions used by the County and San Joaquin COG to develop the GHG emissions inventory in the San Joaquin County 2035 General Plan and mobile-source GHG-reduction strategies contained in the RTP/SCS, respectively.

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LIST OF ATTACHMENTS

ATTACHMENT A

CalEEMod Output Files – Criteria Air Pollutants

Gill Women's Medical Center - Phase 1 Construction

San Joaquin County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Hospital	36.00	1000sqft	0.83	36,000.00	0
Parking Lot	282.00	Space	2.17	112,800.00	0
Other Non-Asphalt Surfaces	9.50	Acre	9.50	413,820.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	51
Climate Zone	2			**Operational Year**	2024
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	210	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Gill Women's Medical Center - Phase 1 Construction - San Joaquin County, Annual

Project Characteristics - PGE 2017 CO2 Intensity Factor (PG&E. 2019. Corporate Responsibility & Sustanability Report).

Land Use - Phase 1 = 12.5 acres. Land disturbance accounts for women's medical center, 282 parking spaces, new well and water tank, septic system and leach lines, detention pond, internal circulation, and CMU wall.

Construction Phase - Construction duration per Draft EIR Project Description

Off-road Equipment - Construction equipment per Draft EIR Project Description

Off-road Equipment - Construction equipment per Draft EIR Project Description

Off-road Equipment - Construction equipment per Draft EIR Project Description

Off-road Equipment - Equipment per Draft EIR Project Description

Grading -

Vehicle Trips - No operations this model

Energy Use - No operations this model

Water And Wastewater - No operations this model

Solid Waste - No operations this model

Construction Off-road Equipment Mitigation - SJVAPCD Regulation VIII Fugitive PM10 Prohibitions. MM AQ-1

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	40
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	14.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
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tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	20.00	178.00
tblConstructionPhase	NumDays	300.00	191.00
tblConstructionPhase	NumDays	30.00	40.00
tblConstructionPhase	PhaseEndDate	2/8/2022	12/16/2023
tblConstructionPhase	PhaseEndDate	12/14/2021	12/16/2023
tblConstructionPhase	PhaseEndDate	10/20/2020	2/24/2023
tblConstructionPhase	PhaseEndDate	1/11/2022	3/23/2023
tblConstructionPhase	PhaseStartDate	1/12/2022	4/12/2023
tblConstructionPhase	PhaseStartDate	10/21/2020	3/24/2023
tblConstructionPhase	PhaseStartDate	9/9/2020	1/1/2023
tblConstructionPhase	PhaseStartDate	12/15/2021	2/24/2023
tblEnergyUse	LightingElect	4.53	0.00
tblEnergyUse	LightingElect	0.35	0.00
tblEnergyUse	NT24E	5.64	0.00
tblEnergyUse	NT24NG	23.87	0.00
tblEnergyUse	T24E	5.43	0.00
tblEnergyUse	T24NG	60.56	0.00

tblLandUse	LotAcreage	2.54	2.17
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	6.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	6.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	6.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	6.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	8.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	210
tblSolidWaste	SolidWasteGenerationRate	388.80	0.00
tblVehicleTrips	ST_TR	10.18	0.00
tblVehicleTrips	SU_TR	8.91	0.00
tblVehicleTrips	WD_TR	13.22	0.00
tblWater	IndoorWaterUseRate	4,517,299.35	0.00
tblWater	OutdoorWaterUseRate	860,437.97	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					
2023	1.0713	6.3179	6.7883	0.0150	1.0220	0.2672	1.2893	0.4748	0.2536	0.7284	0.0000	1,319.8118	1,319.8118	0.2002	0.0000	1,324.8158
Maximum	**1.0713**	**6.3179**	**6.7883**	**0.0150**	**1.0220**	**0.2672**	**1.2893**	**0.4748**	**0.2536**	**0.7284**	**0.0000**	**1,319.8118**	**1,319.8118**	**0.2002**	**0.0000**	**1,324.8158**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.6621	1.7256	7.4399	0.0150	0.4757	0.0398	0.5155	0.2084	0.0397	0.2481	0.0000	1,319.8107	1,319.8107	0.2002	0.0000	1,324.8147
Maximum	**0.6621**	**1.7256**	**7.4399**	**0.0150**	**0.4757**	**0.0398**	**0.5155**	**0.2084**	**0.0397**	**0.2481**	**0.0000**	**1,319.8107**	**1,319.8107**	**0.2002**	**0.0000**	**1,324.8147**

	ROG	**NOx**	**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	**38.19**	**72.69**	**-9.60**	**0.00**	**53.45**	**85.11**	**60.01**	**56.11**	**84.37**	**65.95**	**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)
10	12-9-2022	3-8-2023	1.5633	0.1489
11	3-9-2023	6-8-2023	1.7213	0.6211
12	6-9-2023	9-8-2023	1.9687	0.7787
13	9-9-2023	9-30-2023	0.4708	0.1862
		Highest	1.9687	0.7787

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.2109	3.0000e-005	3.0000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	5.8500e-003	5.8500e-003	2.0000e-005	0.0000	6.2300e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.2109**	**3.0000e-005**	**3.0000e-003**	**0.0000**	**0.0000**	**1.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**1.0000e-005**	**0.0000**	**5.8500e-003**	**5.8500e-003**	**2.0000e-005**	**0.0000**	**6.2300e-003**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.2109	3.0000e-005	3.0000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	5.8500e-003	5.8500e-003	2.0000e-005	0.0000	6.2300e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.2109**	**3.0000e-005**	**3.0000e-003**	**0.0000**	**0.0000**	**1.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**1.0000e-005**	**0.0000**	**5.8500e-003**	**5.8500e-003**	**2.0000e-005**	**0.0000**	**6.2300e-003**

	ROG	NOx	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	Grading & Undergrounding	Grading	1/1/2023	2/24/2023	5	40	
2	Paving	Paving	2/24/2023	3/23/2023	5	20	
3	Building Construction	Building Construction	3/24/2023	12/16/2023	5	191	
4	Architectural Coating	Architectural Coating	4/12/2023	12/16/2023	5	178	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 11.67

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 54,000; Non-Residential Outdoor: 18,000; Striped Parking Area: 31,597 (Architectural Coating – sqft)

<u>OffRoad Equipment</u>

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	2	6.00	78	0.48
Grading & Undergrounding	Excavators	2	8.00	158	0.38
Building Construction	Cranes	2	7.00	231	0.29
Building Construction	Forklifts	6	8.00	89	0.20
Building Construction	Generator Sets	6	8.00	84	0.74
Paving	Pavers	4	8.00	130	0.42
Paving	Rollers	4	8.00	80	0.38
Grading & Undergrounding	Rubber Tired Dozers	6	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	6	7.00	97	0.37
Grading & Undergrounding	Graders	2	8.00	187	0.41
Grading & Undergrounding	Tractors/Loaders/Backhoes	8	8.00	97	0.37
Paving	Paving Equipment	4	8.00	132	0.36
Grading & Undergrounding	Scrapers	0	8.00	367	0.48
Building Construction	Welders	2	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
Grading & Undergrounding	18	45.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	22	233.00	92.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	12	30.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	2	47.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use Soil Stabilizer

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Grading & Undergrounding - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.7439	0.0000	0.7439	0.3995	0.0000	0.3995	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1293	1.3490	0.9278	1.9900e-003		0.0597	0.0597		0.0549	0.0549	0.0000	175.2053	175.2053	0.0567	0.0000	176.6219
Total	**0.1293**	**1.3490**	**0.9278**	**1.9900e-003**	**0.7439**	**0.0597**	**0.8036**	**0.3995**	**0.0549**	**0.4545**	**0.0000**	**175.2053**	**175.2053**	**0.0567**	**0.0000**	**176.6219**

3.2 Grading & Undergrounding - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8600e-003	1.8400e-003	0.0193	6.0000e-005	7.1700e-003	4.0000e-005	7.2100e-003	1.9100e-003	4.0000e-005	1.9500e-003	0.0000	5.6807	5.6807	1.2000e-004	0.0000	5.6838
Total	**2.8600e-003**	**1.8400e-003**	**0.0193**	**6.0000e-005**	**7.1700e-003**	**4.0000e-005**	**7.2100e-003**	**1.9100e-003**	**4.0000e-005**	**1.9500e-003**	**0.0000**	**5.6807**	**5.6807**	**1.2000e-004**	**0.0000**	**5.6838**

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					0.2901	0.0000	0.2901	0.1558	0.0000	0.1558	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0244	0.1058	1.1105	1.9900e-003		3.2500e-003	3.2500e-003		3.2500e-003	3.2500e-003	0.0000	175.2051	175.2051	0.0567	0.0000	176.6217
Total	**0.0244**	**0.1058**	**1.1105**	**1.9900e-003**	**0.2901**	**3.2500e-003**	**0.2934**	**0.1558**	**3.2500e-003**	**0.1591**	**0.0000**	**175.2051**	**175.2051**	**0.0567**	**0.0000**	**176.6217**

3.2 Grading & Undergrounding - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8600e-003	1.8400e-003	0.0193	6.0000e-005	4.6900e-003	4.0000e-005	4.7300e-003	1.3000e-003	4.0000e-005	1.3400e-003	0.0000	5.6807	5.6807	1.2000e-004	0.0000	5.6838
Total	**2.8600e-003**	**1.8400e-003**	**0.0193**	**6.0000e-005**	**4.6900e-003**	**4.0000e-005**	**4.7300e-003**	**1.3000e-003**	**4.0000e-005**	**1.3400e-003**	**0.0000**	**5.6807**	**5.6807**	**1.2000e-004**	**0.0000**	**5.6838**

3.3 Paving - 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	0.0207	0.2038	0.2917	4.6000e-004		0.0102	0.0102		9.3900e-003	9.3900e-003	0.0000	40.0537	40.0537	0.0130	0.0000	40.3776
Paving	2.8400e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0235**	**0.2038**	**0.2917**	**4.6000e-004**		**0.0102**	**0.0102**		**9.3900e-003**	**9.3900e-003**	**0.0000**	**40.0537**	**40.0537**	**0.0130**	**0.0000**	**40.3776**

3.3 Paving - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.5000e-004	6.1000e-004	6.4200e-003	2.0000e-005	2.3900e-003	1.0000e-005	2.4000e-003	6.4000e-004	1.0000e-005	6.5000e-004	0.0000	1.8936	1.8936	4.0000e-005	0.0000	1.8946
Total	**9.5000e-004**	**6.1000e-004**	**6.4200e-003**	**2.0000e-005**	**2.3900e-003**	**1.0000e-005**	**2.4000e-003**	**6.4000e-004**	**1.0000e-005**	**6.5000e-004**	**0.0000**	**1.8936**	**1.8936**	**4.0000e-005**	**0.0000**	**1.8946**

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	5.6100e-003	0.0243	0.3459	4.6000e-004		7.5000e-004	7.5000e-004		7.5000e-004	7.5000e-004	0.0000	40.0537	40.0537	0.0130	0.0000	40.3775
Paving	2.8400e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**8.4500e-003**	**0.0243**	**0.3459**	**4.6000e-004**		**7.5000e-004**	**7.5000e-004**		**7.5000e-004**	**7.5000e-004**	**0.0000**	**40.0537**	**40.0537**	**0.0130**	**0.0000**	**40.3775**

3.3 Paving - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.5000e-004	6.1000e-004	6.4200e-003	2.0000e-005	1.5600e-003	1.0000e-005	1.5800e-003	4.3000e-004	1.0000e-005	4.5000e-004	0.0000	1.8936	1.8936	4.0000e-005	0.0000	1.8946
Total	**9.5000e-004**	**6.1000e-004**	**6.4200e-003**	**2.0000e-005**	**1.5600e-003**	**1.0000e-005**	**1.5800e-003**	**4.3000e-004**	**1.0000e-005**	**4.5000e-004**	**0.0000**	**1.8936**	**1.8936**	**4.0000e-005**	**0.0000**	**1.8946**

3.4 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.4172	3.7849	4.5043	7.6600e-003		0.1827	0.1827		0.1748	0.1748	0.0000	658.6563	658.6563	0.1148	0.0000	661.5268
Total	**0.4172**	**3.7849**	**4.5043**	**7.6600e-003**		**0.1827**	**0.1827**		**0.1748**	**0.1748**	**0.0000**	**658.6563**	**658.6563**	**0.1148**	**0.0000**	**661.5268**

3.4 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0192	0.6918	0.1508	2.3800e-003	0.0581	7.1000e-004	0.0588	0.0168	6.8000e-004	0.0175	0.0000	226.0224	226.0224	9.1700e-003	0.0000	226.2516
Worker	0.0707	0.0455	0.4762	1.5500e-003	0.1772	1.0900e-003	0.1783	0.0471	1.0100e-003	0.0481	0.0000	140.4492	140.4492	3.0900e-003	0.0000	140.5264
Total	**0.0899**	**0.7373**	**0.6269**	**3.9300e-003**	**0.2353**	**1.8000e-003**	**0.2371**	**0.0639**	**1.6900e-003**	**0.0656**	**0.0000**	**366.4717**	**366.4717**	**0.0123**	**0.0000**	**366.7779**

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	0.1280	0.6153	4.9190	7.6600e-003		0.0211	0.0211		0.0211	0.0211	0.0000	658.6555	658.6555	0.1148	0.0000	661.5260
Total	**0.1280**	**0.6153**	**4.9190**	**7.6600e-003**		**0.0211**	**0.0211**		**0.0211**	**0.0211**	**0.0000**	**658.6555**	**658.6555**	**0.1148**	**0.0000**	**661.5260**

3.4 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0192	0.6918	0.1508	2.3800e-003	0.0417	7.1000e-004	0.0424	0.0128	6.8000e-004	0.0134	0.0000	226.0224	226.0224	9.1700e-003	0.0000	226.2516
Worker	0.0707	0.0455	0.4762	1.5500e-003	0.1159	1.0900e-003	0.1170	0.0321	1.0100e-003	0.0331	0.0000	140.4492	140.4492	3.0900e-003	0.0000	140.5264
Total	**0.0899**	**0.7373**	**0.6269**	**3.9300e-003**	**0.1576**	**1.8000e-003**	**0.1594**	**0.0448**	**1.6900e-003**	**0.0465**	**0.0000**	**366.4717**	**366.4717**	**0.0123**	**0.0000**	**366.7779**

3.5 Architectural Coating - 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					
Archit. Coating	0.3601					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0341	0.2319	0.3224	5.3000e-004		0.0126	0.0126		0.0126	0.0126	0.0000	45.4479	45.4479	2.7200e-003	0.0000	45.5159
Total	**0.3943**	**0.2319**	**0.3224**	**5.3000e-004**		**0.0126**	**0.0126**		**0.0126**	**0.0126**	**0.0000**	**45.4479**	**45.4479**	**2.7200e-003**	**0.0000**	**45.5159**

3.5 Architectural Coating - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0133	8.5500e-003	0.0895	2.9000e-004	0.0333	2.1000e-004	0.0335	8.8600e-003	1.9000e-004	9.0500e-003	0.0000	26.4027	26.4027	5.8000e-004	0.0000	26.4172
Total	**0.0133**	**8.5500e-003**	**0.0895**	**2.9000e-004**	**0.0333**	**2.1000e-004**	**0.0335**	**8.8600e-003**	**1.9000e-004**	**9.0500e-003**	**0.0000**	**26.4027**	**26.4027**	**5.8000e-004**	**0.0000**	**26.4172**

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	0.3601					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0341	0.2319	0.3224	5.3000e-004		0.0126	0.0126		0.0126	0.0126	0.0000	45.4479	45.4479	2.7200e-003	0.0000	45.5158
Total	**0.3943**	**0.2319**	**0.3224**	**5.3000e-004**		**0.0126**	**0.0126**		**0.0126**	**0.0126**	**0.0000**	**45.4479**	**45.4479**	**2.7200e-003**	**0.0000**	**45.5158**

3.5 Architectural Coating - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0133	8.5500e-003	0.0895	2.9000e-004	0.0218	2.1000e-004	0.0220	6.0300e-003	1.9000e-004	6.2200e-003	0.0000	26.4027	26.4027	5.8000e-004	0.0000	26.4172
Total	**0.0133**	**8.5500e-003**	**0.0895**	**2.9000e-004**	**0.0218**	**2.1000e-004**	**0.0220**	**6.0300e-003**	**1.9000e-004**	**6.2200e-003**	**0.0000**	**26.4027**	**26.4027**	**5.8000e-004**	**0.0000**	**26.4172**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Hospital	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

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
Hospital	9.50	7.30	7.30	64.90	16.10	19.00	73	25	2
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

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Hospital	0.565659	0.034079	0.186058	0.112666	0.015522	0.004397	0.016109	0.056708	0.001188	0.001371	0.004918	0.000602	0.000722
Other Non-Asphalt Surfaces	0.565659	0.034079	0.186058	0.112666	0.015522	0.004397	0.016109	0.056708	0.001188	0.001371	0.004918	0.000602	0.000722
Parking Lot	0.565659	0.034079	0.186058	0.112666	0.015522	0.004397	0.016109	0.056708	0.001188	0.001371	0.004918	0.000602	0.000722

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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					
Hospital	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
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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					
Hospital	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
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Hospital	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
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Hospital	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
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive 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	0.2109	3.0000e-005	3.0000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	5.8500e-003	5.8500e-003	2.0000e-005	0.0000	6.2300e-003
Unmitigated	0.2109	3.0000e-005	3.0000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	5.8500e-003	5.8500e-003	2.0000e-005	0.0000	6.2300e-003

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	0.0360					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1746					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.8000e-004	3.0000e-005	3.0000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	5.8500e-003	5.8500e-003	2.0000e-005	0.0000	6.2300e-003
Total	**0.2109**	**3.0000e-005**	**3.0000e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**5.8500e-003**	**5.8500e-003**	**2.0000e-005**	**0.0000**	**6.2300e-003**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0360					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1746					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.8000e-004	3.0000e-005	3.0000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	5.8500e-003	5.8500e-003	2.0000e-005	0.0000	6.2300e-003
Total	**0.2109**	**3.0000e-005**	**3.0000e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**5.8500e-003**	**5.8500e-003**	**2.0000e-005**	**0.0000**	**6.2300e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Hospital	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
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Hospital	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
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Hospital	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
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Hospital	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
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

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

Gill Women's Medical Center - Phase 2 Construction

San Joaquin County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Hospital	140.00	1000sqft	3.21	140,000.00	0
Medical Office Building	60.00	1000sqft	1.38	60,000.00	0
Unrefrigerated Warehouse-No Rail	2.00	1000sqft	0.05	2,000.00	0
Unrefrigerated Warehouse-No Rail	6.00	1000sqft	0.14	6,000.00	0
Unrefrigerated Warehouse-No Rail	4.00	1000sqft	0.09	4,000.00	0
Other Non-Asphalt Surfaces	20.00	1000sqft	0.46	20,000.00	0
Parking Lot	1,006.00	Space	9.05	402,400.00	0
Other Non-Asphalt Surfaces	9.50	Acre	9.50	413,820.00	0
Other Non-Asphalt Surfaces	6.02	Acre	6.02	262,231.20	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	51
Climate Zone	2			**Operational Year**	2030
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	210	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E 2017 CO2 Intensity Factor (PG&E. 2019. Corporate Responsibility and Sustainability Report).

Land Use - Land uses account for hospital, office bldg, 2k SF water trtmnt, 6k SF wstwater trtmnt, 4k SF plant bldg, 20k helipad, 1,006 p-spaces, 9.5-acre detntion basin, internal circulation, well, water tank, septic system, and CMU wall

Construction Phase - Phase 2 duration per Draft EIR Project Description

Off-road Equipment - Construction equipment per Draft EIR Project Description

Off-road Equipment - Construction equipment per Draft EIR Project Description

Off-road Equipment - Construction equipment per Draft EIR Project Description

Off-road Equipment - Construction equipment per Draft EIR Project Description

Grading -

Vehicle Trips - No operations this model

Energy Use - No operations this model

Water And Wastewater - No operations this model

Solid Waste - No operations this model

Construction Off-road Equipment Mitigation - SJVAPCD Regulation VIII (Fugitive PM10 Prohibitions). MM AQ-1.

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	40
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	14.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	35.00	300.00
tblConstructionPhase	NumDays	440.00	330.00
tblConstructionPhase	NumDays	45.00	65.00
tblConstructionPhase	PhaseEndDate	1/3/2023	8/24/2030
tblConstructionPhase	PhaseEndDate	9/27/2022	8/24/2030
tblConstructionPhase	PhaseEndDate	1/19/2021	3/30/2029
tblConstructionPhase	PhaseEndDate	11/15/2022	5/18/2029
tblConstructionPhase	PhaseStartDate	11/16/2022	7/1/2029
tblConstructionPhase	PhaseStartDate	1/20/2021	5/19/2029
tblConstructionPhase	PhaseStartDate	11/18/2020	1/1/2029
tblConstructionPhase	PhaseStartDate	9/28/2022	3/31/2029
tblEnergyUse	LightingElect	4.53	0.00
tblEnergyUse	LightingElect	3.17	0.00
tblEnergyUse	LightingElect	0.35	0.00
tblEnergyUse	LightingElect	2.33	0.00
tblEnergyUse	NT24E	5.64	0.00
tblEnergyUse	NT24E	3.62	0.00

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tblEnergyUse	NT24E	1.77	0.00
tblEnergyUse	NT24NG	23.87	0.00
tblEnergyUse	NT24NG	0.47	0.00
tblEnergyUse	T24E	5.43	0.00
tblEnergyUse	T24E	3.22	0.00
tblEnergyUse	T24E	0.50	0.00
tblEnergyUse	T24NG	60.56	0.00
tblEnergyUse	T24NG	15.99	0.00
tblEnergyUse	T24NG	6.11	0.00
tblGrading	AcresOfGrading	65.00	162.50
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	6.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	6.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	6.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	8.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	210
tblSolidWaste	SolidWasteGenerationRate	1,512.00	0.00
tblSolidWaste	SolidWasteGenerationRate	648.00	0.00
tblSolidWaste	SolidWasteGenerationRate	11.28	0.00

tblTripsAndVMT	WorkerTripNumber	45.00	20.00
tblTripsAndVMT	WorkerTripNumber	30.00	15.00
tblVehicleTrips	ST_TR	10.18	0.00
tblVehicleTrips	ST_TR	8.96	0.00
tblVehicleTrips	ST_TR	1.68	0.00
tblVehicleTrips	SU_TR	8.91	0.00
tblVehicleTrips	SU_TR	1.55	0.00
tblVehicleTrips	SU_TR	1.68	0.00
tblVehicleTrips	WD_TR	13.22	0.00
tblVehicleTrips	WD_TR	36.13	0.00
tblVehicleTrips	WD_TR	1.68	0.00
tblWater	IndoorWaterUseRate	17,567,275.26	0.00
tblWater	IndoorWaterUseRate	7,528,832.25	0.00
tblWater	IndoorWaterUseRate	2,775,000.00	0.00
tblWater	OutdoorWaterUseRate	3,346,147.67	0.00
tblWater	OutdoorWaterUseRate	1,434,063.29	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					
2029	1.3636	5.7551	5.7513	0.0161	1.7772	0.1913	1.9685	0.7948	0.1783	0.9732	0.0000	1,448.3333	1,448.3333	0.2247	0.0000	1,453.9517
2030	1.3438	2.8925	3.9724	0.0134	0.5481	0.0317	0.5798	0.1485	0.0315	0.1800	0.0000	1,203.2078	1,203.2078	0.0404	0.0000	1,204.2173
Maximum	**1.3636**	**5.7551**	**5.7513**	**0.0161**	**1.7772**	**0.1913**	**1.9685**	**0.7948**	**0.1783**	**0.9732**	**0.0000**	**1,448.3333**	**1,448.3333**	**0.2247**	**0.0000**	**1,453.9517**

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					
2029	1.0502	2.1315	6.4176	0.0161	0.8369	0.0292	0.8661	0.3533	0.0290	0.3823	0.0000	1,448.3324	1,448.3324	0.2247	0.0000	1,453.9508
2030	1.1983	1.9614	4.2103	0.0134	0.3662	0.0159	0.3820	0.1038	0.0156	0.1195	0.0000	1,203.2072	1,203.2072	0.0404	0.0000	1,204.2167
Maximum	**1.1983**	**2.1315**	**6.4176**	**0.0161**	**0.8369**	**0.0292**	**0.8661**	**0.3533**	**0.0290**	**0.3823**	**0.0000**	**1,448.3324**	**1,448.3324**	**0.2247**	**0.0000**	**1,453.9508**

	ROG	NOx	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	**16.95**	**52.67**	**-9.30**	**0.00**	**48.26**	**79.78**	**51.02**	**51.54**	**78.72**	**56.48**	**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)
34	**12-9-2028**	**3-8-2029**	1.5745	0.1575
35	**3-9-2029**	**6-8-2029**	1.2060	0.2992
36	**6-9-2029**	**9-8-2029**	1.8650	1.1579
37	**9-9-2029**	**12-8-2029**	1.9614	1.2620
38	**12-9-2029**	**3-8-2030**	1.6990	1.2173
39	**3-9-2030**	**6-8-2030**	1.6468	1.2282
40	**6-9-2030**	**9-8-2030**	1.3769	1.0266
		Highest	1.9614	1.2620

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	1.0703	1.0000e-004	0.0115	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0224	0.0224	6.0000e-005	0.0000	0.0238
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.0703**	**1.0000e-004**	**0.0115**	**0.0000**	**0.0000**	**4.0000e-005**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**4.0000e-005**	**0.0000**	**0.0224**	**0.0224**	**6.0000e-005**	**0.0000**	**0.0238**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.0703	1.0000e-004	0.0115	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0224	0.0224	6.0000e-005	0.0000	0.0238
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.0703**	**1.0000e-004**	**0.0115**	**0.0000**	**0.0000**	**4.0000e-005**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**4.0000e-005**	**0.0000**	**0.0224**	**0.0224**	**6.0000e-005**	**0.0000**	**0.0238**

	ROG	**NOx**	**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	Grading	Grading	1/1/2029	3/30/2029	5	65	
2	Paving	Paving	3/31/2029	5/18/2029	5	35	
3	Building Construction	Building Construction	5/19/2029	8/24/2030	5	330	
4	Architectural Coating	Architectural Coating	7/1/2029	8/24/2030	5	300	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 162.5

Acres of Paving: 25.03

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 318,000; Non-Residential Outdoor: 106,000; Striped Parking Area: 65,907 (Architectural Coating – sqft)

<u>OffRoad Equipment</u>

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	2	6.00	78	0.48
Grading	Excavators	2	8.00	158	0.38
Building Construction	Cranes	2	7.00	231	0.29
Building Construction	Forklifts	6	8.00	89	0.20
Building Construction	Generator Sets	2	8.00	84	0.74
Paving	Pavers	4	8.00	130	0.42
Paving	Rollers	4	8.00	80	0.38
Grading	Rubber Tired Dozers	6	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	6	7.00	97	0.37
Grading	Graders	2	8.00	187	0.41
Grading	Tractors/Loaders/Backhoes	8	8.00	97	0.37
Paving	Paving Equipment	4	8.00	132	0.36
Grading	Scrapers	0	8.00	367	0.48
Building Construction	Welders	2	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	2	106.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	18	530.00	215.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	18	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	12	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use Soil Stabilizer

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Grading - 2029

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					1.2605	0.0000	1.2605	0.6548	0.0000	0.6548	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1918	1.9443	1.4797	3.2400e-003		0.0818	0.0818		0.0752	0.0752	0.0000	284.7919	284.7919	0.0921	0.0000	287.0945
Total	**0.1918**	**1.9443**	**1.4797**	**3.2400e-003**	**1.2605**	**0.0818**	**1.3422**	**0.6548**	**0.0752**	**0.7300**	**0.0000**	**284.7919**	**284.7919**	**0.0921**	**0.0000**	**287.0945**

3.2 Grading - 2029

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	1.4000e-003	7.5000e-004	8.9800e-003	4.0000e-005	5.1800e-003	2.0000e-005	5.2000e-003	1.3800e-003	2.0000e-005	1.4000e-003	0.0000	3.3025	3.3025	5.0000e-005	0.0000	3.3037
Total	**1.4000e-003**	**7.5000e-004**	**8.9800e-003**	**4.0000e-005**	**5.1800e-003**	**2.0000e-005**	**5.2000e-003**	**1.3800e-003**	**2.0000e-005**	**1.4000e-003**	**0.0000**	**3.3025**	**3.3025**	**5.0000e-005**	**0.0000**	**3.3037**

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					0.4916	0.0000	0.4916	0.2554	0.0000	0.2554	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0397	0.1719	1.8045	3.2400e-003		5.2900e-003	5.2900e-003		5.2900e-003	5.2900e-003	0.0000	284.7915	284.7915	0.0921	0.0000	287.0942
Total	**0.0397**	**0.1719**	**1.8045**	**3.2400e-003**	**0.4916**	**5.2900e-003**	**0.4969**	**0.2554**	**5.2900e-003**	**0.2607**	**0.0000**	**284.7915**	**284.7915**	**0.0921**	**0.0000**	**287.0942**

3.2 Grading - 2029

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	1.4000e-003	7.5000e-004	8.9800e-003	4.0000e-005	3.3900e-003	2.0000e-005	3.4100e-003	9.4000e-004	2.0000e-005	9.6000e-004	0.0000	3.3025	3.3025	5.0000e-005	0.0000	3.3037
Total	**1.4000e-003**	**7.5000e-004**	**8.9800e-003**	**4.0000e-005**	**3.3900e-003**	**2.0000e-005**	**3.4100e-003**	**9.4000e-004**	**2.0000e-005**	**9.6000e-004**	**0.0000**	**3.3025**	**3.3025**	**5.0000e-005**	**0.0000**	**3.3037**

3.3 Paving - 2029

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	0.0320	0.3004	0.5102	8.0000e-004		0.0147	0.0147		0.0135	0.0135	0.0000	70.0674	70.0674	0.0227	0.0000	70.6339
Paving	0.0119					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0439**	**0.3004**	**0.5102**	**8.0000e-004**		**0.0147**	**0.0147**		**0.0135**	**0.0135**	**0.0000**	**70.0674**	**70.0674**	**0.0227**	**0.0000**	**70.6339**

3.3 Paving - 2029

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	5.7000e-004	3.0000e-004	3.6300e-003	1.0000e-005	2.0900e-003	1.0000e-005	2.1000e-003	5.6000e-004	1.0000e-005	5.7000e-004	0.0000	1.3337	1.3337	2.0000e-005	0.0000	1.3342
Total	**5.7000e-004**	**3.0000e-004**	**3.6300e-003**	**1.0000e-005**	**2.0900e-003**	**1.0000e-005**	**2.1000e-003**	**5.6000e-004**	**1.0000e-005**	**5.7000e-004**	**0.0000**	**1.3337**	**1.3337**	**2.0000e-005**	**0.0000**	**1.3342**

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	9.8200e-003	0.0425	0.6054	8.0000e-004		1.3100e-003	1.3100e-003		1.3100e-003	1.3100e-003	0.0000	70.0673	70.0673	0.0227	0.0000	70.6338
Paving	0.0119					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0217**	**0.0425**	**0.6054**	**8.0000e-004**		**1.3100e-003**	**1.3100e-003**		**1.3100e-003**	**1.3100e-003**	**0.0000**	**70.0673**	**70.0673**	**0.0227**	**0.0000**	**70.6338**

3.3 Paving - 2029

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	5.7000e-004	3.0000e-004	3.6300e-003	1.0000e-005	1.3700e-003	1.0000e-005	1.3800e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.3337	1.3337	2.0000e-005	0.0000	1.3342
Total	**5.7000e-004**	**3.0000e-004**	**3.6300e-003**	**1.0000e-005**	**1.3700e-003**	**1.0000e-005**	**1.3800e-003**	**3.8000e-004**	**1.0000e-005**	**3.9000e-004**	**0.0000**	**1.3337**	**1.3337**	**2.0000e-005**	**0.0000**	**1.3342**

3.4 Building Construction - 2029

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	0.2202	2.0076	2.5896	4.3400e-003		0.0849	0.0849		0.0799	0.0799	0.0000	373.3903	373.3903	0.0878	0.0000	375.5846
Total	**0.2202**	**2.0076**	**2.5896**	**4.3400e-003**		**0.0849**	**0.0849**		**0.0799**	**0.0799**	**0.0000**	**373.3903**	**373.3903**	**0.0878**	**0.0000**	**375.5846**

3.4 Building Construction - 2029

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	0.0327	1.2943	0.2368	4.5300e-003	0.1144	1.2900e-003	0.1156	0.0331	1.2400e-003	0.0343	0.0000	429.9551	429.9551	0.0164	0.0000	430.3661
Worker	0.0921	0.0494	0.5893	2.3900e-003	0.3398	1.6100e-003	0.3415	0.0904	1.4800e-003	0.0918	0.0000	216.7693	216.7693	3.3200e-003	0.0000	216.8523
Total	**0.1248**	**1.3437**	**0.8262**	**6.9200e-003**	**0.4542**	**2.9000e-003**	**0.4571**	**0.1234**	**2.7200e-003**	**0.1261**	**0.0000**	**646.7245**	**646.7245**	**0.0198**	**0.0000**	**647.2184**

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	0.0811	0.4142	2.8360	4.3400e-003		0.0127	0.0127		0.0127	0.0127	0.0000	373.3899	373.3899	0.0878	0.0000	375.5842
Total	**0.0811**	**0.4142**	**2.8360**	**4.3400e-003**		**0.0127**	**0.0127**		**0.0127**	**0.0127**	**0.0000**	**373.3899**	**373.3899**	**0.0878**	**0.0000**	**375.5842**

3.4 Building Construction - 2029

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	0.0327	1.2943	0.2368	4.5300e-003	0.0821	1.2900e-003	0.0834	0.0251	1.2400e-003	0.0264	0.0000	429.9551	429.9551	0.0164	0.0000	430.3661
Worker	0.0921	0.0494	0.5893	2.3900e-003	0.2223	1.6100e-003	0.2239	0.0615	1.4800e-003	0.0630	0.0000	216.7693	216.7693	3.3200e-003	0.0000	216.8523
Total	**0.1248**	**1.3437**	**0.8262**	**6.9200e-003**	**0.3044**	**2.9000e-003**	**0.3073**	**0.0866**	**2.7200e-003**	**0.0893**	**0.0000**	**646.7245**	**646.7245**	**0.0198**	**0.0000**	**647.2184**

3.4 Building Construction - 2030

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	0.2212	1.3410	2.7305	5.2300e-003		0.0250	0.0250		0.0250	0.0250	0.0000	444.2351	444.2351	0.0178	0.0000	444.6807
Total	**0.2212**	**1.3410**	**2.7305**	**5.2300e-003**		**0.0250**	**0.0250**		**0.0250**	**0.0250**	**0.0000**	**444.2351**	**444.2351**	**0.0178**	**0.0000**	**444.6807**

3.4 Building Construction - 2030

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	0.0338	1.3499	0.2438	4.7400e-003	0.1200	1.3400e-003	0.1214	0.0347	1.2800e-003	0.0360	0.0000	449.8918	449.8918	0.0170	0.0000	450.3168
Worker	0.0894	0.0474	0.5785	2.4500e-003	0.3567	1.5800e-003	0.3583	0.0948	1.4500e-003	0.0963	0.0000	221.6091	221.6091	3.1800e-003	0.0000	221.6885
Total	**0.1232**	**1.3973**	**0.8223**	**7.1900e-003**	**0.4768**	**2.9200e-003**	**0.4797**	**0.1295**	**2.7300e-003**	**0.1323**	**0.0000**	**671.5008**	**671.5008**	**0.0202**	**0.0000**	**672.0053**

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	0.0757	0.4099	2.9685	5.2300e-003		9.1800e-003	9.1800e-003		9.1800e-003	9.1800e-003	0.0000	444.2346	444.2346	0.0178	0.0000	444.6801
Total	**0.0757**	**0.4099**	**2.9685**	**5.2300e-003**		**9.1800e-003**	**9.1800e-003**		**9.1800e-003**	**9.1800e-003**	**0.0000**	**444.2346**	**444.2346**	**0.0178**	**0.0000**	**444.6801**

3.4 Building Construction - 2030

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	0.0338	1.3499	0.2438	4.7400e-003	0.0862	1.3400e-003	0.0875	0.0264	1.2800e-003	0.0277	0.0000	449.8918	449.8918	0.0170	0.0000	450.3168
Worker	0.0894	0.0474	0.5785	2.4500e-003	0.2333	1.5800e-003	0.2349	0.0646	1.4500e-003	0.0660	0.0000	221.6091	221.6091	3.1800e-003	0.0000	221.6885
Total	**0.1232**	**1.3973**	**0.8223**	**7.1900e-003**	**0.3195**	**2.9200e-003**	**0.3224**	**0.0909**	**2.7300e-003**	**0.0937**	**0.0000**	**671.5008**	**671.5008**	**0.0202**	**0.0000**	**672.0053**

3.5 Architectural Coating - 2029

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	0.7437					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0224	0.1501	0.2370	3.9000e-004		6.7500e-003	6.7500e-003		6.7500e-003	6.7500e-003	0.0000	33.4476	33.4476	1.8200e-003	0.0000	33.4932
Total	**0.7660**	**0.1501**	**0.2370**	**3.9000e-004**		**6.7500e-003**	**6.7500e-003**		**6.7500e-003**	**6.7500e-003**	**0.0000**	**33.4476**	**33.4476**	**1.8200e-003**	**0.0000**	**33.4932**

3.5 Architectural Coating - 2029

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	0.0150	8.0400e-003	0.0959	3.9000e-004	0.0553	2.6000e-004	0.0556	0.0147	2.4000e-004	0.0149	0.0000	35.2755	35.2755	5.4000e-004	0.0000	35.2890
Total	**0.0150**	**8.0400e-003**	**0.0959**	**3.9000e-004**	**0.0553**	**2.6000e-004**	**0.0556**	**0.0147**	**2.4000e-004**	**0.0149**	**0.0000**	**35.2755**	**35.2755**	**5.4000e-004**	**0.0000**	**35.2890**

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	0.7437					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0224	0.1501	0.2370	3.9000e-004		6.7500e-003	6.7500e-003		6.7500e-003	6.7500e-003	0.0000	33.4476	33.4476	1.8200e-003	0.0000	33.4932
Total	**0.7660**	**0.1501**	**0.2370**	**3.9000e-004**		**6.7500e-003**	**6.7500e-003**		**6.7500e-003**	**6.7500e-003**	**0.0000**	**33.4476**	**33.4476**	**1.8200e-003**	**0.0000**	**33.4932**

3.5 Architectural Coating - 2029

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	0.0150	8.0400e-003	0.0959	3.9000e-004	0.0362	2.6000e-004	0.0364	0.0100	2.4000e-004	0.0103	0.0000	35.2755	35.2755	5.4000e-004	0.0000	35.2890
Total	**0.0150**	**8.0400e-003**	**0.0959**	**3.9000e-004**	**0.0362**	**2.6000e-004**	**0.0364**	**0.0100**	**2.4000e-004**	**0.0103**	**0.0000**	**35.2755**	**35.2755**	**5.4000e-004**	**0.0000**	**35.2890**

3.5 Architectural Coating - 2030

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	0.9594					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0221	0.1447	0.3038	5.0000e-004		3.4300e-003	3.4300e-003		3.4300e-003	3.4300e-003	0.0000	43.1500	43.1500	1.7500e-003	0.0000	43.1937
Total	**0.9815**	**0.1447**	**0.3038**	**5.0000e-004**		**3.4300e-003**	**3.4300e-003**		**3.4300e-003**	**3.4300e-003**	**0.0000**	**43.1500**	**43.1500**	**1.7500e-003**	**0.0000**	**43.1937**

3.5 Architectural Coating - 2030

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	0.0179	9.4800e-003	0.1157	4.9000e-004	0.0714	3.2000e-004	0.0717	0.0190	2.9000e-004	0.0193	0.0000	44.3218	44.3218	6.4000e-004	0.0000	44.3377
Total	**0.0179**	**9.4800e-003**	**0.1157**	**4.9000e-004**	**0.0714**	**3.2000e-004**	**0.0717**	**0.0190**	**2.9000e-004**	**0.0193**	**0.0000**	**44.3218**	**44.3218**	**6.4000e-004**	**0.0000**	**44.3377**

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	0.9594					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0221	0.1447	0.3038	5.0000e-004		3.4300e-003	3.4300e-003		3.4300e-003	3.4300e-003	0.0000	43.1499	43.1499	1.7500e-003	0.0000	43.1936
Total	**0.9815**	**0.1447**	**0.3038**	**5.0000e-004**		**3.4300e-003**	**3.4300e-003**		**3.4300e-003**	**3.4300e-003**	**0.0000**	**43.1499**	**43.1499**	**1.7500e-003**	**0.0000**	**43.1936**

3.5 Architectural Coating - 2030

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	0.0179	9.4800e-003	0.1157	4.9000e-004	0.0467	3.2000e-004	0.0470	0.0129	2.9000e-004	0.0132	0.0000	44.3218	44.3218	6.4000e-004	0.0000	44.3377
Total	**0.0179**	**9.4800e-003**	**0.1157**	**4.9000e-004**	**0.0467**	**3.2000e-004**	**0.0470**	**0.0129**	**2.9000e-004**	**0.0132**	**0.0000**	**44.3218**	**44.3218**	**6.4000e-004**	**0.0000**	**44.3377**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Hospital	0.00	0.00	0.00		
Medical Office Building	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Other Non-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		
Unrefrigerated Warehouse-No Rail	0.00	0.00	0.00		
Unrefrigerated Warehouse-No Rail	0.00	0.00	0.00		
Unrefrigerated Warehouse-No Rail	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

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
Hospital	9.50	7.30	7.30	64.90	16.10	19.00	73	25	2
Medical Office Building	9.50	7.30	7.30	29.60	51.40	19.00	60	30	10
Other Non-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
Other Non-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
Other Non-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
Unrefrigerated Warehouse-No	9.50	7.30	7.30	59.00	0.00	41.00	92	5	3
Unrefrigerated Warehouse-No	9.50	7.30	7.30	59.00	0.00	41.00	92	5	3
Unrefrigerated Warehouse-No	9.50	7.30	7.30	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Hospital	0.581437	0.032303	0.190969	0.100551	0.011057	0.003880	0.015441	0.056216	0.001173	0.001204	0.004639	0.000578	0.000551
Medical Office Building	0.581437	0.032303	0.190969	0.100551	0.011057	0.003880	0.015441	0.056216	0.001173	0.001204	0.004639	0.000578	0.000551
Other Non-Asphalt Surfaces	0.581437	0.032303	0.190969	0.100551	0.011057	0.003880	0.015441	0.056216	0.001173	0.001204	0.004639	0.000578	0.000551
Parking Lot	0.581437	0.032303	0.190969	0.100551	0.011057	0.003880	0.015441	0.056216	0.001173	0.001204	0.004639	0.000578	0.000551
Unrefrigerated Warehouse-No Rail	0.581437	0.032303	0.190969	0.100551	0.011057	0.003880	0.015441	0.056216	0.001173	0.001204	0.004639	0.000578	0.000551

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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					
Hospital	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
Medical Office Building	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
Unrefrigerated Warehouse-No Rail	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		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.2 Energy by Land Use - NaturalGas

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					
Hospital	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
Medical Office Building	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
Unrefrigerated Warehouse-No Rail	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		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Hospital	0	0.0000	0.0000	0.0000	0.0000
Medical Office Building	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
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Hospital	0	0.0000	0.0000	0.0000	0.0000
Medical Office Building	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
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive 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	1.0703	1.0000e-004	0.0115	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0224	0.0224	6.0000e-005	0.0000	0.0238
Unmitigated	1.0703	1.0000e-004	0.0115	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0224	0.0224	6.0000e-005	0.0000	0.0238

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	0.1703					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.8990					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0500e-003	1.0000e-004	0.0115	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0224	0.0224	6.0000e-005	0.0000	0.0238
Total	**1.0703**	**1.0000e-004**	**0.0115**	**0.0000**		**4.0000e-005**	**4.0000e-005**		**4.0000e-005**	**4.0000e-005**	**0.0000**	**0.0224**	**0.0224**	**6.0000e-005**	**0.0000**	**0.0238**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1703					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.8990					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0500e-003	1.0000e-004	0.0115	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0224	0.0224	6.0000e-005	0.0000	0.0238
Total	**1.0703**	**1.0000e-004**	**0.0115**	**0.0000**		**4.0000e-005**	**4.0000e-005**		**4.0000e-005**	**4.0000e-005**	**0.0000**	**0.0224**	**0.0224**	**6.0000e-005**	**0.0000**	**0.0238**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Hospital	0 / 0	0.0000	0.0000	0.0000	0.0000
Medical Office Building	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
Unrefrigerated Warehouse-No Rail	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Hospital	0 / 0	0.0000	0.0000	0.0000	0.0000
Medical Office Building	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
Unrefrigerated Warehouse-No Rail	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Hospital	0	0.0000	0.0000	0.0000	0.0000
Medical Office Building	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
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Hospital	0	0.0000	0.0000	0.0000	0.0000
Medical Office Building	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
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

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

Gill Women's Medical Center - Buildout

San Joaquin County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Hospital	36.00	1000sqft	0.83	36,000.00	0
Hospital	140.00	1000sqft	3.21	140,000.00	0
Medical Office Building	60.00	1000sqft	1.38	60,000.00	0
Unrefrigerated Warehouse-No Rail	2.00	1000sqft	0.05	2,000.00	0
Unrefrigerated Warehouse-No Rail	6.00	1000sqft	0.14	6,000.00	0
Unrefrigerated Warehouse-No Rail	4.00	1000sqft	0.09	4,000.00	0
Other Non-Asphalt Surfaces	19.00	Acre	19.00	827,640.00	0
Other Non-Asphalt Surfaces	17.70	Acre	5.65	771,012.00	0
Parking Lot	1,288.00	Space	11.59	515,200.00	0
Other Non-Asphalt Surfaces	20.00	1000sqft	0.46	20,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	51
Climate Zone	2			**Operational Year**	2024
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	210	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E 2017 CO2 Intensity Factor. (PG&E. 2019. Corporate Responsibility and Sustainability Report).

Land Use - Land uses account for 140k sf hospital, 36k sf women's bldg, 60k sf office bldg, 4k sf plant building, 2k sf water trtmnt & 6l sf WW trtmnt facility, parking lot, 20k sf helipad, 19 acres detention basins, wells, water tanks, & internal circulation

Construction Phase - No construction this model

Vehicle Trips - Traffic emissions modeled separately

Solid Waste - No waste from plant buildings

Water And Wastewater - No water consumption at plant buildings

Energy Use -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	55.00	1.00
tblConstructionPhase	PhaseEndDate	7/17/2024	5/2/2024
tblLandUse	LotAcreage	17.70	5.65
tblProjectCharacteristics	CO2IntensityFactor	641.35	210
tblSolidWaste	SolidWasteGenerationRate	11.28	0.00
tblVehicleTrips	ST_TR	10.18	0.00
tblVehicleTrips	ST_TR	8.96	0.00
tblVehicleTrips	ST_TR	1.68	0.00
tblVehicleTrips	SU_TR	8.91	0.00
tblVehicleTrips	SU_TR	1.55	0.00
tblVehicleTrips	SU_TR	1.68	0.00
tblVehicleTrips	WD_TR	13.22	0.00
tblVehicleTrips	WD_TR	36.13	0.00
tblVehicleTrips	WD_TR	1.68	0.00
tblWater	IndoorWaterUseRate	2,775,000.00	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					
2024	2.1697	7.9000e-004	2.8300e-003	1.0000e-005	7.8000e-004	4.0000e-005	8.1000e-004	2.1000e-004	3.0000e-005	2.4000e-004	0.0000	0.7166	0.7166	2.0000e-005	0.0000	0.7171
Maximum	**2.1697**	**7.9000e-004**	**2.8300e-003**	**1.0000e-005**	**7.8000e-004**	**4.0000e-005**	**8.1000e-004**	**2.1000e-004**	**3.0000e-005**	**2.4000e-004**	**0.0000**	**0.7166**	**0.7166**	**2.0000e-005**	**0.0000**	**0.7171**

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					
2024	2.1697	7.9000e-004	2.8300e-003	1.0000e-005	7.8000e-004	4.0000e-005	8.1000e-004	2.1000e-004	3.0000e-005	2.4000e-004	0.0000	0.7166	0.7166	2.0000e-005	0.0000	0.7171
Maximum	**2.1697**	**7.9000e-004**	**2.8300e-003**	**1.0000e-005**	**7.8000e-004**	**4.0000e-005**	**8.1000e-004**	**2.1000e-004**	**3.0000e-005**	**2.4000e-004**	**0.0000**	**0.7166**	**0.7166**	**2.0000e-005**	**0.0000**	**0.7171**

	ROG	**NOx**	**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)
15	**3-10-2024**	**6-9-2024**	1.5503	1.5503
		Highest	1.5503	1.5503

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	1.3248	1.3000e-004	0.0146	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.0285	0.0285	7.0000e-005	0.0000	0.0303
Energy	0.0859	0.7804	0.6556	4.6800e-003		0.0593	0.0593		0.0593	0.0593	0.0000	1,190.7584	1,190.7584	0.0634	0.0253	1,199.8898
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	517.3834	0.0000	517.3834	30.5765	0.0000	1,281.7954
Water						0.0000	0.0000		0.0000	0.0000	9.3950	17.1439	26.5389	0.9673	0.0233	57.6577
Total	**1.4106**	**0.7806**	**0.6702**	**4.6800e-003**	**0.0000**	**0.0594**	**0.0594**	**0.0000**	**0.0594**	**0.0594**	**526.7783**	**1,207.9308**	**1,734.7092**	**31.6073**	**0.0486**	**2,539.3732**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.3248	1.3000e-004	0.0146	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.0285	0.0285	7.0000e-005	0.0000	0.0303
Energy	0.0859	0.7804	0.6556	4.6800e-003		0.0593	0.0593		0.0593	0.0593	0.0000	1,190.7584	1,190.7584	0.0634	0.0253	1,199.8898
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	517.3834	0.0000	517.3834	30.5765	0.0000	1,281.7954
Water						0.0000	0.0000		0.0000	0.0000	9.3950	17.1439	26.5389	0.9673	0.0233	57.6577
Total	**1.4106**	**0.7806**	**0.6702**	**4.6800e-003**	**0.0000**	**0.0594**	**0.0594**	**0.0000**	**0.0594**	**0.0594**	**526.7783**	**1,207.9308**	**1,734.7092**	**31.6073**	**0.0486**	**2,539.3732**

	ROG	NOx	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	5/2/2024	5/2/2024	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 36.7

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 372,000; Non-Residential Outdoor: 124,000; Striped Parking Area: 128,031 (Architectural Coating – sqft)

<u>OffRoad Equipment</u>

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48

<u>Trips and VMT</u>

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	195.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.1693					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.0000e-005	6.1000e-004	9.1000e-004	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.1277	0.1277	1.0000e-005	0.0000	0.1278
Total	**2.1694**	**6.1000e-004**	**9.1000e-004**	**0.0000**		**3.0000e-005**	**3.0000e-005**		**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.1277**	**0.1277**	**1.0000e-005**	**0.0000**	**0.1278**

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	2.9000e-004	1.8000e-004	1.9200e-003	1.0000e-005	7.8000e-004	0.0000	7.8000e-004	2.1000e-004	0.0000	2.1000e-004	0.0000	0.5890	0.5890	1.0000e-005	0.0000	0.5893
Total	**2.9000e-004**	**1.8000e-004**	**1.9200e-003**	**1.0000e-005**	**7.8000e-004**	**0.0000**	**7.8000e-004**	**2.1000e-004**	**0.0000**	**2.1000e-004**	**0.0000**	**0.5890**	**0.5890**	**1.0000e-005**	**0.0000**	**0.5893**

3.2 Architectural Coating - 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	tons/yr										MT/yr					
Archit. Coating	2.1693					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.0000e-005	6.1000e-004	9.1000e-004	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.1277	0.1277	1.0000e-005	0.0000	0.1278
Total	**2.1694**	**6.1000e-004**	**9.1000e-004**	**0.0000**		**3.0000e-005**	**3.0000e-005**		**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.1277**	**0.1277**	**1.0000e-005**	**0.0000**	**0.1278**

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	2.9000e-004	1.8000e-004	1.9200e-003	1.0000e-005	7.8000e-004	0.0000	7.8000e-004	2.1000e-004	0.0000	2.1000e-004	0.0000	0.5890	0.5890	1.0000e-005	0.0000	0.5893
Total	**2.9000e-004**	**1.8000e-004**	**1.9200e-003**	**1.0000e-005**	**7.8000e-004**	**0.0000**	**7.8000e-004**	**2.1000e-004**	**0.0000**	**2.1000e-004**	**0.0000**	**0.5890**	**0.5890**	**1.0000e-005**	**0.0000**	**0.5893**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Hospital	0.00	0.00	0.00		
Hospital	0.00	0.00	0.00		
Medical Office Building	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Other Non-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		
Unrefrigerated Warehouse-No Rail	0.00	0.00	0.00		
Unrefrigerated Warehouse-No Rail	0.00	0.00	0.00		
Unrefrigerated Warehouse-No Rail	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

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
Hospital	9.50	7.30	7.30	64.90	16.10	19.00	73	25	2
Hospital	9.50	7.30	7.30	64.90	16.10	19.00	73	25	2
Medical Office Building	9.50	7.30	7.30	29.60	51.40	19.00	60	30	10
Other Non-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
Other Non-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
Other Non-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
Unrefrigerated Warehouse-No	9.50	7.30	7.30	59.00	0.00	41.00	92	5	3
Unrefrigerated Warehouse-No	9.50	7.30	7.30	59.00	0.00	41.00	92	5	3
Unrefrigerated Warehouse-No	9.50	7.30	7.30	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Hospital	0.565659	0.034079	0.186058	0.112666	0.015522	0.004397	0.016109	0.056708	0.001188	0.001371	0.004918	0.000602	0.000722
Medical Office Building	0.565659	0.034079	0.186058	0.112666	0.015522	0.004397	0.016109	0.056708	0.001188	0.001371	0.004918	0.000602	0.000722
Other Non-Asphalt Surfaces	0.565659	0.034079	0.186058	0.112666	0.015522	0.004397	0.016109	0.056708	0.001188	0.001371	0.004918	0.000602	0.000722
Parking Lot	0.565659	0.034079	0.186058	0.112666	0.015522	0.004397	0.016109	0.056708	0.001188	0.001371	0.004918	0.000602	0.000722
Unrefrigerated Warehouse-No Rail	0.565659	0.034079	0.186058	0.112666	0.015522	0.004397	0.016109	0.056708	0.001188	0.001371	0.004918	0.000602	0.000722

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	341.1746	341.1746	0.0471	9.7500e-003	345.2573
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	341.1746	341.1746	0.0471	9.7500e-003	345.2573
NaturalGas Mitigated	0.0859	0.7804	0.6556	4.6800e-003		0.0593	0.0593		0.0593	0.0593	0.0000	849.5839	849.5839	0.0163	0.0156	854.6325
NaturalGas Unmitigated	0.0859	0.7804	0.6556	4.6800e-003		0.0593	0.0593		0.0593	0.0593	0.0000	849.5839	849.5839	0.0163	0.0156	854.6325

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					
Hospital	1.18202e+007	0.0637	0.5794	0.4867	3.4800e-003		0.0440	0.0440		0.0440	0.0440	0.0000	630.7709	630.7709	0.0121	0.0116	634.5192
Hospital	3.03948e+006	0.0164	0.1490	0.1252	8.9000e-004		0.0113	0.0113		0.0113	0.0113	0.0000	162.1982	162.1982	3.1100e-003	2.9700e-003	163.1621
Medical Office Building	987600	5.3300e-003	0.0484	0.0407	2.9000e-004		3.6800e-003	3.6800e-003		3.6800e-003	3.6800e-003	0.0000	52.7021	52.7021	1.0100e-003	9.7000e-004	53.0153
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
Unrefrigerated Warehouse-No Rail	12220	7.0000e-005	6.0000e-004	5.0000e-004	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.6521	0.6521	1.0000e-005	1.0000e-005	0.6560
Unrefrigerated Warehouse-No Rail	24440	1.3000e-004	1.2000e-003	1.0100e-003	1.0000e-005		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	1.3042	1.3042	2.0000e-005	2.0000e-005	1.3120
Unrefrigerated Warehouse-No Rail	36660	2.0000e-004	1.8000e-003	1.5100e-003	1.0000e-005		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004	0.0000	1.9563	1.9563	4.0000e-005	4.0000e-005	1.9679
Total		**0.0859**	**0.7804**	**0.6556**	**4.6800e-003**		**0.0593**	**0.0593**		**0.0593**	**0.0593**	**0.0000**	**849.5839**	**849.5839**	**0.0163**	**0.0156**	**854.6325**

5.2 Energy by Land Use - NaturalGas

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					
Hospital	1.18202e+007	0.0637	0.5794	0.4867	3.4800e-003		0.0440	0.0440		0.0440	0.0440	0.0000	630.7709	630.7709	0.0121	0.0116	634.5192
Hospital	3.03948e+006	0.0164	0.1490	0.1252	8.9000e-004		0.0113	0.0113		0.0113	0.0113	0.0000	162.1982	162.1982	3.1100e-003	2.9700e-003	163.1621
Medical Office Building	987600	5.3300e-003	0.0484	0.0407	2.9000e-004		3.6800e-003	3.6800e-003		3.6800e-003	3.6800e-003	0.0000	52.7021	52.7021	1.0100e-003	9.7000e-004	53.0153
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
Unrefrigerated Warehouse-No Rail	12220	7.0000e-005	6.0000e-004	5.0000e-004	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.6521	0.6521	1.0000e-005	1.0000e-005	0.6560
Unrefrigerated Warehouse-No Rail	24440	1.3000e-004	1.2000e-003	1.0100e-003	1.0000e-005		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	1.3042	1.3042	2.0000e-005	2.0000e-005	1.3120
Unrefrigerated Warehouse-No Rail	36660	2.0000e-004	1.8000e-003	1.5100e-003	1.0000e-005		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004	0.0000	1.9563	1.9563	4.0000e-005	4.0000e-005	1.9679
Total		**0.0859**	**0.7804**	**0.6556**	**4.6800e-003**		**0.0593**	**0.0593**		**0.0593**	**0.0593**	**0.0000**	**849.5839**	**849.5839**	**0.0163**	**0.0156**	**854.6325**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Hospital	2.184e +006	208.0356	0.0287	5.9400e-003	210.5251
Hospital	561600	53.4949	7.3900e-003	1.5300e-003	54.1350
Medical Office Building	600600	57.2098	7.9000e-003	1.6300e-003	57.8944
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	180320	17.1763	2.3700e-003	4.9000e-004	17.3818
Unrefrigerated Warehouse-No Rail	18400	1.7527	2.4000e-004	5.0000e-005	1.7737
Unrefrigerated Warehouse-No Rail	27600	2.6290	3.6000e-004	8.0000e-005	2.6605
Unrefrigerated Warehouse-No Rail	9200	0.8763	1.2000e-004	3.0000e-005	0.8868
Total		**341.1746**	**0.0471**	**9.7500e-003**	**345.2573**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Hospital	2.184e +006	208.0356	0.0287	5.9400e-003	210.5251
Hospital	561600	53.4949	7.3900e-003	1.5300e-003	54.1350
Medical Office Building	600600	57.2098	7.9000e-003	1.6300e-003	57.8944
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	180320	17.1763	2.3700e-003	4.9000e-004	17.3818
Unrefrigerated Warehouse-No Rail	18400	1.7527	2.4000e-004	5.0000e-005	1.7737
Unrefrigerated Warehouse-No Rail	27600	2.6290	3.6000e-004	8.0000e-005	2.6605
Unrefrigerated Warehouse-No Rail	9200	0.8763	1.2000e-004	3.0000e-005	0.8868
Total		**341.1746**	**0.0471**	**9.7500e-003**	**345.2573**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive 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	1.3248	1.3000e-004	0.0146	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.0285	0.0285	7.0000e-005	0.0000	0.0303
Unmitigated	1.3248	1.3000e-004	0.0146	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.0285	0.0285	7.0000e-005	0.0000	0.0303

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	0.2169					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.1065					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.3500e-003	1.3000e-004	0.0146	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.0285	0.0285	7.0000e-005	0.0000	0.0303
Total	**1.3248**	**1.3000e-004**	**0.0146**	**0.0000**		**5.0000e-005**	**5.0000e-005**		**5.0000e-005**	**5.0000e-005**	**0.0000**	**0.0285**	**0.0285**	**7.0000e-005**	**0.0000**	**0.0303**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.2169					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.1065					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.3500e-003	1.3000e-004	0.0146	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.0285	0.0285	7.0000e-005	0.0000	0.0303
Total	**1.3248**	**1.3000e-004**	**0.0146**	**0.0000**		**5.0000e-005**	**5.0000e-005**		**5.0000e-005**	**5.0000e-005**	**0.0000**	**0.0285**	**0.0285**	**7.0000e-005**	**0.0000**	**0.0303**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	26.5389	0.9673	0.0233	57.6577
Unmitigated	26.5389	0.9673	0.0233	57.6577

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Hospital	22.0846 / 4.20659	19.7917	0.7214	0.0174	42.9990
Medical Office Building	7.52883 / 1.43406	6.7472	0.2459	5.9200e-003	14.6587
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
Unrefrigerated Warehouse-No Rail	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**26.5389**	**0.9673**	**0.0233**	**57.6577**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Hospital	22.0846 / 4.20659	19.7917	0.7214	0.0174	42.9990
Medical Office Building	7.52883 / 1.43406	6.7472	0.2459	5.9200e-003	14.6587
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
Unrefrigerated Warehouse-No Rail	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**26.5389**	**0.9673**	**0.0233**	**57.6577**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	517.3834	30.5765	0.0000	1,281.7954
Unmitigated	517.3834	30.5765	0.0000	1,281.7954

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Hospital	1900.8	385.8452	22.8028	0.0000	955.9152
Medical Office Building	648	131.5381	7.7737	0.0000	325.8802
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**517.3834**	**30.5765**	**0.0000**	**1,281.7954**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Hospital	1900.8	385.8452	22.8028	0.0000	955.9152
Medical Office Building	648	131.5381	7.7737	0.0000	325.8802
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**517.3834**	**30.5765**	**0.0000**	**1,281.7954**

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

Gill Women's Medical Center Automobile Criteria Air Pollutant Emissions

Vehicle Class	Daily VMT[1]	Pollutant	Run Emission Rate[2] (Gram/Mile)	Start Emission Rate [3] (Grams/Start/Day)	Total Grams Daily	Total Pounds Daily	Total Tons Annually
Project Trips	51587	**NOx**	0.233193	0.332386	17314.65	**38.20**	**6.97**
		ROG[4]	0.020120	0.201220	5600.27	**12.35**	**2.25**
		PM10	0.052767	0.001492	2745.82	**6.06**	**1.11**
		PM2.5	0.022943	0.001372	1205.40	**2.66**	**0.49**
		CO	0.599655	1.919522	61454.78	**135.57**	**24.74**
		SOx	0.003428	0.000457	184.09	**0.41**	**0.07**

[1] Daily VMT per Traffic Impact Study prepared by KD Anderson and Associates (2020).

[2]Particulate matter Run emissions account for tire wear and brake wear.

[3]Start emissions account for 4 autombile starts daily.

[4]ROG emissions account for Hotsoak and Runloss emissions per trip/start.

All emission factors sourced from EMFAC2017, yet weighted based on the fleet mix from CalEEMod.

EMFAC2017 Emissions Factors

Vehicle Category	NOx_RUNEX	NOx_STREX	PM2.5_RUNEX	PM2.5_STREX	PM2.5_PMTW	PM2.5_PMBW	PM10_RUNEX	PM10_STREX	PM10_PMTW
HHDT	2.394429	2.348077	0.025476	0.000000	0.008920	0.026225	0.026628	0.000000	0.035680
LDA	0.030305	0.178427	0.001153	0.001654	0.002000	0.015750	0.001254	0.001799	0.008000
LDT1	0.079995	0.256512	0.001502	0.002229	0.002000	0.015750	0.001634	0.002425	0.008000
LDT2	0.063151	0.275360	0.001195	0.001682	0.002000	0.015750	0.001299	0.001829	0.008000
LHDT1	2.291581	0.000000	0.027774	0.000000	0.003000	0.032760	0.029030	0.000000	0.012000
LHDT2	1.622271	0.000000	0.024979	0.000000	0.003000	0.038220	0.026108	0.000000	0.012000
MCY	1.171393	0.268942	0.001757	0.002663	0.001000	0.005040	0.001879	0.002830	0.004000
MDV	0.040577	0.000000	0.004130	0.000000	0.002000	0.015750	0.004317	0.000000	0.008000
MHDT	1.678692	2.156701	0.008074	0.000000	0.003000	0.055860	0.008439	0.000000	0.012000
OBUS	1.990323	2.204263	0.012643	0.000000	0.003000	0.055860	0.013215	0.000000	0.012000
UBUS	0.768783	0.000000	0.005786	0.000000	0.007931	0.031349	0.006047	0.000000	0.031724
Weighted Average per Fleet Mix	0.233193	0.332386	0.003318	0.001372	0.002419	0.017206	0.002943	0.001492	0.009678
			0.022943				**0.052767**		
			Run+PMTW+PMBW				**Run+PMTW+PMBW**		

PM10_PMBW	ROG_RUNEX	ROG_STREX	ROG_HOTSOAK	ROG_RUNLOSS	CO_RUNEX	CO_STREX	SOx_RUNEX	SOx_STREX
0.061191	0.022057	0.000000	0.000000	0.000000	0.210877	0.000000	0.012515	0.000000
0.036750	0.006377	0.209506	0.098907	0.216997	0.523623	2.181779	0.002491	0.000523
0.036750	0.017798	0.353531	0.212340	0.737391	0.926663	2.377974	0.002897	0.000621
0.036750	0.011730	0.311179	0.137430	0.471818	0.728842	2.772401	0.003080	0.000670
0.076440	0.178065	0.000000	0.000000	0.000000	0.836721	0.000000	0.005233	0.000000
0.089180	0.159532	0.000000	0.000000	0.000000	0.740932	0.000000	0.005818	0.000000
0.011760	2.208804	1.950824	0.848342	1.975623	20.680901	8.991538	0.002107	0.000613
0.036750	0.008738	0.000000	0.000000	0.000000	0.160413	0.000000	0.003344	0.000000
0.130340	0.011910	0.000000	0.000000	0.000000	0.124380	0.000000	0.009643	0.000000
0.130340	0.013861	0.000000	0.000000	0.000000	0.151623	0.000000	0.011533	0.000000
0.073148	0.003990	0.000000	0.000000	0.000000	0.136631	0.000000	0.013105	0.000000
0.040146	0.020120	0.201220	0.094358	0.248522	0.599655	1.919522	0.003428	0.000457

Gill Woman's Medical Center

Helicopter Criteria Pollutant and Greenhoue Gas Emissions Calculations

Table 1. Trip Dimensions			
Parameter	**Value**	**Units**	**Source**
LTOs per Year	52	LTO/year	Heliport Design Document (Heliplanners, 2021)
LTOs per Day	3	LTO/day	Project Operations
Time per Flight	3.5	hours	Conservative Estimate
Number of Engines	2	each	Design Specifications

Table 2. Operational Parameters for T400-CP-400 Engine LTOs[1]			
Mode	**Power Setting**	**Fuel Flow Rate (lb/hr)**	**Duration (min)**
Taxi/Idle-out	Ground Idle	136	8.00
Take off	Maximum	1,069	2.27
Climb out	Intermediate	406	4.53
Crusing[2]	Cruse	279	181.40
Approach	Cruse	279	6.80
Taxi/Idle -in	Ground Idle	136	7.00

Table 3. Emission Factors for T400-CP-400 Engine							
	Emission Factors (lb/1,000 lb fuel)						
Source Type	**CO**	**NO_X**	**SO_2**	**VOC**	**PM_{10}**	**$PM_{2.5}$**	**CO_2**
Ground Idle	27.94	2.21	1.07	10.99	0.44	0.40	3,214.59
Flight Idle	29.08	2.84	1.07	8.97	0.41	0.37	3,214.59
Cruise	1.79	4.66	1.07	-	0.36	0.32	3,214.59
Intermediate	-	5.91	1.07	-	0.25	0.22	3,214.59
Maximum	-	11.51	1.07	0.22	0.28	0.25	3,214.59

<u>Equations</u>

1. LTO Emissions (lbs/trip) = Duration in mixing zone (min) * Fuel Flow Rate (lbs/hr) / 60 (min/hr) Emission Factor (lb/1,000 lb) / 1,000 (lb fuel) * 2 (engines)
2. Daily Emissions (lbs/day) = Trip Emissions (lb/trip) * Daily Trips (trips/day)
3. Annual Emissions (tons/yr) = Trip Emissions (lb/trip) * Annual Trips (trips/yr) / 2,000 (lb/ton)

Gill Woman's Medical Center

Helicopter Criteria Pollutant and Greenhoue Gas Emissions Calculations

Table 4. Emissions per Trip by Mode

Mode	Trip Emissions (lbs/trip)						
	CO	NO_X	SO_2	VOC	PM_{10}	$PM_{2.5}$	CO_2
Taxi/Idle-out	1.01	0.08	0.04	0.40	0.02	0.01	58
Take off	-	0.93	0.09	0.02	0.02	0.02	130
Climb out	-	0.36	0.07	-	0.02	0.01	99
Crusing[2]	-	-	-	-	-	-	5,423
Approach	0.11	0.29	0.07	-	0.02	0.02	102
Taxi/Idle -in	0.89	0.07	0.03	0.35	0.01	0.01	51
Total	**2.01**	**1.74**	**0.29**	**0.77**	**0.09**	**0.08**	**5,863**

Table 5. Emission Totals

Air Basin	Units	Emission Totals							Fuel Usage[3] (gal)
		CO	NO_X	SO_2	ROG	PM_{10}	$PM_{2.5}$	CO2	
Daily Maximum	lbs/day	6.04	5.21	0.88	2.30	0.27	0.24	17,588	782
Annual Emissions	tpy	0.052	0.045	0.008	0.020	0.002	0.002	152	13,548

Acronyms

CO	carbon monoxide	PM_{10}	PM less than 10 microns in diameter
CO_2	carbon dioxide	$PM_{2.5}$	PM less than 2.5 microns in diameter
lb	pounds	ROG	Reactive Organic Gas
LTO	landing take off cycle	SO_2	sulfur dioxide
NOx	nitrogen oxide	tpy	tons per year
PM	particulate matter		

Notes

(1) T400-CP-400 engines used as a "worst case" scenario for the largest helicopter that would land at the project helipad.

(2) Green house gases only calculated for cruising as aircraft will be above mixing height in this mode.

(3) Fuel usage calculated with 7 lb/gal density of aviation fuel.

Source: Emission Factors and equations found in Air Force 2020 Mobile Emissions Guidance

ATTACHMENT B

CalEEMod Output Files – Greenhouse Gas Emissions

Gill Women's Medical Center - Phase 1 Construction

San Joaquin County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Hospital	36.00	1000sqft	0.83	36,000.00	0
Parking Lot	282.00	Space	2.17	112,800.00	0
Other Non-Asphalt Surfaces	9.50	Acre	9.50	413,820.00	0

1.2 Other Project Characteristics

Urbanization Urban **Wind Speed (m/s)** 2.7 **Precipitation Freq (Days)** 51

Climate Zone 2 **Operational Year** 2024

Utility Company Pacific Gas & Electric Company

CO2 Intensity (lb/MWhr) 210 **CH4 Intensity (lb/MWhr)** 0.029 **N2O Intensity (lb/MWhr)** 0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - PGE 2017 CO2 Intensity Factor (PG&E. 2019. Corporate Responsibility & Sustanability Report).

Land Use - Phase 1 = 12.5 acres. Land disturbance accounts for women's medical center, 282 parking spaces, new well and water tank, septic system and leach lines, detention pond, internal circulation, and CMU wall.

Construction Phase - Construction duration per Draft EIR Project Description

Off-road Equipment - Construction equipment per Draft EIR Project Description

Off-road Equipment - Construction equipment per Draft EIR Project Description

Off-road Equipment - Construction equipment per Draft EIR Project Description

Off-road Equipment - Equipment per Draft EIR Project Description

Grading -

Vehicle Trips - No operations this model

Energy Use - No operations this model

Water And Wastewater - No operations this model

Solid Waste - No operations this model

Construction Off-road Equipment Mitigation - SJVAPCD Regulation VIII Fugitive PM10 Prohibitions. MM AQ-1

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	40
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	14.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	20.00	178.00
tblConstructionPhase	NumDays	300.00	191.00
tblConstructionPhase	NumDays	30.00	40.00
tblConstructionPhase	PhaseEndDate	2/8/2022	12/16/2023
tblConstructionPhase	PhaseEndDate	12/14/2021	12/16/2023
tblConstructionPhase	PhaseEndDate	10/20/2020	2/24/2023
tblConstructionPhase	PhaseEndDate	1/11/2022	3/23/2023
tblConstructionPhase	PhaseStartDate	1/12/2022	4/12/2023
tblConstructionPhase	PhaseStartDate	10/21/2020	3/24/2023
tblConstructionPhase	PhaseStartDate	9/9/2020	1/1/2023
tblConstructionPhase	PhaseStartDate	12/15/2021	2/24/2023
tblEnergyUse	LightingElect	4.53	0.00
tblEnergyUse	LightingElect	0.35	0.00
tblEnergyUse	NT24E	5.64	0.00
tblEnergyUse	NT24NG	23.87	0.00
tblEnergyUse	T24E	5.43	0.00
tblEnergyUse	T24NG	60.56	0.00

tblLandUse	LotAcreage	2.54	2.17
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	6.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	6.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	6.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	6.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	8.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	210
tblSolidWaste	SolidWasteGenerationRate	388.80	0.00
tblVehicleTrips	ST_TR	10.18	0.00
tblVehicleTrips	SU_TR	8.91	0.00
tblVehicleTrips	WD_TR	13.22	0.00
tblWater	IndoorWaterUseRate	4,517,299.35	0.00
tblWater	OutdoorWaterUseRate	860,437.97	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					
2023	1.0713	6.3179	6.7883	0.0150	1.0220	0.2672	1.2893	0.4748	0.2536	0.7284	0.0000	1,319.8118	1,319.8118	0.2002	0.0000	1,324.8158
Maximum	**1.0713**	**6.3179**	**6.7883**	**0.0150**	**1.0220**	**0.2672**	**1.2893**	**0.4748**	**0.2536**	**0.7284**	**0.0000**	**1,319.8118**	**1,319.8118**	**0.2002**	**0.0000**	**1,324.8158**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.6621	1.7256	7.4399	0.0150	0.4757	0.0398	0.5155	0.2084	0.0397	0.2481	0.0000	1,319.8107	1,319.8107	0.2002	0.0000	1,324.8147
Maximum	**0.6621**	**1.7256**	**7.4399**	**0.0150**	**0.4757**	**0.0398**	**0.5155**	**0.2084**	**0.0397**	**0.2481**	**0.0000**	**1,319.8107**	**1,319.8107**	**0.2002**	**0.0000**	**1,324.8147**

	ROG	**NOx**	**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	**38.19**	**72.69**	**-9.60**	**0.00**	**53.45**	**85.11**	**60.01**	**56.11**	**84.37**	**65.95**	**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)
10	12-9-2022	3-8-2023	1.5633	0.1489
11	3-9-2023	6-8-2023	1.7213	0.6211
12	6-9-2023	9-8-2023	1.9687	0.7787
13	9-9-2023	9-30-2023	0.4708	0.1862
		Highest	1.9687	0.7787

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.2109	3.0000e-005	3.0000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	5.8500e-003	5.8500e-003	2.0000e-005	0.0000	6.2300e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.2109**	**3.0000e-005**	**3.0000e-003**	**0.0000**	**0.0000**	**1.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**1.0000e-005**	**0.0000**	**5.8500e-003**	**5.8500e-003**	**2.0000e-005**	**0.0000**	**6.2300e-003**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.2109	3.0000e-005	3.0000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	5.8500e-003	5.8500e-003	2.0000e-005	0.0000	6.2300e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.2109**	**3.0000e-005**	**3.0000e-003**	**0.0000**	**0.0000**	**1.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**1.0000e-005**	**0.0000**	**5.8500e-003**	**5.8500e-003**	**2.0000e-005**	**0.0000**	**6.2300e-003**

	ROG	NOx	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	Grading & Undergrounding	Grading	1/1/2023	2/24/2023	5	40	
2	Paving	Paving	2/24/2023	3/23/2023	5	20	
3	Building Construction	Building Construction	3/24/2023	12/16/2023	5	191	
4	Architectural Coating	Architectural Coating	4/12/2023	12/16/2023	5	178	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 11.67

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 54,000; Non-Residential Outdoor: 18,000; Striped Parking Area: 31,597 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	2	6.00	78	0.48
Grading & Undergrounding	Excavators	2	8.00	158	0.38
Building Construction	Cranes	2	7.00	231	0.29
Building Construction	Forklifts	6	8.00	89	0.20
Building Construction	Generator Sets	6	8.00	84	0.74
Paving	Pavers	4	8.00	130	0.42
Paving	Rollers	4	8.00	80	0.38
Grading & Undergrounding	Rubber Tired Dozers	6	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	6	7.00	97	0.37
Grading & Undergrounding	Graders	2	8.00	187	0.41
Grading & Undergrounding	Tractors/Loaders/Backhoes	8	8.00	97	0.37
Paving	Paving Equipment	4	8.00	132	0.36
Grading & Undergrounding	Scrapers	0	8.00	367	0.48
Building Construction	Welders	2	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
Grading & Undergrounding	18	45.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	22	233.00	92.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	12	30.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	2	47.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use Soil Stabilizer

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Grading & Undergrounding - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.7439	0.0000	0.7439	0.3995	0.0000	0.3995	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1293	1.3490	0.9278	1.9900e-003		0.0597	0.0597		0.0549	0.0549	0.0000	175.2053	175.2053	0.0567	0.0000	176.6219
Total	**0.1293**	**1.3490**	**0.9278**	**1.9900e-003**	**0.7439**	**0.0597**	**0.8036**	**0.3995**	**0.0549**	**0.4545**	**0.0000**	**175.2053**	**175.2053**	**0.0567**	**0.0000**	**176.6219**

3.2 Grading & Undergrounding - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8600e-003	1.8400e-003	0.0193	6.0000e-005	7.1700e-003	4.0000e-005	7.2100e-003	1.9100e-003	4.0000e-005	1.9500e-003	0.0000	5.6807	5.6807	1.2000e-004	0.0000	5.6838
Total	**2.8600e-003**	**1.8400e-003**	**0.0193**	**6.0000e-005**	**7.1700e-003**	**4.0000e-005**	**7.2100e-003**	**1.9100e-003**	**4.0000e-005**	**1.9500e-003**	**0.0000**	**5.6807**	**5.6807**	**1.2000e-004**	**0.0000**	**5.6838**

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					0.2901	0.0000	0.2901	0.1558	0.0000	0.1558	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0244	0.1058	1.1105	1.9900e-003		3.2500e-003	3.2500e-003		3.2500e-003	3.2500e-003	0.0000	175.2051	175.2051	0.0567	0.0000	176.6217
Total	**0.0244**	**0.1058**	**1.1105**	**1.9900e-003**	**0.2901**	**3.2500e-003**	**0.2934**	**0.1558**	**3.2500e-003**	**0.1591**	**0.0000**	**175.2051**	**175.2051**	**0.0567**	**0.0000**	**176.6217**

3.2 Grading & Undergrounding - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8600e-003	1.8400e-003	0.0193	6.0000e-005	4.6900e-003	4.0000e-005	4.7300e-003	1.3000e-003	4.0000e-005	1.3400e-003	0.0000	5.6807	5.6807	1.2000e-004	0.0000	5.6838
Total	**2.8600e-003**	**1.8400e-003**	**0.0193**	**6.0000e-005**	**4.6900e-003**	**4.0000e-005**	**4.7300e-003**	**1.3000e-003**	**4.0000e-005**	**1.3400e-003**	**0.0000**	**5.6807**	**5.6807**	**1.2000e-004**	**0.0000**	**5.6838**

3.3 Paving - 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	0.0207	0.2038	0.2917	4.6000e-004		0.0102	0.0102		9.3900e-003	9.3900e-003	0.0000	40.0537	40.0537	0.0130	0.0000	40.3776
Paving	2.8400e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0235**	**0.2038**	**0.2917**	**4.6000e-004**		**0.0102**	**0.0102**		**9.3900e-003**	**9.3900e-003**	**0.0000**	**40.0537**	**40.0537**	**0.0130**	**0.0000**	**40.3776**

3.3 Paving - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.5000e-004	6.1000e-004	6.4200e-003	2.0000e-005	2.3900e-003	1.0000e-005	2.4000e-003	6.4000e-004	1.0000e-005	6.5000e-004	0.0000	1.8936	1.8936	4.0000e-005	0.0000	1.8946
Total	**9.5000e-004**	**6.1000e-004**	**6.4200e-003**	**2.0000e-005**	**2.3900e-003**	**1.0000e-005**	**2.4000e-003**	**6.4000e-004**	**1.0000e-005**	**6.5000e-004**	**0.0000**	**1.8936**	**1.8936**	**4.0000e-005**	**0.0000**	**1.8946**

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	5.6100e-003	0.0243	0.3459	4.6000e-004		7.5000e-004	7.5000e-004		7.5000e-004	7.5000e-004	0.0000	40.0537	40.0537	0.0130	0.0000	40.3775
Paving	2.8400e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**8.4500e-003**	**0.0243**	**0.3459**	**4.6000e-004**		**7.5000e-004**	**7.5000e-004**		**7.5000e-004**	**7.5000e-004**	**0.0000**	**40.0537**	**40.0537**	**0.0130**	**0.0000**	**40.3775**

3.3 Paving - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.5000e-004	6.1000e-004	6.4200e-003	2.0000e-005	1.5600e-003	1.0000e-005	1.5800e-003	4.3000e-004	1.0000e-005	4.5000e-004	0.0000	1.8936	1.8936	4.0000e-005	0.0000	1.8946
Total	**9.5000e-004**	**6.1000e-004**	**6.4200e-003**	**2.0000e-005**	**1.5600e-003**	**1.0000e-005**	**1.5800e-003**	**4.3000e-004**	**1.0000e-005**	**4.5000e-004**	**0.0000**	**1.8936**	**1.8936**	**4.0000e-005**	**0.0000**	**1.8946**

3.4 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.4172	3.7849	4.5043	7.6600e-003		0.1827	0.1827		0.1748	0.1748	0.0000	658.6563	658.6563	0.1148	0.0000	661.5268
Total	**0.4172**	**3.7849**	**4.5043**	**7.6600e-003**		**0.1827**	**0.1827**		**0.1748**	**0.1748**	**0.0000**	**658.6563**	**658.6563**	**0.1148**	**0.0000**	**661.5268**

3.4 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0192	0.6918	0.1508	2.3800e-003	0.0581	7.1000e-004	0.0588	0.0168	6.8000e-004	0.0175	0.0000	226.0224	226.0224	9.1700e-003	0.0000	226.2516
Worker	0.0707	0.0455	0.4762	1.5500e-003	0.1772	1.0900e-003	0.1783	0.0471	1.0100e-003	0.0481	0.0000	140.4492	140.4492	3.0900e-003	0.0000	140.5264
Total	**0.0899**	**0.7373**	**0.6269**	**3.9300e-003**	**0.2353**	**1.8000e-003**	**0.2371**	**0.0639**	**1.6900e-003**	**0.0656**	**0.0000**	**366.4717**	**366.4717**	**0.0123**	**0.0000**	**366.7779**

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	0.1280	0.6153	4.9190	7.6600e-003		0.0211	0.0211		0.0211	0.0211	0.0000	658.6555	658.6555	0.1148	0.0000	661.5260
Total	**0.1280**	**0.6153**	**4.9190**	**7.6600e-003**		**0.0211**	**0.0211**		**0.0211**	**0.0211**	**0.0000**	**658.6555**	**658.6555**	**0.1148**	**0.0000**	**661.5260**

3.4 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0192	0.6918	0.1508	2.3800e-003	0.0417	7.1000e-004	0.0424	0.0128	6.8000e-004	0.0134	0.0000	226.0224	226.0224	9.1700e-003	0.0000	226.2516
Worker	0.0707	0.0455	0.4762	1.5500e-003	0.1159	1.0900e-003	0.1170	0.0321	1.0100e-003	0.0331	0.0000	140.4492	140.4492	3.0900e-003	0.0000	140.5264
Total	**0.0899**	**0.7373**	**0.6269**	**3.9300e-003**	**0.1576**	**1.8000e-003**	**0.1594**	**0.0448**	**1.6900e-003**	**0.0465**	**0.0000**	**366.4717**	**366.4717**	**0.0123**	**0.0000**	**366.7779**

3.5 Architectural Coating - 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					
Archit. Coating	0.3601					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0341	0.2319	0.3224	5.3000e-004		0.0126	0.0126		0.0126	0.0126	0.0000	45.4479	45.4479	2.7200e-003	0.0000	45.5159
Total	**0.3943**	**0.2319**	**0.3224**	**5.3000e-004**		**0.0126**	**0.0126**		**0.0126**	**0.0126**	**0.0000**	**45.4479**	**45.4479**	**2.7200e-003**	**0.0000**	**45.5159**

3.5 Architectural Coating - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0133	8.5500e-003	0.0895	2.9000e-004	0.0333	2.1000e-004	0.0335	8.8600e-003	1.9000e-004	9.0500e-003	0.0000	26.4027	26.4027	5.8000e-004	0.0000	26.4172
Total	**0.0133**	**8.5500e-003**	**0.0895**	**2.9000e-004**	**0.0333**	**2.1000e-004**	**0.0335**	**8.8600e-003**	**1.9000e-004**	**9.0500e-003**	**0.0000**	**26.4027**	**26.4027**	**5.8000e-004**	**0.0000**	**26.4172**

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	0.3601					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0341	0.2319	0.3224	5.3000e-004		0.0126	0.0126		0.0126	0.0126	0.0000	45.4479	45.4479	2.7200e-003	0.0000	45.5158
Total	**0.3943**	**0.2319**	**0.3224**	**5.3000e-004**		**0.0126**	**0.0126**		**0.0126**	**0.0126**	**0.0000**	**45.4479**	**45.4479**	**2.7200e-003**	**0.0000**	**45.5158**

3.5 Architectural Coating - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0133	8.5500e-003	0.0895	2.9000e-004	0.0218	2.1000e-004	0.0220	6.0300e-003	1.9000e-004	6.2200e-003	0.0000	26.4027	26.4027	5.8000e-004	0.0000	26.4172
Total	**0.0133**	**8.5500e-003**	**0.0895**	**2.9000e-004**	**0.0218**	**2.1000e-004**	**0.0220**	**6.0300e-003**	**1.9000e-004**	**6.2200e-003**	**0.0000**	**26.4027**	**26.4027**	**5.8000e-004**	**0.0000**	**26.4172**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Hospital	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

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
Hospital	9.50	7.30	7.30	64.90	16.10	19.00	73	25	2
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

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Hospital	0.565659	0.034079	0.186058	0.112666	0.015522	0.004397	0.016109	0.056708	0.001188	0.001371	0.004918	0.000602	0.000722
Other Non-Asphalt Surfaces	0.565659	0.034079	0.186058	0.112666	0.015522	0.004397	0.016109	0.056708	0.001188	0.001371	0.004918	0.000602	0.000722
Parking Lot	0.565659	0.034079	0.186058	0.112666	0.015522	0.004397	0.016109	0.056708	0.001188	0.001371	0.004918	0.000602	0.000722

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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					
Hospital	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
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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					
Hospital	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
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Hospital	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
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Hospital	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
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive 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	0.2109	3.0000e-005	3.0000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	5.8500e-003	5.8500e-003	2.0000e-005	0.0000	6.2300e-003
Unmitigated	0.2109	3.0000e-005	3.0000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	5.8500e-003	5.8500e-003	2.0000e-005	0.0000	6.2300e-003

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	0.0360					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1746					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.8000e-004	3.0000e-005	3.0000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	5.8500e-003	5.8500e-003	2.0000e-005	0.0000	6.2300e-003
Total	**0.2109**	**3.0000e-005**	**3.0000e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**5.8500e-003**	**5.8500e-003**	**2.0000e-005**	**0.0000**	**6.2300e-003**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0360					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1746					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.8000e-004	3.0000e-005	3.0000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	5.8500e-003	5.8500e-003	2.0000e-005	0.0000	6.2300e-003
Total	**0.2109**	**3.0000e-005**	**3.0000e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**5.8500e-003**	**5.8500e-003**	**2.0000e-005**	**0.0000**	**6.2300e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Hospital	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
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Hospital	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
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Hospital	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
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Hospital	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
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

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

Gill Women's Medical Center - Phase 2 Construction

San Joaquin County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Hospital	140.00	1000sqft	3.21	140,000.00	0
Medical Office Building	60.00	1000sqft	1.38	60,000.00	0
Unrefrigerated Warehouse-No Rail	2.00	1000sqft	0.05	2,000.00	0
Unrefrigerated Warehouse-No Rail	6.00	1000sqft	0.14	6,000.00	0
Unrefrigerated Warehouse-No Rail	4.00	1000sqft	0.09	4,000.00	0
Other Non-Asphalt Surfaces	20.00	1000sqft	0.46	20,000.00	0
Parking Lot	1,006.00	Space	9.05	402,400.00	0
Other Non-Asphalt Surfaces	9.50	Acre	9.50	413,820.00	0
Other Non-Asphalt Surfaces	6.02	Acre	6.02	262,231.20	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	51
Climate Zone	2			**Operational Year**	2030
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	210	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E 2017 CO2 Intensity Factor (PG&E. 2019. Corporate Responsibility and Sustainability Report).

Land Use - Land uses account for hospital, office bldg, 2k SF water trtmnt, 6k SF wstwater trtmnt, 4k SF plant bldg, 20k helipad, 1,006 p-spaces, 9.5-acre detntion basin, internal circulation, well, water tank, septic system, and CMU wall

Construction Phase - Phase 2 duration per Draft EIR Project Description

Off-road Equipment - Construction equipment per Draft EIR Project Description

Off-road Equipment - Construction equipment per Draft EIR Project Description

Off-road Equipment - Construction equipment per Draft EIR Project Description

Off-road Equipment - Construction equipment per Draft EIR Project Description

Grading -

Vehicle Trips - No operations this model

Energy Use - No operations this model

Water And Wastewater - No operations this model

Solid Waste - No operations this model

Construction Off-road Equipment Mitigation - SJVAPCD Regulation VIII (Fugitive PM10 Prohibitions). MM AQ-1.

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	40
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	14.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	35.00	300.00
tblConstructionPhase	NumDays	440.00	330.00
tblConstructionPhase	NumDays	45.00	65.00
tblConstructionPhase	PhaseEndDate	1/3/2023	8/24/2030
tblConstructionPhase	PhaseEndDate	9/27/2022	8/24/2030
tblConstructionPhase	PhaseEndDate	1/19/2021	3/30/2029
tblConstructionPhase	PhaseEndDate	11/15/2022	5/18/2029
tblConstructionPhase	PhaseStartDate	11/16/2022	7/1/2029
tblConstructionPhase	PhaseStartDate	1/20/2021	5/19/2029
tblConstructionPhase	PhaseStartDate	11/18/2020	1/1/2029
tblConstructionPhase	PhaseStartDate	9/28/2022	3/31/2029
tblEnergyUse	LightingElect	4.53	0.00
tblEnergyUse	LightingElect	3.17	0.00
tblEnergyUse	LightingElect	0.35	0.00
tblEnergyUse	LightingElect	2.33	0.00
tblEnergyUse	NT24E	5.64	0.00
tblEnergyUse	NT24E	3.62	0.00

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tblEnergyUse	NT24E	1.77	0.00
tblEnergyUse	NT24NG	23.87	0.00
tblEnergyUse	NT24NG	0.47	0.00
tblEnergyUse	T24E	5.43	0.00
tblEnergyUse	T24E	3.22	0.00
tblEnergyUse	T24E	0.50	0.00
tblEnergyUse	T24NG	60.56	0.00
tblEnergyUse	T24NG	15.99	0.00
tblEnergyUse	T24NG	6.11	0.00
tblGrading	AcresOfGrading	65.00	162.50
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	6.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	6.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	6.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	8.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	210
tblSolidWaste	SolidWasteGenerationRate	1,512.00	0.00
tblSolidWaste	SolidWasteGenerationRate	648.00	0.00
tblSolidWaste	SolidWasteGenerationRate	11.28	0.00

tblTripsAndVMT	WorkerTripNumber	45.00	20.00
tblTripsAndVMT	WorkerTripNumber	30.00	15.00
tblVehicleTrips	ST_TR	10.18	0.00
tblVehicleTrips	ST_TR	8.96	0.00
tblVehicleTrips	ST_TR	1.68	0.00
tblVehicleTrips	SU_TR	8.91	0.00
tblVehicleTrips	SU_TR	1.55	0.00
tblVehicleTrips	SU_TR	1.68	0.00
tblVehicleTrips	WD_TR	13.22	0.00
tblVehicleTrips	WD_TR	36.13	0.00
tblVehicleTrips	WD_TR	1.68	0.00
tblWater	IndoorWaterUseRate	17,567,275.26	0.00
tblWater	IndoorWaterUseRate	7,528,832.25	0.00
tblWater	IndoorWaterUseRate	2,775,000.00	0.00
tblWater	OutdoorWaterUseRate	3,346,147.67	0.00
tblWater	OutdoorWaterUseRate	1,434,063.29	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					
2029	1.3636	5.7551	5.7513	0.0161	1.7772	0.1913	1.9685	0.7948	0.1783	0.9732	0.0000	1,448.333 3	1,448.333 3	0.2247	0.0000	1,453.951 7
2030	1.3438	2.8925	3.9724	0.0134	0.5481	0.0317	0.5798	0.1485	0.0315	0.1800	0.0000	1,203.207 8	1,203.207 8	0.0404	0.0000	1,204.217 3
Maximum	**1.3636**	**5.7551**	**5.7513**	**0.0161**	**1.7772**	**0.1913**	**1.9685**	**0.7948**	**0.1783**	**0.9732**	**0.0000**	**1,448.333 3**	**1,448.333 3**	**0.2247**	**0.0000**	**1,453.951 7**

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					
2029	1.0502	2.1315	6.4176	0.0161	0.8369	0.0292	0.8661	0.3533	0.0290	0.3823	0.0000	1,448.332 4	1,448.332 4	0.2247	0.0000	1,453.950 8
2030	1.1983	1.9614	4.2103	0.0134	0.3662	0.0159	0.3820	0.1038	0.0156	0.1195	0.0000	1,203.207 2	1,203.207 2	0.0404	0.0000	1,204.216 7
Maximum	**1.1983**	**2.1315**	**6.4176**	**0.0161**	**0.8369**	**0.0292**	**0.8661**	**0.3533**	**0.0290**	**0.3823**	**0.0000**	**1,448.332 4**	**1,448.332 4**	**0.2247**	**0.0000**	**1,453.950 8**

	ROG	**NOx**	**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	**16.95**	**52.67**	**-9.30**	**0.00**	**48.26**	**79.78**	**51.02**	**51.54**	**78.72**	**56.48**	**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)
34	**12-9-2028**	**3-8-2029**	1.5745	0.1575
35	**3-9-2029**	**6-8-2029**	1.2060	0.2992
36	**6-9-2029**	**9-8-2029**	1.8650	1.1579
37	**9-9-2029**	**12-8-2029**	1.9614	1.2620
38	**12-9-2029**	**3-8-2030**	1.6990	1.2173
39	**3-9-2030**	**6-8-2030**	1.6468	1.2282
40	**6-9-2030**	**9-8-2030**	1.3769	1.0266
		Highest	1.9614	1.2620

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	1.0703	1.0000e-004	0.0115	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0224	0.0224	6.0000e-005	0.0000	0.0238
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.0703**	**1.0000e-004**	**0.0115**	**0.0000**	**0.0000**	**4.0000e-005**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**4.0000e-005**	**0.0000**	**0.0224**	**0.0224**	**6.0000e-005**	**0.0000**	**0.0238**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.0703	1.0000e-004	0.0115	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0224	0.0224	6.0000e-005	0.0000	0.0238
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.0703**	**1.0000e-004**	**0.0115**	**0.0000**	**0.0000**	**4.0000e-005**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**4.0000e-005**	**0.0000**	**0.0224**	**0.0224**	**6.0000e-005**	**0.0000**	**0.0238**

	ROG	NOx	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	Grading	Grading	1/1/2029	3/30/2029	5	65	
2	Paving	Paving	3/31/2029	5/18/2029	5	35	
3	Building Construction	Building Construction	5/19/2029	8/24/2030	5	330	
4	Architectural Coating	Architectural Coating	7/1/2029	8/24/2030	5	300	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 162.5

Acres of Paving: 25.03

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 318,000; Non-Residential Outdoor: 106,000; Striped Parking Area: 65,907 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	2	6.00	78	0.48
Grading	Excavators	2	8.00	158	0.38
Building Construction	Cranes	2	7.00	231	0.29
Building Construction	Forklifts	6	8.00	89	0.20
Building Construction	Generator Sets	2	8.00	84	0.74
Paving	Pavers	4	8.00	130	0.42
Paving	Rollers	4	8.00	80	0.38
Grading	Rubber Tired Dozers	6	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	6	7.00	97	0.37
Grading	Graders	2	8.00	187	0.41
Grading	Tractors/Loaders/Backhoes	8	8.00	97	0.37
Paving	Paving Equipment	4	8.00	132	0.36
Grading	Scrapers	0	8.00	367	0.48
Building Construction	Welders	2	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	2	106.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	18	530.00	215.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	18	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	12	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use Soil Stabilizer

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Grading - 2029

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					1.2605	0.0000	1.2605	0.6548	0.0000	0.6548	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1918	1.9443	1.4797	3.2400e-003		0.0818	0.0818		0.0752	0.0752	0.0000	284.7919	284.7919	0.0921	0.0000	287.0945
Total	**0.1918**	**1.9443**	**1.4797**	**3.2400e-003**	**1.2605**	**0.0818**	**1.3422**	**0.6548**	**0.0752**	**0.7300**	**0.0000**	**284.7919**	**284.7919**	**0.0921**	**0.0000**	**287.0945**

3.2 Grading - 2029

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	1.4000e-003	7.5000e-004	8.9800e-003	4.0000e-005	5.1800e-003	2.0000e-005	5.2000e-003	1.3800e-003	2.0000e-005	1.4000e-003	0.0000	3.3025	3.3025	5.0000e-005	0.0000	3.3037
Total	**1.4000e-003**	**7.5000e-004**	**8.9800e-003**	**4.0000e-005**	**5.1800e-003**	**2.0000e-005**	**5.2000e-003**	**1.3800e-003**	**2.0000e-005**	**1.4000e-003**	**0.0000**	**3.3025**	**3.3025**	**5.0000e-005**	**0.0000**	**3.3037**

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					0.4916	0.0000	0.4916	0.2554	0.0000	0.2554	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0397	0.1719	1.8045	3.2400e-003		5.2900e-003	5.2900e-003		5.2900e-003	5.2900e-003	0.0000	284.7915	284.7915	0.0921	0.0000	287.0942
Total	**0.0397**	**0.1719**	**1.8045**	**3.2400e-003**	**0.4916**	**5.2900e-003**	**0.4969**	**0.2554**	**5.2900e-003**	**0.2607**	**0.0000**	**284.7915**	**284.7915**	**0.0921**	**0.0000**	**287.0942**

3.2 Grading - 2029

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	1.4000e-003	7.5000e-004	8.9800e-003	4.0000e-005	3.3900e-003	2.0000e-005	3.4100e-003	9.4000e-004	2.0000e-005	9.6000e-004	0.0000	3.3025	3.3025	5.0000e-005	0.0000	3.3037
Total	**1.4000e-003**	**7.5000e-004**	**8.9800e-003**	**4.0000e-005**	**3.3900e-003**	**2.0000e-005**	**3.4100e-003**	**9.4000e-004**	**2.0000e-005**	**9.6000e-004**	**0.0000**	**3.3025**	**3.3025**	**5.0000e-005**	**0.0000**	**3.3037**

3.3 Paving - 2029

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	0.0320	0.3004	0.5102	8.0000e-004		0.0147	0.0147		0.0135	0.0135	0.0000	70.0674	70.0674	0.0227	0.0000	70.6339
Paving	0.0119					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0439**	**0.3004**	**0.5102**	**8.0000e-004**		**0.0147**	**0.0147**		**0.0135**	**0.0135**	**0.0000**	**70.0674**	**70.0674**	**0.0227**	**0.0000**	**70.6339**

3.3 Paving - 2029

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	5.7000e-004	3.0000e-004	3.6300e-003	1.0000e-005	2.0900e-003	1.0000e-005	2.1000e-003	5.6000e-004	1.0000e-005	5.7000e-004	0.0000	1.3337	1.3337	2.0000e-005	0.0000	1.3342
Total	**5.7000e-004**	**3.0000e-004**	**3.6300e-003**	**1.0000e-005**	**2.0900e-003**	**1.0000e-005**	**2.1000e-003**	**5.6000e-004**	**1.0000e-005**	**5.7000e-004**	**0.0000**	**1.3337**	**1.3337**	**2.0000e-005**	**0.0000**	**1.3342**

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	9.8200e-003	0.0425	0.6054	8.0000e-004		1.3100e-003	1.3100e-003		1.3100e-003	1.3100e-003	0.0000	70.0673	70.0673	0.0227	0.0000	70.6338
Paving	0.0119					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0217**	**0.0425**	**0.6054**	**8.0000e-004**		**1.3100e-003**	**1.3100e-003**		**1.3100e-003**	**1.3100e-003**	**0.0000**	**70.0673**	**70.0673**	**0.0227**	**0.0000**	**70.6338**

3.3 Paving - 2029

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	5.7000e-004	3.0000e-004	3.6300e-003	1.0000e-005	1.3700e-003	1.0000e-005	1.3800e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.3337	1.3337	2.0000e-005	0.0000	1.3342
Total	**5.7000e-004**	**3.0000e-004**	**3.6300e-003**	**1.0000e-005**	**1.3700e-003**	**1.0000e-005**	**1.3800e-003**	**3.8000e-004**	**1.0000e-005**	**3.9000e-004**	**0.0000**	**1.3337**	**1.3337**	**2.0000e-005**	**0.0000**	**1.3342**

3.4 Building Construction - 2029

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	0.2202	2.0076	2.5896	4.3400e-003		0.0849	0.0849		0.0799	0.0799	0.0000	373.3903	373.3903	0.0878	0.0000	375.5846
Total	**0.2202**	**2.0076**	**2.5896**	**4.3400e-003**		**0.0849**	**0.0849**		**0.0799**	**0.0799**	**0.0000**	**373.3903**	**373.3903**	**0.0878**	**0.0000**	**375.5846**

3.4 Building Construction - 2029

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	0.0327	1.2943	0.2368	4.5300e-003	0.1144	1.2900e-003	0.1156	0.0331	1.2400e-003	0.0343	0.0000	429.9551	429.9551	0.0164	0.0000	430.3661
Worker	0.0921	0.0494	0.5893	2.3900e-003	0.3398	1.6100e-003	0.3415	0.0904	1.4800e-003	0.0918	0.0000	216.7693	216.7693	3.3200e-003	0.0000	216.8523
Total	**0.1248**	**1.3437**	**0.8262**	**6.9200e-003**	**0.4542**	**2.9000e-003**	**0.4571**	**0.1234**	**2.7200e-003**	**0.1261**	**0.0000**	**646.7245**	**646.7245**	**0.0198**	**0.0000**	**647.2184**

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	0.0811	0.4142	2.8360	4.3400e-003		0.0127	0.0127		0.0127	0.0127	0.0000	373.3899	373.3899	0.0878	0.0000	375.5842
Total	**0.0811**	**0.4142**	**2.8360**	**4.3400e-003**		**0.0127**	**0.0127**		**0.0127**	**0.0127**	**0.0000**	**373.3899**	**373.3899**	**0.0878**	**0.0000**	**375.5842**

3.4 Building Construction - 2029

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	0.0327	1.2943	0.2368	4.5300e-003	0.0821	1.2900e-003	0.0834	0.0251	1.2400e-003	0.0264	0.0000	429.9551	429.9551	0.0164	0.0000	430.3661
Worker	0.0921	0.0494	0.5893	2.3900e-003	0.2223	1.6100e-003	0.2239	0.0615	1.4800e-003	0.0630	0.0000	216.7693	216.7693	3.3200e-003	0.0000	216.8523
Total	**0.1248**	**1.3437**	**0.8262**	**6.9200e-003**	**0.3044**	**2.9000e-003**	**0.3073**	**0.0866**	**2.7200e-003**	**0.0893**	**0.0000**	**646.7245**	**646.7245**	**0.0198**	**0.0000**	**647.2184**

3.4 Building Construction - 2030

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	0.2212	1.3410	2.7305	5.2300e-003		0.0250	0.0250		0.0250	0.0250	0.0000	444.2351	444.2351	0.0178	0.0000	444.6807
Total	**0.2212**	**1.3410**	**2.7305**	**5.2300e-003**		**0.0250**	**0.0250**		**0.0250**	**0.0250**	**0.0000**	**444.2351**	**444.2351**	**0.0178**	**0.0000**	**444.6807**

3.4 Building Construction - 2030

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	0.0338	1.3499	0.2438	4.7400e-003	0.1200	1.3400e-003	0.1214	0.0347	1.2800e-003	0.0360	0.0000	449.8918	449.8918	0.0170	0.0000	450.3168
Worker	0.0894	0.0474	0.5785	2.4500e-003	0.3567	1.5800e-003	0.3583	0.0948	1.4500e-003	0.0963	0.0000	221.6091	221.6091	3.1800e-003	0.0000	221.6885
Total	**0.1232**	**1.3973**	**0.8223**	**7.1900e-003**	**0.4768**	**2.9200e-003**	**0.4797**	**0.1295**	**2.7300e-003**	**0.1323**	**0.0000**	**671.5008**	**671.5008**	**0.0202**	**0.0000**	**672.0053**

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	0.0757	0.4099	2.9685	5.2300e-003		9.1800e-003	9.1800e-003		9.1800e-003	9.1800e-003	0.0000	444.2346	444.2346	0.0178	0.0000	444.6801
Total	**0.0757**	**0.4099**	**2.9685**	**5.2300e-003**		**9.1800e-003**	**9.1800e-003**		**9.1800e-003**	**9.1800e-003**	**0.0000**	**444.2346**	**444.2346**	**0.0178**	**0.0000**	**444.6801**

3.4 Building Construction - 2030

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	0.0338	1.3499	0.2438	4.7400e-003	0.0862	1.3400e-003	0.0875	0.0264	1.2800e-003	0.0277	0.0000	449.8918	449.8918	0.0170	0.0000	450.3168
Worker	0.0894	0.0474	0.5785	2.4500e-003	0.2333	1.5800e-003	0.2349	0.0646	1.4500e-003	0.0660	0.0000	221.6091	221.6091	3.1800e-003	0.0000	221.6885
Total	**0.1232**	**1.3973**	**0.8223**	**7.1900e-003**	**0.3195**	**2.9200e-003**	**0.3224**	**0.0909**	**2.7300e-003**	**0.0937**	**0.0000**	**671.5008**	**671.5008**	**0.0202**	**0.0000**	**672.0053**

3.5 Architectural Coating - 2029

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	0.7437					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0224	0.1501	0.2370	3.9000e-004		6.7500e-003	6.7500e-003		6.7500e-003	6.7500e-003	0.0000	33.4476	33.4476	1.8200e-003	0.0000	33.4932
Total	**0.7660**	**0.1501**	**0.2370**	**3.9000e-004**		**6.7500e-003**	**6.7500e-003**		**6.7500e-003**	**6.7500e-003**	**0.0000**	**33.4476**	**33.4476**	**1.8200e-003**	**0.0000**	**33.4932**

3.5 Architectural Coating - 2029

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	0.0150	8.0400e-003	0.0959	3.9000e-004	0.0553	2.6000e-004	0.0556	0.0147	2.4000e-004	0.0149	0.0000	35.2755	35.2755	5.4000e-004	0.0000	35.2890
Total	**0.0150**	**8.0400e-003**	**0.0959**	**3.9000e-004**	**0.0553**	**2.6000e-004**	**0.0556**	**0.0147**	**2.4000e-004**	**0.0149**	**0.0000**	**35.2755**	**35.2755**	**5.4000e-004**	**0.0000**	**35.2890**

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	0.7437					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0224	0.1501	0.2370	3.9000e-004		6.7500e-003	6.7500e-003		6.7500e-003	6.7500e-003	0.0000	33.4476	33.4476	1.8200e-003	0.0000	33.4932
Total	**0.7660**	**0.1501**	**0.2370**	**3.9000e-004**		**6.7500e-003**	**6.7500e-003**		**6.7500e-003**	**6.7500e-003**	**0.0000**	**33.4476**	**33.4476**	**1.8200e-003**	**0.0000**	**33.4932**

3.5 Architectural Coating - 2029

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	0.0150	8.0400e-003	0.0959	3.9000e-004	0.0362	2.6000e-004	0.0364	0.0100	2.4000e-004	0.0103	0.0000	35.2755	35.2755	5.4000e-004	0.0000	35.2890
Total	**0.0150**	**8.0400e-003**	**0.0959**	**3.9000e-004**	**0.0362**	**2.6000e-004**	**0.0364**	**0.0100**	**2.4000e-004**	**0.0103**	**0.0000**	**35.2755**	**35.2755**	**5.4000e-004**	**0.0000**	**35.2890**

3.5 Architectural Coating - 2030

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	0.9594					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0221	0.1447	0.3038	5.0000e-004		3.4300e-003	3.4300e-003		3.4300e-003	3.4300e-003	0.0000	43.1500	43.1500	1.7500e-003	0.0000	43.1937
Total	**0.9815**	**0.1447**	**0.3038**	**5.0000e-004**		**3.4300e-003**	**3.4300e-003**		**3.4300e-003**	**3.4300e-003**	**0.0000**	**43.1500**	**43.1500**	**1.7500e-003**	**0.0000**	**43.1937**

3.5 Architectural Coating - 2030

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	0.0179	9.4800e-003	0.1157	4.9000e-004	0.0714	3.2000e-004	0.0717	0.0190	2.9000e-004	0.0193	0.0000	44.3218	44.3218	6.4000e-004	0.0000	44.3377
Total	**0.0179**	**9.4800e-003**	**0.1157**	**4.9000e-004**	**0.0714**	**3.2000e-004**	**0.0717**	**0.0190**	**2.9000e-004**	**0.0193**	**0.0000**	**44.3218**	**44.3218**	**6.4000e-004**	**0.0000**	**44.3377**

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	0.9594					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0221	0.1447	0.3038	5.0000e-004		3.4300e-003	3.4300e-003		3.4300e-003	3.4300e-003	0.0000	43.1499	43.1499	1.7500e-003	0.0000	43.1936
Total	**0.9815**	**0.1447**	**0.3038**	**5.0000e-004**		**3.4300e-003**	**3.4300e-003**		**3.4300e-003**	**3.4300e-003**	**0.0000**	**43.1499**	**43.1499**	**1.7500e-003**	**0.0000**	**43.1936**

3.5 Architectural Coating - 2030

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	0.0179	9.4800e-003	0.1157	4.9000e-004	0.0467	3.2000e-004	0.0470	0.0129	2.9000e-004	0.0132	0.0000	44.3218	44.3218	6.4000e-004	0.0000	44.3377
Total	**0.0179**	**9.4800e-003**	**0.1157**	**4.9000e-004**	**0.0467**	**3.2000e-004**	**0.0470**	**0.0129**	**2.9000e-004**	**0.0132**	**0.0000**	**44.3218**	**44.3218**	**6.4000e-004**	**0.0000**	**44.3377**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Hospital	0.00	0.00	0.00		
Medical Office Building	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Other Non-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		
Unrefrigerated Warehouse-No Rail	0.00	0.00	0.00		
Unrefrigerated Warehouse-No Rail	0.00	0.00	0.00		
Unrefrigerated Warehouse-No Rail	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

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
Hospital	9.50	7.30	7.30	64.90	16.10	19.00	73	25	2
Medical Office Building	9.50	7.30	7.30	29.60	51.40	19.00	60	30	10
Other Non-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
Other Non-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
Other Non-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
Unrefrigerated Warehouse-No Rail	9.50	7.30	7.30	59.00	0.00	41.00	92	5	3
Unrefrigerated Warehouse-No Rail	9.50	7.30	7.30	59.00	0.00	41.00	92	5	3
Unrefrigerated Warehouse-No Rail	9.50	7.30	7.30	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Hospital	0.581437	0.032303	0.190969	0.100551	0.011057	0.003880	0.015441	0.056216	0.001173	0.001204	0.004639	0.000578	0.000551
Medical Office Building	0.581437	0.032303	0.190969	0.100551	0.011057	0.003880	0.015441	0.056216	0.001173	0.001204	0.004639	0.000578	0.000551
Other Non-Asphalt Surfaces	0.581437	0.032303	0.190969	0.100551	0.011057	0.003880	0.015441	0.056216	0.001173	0.001204	0.004639	0.000578	0.000551
Parking Lot	0.581437	0.032303	0.190969	0.100551	0.011057	0.003880	0.015441	0.056216	0.001173	0.001204	0.004639	0.000578	0.000551
Unrefrigerated Warehouse-No Rail	0.581437	0.032303	0.190969	0.100551	0.011057	0.003880	0.015441	0.056216	0.001173	0.001204	0.004639	0.000578	0.000551

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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					
Hospital	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
Medical Office Building	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
Unrefrigerated Warehouse-No Rail	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		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.2 Energy by Land Use - NaturalGas

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					
Hospital	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
Medical Office Building	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
Unrefrigerated Warehouse-No Rail	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		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Hospital	0	0.0000	0.0000	0.0000	0.0000
Medical Office Building	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
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Hospital	0	0.0000	0.0000	0.0000	0.0000
Medical Office Building	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
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive 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	1.0703	1.0000e-004	0.0115	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0224	0.0224	6.0000e-005	0.0000	0.0238
Unmitigated	1.0703	1.0000e-004	0.0115	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0224	0.0224	6.0000e-005	0.0000	0.0238

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	0.1703					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.8990					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0500e-003	1.0000e-004	0.0115	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0224	0.0224	6.0000e-005	0.0000	0.0238
Total	**1.0703**	**1.0000e-004**	**0.0115**	**0.0000**		**4.0000e-005**	**4.0000e-005**		**4.0000e-005**	**4.0000e-005**	**0.0000**	**0.0224**	**0.0224**	**6.0000e-005**	**0.0000**	**0.0238**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1703					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.8990					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0500e-003	1.0000e-004	0.0115	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0224	0.0224	6.0000e-005	0.0000	0.0238
Total	**1.0703**	**1.0000e-004**	**0.0115**	**0.0000**		**4.0000e-005**	**4.0000e-005**		**4.0000e-005**	**4.0000e-005**	**0.0000**	**0.0224**	**0.0224**	**6.0000e-005**	**0.0000**	**0.0238**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Hospital	0 / 0	0.0000	0.0000	0.0000	0.0000
Medical Office Building	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
Unrefrigerated Warehouse-No Rail	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Hospital	0 / 0	0.0000	0.0000	0.0000	0.0000
Medical Office Building	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
Unrefrigerated Warehouse-No Rail	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Hospital	0	0.0000	0.0000	0.0000	0.0000
Medical Office Building	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
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Hospital	0	0.0000	0.0000	0.0000	0.0000
Medical Office Building	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
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

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

Gill Women's Medical Center - Buildout

San Joaquin County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Hospital	36.00	1000sqft	0.83	36,000.00	0
Hospital	140.00	1000sqft	3.21	140,000.00	0
Medical Office Building	60.00	1000sqft	1.38	60,000.00	0
Unrefrigerated Warehouse-No Rail	2.00	1000sqft	0.05	2,000.00	0
Unrefrigerated Warehouse-No Rail	6.00	1000sqft	0.14	6,000.00	0
Unrefrigerated Warehouse-No Rail	4.00	1000sqft	0.09	4,000.00	0
Other Non-Asphalt Surfaces	19.00	Acre	19.00	827,640.00	0
Other Non-Asphalt Surfaces	17.70	Acre	5.65	771,012.00	0
Other Non-Asphalt Surfaces	20.00	1000sqft	0.46	20,000.00	0
Parking Lot	1,288.00	Space	11.59	515,200.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	51
Climate Zone	2			**Operational Year**	2024
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	210	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E 2017 CO2 Intensity Factor. (PG&E. 2019. Corporate Responsibility and Sustainability Report).

Land Use - Land uses account for 140k sf hospital, 36k sf women's bldg, 60k sf office bldg, 4k sf plant building, 2k sf water trtmnt & 6l sf WW trtmnt facility, parking lot, 20k sf helipad, 19 acres detention basins, wells, water tanks, & internal circulation

Construction Phase - No construction this model

Vehicle Trips - Traffic emissions modeled separately

Energy Use -

Water And Wastewater - No water consumption at plant buildings

Solid Waste - No waste from plant buildings

Energy Mitigation - 2019 California Building Energy Efficiency Standards

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	55.00	1.00
tblLandUse	LotAcreage	17.70	5.65
tblProjectCharacteristics	CO2IntensityFactor	641.35	210
tblSolidWaste	SolidWasteGenerationRate	11.28	0.00
tblVehicleTrips	ST_TR	10.18	0.00
tblVehicleTrips	ST_TR	8.96	0.00
tblVehicleTrips	ST_TR	1.68	0.00
tblVehicleTrips	SU_TR	8.91	0.00
tblVehicleTrips	SU_TR	1.55	0.00
tblVehicleTrips	SU_TR	1.68	0.00
tblVehicleTrips	WD_TR	13.22	0.00
tblVehicleTrips	WD_TR	36.13	0.00
tblVehicleTrips	WD_TR	1.68	0.00
tblWater	IndoorWaterUseRate	2,775,000.00	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					
2024	2.1697	7.9000e-004	2.8300e-003	1.0000e-005	7.8000e-004	4.0000e-005	8.1000e-004	2.1000e-004	3.0000e-005	2.4000e-004	0.0000	0.7166	0.7166	2.0000e-005	0.0000	0.7171
Maximum	**2.1697**	**7.9000e-004**	**2.8300e-003**	**1.0000e-005**	**7.8000e-004**	**4.0000e-005**	**8.1000e-004**	**2.1000e-004**	**3.0000e-005**	**2.4000e-004**	**0.0000**	**0.7166**	**0.7166**	**2.0000e-005**	**0.0000**	**0.7171**

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					
2024	2.1697	7.9000e-004	2.8300e-003	1.0000e-005	7.8000e-004	4.0000e-005	8.1000e-004	2.1000e-004	3.0000e-005	2.4000e-004	0.0000	0.7166	0.7166	2.0000e-005	0.0000	0.7171
Maximum	**2.1697**	**7.9000e-004**	**2.8300e-003**	**1.0000e-005**	**7.8000e-004**	**4.0000e-005**	**8.1000e-004**	**2.1000e-004**	**3.0000e-005**	**2.4000e-004**	**0.0000**	**0.7166**	**0.7166**	**2.0000e-005**	**0.0000**	**0.7171**

	ROG	**NOx**	**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)
15	**3-10-2024**	**6-9-2024**	1.5503	1.5503
		Highest	1.5503	1.5503

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	1.3248	1.3000e-004	0.0146	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.0285	0.0285	7.0000e-005	0.0000	0.0303
Energy	0.0859	0.7804	0.6556	4.6800e-003		0.0593	0.0593		0.0593	0.0593	0.0000	1,190.7584	1,190.7584	0.0634	0.0253	1,199.8898
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	517.3834	0.0000	517.3834	30.5765	0.0000	1,281.7954
Water						0.0000	0.0000		0.0000	0.0000	9.3950	17.1439	26.5389	0.9673	0.0233	57.6577
Total	**1.4106**	**0.7806**	**0.6702**	**4.6800e-003**	**0.0000**	**0.0594**	**0.0594**	**0.0000**	**0.0594**	**0.0594**	**526.7783**	**1,207.9308**	**1,734.7092**	**31.6073**	**0.0486**	**2,539.3732**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.3248	1.3000e-004	0.0146	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.0285	0.0285	7.0000e-005	0.0000	0.0303
Energy	0.0669	0.6085	0.5111	3.6500e-003		0.0463	0.0463		0.0463	0.0463	0.0000	970.5888	970.5888	0.0553	0.0210	978.2131
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	517.3834	0.0000	517.3834	30.5765	0.0000	1,281.7954
Water						0.0000	0.0000		0.0000	0.0000	9.3950	17.1439	26.5389	0.9673	0.0233	57.6577
Total	**1.3917**	**0.6086**	**0.5257**	**3.6500e-003**	**0.0000**	**0.0463**	**0.0463**	**0.0000**	**0.0463**	**0.0463**	**526.7783**	**987.7612**	**1,514.5396**	**31.5991**	**0.0442**	**2,317.6965**

	ROG	NOx	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	**1.34**	**22.03**	**21.55**	**22.01**	**0.00**	**22.00**	**22.00**	**0.00**	**22.00**	**22.00**	**0.00**	**18.23**	**12.69**	**0.03**	**8.99**	**8.73**

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	5/2/2024	5/2/2024	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 36.7

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 372,000; Non-Residential Outdoor: 124,000; Striped Parking Area: 128,031 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
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
Architectural Coating	1	195.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.1693					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.0000e-005	6.1000e-004	9.1000e-004	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.1277	0.1277	1.0000e-005	0.0000	0.1278
Total	**2.1694**	**6.1000e-004**	**9.1000e-004**	**0.0000**		**3.0000e-005**	**3.0000e-005**		**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.1277**	**0.1277**	**1.0000e-005**	**0.0000**	**0.1278**

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	2.9000e-004	1.8000e-004	1.9200e-003	1.0000e-005	7.8000e-004	0.0000	7.8000e-004	2.1000e-004	0.0000	2.1000e-004	0.0000	0.5890	0.5890	1.0000e-005	0.0000	0.5893
Total	**2.9000e-004**	**1.8000e-004**	**1.9200e-003**	**1.0000e-005**	**7.8000e-004**	**0.0000**	**7.8000e-004**	**2.1000e-004**	**0.0000**	**2.1000e-004**	**0.0000**	**0.5890**	**0.5890**	**1.0000e-005**	**0.0000**	**0.5893**

3.2 Architectural Coating - 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	tons/yr										MT/yr					
Archit. Coating	2.1693					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.0000e-005	6.1000e-004	9.1000e-004	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.1277	0.1277	1.0000e-005	0.0000	0.1278
Total	**2.1694**	**6.1000e-004**	**9.1000e-004**	**0.0000**		**3.0000e-005**	**3.0000e-005**		**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.1277**	**0.1277**	**1.0000e-005**	**0.0000**	**0.1278**

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	2.9000e-004	1.8000e-004	1.9200e-003	1.0000e-005	7.8000e-004	0.0000	7.8000e-004	2.1000e-004	0.0000	2.1000e-004	0.0000	0.5890	0.5890	1.0000e-005	0.0000	0.5893
Total	**2.9000e-004**	**1.8000e-004**	**1.9200e-003**	**1.0000e-005**	**7.8000e-004**	**0.0000**	**7.8000e-004**	**2.1000e-004**	**0.0000**	**2.1000e-004**	**0.0000**	**0.5890**	**0.5890**	**1.0000e-005**	**0.0000**	**0.5893**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Hospital	0.00	0.00	0.00		
Hospital	0.00	0.00	0.00		
Medical Office Building	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Other Non-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		
Unrefrigerated Warehouse-No Rail	0.00	0.00	0.00		
Unrefrigerated Warehouse-No Rail	0.00	0.00	0.00		
Unrefrigerated Warehouse-No Rail	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

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
Hospital	9.50	7.30	7.30	64.90	16.10	19.00	73	25	2
Hospital	9.50	7.30	7.30	64.90	16.10	19.00	73	25	2
Medical Office Building	9.50	7.30	7.30	29.60	51.40	19.00	60	30	10
Other Non-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
Other Non-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
Other Non-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
Unrefrigerated Warehouse-No Rail	9.50	7.30	7.30	59.00	0.00	41.00	92	5	3
Unrefrigerated Warehouse-No Rail	9.50	7.30	7.30	59.00	0.00	41.00	92	5	3
Unrefrigerated Warehouse-No Rail	9.50	7.30	7.30	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Hospital	0.565659	0.034079	0.186058	0.112666	0.015522	0.004397	0.016109	0.056708	0.001188	0.001371	0.004918	0.000602	0.000722
Medical Office Building	0.565659	0.034079	0.186058	0.112666	0.015522	0.004397	0.016109	0.056708	0.001188	0.001371	0.004918	0.000602	0.000722
Other Non-Asphalt Surfaces	0.565659	0.034079	0.186058	0.112666	0.015522	0.004397	0.016109	0.056708	0.001188	0.001371	0.004918	0.000602	0.000722
Parking Lot	0.565659	0.034079	0.186058	0.112666	0.015522	0.004397	0.016109	0.056708	0.001188	0.001371	0.004918	0.000602	0.000722
Unrefrigerated Warehouse-No Rail	0.565659	0.034079	0.186058	0.112666	0.015522	0.004397	0.016109	0.056708	0.001188	0.001371	0.004918	0.000602	0.000722

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	308.1724	308.1724	0.0426	8.8000e-003	311.8602
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	341.1746	341.1746	0.0471	9.7500e-003	345.2573
NaturalGas Mitigated	0.0669	0.6085	0.5111	3.6500e-003		0.0463	0.0463		0.0463	0.0463	0.0000	662.4165	662.4165	0.0127	0.0121	666.3529
NaturalGas Unmitigated	0.0859	0.7804	0.6556	4.6800e-003		0.0593	0.0593		0.0593	0.0593	0.0000	849.5839	849.5839	0.0163	0.0156	854.6325

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					
Hospital	1.18202e+007	0.0637	0.5794	0.4867	3.4800e-003		0.0440	0.0440		0.0440	0.0440	0.0000	630.7709	630.7709	0.0121	0.0116	634.5192
Hospital	3.03948e+006	0.0164	0.1490	0.1252	8.9000e-004		0.0113	0.0113		0.0113	0.0113	0.0000	162.1982	162.1982	3.1100e-003	2.9700e-003	163.1621
Medical Office Building	987600	5.3300e-003	0.0484	0.0407	2.9000e-004		3.6800e-003	3.6800e-003		3.6800e-003	3.6800e-003	0.0000	52.7021	52.7021	1.0100e-003	9.7000e-004	53.0153
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
Unrefrigerated Warehouse-No Rail	12220	7.0000e-005	6.0000e-004	5.0000e-004	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.6521	0.6521	1.0000e-005	1.0000e-005	0.6560
Unrefrigerated Warehouse-No Rail	24440	1.3000e-004	1.2000e-003	1.0100e-003	1.0000e-005		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	1.3042	1.3042	2.0000e-005	2.0000e-005	1.3120
Unrefrigerated Warehouse-No Rail	36660	2.0000e-004	1.8000e-003	1.5100e-003	1.0000e-005		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004	0.0000	1.9563	1.9563	4.0000e-005	4.0000e-005	1.9679
Total		**0.0859**	**0.7804**	**0.6556**	**4.6800e-003**		**0.0593**	**0.0593**		**0.0593**	**0.0593**	**0.0000**	**849.5839**	**849.5839**	**0.0163**	**0.0156**	**854.6325**

5.2 Energy by Land Use - NaturalGas

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					
Hospital	9.27668e+006	0.0500	0.4547	0.3820	2.7300e-003		0.0346	0.0346		0.0346	0.0346	0.0000	495.0390	495.0390	9.4900e-003	9.0800e-003	497.9807
Hospital	2.38543e+006	0.0129	0.1169	0.0982	7.0000e-004		8.8900e-003	8.8900e-003		8.8900e-003	8.8900e-003	0.0000	127.2957	127.2957	2.4400e-003	2.3300e-003	128.0522
Medical Office Building	699780	3.7700e-003	0.0343	0.0288	2.1000e-004		2.6100e-003	2.6100e-003		2.6100e-003	2.6100e-003	0.0000	37.3429	37.3429	7.2000e-004	6.8000e-004	37.5648
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
Unrefrigerated Warehouse-No Rail	17108	9.0000e-005	8.4000e-004	7.0000e-004	1.0000e-005		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.9130	0.9130	2.0000e-005	2.0000e-005	0.9184
Unrefrigerated Warehouse-No Rail	25662	1.4000e-004	1.2600e-003	1.0600e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004	0.0000	1.3694	1.3694	3.0000e-005	3.0000e-005	1.3776
Unrefrigerated Warehouse-No Rail	8554	5.0000e-005	4.2000e-004	3.5000e-004	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.4565	0.4565	1.0000e-005	1.0000e-005	0.4592
Total		**0.0669**	**0.6085**	**0.5111**	**3.6600e-003**		**0.0463**	**0.0463**		**0.0463**	**0.0463**	**0.0000**	**662.4165**	**662.4165**	**0.0127**	**0.0122**	**666.3529**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Hospital	2.184e +006	208.0356	0.0287	5.9400e-003	210.5251
Hospital	561600	53.4949	7.3900e-003	1.5300e-003	54.1350
Medical Office Building	600600	57.2098	7.9000e-003	1.6300e-003	57.8944
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	180320	17.1763	2.3700e-003	4.9000e-004	17.3818
Unrefrigerated Warehouse-No Rail	18400	1.7527	2.4000e-004	5.0000e-005	1.7737
Unrefrigerated Warehouse-No Rail	27600	2.6290	3.6000e-004	8.0000e-005	2.6605
Unrefrigerated Warehouse-No Rail	9200	0.8763	1.2000e-004	3.0000e-005	0.8868
Total		**341.1746**	**0.0471**	**9.7500e-003**	**345.2573**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Hospital	1.95594e +006	186.3119	0.0257	5.3200e-003	188.5414
Hospital	502956	47.9088	6.6200e-003	1.3700e-003	48.4821
Medical Office Building	542640	51.6889	7.1400e-003	1.4800e-003	52.3074
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	180320	17.1763	2.3700e-003	4.9000e-004	17.3818
Unrefrigerated Warehouse-No Rail	17800	1.6955	2.3000e-004	5.0000e-005	1.7158
Unrefrigerated Warehouse-No Rail	26700	2.5433	3.5000e-004	7.0000e-005	2.5737
Unrefrigerated Warehouse-No Rail	8900	0.8478	1.2000e-004	2.0000e-005	0.8579
Total		**308.1724**	**0.0426**	**8.8000e-003**	**311.8602**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive 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	1.3248	1.3000e-004	0.0146	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.0285	0.0285	7.0000e-005	0.0000	0.0303
Unmitigated	1.3248	1.3000e-004	0.0146	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.0285	0.0285	7.0000e-005	0.0000	0.0303

6.2 Area by SubCategory

<u>Unmitigated</u>

	ROG	NOx	CO	SO2	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	0.2169					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.1065					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.3500e-003	1.3000e-004	0.0146	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.0285	0.0285	7.0000e-005	0.0000	0.0303
Total	**1.3248**	**1.3000e-004**	**0.0146**	**0.0000**		**5.0000e-005**	**5.0000e-005**		**5.0000e-005**	**5.0000e-005**	**0.0000**	**0.0285**	**0.0285**	**7.0000e-005**	**0.0000**	**0.0303**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.2169					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.1065					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.3500e-003	1.3000e-004	0.0146	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.0285	0.0285	7.0000e-005	0.0000	0.0303
Total	**1.3248**	**1.3000e-004**	**0.0146**	**0.0000**		**5.0000e-005**	**5.0000e-005**		**5.0000e-005**	**5.0000e-005**	**0.0000**	**0.0285**	**0.0285**	**7.0000e-005**	**0.0000**	**0.0303**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	26.5389	0.9673	0.0233	57.6577
Unmitigated	26.5389	0.9673	0.0233	57.6577

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Hospital	22.0846 / 4.20659	19.7917	0.7214	0.0174	42.9990
Medical Office Building	7.52883 / 1.43406	6.7472	0.2459	5.9200e-003	14.6587
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
Unrefrigerated Warehouse-No Rail	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**26.5389**	**0.9673**	**0.0233**	**57.6577**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Hospital	22.0846 / 4.20659	19.7917	0.7214	0.0174	42.9990
Medical Office Building	7.52883 / 1.43406	6.7472	0.2459	5.9200e-003	14.6587
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
Unrefrigerated Warehouse-No Rail	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**26.5389**	**0.9673**	**0.0233**	**57.6577**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	517.3834	30.5765	0.0000	1,281.795 4
Unmitigated	517.3834	30.5765	0.0000	1,281.795 4

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Hospital	1900.8	385.8452	22.8028	0.0000	955.9152
Medical Office Building	648	131.5381	7.7737	0.0000	325.8802
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**517.3834**	**30.5765**	**0.0000**	**1,281.795 4**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Hospital	1900.8	385.8452	22.8028	0.0000	955.9152
Medical Office Building	648	131.5381	7.7737	0.0000	325.8802
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**517.3834**	**30.5765**	**0.0000**	**1,281.7954**

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

Gill Women's Medical Center Automobile Greenhouse Gas Emissions

Vehicle Class	Daily VMT[1]	Pollutant	Run Emission Rate[2] (Gram/Mile)	Start Emission Rate [2] (Grams/Start/Day)	Total Grams Daily	Metric Tons Daily	CO2e Annually
Project Trips	51587	**CO2**	352.490181	46.144793	18917613.19	**18.92**	
		CH4	0.003325	0.044105	872.78	**0.00**	**7099**
		N2O	0.025127	0.021735	1641.83	**0.00**	

[1] Daily VMT per Traffic Impact Study prepared by KD Anderson and Associates (2020).

[2]Start emissions account for 4 autombile starts daily.

All emission factors sourced from EMFAC2017, yet weighted based on the fleet mix from CalEEMod.

EMFAC2017 Emission Factors

Vehicle Category	CO2_RUNEX	CO2_STREX	CH4_RUNEX	CH4_STREX	N2O_RUNEX	N2O_STREX
HHDT	1324.658171	0.000000	0.001024	0.000000	0.208218	0.000000
LDA	251.679950	52.853573	0.001765	0.047876	0.003906	0.025220
LDT1	292.746009	62.748137	0.004147	0.070628	0.006650	0.028596
LDT2	311.198189	67.706185	0.002964	0.066937	0.005629	0.031347
LHDT1	553.575820	0.000000	0.008271	0.000000	0.087014	0.000000
LHDT2	615.473890	0.000000	0.007410	0.000000	0.096744	0.000000
MCY	212.948520	61.907650	0.324868	0.255971	0.067039	0.015138
MDV	353.728098	0.000000	0.000406	0.000000	0.055601	0.000000
MHDT	1020.686759	0.000000	0.000553	0.000000	0.160438	0.000000
OBUS	1220.757813	0.000000	0.000644	0.000000	0.191886	0.000000
UBUS	1386.246310	0.000000	0.073128	0.000000	0.217899	0.000000
Weighted Average per Fleet Mix	352.490181	46.144793	0.003325	0.044105	0.025127	0.021735

Gill Woman's Medical Center

Helicopter Criteria Pollutant and Greenhoue Gas Emissions Calculations

Table 1. Trip Dimensions			
Parameter	**Value**	**Units**	**Source**
LTOs per Year	52	LTO/year	Heliport Design Document (Heliplanners, 2021)
LTOs per Day	3	LTO/day	Project Operations
Time per Flight	3.5	hours	Conservative Estimate
Number of Engines	2	each	Design Specifications

Table 2. Operational Parameters for T400-CP-400 Engine LTOs[1]			
Mode	**Power Setting**	**Fuel Flow Rate (lb/hr)**	**Duration (min)**
Taxi/Idle-out	Ground Idle	136	8.00
Take off	Maximum	1,069	2.27
Climb out	Intermediate	406	4.53
Crusing[2]	Cruse	279	181.40
Approach	Cruse	279	6.80
Taxi/Idle -in	Ground Idle	136	7.00

Table 3. Emission Factors for T400-CP-400 Engine							
	Emission Factors (lb/1,000 lb fuel)						
Source Type	**CO**	**NO_X**	**SO_2**	**VOC**	**PM_{10}**	**$PM_{2.5}$**	**CO_2**
Ground Idle	27.94	2.21	1.07	10.99	0.44	0.40	3,214.59
Flight Idle	29.08	2.84	1.07	8.97	0.41	0.37	3,214.59
Cruise	1.79	4.66	1.07	-	0.36	0.32	3,214.59
Intermediate	-	5.91	1.07	-	0.25	0.22	3,214.59
Maximum	-	11.51	1.07	0.22	0.28	0.25	3,214.59

Equations

1. LTO Emissions (lbs/trip) = Duration in mixing zone (min) * Fuel Flow Rate (lbs/hr) / 60 (min/hr) Emission Factor (lb/1,000 lb) / 1,000 (lb fuel) * 2 (engines)
2. Daily Emissions (lbs/day) = Trip Emissions (lb/trip) * Daily Trips (trips/day)
3. Annual Emissions (tons/yr) = Trip Emissions (lb/trip) * Annual Trips (trips/yr) / 2,000 (lb/ton)

Gill Woman's Medical Center

Helicopter Criteria Pollutant and Greenhoue Gas Emissions Calculations

Table 4. Emissions per Trip by Mode								
	Trip Emissions (lbs/trip)							
Mode	**CO**	**NO_X**	**SO_2**	**VOC**	**PM_{10}**	**$PM_{2.5}$**	**CO_2**
Taxi/Idle-out	1.01	0.08	0.04	0.40	0.02	0.01	58
Take off	-	0.93	0.09	0.02	0.02	0.02	130
Climb out	-	0.36	0.07	-	0.02	0.01	99
Crusing[2]	-	-	-	-	-	-	5,423
Approach	0.11	0.29	0.07	-	0.02	0.02	102
Taxi/Idle -in	0.89	0.07	0.03	0.35	0.01	0.01	51
Total	**2.01**	**1.74**	**0.29**	**0.77**	**0.09**	**0.08**	**5,863**

Table 5. Emission Totals									**Fuel**
		Emission Totals							**Usage[3]**
Air Basin	**Units**	**CO**	**NO_X**	**SO_2**	**ROG**	**PM_{10}**	**$PM_{2.5}$**	**CO2**	**(gal)**
Daily Maximum	lbs/day	6.04	5.21	0.88	2.30	0.27	0.24	17,588	782
Annual Emissions	tpy	0.052	0.045	0.008	0.020	0.002	0.002	152	13,548

Acronyms

CO	carbon monoxide	PM_{10}	PM less than 10 microns in diameter
CO_2	carbon dioxide	$PM_{2.5}$	PM less than 2.5 microns in diameter
lb	pounds	ROG	Reactive Organic Gas
LTO	landing take off cycle	SO_2	sulfur dioxide
NOx	nitrogen oxide	tpy	tons per year
PM	particulate matter		

Notes

(1) T400-CP-400 engines used as a "worst case" scenario for the largest helicopter that would land at the project helipad.

(2) Green house gases only calculated for cruising as aircraft will be above mixing height in this mode.

(3) Fuel usage calculated with 7 lb/gal density of aviation fuel.

Source: Emission Factors and equations found in Air Force 2020 Mobile Emissions Guidance

APPENDIX E

Biological Resources Assessment, Gill Medical Center
February 2022-
ECORP Consulting, Inc.

Biological Resources Assessment

Gill Medical Center

San Joaquin County, California

Prepared for:

Gill Medical Center, LLC

February 2022

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

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LIST OF ACRONYMS AND ABBREVIATIONS

BA	Biological assessment
BCC	Birds of conservation concern
BO	Biological opinion
BRA	Biological resources assessment
CDFG	California Department of Fish and Game
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
City	City of Stockton
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CRPR	California Rare Plant Rank
CWA	Clean Water Act
ESA	Endangered Species Act
MBTA	Migratory Bird Treaty Act
NAD	North American Datum
NMFS	National Marine Fisheries Service
NPDES	National Pollutant Discharge Elimination System
NPPA	Native Plant Protection Act
NRCS	Natural Resources Conservation Service
OSHPD	Office of State Health Planning and Development
Project	Gill Medical Center Project
RWQCB	Regional Water Quality Control Board
SF	Square foot
SJCOG	San Joaquin Council of Governments
SJMSCP	San Joaquin County Multi-Species Habitat Conservation and Open Space Plan
SSC	Species of Special Concern
USACE	U.S. Army Corps of Engineers
USC	U.S. Code
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

1.0 INTRODUCTION

On behalf of the Gill Medical Center, LLC, ECORP Consulting, Inc. conducted a biological resources assessment (BRA) for the approximately 42.4-acre Gill Medical Center Project (Project) located in San Joaquin County, California. The purpose of the assessment was to collect information on the biological resources present or with the potential to occur in the Project Study Area, assess potential biological impacts related to Project activities, and identify potential mitigation measures to inform and support the Project's California Environmental Quality Act (CEQA) documentation for biological resources.

1.1 Project Location

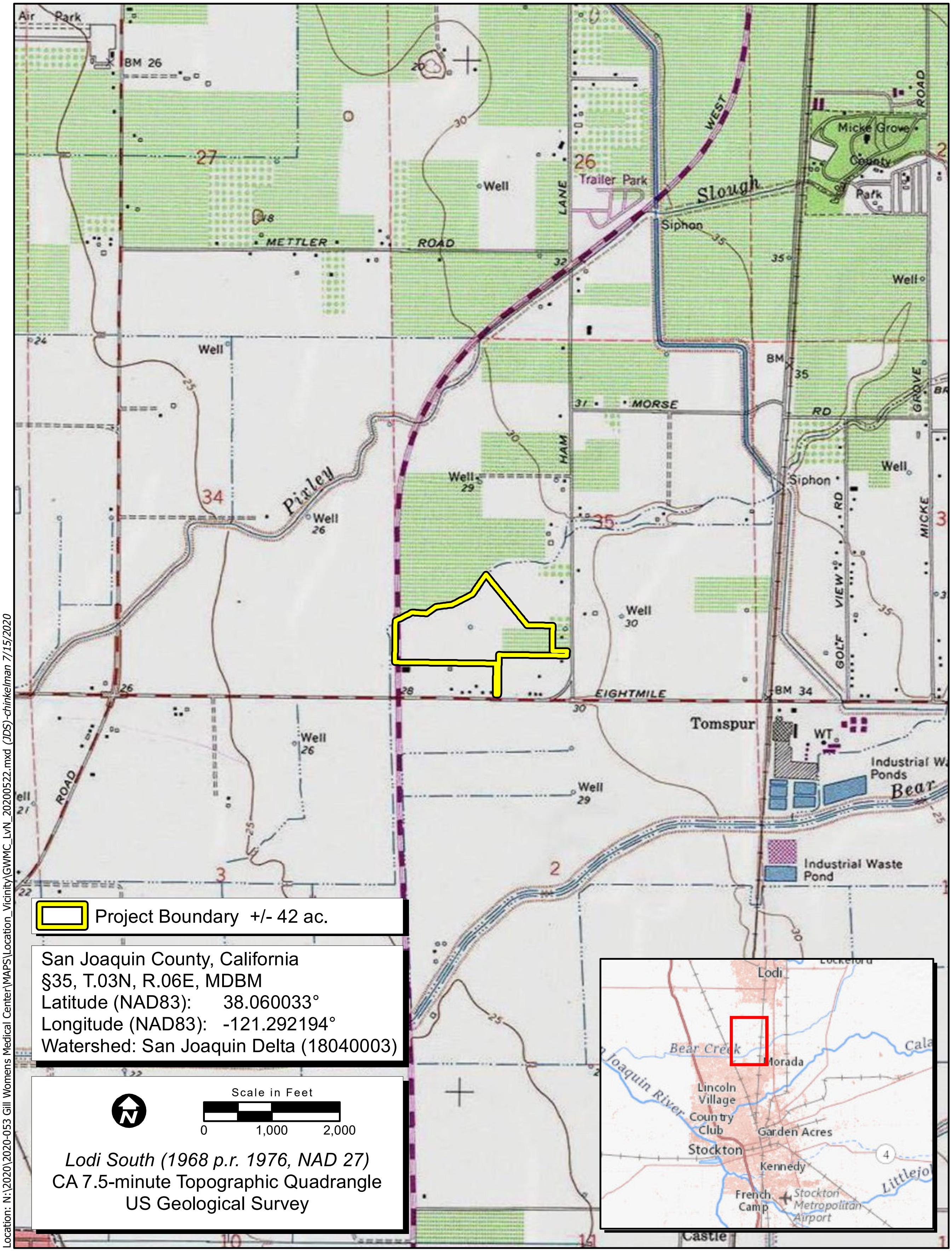
The Project is located in San Joaquin County, California, east of West Lane, north of Eight Mile Road, and west of North Ham Lane (Figure 1. *Project Location and Vicinity*). The site corresponds to a portion of Section 35, Township 03 North, Range 06 East (Mount Diablo Base and Meridian) east of the "Lodi South, California" 7.5-minute quadrangles (North American Datum [NAD]27) (U.S. Geological Survey [USGS] 1968, photorevised 1976). The approximate center of the site is located at latitude 38.060033° (NAD83) and longitude -121.292194° (NAD83) within the San Joaquin Delta Watershed (Hydrologic Unit Code #18040003) (Natural Resources Conservation Service [NRCS] et al. 2019).

1.2 Project Description

The Proposed Gill Medical Center Project would include a Phase 1 Office of State Health Planning and Development (OSHPD) 1 Hospital and full-service women's Alternative Birthing Center facility and Phase 2 OSHPD 1 Hospital and associated medical office building. The Project is proposed on an approximately 42.4-acre site located northeast of the West Lane/Eight Mile Road intersection in San Joaquin County, north of the city of Stockton. The Project is proposed in two phases over approximately 10 years.

Phase 1 development would include a 36,000+ square-foot (SF) single story Medical Center. The Medical Center would be designed to OSHPD 1 Hospital standards, would be equipped with 12 beds, and would provide labor and delivery focused services including alternate birthing options, and hospital emergency room services. The facility would be permitted and licensed by the California OSHPD as a general acute-care hospital with a duly constituted governing body with overall administrative and professional responsibility and an organized medical staff providing 24-hour inpatient care, including the basic services.

Phase 1 site improvements would include 282 onsite parking stalls and onsite storm water retention areas. Potable water and wastewater collection and treatment would be provided by either the City of Stockton (City) or onsite well and septic systems. Phase 1 Project access would be provided from West Lane via a new entrance drive at the approximate midpoint of the western site boundary. Phase 1 development would be completed within five years of Project approval.



Map Date: 7/15/2020

Sources: ESRI, USGS, San Joaquin County, NJA Architecture

Figure 1. Project Location and Vicinity

2020-053 Gill Medical Center

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Phase 2, to be completed within 10 years of Project approval, would include a 60,000+ SF medical office building, a 140,000+ SF 100 bed hospital expansion designed to OSHPD 1 Hospital standards, a full-service emergency helipad landing area, and 4,000+ SF physical plant building. Phase 2 site improvements would include an additional 1,000 onsite parking stalls and development of additional onsite storm water retention areas. Phase 2 would also add driveway entrances from Eight Mile Road and Ham Lane.

1.3 Purpose of this Biological Resources Assessment

The purpose of this BRA is to assess the potential for occurrence of special-status plant and animal species and their habitats, and sensitive habitats such as wetlands and riparian communities within the Project Study Area. This assessment includes information generated from the reconnaissance-level site assessment and does not include a wetland delineation performed according to U.S. Army Corps of Engineers (USACE) standards, nor does it include determinate field surveys for special-status plant and animal species.

This assessment includes a preliminary analysis of impacts on biological resources anticipated to result from the Project as presently defined. The mitigation recommendations presented in this assessment are based on a preliminary impact analysis, a review of existing literature, and the results of the site reconnaissance survey.

For the purposes of this assessment, special-status species are defined as plants or animals that:

- are listed, proposed for listing, or candidates for future listing as threatened or endangered under the federal Endangered Species Act (ESA);
- are listed or candidates for future listing as threatened or endangered under the California ESA;
- meet the definitions of endangered or rare under § 15380 of the CEQA Guidelines;
- are identified as a species of special concern (SSC) by the California Department of Fish and Wildlife (CDFW);
- are birds identified as birds of conservation concern (BCC) by the U.S. Fish and Wildlife Service (USFWS);
- are considered by the California Native Plant Society (CNPS) to be "rare, threatened, or endangered in California," "plants about which more information is needed," or "plants of limited distribution – a watch list" (i.e., species with a California Rare Plant Rank [CRPR] of 1B, 2, 3, or 4);
- are plants listed as rare under the California Native Plant Protection Act (NPPA) (California Fish and Game Code, § 1900 et seq.); or
- are fully protected in California in accordance with the California Fish and Game Code, § 3511 (birds), § 4700 (mammals), § 5050 (amphibians and reptiles), and § 5515 (fishes).

2.0 REGULATORY SETTING

2.1 Federal Regulations

2.1.1 Endangered Species Act

The federal ESA protects plants and animals that are listed as endangered or threatened by USFWS and the National Marine Fisheries Service (NMFS). Section 9 of the federal ESA prohibits, without authorization, the taking of listed wildlife, where take is defined as “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct” (50 Code of Federal Regulations [CFR] 17.3). For plants, this statute governs removing, possessing, maliciously damaging, or destroying any listed plant under federal jurisdiction and removing, cutting, digging up, damaging, or destroying any listed plant in any other area in knowing violation of state law (16 U.S. Code [USC] 1538).

Under Section 7 of the federal ESA, federal agencies are required to consult with USFWS and/or NMFS if their actions, including permit approvals and funding, could adversely affect a listed (or proposed) species (including plants) or its critical habitat. Through consultation and the issuance of a biological opinion (BO), USFWS and NMFS may issue an incidental take statement allowing take of the species that is incidental to an otherwise authorized activity provided the activity will not jeopardize the continued existence of the species. Section 10 of federal ESA provides for the issuance of incidental take permits where no other federal actions are necessary provided a habitat conservation plan is developed.

Section 7 Consultation

Section 7 of the federal ESA mandates that all federal agencies consult with USFWS and/or NMFS to ensure that federal agencies’ actions do not jeopardize the continued existence of a listed species or adversely modify critical habitat for listed species. If direct and/or indirect effects will occur to critical habitat that appreciably diminish the value of critical habitat for both the survival and recovery of a species, the adverse modifications will require formal consultation with USFWS or NMFS. If adverse effects are likely, the federal lead agency must prepare a biological assessment (BA) for the purpose of analyzing the potential effects of the proposed Project on listed species and critical habitat to establish and justify an "effect determination." Often a third-party, non-federal applicant drafts the BA for the lead federal agencies. The USFWS/NMFS reviews the BA; if it concludes that the Project may adversely affect a listed species or its habitat, it prepares a BO. The BO may recommend "reasonable and prudent alternatives" to the project to avoid jeopardizing or adversely modifying habitat.

Critical Habitat

Critical Habitat is defined in Section 3 of the federal ESA as:

1. the specific areas within the geographical area occupied by a species, at the time it is listed in accordance with the federal ESA, on which are found those physical or biological features essential to the conservation of the species and that may require special management considerations or protection; and

2. specific areas outside the geographical area occupied by a species at the time it is listed, upon a determination that such areas are essential for the conservation of the species.

For inclusion in a Critical Habitat designation, habitat within the geographical area occupied by the species at the time it was listed must first have features essential to the conservation of the species (16 USC 1533). Critical Habitat designations identify, to the extent known and using the best scientific data available, habitat areas that provide essential life cycle needs of the species (areas on which are found the primary constituent elements). Primary constituent elements are the physical and biological features that are essential to the conservation of the species and that may require special management considerations or protection. These include but are not limited to the following:

1. Space for individual and population growth and for normal behavior.
2. Food, water, air, light, minerals, or other nutritional or physiological requirements.
3. Cover or shelter.
4. Sites for breeding, reproduction, or rearing (or development) of offspring.
5. Habitats that are protected from disturbance or are representative of the historic, geographical, and ecological distributions of a species.

2.1.2 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) implements international treaties between the U.S. and other nations devised to protect migratory birds, any of their parts, eggs, and nests from activities such as hunting, pursuing, capturing, killing, selling, and shipping, unless expressly authorized in the regulations or by permit. As authorized under the MBTA, USFWS issues permits to qualified applicants for the following types of activities: falconry, raptor propagation, scientific collecting, special purposes (rehabilitation, education, migratory game bird propagation, and salvage), take of depredating birds, taxidermy, and waterfowl sale and disposal. The regulations governing migratory bird permits can be found in 50 CFR part 13 General Permit Procedures and 50 CFR part 21 Migratory Bird Permits. The State of California has incorporated the protection of nongame birds in § 3800, migratory birds in § 3513, and birds of prey in § 3503.5 of the California Fish and Game Code.

2.1.3 Clean Water Act

The purpose of the federal Clean Water Act (CWA) is to “restore and maintain the chemical, physical, and biological integrity of the nation’s waters.” Section 404 of the CWA prohibits the discharge of dredged or fill material into “Waters of the United States” without a permit from the USACE. The definition of Waters of the U.S. includes rivers, streams, estuaries, the territorial seas, ponds, lakes, and wetlands. Wetlands are defined as those areas “that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions” (33 CFR 328.3 7b). The U.S. Environmental

Protection Agency (USEPA) also has authority over wetlands, including the authority to veto permits issued by USACE under CWA Section 404(c).

Projects involving activities that have no more than minimal individual and cumulative adverse environmental effects may meet the conditions of one of the Nationwide Permits already issued by USACE (Federal Register 82:1860, January 6, 2017). If impacts on wetlands could be substantial, an individual permit is required. A Water Quality Certification or waiver pursuant to Section 401 of the CWA is required for Section 404 permit actions; this certification or waiver is issued by the Regional Water Quality Control Board (RWQCB).

2.2 State and Local Regulations

2.2.1 California Endangered Species Act

The California ESA (California Fish and Game Code §§ 2050-2116) protects species of fish, wildlife, and plants listed by the State as endangered or threatened. Species identified as candidates for listing may also receive protection. Section 2080 of the California ESA prohibits the taking, possession, purchase, sale, and import or export of endangered, threatened, or candidate species, unless otherwise authorized by permit. Take is defined in Section 86 of the California Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." The California ESA allows for take incidental to otherwise lawful projects under permits issued by CDFW.

2.2.2 Fully Protected Species

The State of California first began to designate species as "fully protected" prior to the creation of the federal and California ESAs. Lists of fully protected species were initially developed to provide protection to those animals that were rare or faced possible extinction and included fish, amphibians and reptiles, birds, and mammals. Most fully protected species have since been listed as threatened or endangered under the federal and/or California ESAs. Fully protected species are identified in the California Fish and Game Code § 4700 for mammals, § 3511 for birds, § 5050 for reptiles and amphibians, and § 5515 for fish.

These sections of the California Fish and Game Code provide that fully protected species may not be taken or possessed at any time, including prohibition of CDFW from issuing incidental take permits for fully protected species under the California ESA. CDFW will issue licenses or permits for take of these species for necessary scientific research or live capture and relocation pursuant to the permit, and may allow incidental take for lawful activities carried out under an approved Natural Community Conservation Plan within which such species are covered.

2.2.3 Native Plant Protection Act

The NPPA of 1977 (California Fish and Game Code §§ 1900-1913) was established with the intent to "preserve, protect and enhance rare and endangered plants in this state." The NPPA is administered by CDFW. The Fish and Game Commission has the authority to designate native plants as "endangered" or "rare." The NPPA prohibits the take of plants listed under the NPPA, but the NPPA contains a number of exemptions to this prohibition that have not been clarified by regulation or judicial rule. In 1984, the California ESA brought under its protection all plants previously listed as endangered under the NPPA. Plants listed as rare under the NPPA are not protected under the California ESA, but are still protected under the provisions of the NPPA. The Fish and Game Commission no longer lists plants under the NPPA, referring all listings to the California ESA.

2.2.4 California Fish and Game Code Special Protections for Birds

In addition to protections contained within the California ESA and California Fish and Game Code § 3511 described above, the California Fish and Game Code includes a number of sections that specifically protect certain birds.

Section 3800 states that it is unlawful to take nongame birds, such as those occurring naturally in California that are not resident game birds, migratory game birds, or fully protected birds, except when in accordance with regulations of the California Fish and Game Commission or a mitigation plan approved by CDFW for mining operations.

Section 3503 prohibits the take, possession, or needless destruction of the nest or eggs of any bird.

Section 3503.5 protects birds of prey (which includes eagles, hawks, falcons, kites, ospreys, and owls) and prohibits the take, possession, or destruction of any birds and their nests

Section 3505 makes it unlawful to take, sell, or purchase egrets, ospreys, and several exotic non-native species, or any part of these birds.

Section 3513 specifically prohibits the take or possession of any migratory nongame bird as designated in the MBTA.

2.2.5 Lake or Streambed Alteration Agreements

Section 1602 of the California Fish and Game Code requires individuals or agencies to provide a Notification of Lake or Streambed Alteration to CDFW for "any activity that may substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake." CDFW reviews the proposed actions and, if necessary, proposed measures to protect affected fish and wildlife resources. The final proposal mutually agreed upon by CDFW and the applicant is the Lake or Streambed Alternation Agreement.

2.2.6 Porter-Cologne Water Quality Act

The RWQCB implements water quality regulations under the federal CWA and the Porter-Cologne Water Quality Act. These regulations require compliance with the National Pollutant Discharge Elimination System (NPDES), including compliance with the California Storm Water NPDES General Construction Permit for discharges of stormwater runoff associated with construction activities. General Construction Permits for projects that disturb one or more acres of land require development and implementation of a Storm Water Pollution Prevention Plan. Under the Porter-Cologne Water Quality Act, the RWQCB regulates actions that would involve "discharging waste, or proposing to discharge waste, with any region that could affect the water of the state" [Water Code 13260(a)]. Waters of the State are defined as "any surface water or groundwater, including saline waters, within the boundaries of the state" [Water Code 13050 (e)]. The RWQCB regulates all such activities, as well as dredging, filling, or discharging materials into Waters of the State, that are not regulated by USACE due to a lack of connectivity with a navigable water body. The RWQCB may require issuance of a Waste Discharge Requirements for these activities.

2.2.7 California Environmental Quality Act

In accordance with CEQA Guidelines § 15380, a species or subspecies not specifically protected under the federal or California ESAs or NPPA may be considered endangered, rare, or threatened for CEQA review purposes if the species meets certain criteria specified in the Guidelines. These criteria include definitions similar to definitions used in the federal ESA, the California ESA, and the NPPA. Section 15380 was included in the CEQA Guidelines primarily to address situations in which a project under review may have a significant effect on a species that has not been listed under the federal ESA, the California ESA, or the NPPA, but that may meet the definition of endangered, rare, or threatened. Animal species identified as SSC by CDFW and plants identified by the CNPS as rare, threatened, or endangered may meet the CEQA definition of rare or endangered.

Species of Special Concern

SSC are defined by the CDFW as a species, subspecies, or distinct population of an animal native to California that are not legally protected under federal ESA, the California ESA, or the California Fish and Game Code, but currently satisfies one or more of the following criteria:

- The species has been completely extirpated from the state or, as in the case of birds, it has been extirpated from its primary seasonal or breeding role.
- The species is listed as federally (but not State) threatened or endangered, or meets the State definition of threatened or endangered but has not formally been listed.
- The species has or is experiencing serious (noncyclical) population declines or range retractions (not reversed) that, if continued or resumed, could qualify it for State threatened or endangered status.
- The species has naturally small populations that exhibit high susceptibility to risk from any factor that if realized, could lead to declines that would qualify it for State threatened or endangered status.
- SSC are typically associated with habitats that are threatened.

Depending on the policy of the lead agency, projects that result in substantial impacts to SSC may be considered significant under CEQA.

U.S. Fish and Wildlife Service Birds of Conservation Concern

The 1988 amendment to the Fish and Wildlife Conservation Act mandates USFWS "identify species, subspecies, and populations of all migratory nongame birds that, without additional conservation actions, are likely to become candidates for listing under ESA." To meet this requirement, USFWS published a list of BCC (USFWS 2008) for the U.S. The list identifies the migratory and nonmigratory bird species (beyond those already designated as federally threatened or endangered) that represent USFWS's highest conservation priorities. Depending on the policy of the lead agency, projects that result in substantial impacts to BCC may be considered significant under CEQA.

California Rare Plant Ranks

The CNPS maintains the Inventory of Rare and Endangered Plants of California (CNPS 2020), which provides a list of plant species native to California that are threatened with extinction, have limited distributions, and/or low populations. Plant species meeting one of these criteria are assigned to one of six CRPRs. The rank system was developed in collaboration with government, academia, non-governmental organizations, and private sector botanists, and is jointly managed by CDFW and the CNPS. The CRPRs are currently recognized in the California Natural Diversity Database (CNDDB). The following are definitions of the CNPS CRPRs:

- Rare Plant Rank 1A – presumed extirpated in California and either rare or extinct elsewhere.
- Rare Plant Rank 1B – rare, threatened, or endangered in California and elsewhere.
- Rare Plant Rank 2A – presumed extirpated in California, but more common elsewhere.
- Rare Plant Rank 2B – rare, threatened, or endangered in California but more common elsewhere.
- Rare Plant Rank 3 – a review list of plants about which more information is needed.
- Rare Plant Rank 4 – a watch list of plants of limited distribution.

Additionally, CNPS has defined Threat Ranks that are added to the CRPR as an extension. Threat Ranks designate the level of threat on a scale of 1 through 3, with 1 being the most threatened and 3 being the least threatened. Threat Ranks are generally present for all plants ranked 1B, 2B, or 4, and for the majority of plants ranked 3. Plant species ranked 1A and 2A (presumed extirpated in California), and some species ranked 3, which lack threat information, do not typically have a Threat Rank extension. The following are definitions of the CNPS Threat Ranks:

- Threat Rank 0.1 – Seriously threatened in California (over 80 percent of occurrences threatened/high degree and immediacy of threat).
- Threat Rank 0.2 – Moderately threatened in California (20-80 percent of occurrences threatened/moderate degree and immediacy of threat).
- Threat Rank 0.3 – Not very threatened in California (<20 percent of occurrences threatened/low degree and immediacy of threat or no current threats known).

Factors, such as habitat vulnerability and specificity, distribution, and condition of occurrences, are considered in setting the Threat Rank; and differences in Threat Ranks do not constitute additional or different protection (CNPS 2020).

Depending on the policy of the lead agency, substantial impacts to plants ranked 1A, 1B, or 2, and 3 are typically considered significant under CEQA Guidelines § 15380. Significance under CEQA is typically evaluated on a case-by-case basis for plants ranked 4 and at the discretion of the CEQA lead agency.

California Environmental Quality Act Significance Criteria

Sections 15063-15065 of the CEQA Guidelines address how an impact is identified as significant. Generally, impacts to listed (rare, threatened, or endangered) species are considered significant. Assessment of "impact significance" to populations of non-listed species (e.g., SSC) usually considers the proportion of the species' range that will be affected by a project, impacts to habitat, and the regional and population level effects.

Specifically, § 15064.7 of the CEQA Guidelines encourages local agencies to develop and publish the thresholds that the agency uses in determining the significance of environmental effects caused by projects under its review. However, agencies may also rely upon the guidance provided by the expanded Initial Study checklist contained in Appendix G of the CEQA Guidelines. Appendix G provides examples of impacts that would normally be considered significant.

An evaluation of whether or not an impact on biological resources would be substantial must consider both the resource itself and how that resource fits into a regional or local context. Substantial impacts would be those that would diminish, or result in the loss of, an important biological resource, or those that would obviously conflict with local, State, or federal resource conservation plans, goals, or regulations. Impacts are sometimes locally important but not significant under CEQA. The reason for this is that although the impacts would result in an adverse alteration of existing conditions, they would not substantially diminish or result in the permanent loss of an important resource on a population-wide or region-wide basis.

2.2.8 San Joaquin County Multi-Species Habitat Conservation and Open Space Plan

The key purpose of the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP) (San Joaquin Council of Governments 2000) is to:

- provide a strategy for balancing the need to conserve Open Space and the need to Convert Open Space to non-Open Space uses while protecting the region's agricultural economy;
- preserve landowner property rights;
- provide for the long-term management of plant, fish and wildlife species, especially those that are currently listed, or may be listed in the future, under the federal ESA or the California ESA;
- provide and maintain multiple-use Open Space which contribute to the quality of life of the residents of San Joaquin County; and

- accommodate a growing population while minimizing costs to project proponents and society at large.

The SJMSCP, in accordance with federal ESA Section 10(a)(1)(B) and California ESA Section 2081(b) Incidental Take Permits, provides compensation for the Conservation of Open Space to non-Open Space uses that affect the plant, fish, and wildlife species covered by the SJMSCP. Among other activities, the SJMSCP compensates for conversions of open space for urban development.

2.2.9 San Joaquin County Ordinance, Division 15, Chapter 9-1505 - Trees

The intent of Division 15, Chapter 9-1505 of the Ordinance Code of San Joaquin County, California is to preserve the County's tree resources, The removal of a Native Oak Tree, Heritage Oak, or Historical Tree shall require an approved improvement plan application, as specified in Chapter 9-884 of the Title, and shall be subject to the provisions of this Chapter, unless exempted by Section 9-1505.8 or 9-1505.9.

3.0 METHODS

For the purposes of this assessment, special-status species are defined as plants or animals that:

- are listed, proposed for listing, or candidates for future listing as threatened or endangered under the federal ESA;
- are listed or candidates for future listing as threatened or endangered under the California ESA;
- meet the definitions of endangered or rare under Section 15380 of the CEQA Guidelines;
- are identified as an SSC by CDFW;
- are plants considered by the California CNPS to be "rare, threatened, or endangered in California" (California Rare Plant Rank [CRPR] 1 and 2);
- are plants listed by CNPS as species about which more information is needed to determine their status (CRPR 3), and plants of limited distribution (CRPR 4);
- are plants listed as rare under the California NPPA, California Fish and Game Code, § 1900 et seq.);
- are fully protected in California in accordance with the California Fish and Game Code, §§ 3511 (birds), 4700 (mammals), 5050 (amphibians and reptiles), and 5515 (fishes); or
- are a covered species under the SJMSCP.

Only species that fall into one of the above-listed groups were considered for this assessment. Other species tracked by the CNDDB but having no other special status were not considered to be special status and were not included within this analysis.

3.1 Literature Review

The following resources were reviewed to determine the special-status species that have been documented within or in the vicinity of the Study Area. Results of the species searches are included as Attachment A.

- CDFW CNDDB data for the "Lodi South, California" 7.5-minute quadrangle as well as the eight surrounding USGS quadrangles (CDFW 2020a).
- USFWS Information, Planning, and Consultation System Resource Report List for the Project site (USFWS 2020a).
- CNPS' electronic Inventory of Rare and Endangered Plants of California was queried for the "Lodi South, California" 7.5-minute quadrangles and the eight surrounding quadrangles (CNPS 2020).
- CDFW BIOS query of range maps for potentially occurring special-status species (CDFW 2020b).
- USFWS Threatened & Endangered Species Active Critical Habitat Report (USFWS 2020b).
- The SJMSCP.

Additional background information was reviewed regarding the documented or potential occurrence of special-status species within or near the Project site from the following sources:

- The Status of Rare, Threatened, and Endangered Plants and Animals of California 2000-2004 (California Department of Fish and Game [CDFG] 2005).
- California Bird SSC (Shuford and Gardali 2008).
- Amphibian and Reptile SSC in California (Thompson et al. 2016).
- Mammalian SSC in California (Williams 1986).
- California's Wildlife, Volumes I-III (Zeiner, et al. 1988, 1990a, 1990b).
- A Guide to Wildlife Habitats of California (Mayer and Laudenslayer Jr., eds. 1988).

3.2 Site Reconnaissance

ECORP biologists Keith Kwan and Stephanie Castle conducted a site assessment on May 21, 2020. During the field assessment, meandering transects were walked through the Study Area searching for aquatic resources, potential waters of the U.S./State, special-status species or their habitat. The findings of this site assessment have been incorporated into this BRA.

During the field survey, biological communities occurring onsite were characterized and the following biological resource information was collected:

- Vegetation communities within the Project site.
- Plant and animal species directly observed.

- Animal evidence (e.g., scat, tracks).
- Existing active raptor nest locations.
- Burrows and any other special habitat features.

In addition, soil types were identified using the NRCS Web Soil Survey (NRCS 2020a).

3.3 Special-Status Species Considered for the Project

Special-status plant and animal species that came up on database searches were evaluated for their potential to occur onsite. Species that are tracked in the CNDDB but do not have any other special status, as defined above, were not included in this assessment. Species' potential to occur within the Project site was assessed based on the following criteria:

- **Present** - Species was observed during the site visit or is known to occur within the Project site based on documented occurrences within the CNDDB or other literature.
- **Potential to Occur** - Habitat (including soils and elevation requirements) for the species occurs within the Project site.
- **Low Potential to Occur** - Marginal or limited amounts of habitat occur, and/or the species is not known to occur within the vicinity of the Project site based on CNDDB records and other available documentation.
- **Absent** - No suitable habitat (including soils and elevation requirements) and/or the species is not known to occur within the vicinity of the Project site based on CNDDB records and other documentation.

4.0 RESULTS

4.1 Site Characteristics and Land Use

The Study Area is situated in an agricultural setting at an elevation of approximately 35 feet above mean sea level in the southern San Joaquin Valley subregion of the Great Central Valley region of the California floristic province (Baldwin et. al. 2012). The vast majority of the Study Area is currently a vineyard with a fallow field and ruderal areas. The vineyard is comprised of uniform rows of grapes growing on posts and cables. The south half of an irrigation ditch is located onsite along the northern boundary of the Study Area (where it runs adjacent the site, the ditch center line defines the northern property boundary).

Representative photographs of the Study Area can be found in Attachment B.

The surrounding lands include vineyards, orchards, undeveloped pastures, and rural residences.

4.2 Vegetation Communities and Land Cover Types

The Project is currently comprised primarily of a vineyard with small patch of fallow agricultural field and ruderal roadside areas along access roads and boundaries (Figure 2. *Vegetation Community and Land Cover Types/Preliminary Wetland Assessment*).

4.2.1 Vineyard

The vineyard is comprised of wine grapes (*Vitis* species) planted in uniform rows. The rows are approximately 10 feet apart and include a trellis of posts and wires. Grape plants can attain heights of six to eight feet and dense prior to pruning. Vines are pruned in the fall and winter. There is sparse ground cover of weedy plants such as turkey mullein (*Croton setigerus*), prickly lettuce (*Lactuca serriola*), English plantain (*Plantago lanceolata*), and Italian thistle (*Carduus pycnocephalus*).

4.2.2 Fallow Agricultural Field

A small area of fallow agricultural field is located in the southeastern corner of the Study Area. At the time of the site visit conducted in May 2020, the field was plowed and did not appear to have been planted with a crop the prior growing season. Plants identified in the fallow agricultural field include a variety of non-native weedy species such as wild oats (*Avena fatua*), Italian ryegrass (*Festuca perennis*), broad-leaf pepper grass (*Lepidium latifolium*), and English plantain.

4.2.3 Ruderal/Roadside

The ruderal areas found at the property boundaries include weedy annual grassland species with scattered trees. The ruderal areas within the Study Area include dirt access roads and edges of fields that cannot be accessed by farm equipment and dominated by non-native weedy plants. Common herbaceous plants found in the ruderal areas onsite included wild oats, prickly lettuce, English plantain, chicory (*Cichorium intybus*), and curly dock (*Rumex crispus*). Scattered trees found adjacent to the irrigation ditch, fence lines, and ruderal areas include valley oak (*Quercus lobata*), eucalyptus (*Eucalyptus* species), and walnut (*Juglans* species). Small patches of Himalayan blackberry (*Rubus armeniacus*) are found along the southern fence line and the irrigation ditch.

4.3 Soils

According to the *Web Soil Survey* (NRCS 2020a), there is one soil unit mapped within the Study Area: (180) Jacktone clay, 0 to 2 percent slopes (Figure 3. *Natural Resources Conservation Service Soil Types*). This soil unit contains hydric components (NRCS 2020b). If the unit is used for urban development, the main limitations are the high shrink-well potential, the slow permeability, depth to the hardpan, and low strength. Properly designing foundations and footings and diverting runoff away from buildings help to prevent the structural damage caused by shrinking and swelling. Properly designing buildings can offset the limited ability of the soil to support a load. (Soil Conservation Service 1992).

Map Features

Project Boundary - +/-42 ac.

Reference Coordinates

Native Oak Trees

Preliminary Wetland Assessment[1]

Other Waters

Irrigation Ditch - 0.258 acres

Vegetation Commmunities and Land Cover Types

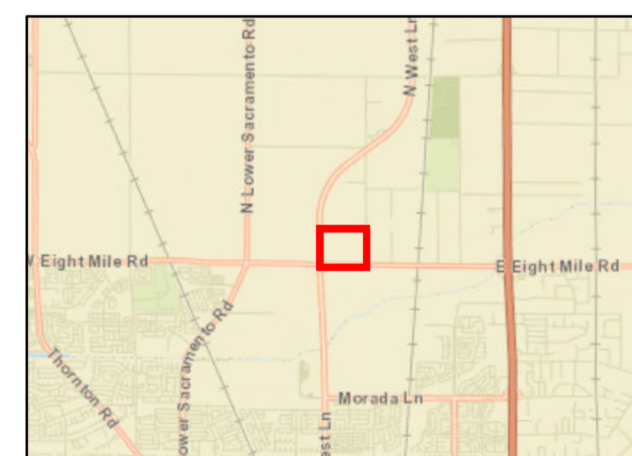
Fallow Agricultural

Vineyard

Ruderal

Photo Source: NAIP (2018)
Boundary Source: NJA Architecture (Boundary is Approximate)
Coordinate System: NAD 1983 StatePlane California III FIPS 0403 Feet

[1] *Subject to U.S. Army Corps of Engineers verification. Feature boundaries have not been legally surveyed and may be subject to adjustments if more accurate locations are required.*



ECORP: N:\2020\2020-053 Gill Womens Medical Center\MAPS\Jurisdictional_Delineation\GWMC_PWA_20200715.mxd (CCH)-chinkelman 9/16/2020

Map Date: 9/16/2020

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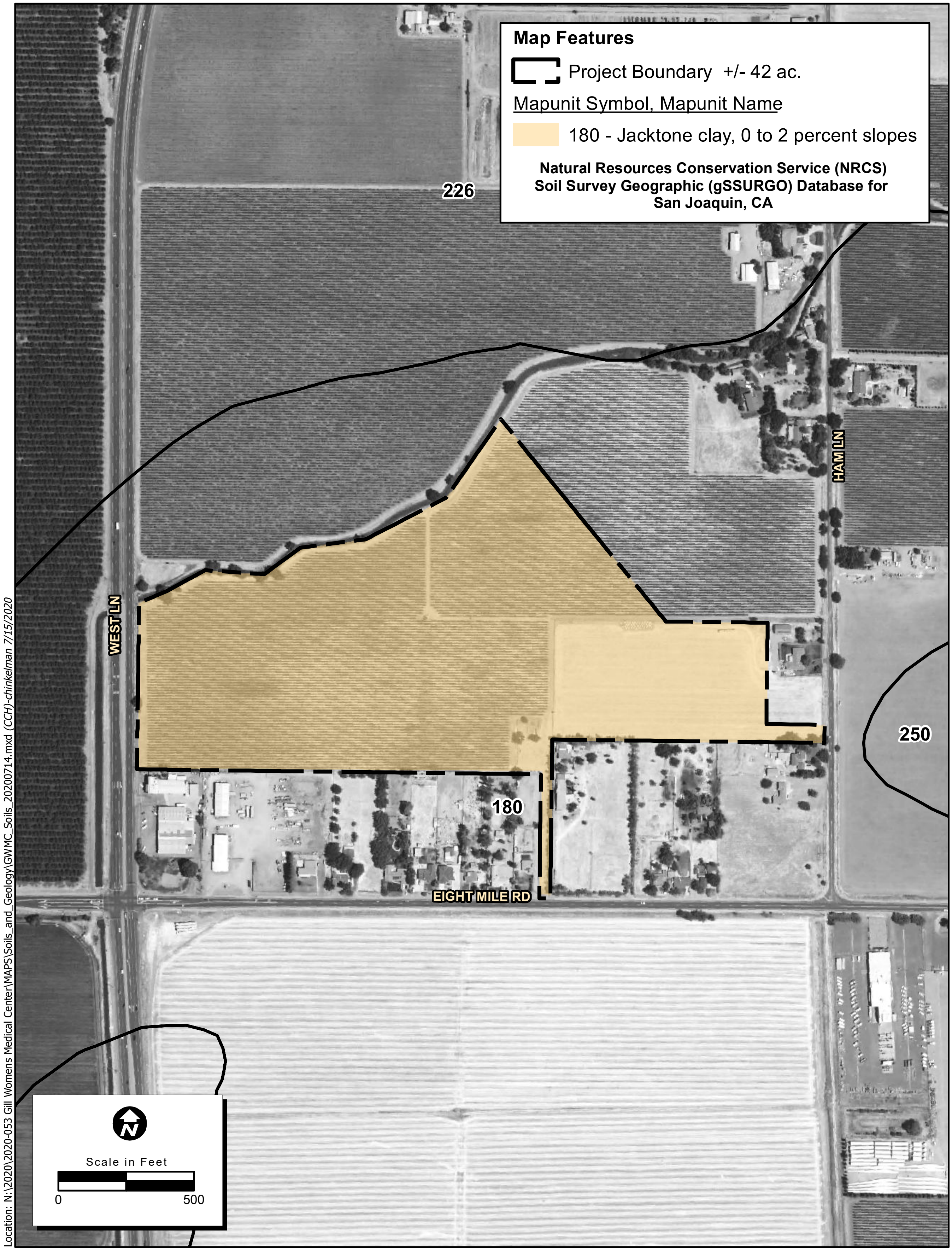
Scale in Feet
0 250

Figure 2. Vegetation Community and Land Cover
Preliminary Wetland Assessment
2020-053 Gill Medical Center



Map Date: 7/15/2020
Photo (or Base) Source: NAIP (2018)

Figure 3. Natural Resources Conservation Service Soils Units

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4.4 Potential Aquatic Resources

A Woodbridge Irrigation District irrigation ditch is located along the northern boundary of the Study Area. The parcel boundary follows the centerline of the ditch. No other potential aquatic resources were identified on the Project Site. There is one California Aquatic Resources Inventory feature mapped, fluvial natural, along the northern boundary (Figure 4. *California Aquatic Resources Inventory*). This corresponds to the irrigation ditch.

The irrigation ditch supports intermittent flows based on irrigation needs. It is an excavated, unlined, and trapezoidal channel that is approximately 8 to 10 feet wide. Channel vegetation is limited to isolated patches of emergent plants, such as cattail (*Typha* species), hard-stem bulrush (*Schoenoplectus acutus*), and soft rush (*Juncus effusus*). A few valley oak trees are found along the banks of the ditch.

4.5 Wildlife

Wildlife use onsite is expected to be minimal due to the agricultural practices and highly disturbed nature of the Study Area and surrounding lands. Common wildlife observed onsite during the field assessment included western fence lizard (*Sceloporus occidentalis*), Eurasian collared-dove (*Streptopelia decaocto*), western kingbird (*Tyrannus verticalis*), house sparrow (*Passer domesticus*), brown-headed cowbird (*Molothrus ater*), and Brewer's blackbird (*Euphagus cyanocephalus*). Several California ground squirrels (*Otospermophilus beecheyi*) and their burrows were found in scattered locations along the irrigation ditch at the northern boundary and within the vineyard.

4.6 Evaluation of Special-Status Species Identified in the Literature Search

A list of all of the special status plant and wildlife species identified in the literature search as potentially occurring within the Project site is provided in Table 1. This table includes the listing status for each species, a brief habitat description, and a determination on the potential to occur in the Project site. The potential to occur is based upon species' known distribution, the vegetation communities and habitats present onsite, and the site elevation. Following the table is a brief description of each species with potential to occur.

Species that were considered "Absent" included those not known to occur in the region and/or elevation of the Study Area or an absence of suitable habitat. These species are not discussed further in this assessment. The species were identified through the database queries that are only tracked by the CNDDB and possess no special-status are not included in this assessment. Sensitive habitats that were identified through the database queries that are not located within the Study Area are not discussed in this assessment.

There are no special-status species previously documented within the Study Area, but several special-status species are known to occur within an approximate five-mile radius of the Project (see Attachment A).

Map Date: 7/15/2020

Figure 4. California Aquatic Resources Inventory

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2020-053 Gill Medical Center

Table 1. Potentially Occurring Special-Status Species

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	FESA	CESA/ NPPA	Other			
Plants						
Alkali milk-vetch *(Astragalus tener* var. *tener)*	–	–	1B.2	Playas, mesic areas within valley and foothill grasslands, and alkaline vernal pools (3'–197').	March–June	Absent; there is no suitable habitat onsite.
Heartscale *(Atriplex cordulata* var. *cordulata)*	–	–	1B.2	Alkaline or saline valley and foothill grasslands, meadows and seeps, and chenopod scrub communities (0'–1,837').	April–October	Absent; there is no suitable habitat onsite.
Big tarplant *(Blepharizonia plumosa* ssp. *plumosa)*	–	–	1B.1	Valley and foothill grassland (98'–1,657').	July–October	Absent; there is no suitable habitat onsite.
Watershield *(Brasenia schreberi)*	–	–	2B.3	Freshwater marshes and swamps (98'–7,218').	June–September	Absent; there is no suitable habitat onsite.
Bristly sedge *(Carex comosa)*	–	–	2B.1	Coastal prairie, marshes and swamps including lake margins, and in valley and foothill grassland (0'–2,051').	May–September	Absent; there is no suitable habitat onsite.
Succulent owl's clover *(Castilleja campestris* ssp. *succulenta)*	FT	CE	1B.2; SJMSCP	Vernal pools, often in acidic environments (164'–2,461').	April–May	Absent; there is no suitable habitat onsite.
Parry's rough tarplant *(Centromadia parryi* ssp. *rudis)*	–	–	4.2	Alkaline, vernally mesic seeps in valley and foothill grassland and vernal pools, sometimes found on roadsides (0'–328').	May–October	Absent; there is no suitable habitat onsite.
Palmate-bracted bird's-beak *(Chloropyron palmatum)*	FE	CE	1B.1	Alkaline areas in chenopod scrub and valley and foothill grassland (16'–509').	May–October	Absent; there is no suitable habitat onsite.
Bolander's water-hemlock *(Cicuta maculata* var. *bolanderi)*	–	–	2B.1	Coastal, fresh, or brackish marshes and swamps (0'–656').	July–September	Absent; there is no suitable habitat onsite.

Table 1. Potentially Occurring Special-Status Species

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	FESA	CESA/ NPPA	Other			
Recurved larkspur *(Delphinium recurvatum)*	–	–	1B.2	Chenopod scrub, cismontane woodland, and valley and foothill grasslands (10'–2,592').	March–June	Absent; there is no suitable habitat onsite.
San Joaquin spearscale (*Extriplex joaquinana*)	–	–	1B.2	Alkaline soils in chenopod scrub, meadows seeps, playas, and valley and foothill grassland (3'–2,740').	April–October	Absent; there is no suitable habitat onsite.
Boggs Lake hedge-hyssop *(Gratiola heterosepala)*	–	CE	1B.2; SJMSCP	Marshes, swamps, lake margins, and vernal pools (33'–7,792').	April–August	Absent; there is no suitable habitat onsite.
Woolly rose-mallow *(Hibiscus lasiocarpos* var. *occidentalis)*	–	–	1B.2	Marshes and freshwater swamps. Often in riprap on sides of levees (0'–394').	June–September	Absent; there is no suitable habitat onsite.
Delta tule pea (*Lathyrus jepsonii* var. *jepsonii)*	–	–	1B.2	Freshwater and brackish marshes and swamps (0'–16').	May–September	Absent; there is no suitable habitat onsite.
Legenere *(Legenere limosa)*	–	–	1B.1	Various seasonally inundated areas including wetlands, wetland swales, marshes, vernal pools, artificial ponds, and floodplains of intermittent drainages (USFWS 2005) (3'–2,887').	April–June	Absent; there is no suitable habitat onsite.
Mason's lilaeopsis *(Lilaeopsis masonii)*	–	CR	1B.1; SJMSCP	Brackish or freshwater marshes or swamps and riparian scrub (0'–33').	April–November	Absent; there is no suitable habitat onsite.
Delta mudwort (*Limosella australis*)	–	–	2B.1	Usually mud banks in freshwater or brackish marshes and swamps and riparian scrub (0'–10').	May–August	Absent; there is no suitable habitat onsite.
Sanford's arrowhead *(Sagittaria sanfordii)*	–	–	1B.2	Shallow marshes and freshwater swamps (0'–2,133').	May–October	Low Potential; the irrigation ditch represents marginally suitable habitat for this species.
Side-flowering skullcap *(Scutellaria lateriflora)*	–	–	2B.2	Mesic areas in meadows and seeps and marshes and swamps (0'–1,640').	July–September	Absent; there is no suitable habitat onsite.

Table 1. Potentially Occurring Special-Status Species

Common Name (Scientific Name)	Status FESA	Status CESA/ NPPA	Status Other	Habitat Description	Survey Period	Potential To Occur Onsite
Suisun marsh aster (*Symphyotrichum lentum*)	–	–	1B.2	Brackish and freshwater marshes and swamps (0'–10').	May–November	Absent; there is no suitable habitat onsite.
Saline clover *(Trifolium hydrophilum)*	–	–	1B.2	Marshes and swamps, mesic and alkaline areas in valley and foothill grassland, and vernal pools (0'–984').	April–June	Absent; there is no suitable habitat onsite.
Invertebrates						
Conservancy fairy shrimp (*Branchinecta conservatio)*	FE	-	SJMSCP	Vernal pools/wetlands.	November-April	Absent; there is no suitable habitat onsite.
Longhorn fairy shrimp *(Branchinecta longiantenna)*	FE	-	SJMSCP	Vernal pools/wetlands.	November–April	Absent; there is no suitable habitat onsite.
Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*)	FT	-	SJMSCP	Elderberry shrubs.	Any season	Absent; there is no suitable habitat onsite.
Vernal pool fairy shrimp (*Branchinecta lynchi*)	FT	-	SJMSCP	Vernal pools/wetlands.	November-April	Absent; there is no suitable habitat onsite.
Fish						
Delta smelt (*Hypomesus transpacificus*)	FT	CE	SJMSCP	Sacramento-San Joaquin delta.	N/A	Absent; there is no suitable habitat onsite.
Longfin smelt (*Spirinchus thaleichthys*)	FC	CT	SSC; SJMSCP	Freshwater and seawater estuaries.	N/A	Absent; there is no suitable habitat onsite.
Sacramento splittail *(Pogonichthys macrolepidotus)*	-	-	SSC; SJMSCP	San Francisco bay estuary. Spawns in upstream floodplains and backwater sloughs.	N/A	Absent; there is no suitable habitat onsite.
Steelhead (CA Central Valley DPS) (*Oncorhynchus mykiss*)	FT	-	-	Undammed rivers, streams, creeks.	N/A	Absent; there is no suitable habitat onsite.

Table 1. Potentially Occurring Special-Status Species						
	Status					
Common Name (Scientific Name)	FESA	CESA/ NPPA	Other	Habitat Description	Survey Period	Potential To Occur Onsite
Amphibians						
California red-legged frog (*Rana draytonii*)	FT	-	SSC; SJMSCP	Lowlands or foothills at waters with dense shrubby or emergent riparian vegetation. Adults must have aestivation habitat to endure summer dry down.	May 1- November 1	Absent; there is no suitable habitat onsite.
California tiger salamander (Central California DPS) (*Ambystoma californiense*)	FT	CT	SSC; SJMSCP	Vernal pools, wetlands (breeding) and adjacent grassland or oak woodland; needs underground refuge (e.g., ground squirrel and/or gopher burrows). Largely terrestrial as adults.	March-May	Absent; there is no suitable habitat onsite.
Foothill yellow-legged frog (*Rana boylii*)	-	CE	SSC; SJMSCP	Foothill yellow-legged frogs can be active all year in warmer locations, but may become inactive or hibernate in colder climates. At lower elevations, foothill yellow-legged frogs likely spend most of the year in or near streams. Adult frogs, primarily males, will gather along main-stem rivers during spring to breed.	May - October	Absent; there is no suitable habitat onsite.
Western spadefoot (*Spea hammondii*)	-	-	SSC; SJMSCP	California endemic species of vernal pools, swales, wetlands and adjacent grasslands throughout the Central Valley.	March-May	Absent; there is no suitable habitat onsite.
Reptiles						
Giant garter snake (*Thamnophis gigas*)	FT	CT	SJMSCP	Freshwater ditches, sloughs, and marshes in the Central Valley. Almost extirpated from the southern parts of its range.	April-October	Low Potential; the irrigation ditch and upland/vineyard near the irrigation ditch supports marginal habitat.

Table 1. Potentially Occurring Special-Status Species

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	FESA	CESA/ NPPA	Other			
Northwestern pond turtle (*Actinemys marmorata*)	-	-	SSC; SJMSCP	Requires basking sites and upland habitats up to 0.5 km from water for egg laying. Uses ponds, streams, detention basins, and irrigation ditches.	April-September	Low Potential; the irrigation ditch and upland/vineyard near the irrigation ditch supports marginal habitat.
Birds						
Rufous hummingbird *(Selasphorus rufus)*	-	-	BCC	Breeds in British Columbia and Alaska (does not breed in California). Winters in coastal Southern California south into Mexico. Common migrant during March-April in Sierra Nevada foothills and June-August in Lower Conifer to Alpine zone of Sierra Nevada. Nesting habitat includes secondary succession communities and openings, mature forests, parks and residential area.	April-July	Absent; this species does not nest in the region.
California black rail (*Laterallus jamaicensis coturniculus*)	-	CT	BCC, CFP, SJMSCP	Salt marsh, shallow freshwater marsh, wet meadows, and flooded grassy vegetation. In California, primarily found in coastal and Bay-Delta communities, but also in Sierran foothills (Butte, Yuba, Nevada, Placer, El Dorado counties)	March-September (breeding)	Absent; there is no suitable habitat onsite.

Table 1. Potentially Occurring Special-Status Species

Common Name (Scientific Name)	Status FESA	Status CESA/ NPPA	Status Other	Habitat Description	Survey Period	Potential To Occur Onsite
Greater sandhill crane *(Antigone canadensis tabida)*	-	CT	CFP; SJMSCP	Breeds in NE California, Nevada, Oregon, Washington, and BC, Canada; winters from CA to Florida. In winter, they forage in burned grasslands, pastures, and feed on waste grain in a variety of agricultural settings (corn, wheat, milo, rice, oats, and barley), tilled fields, recently planted fields, alfalfa fields, row crops and burned rice fields.	March-August (breeding); September-March (wintering)	Absent; there is no suitable wintering habitat onsite, and this species does not nest in the region.
Whimbrel *(Numenius phaeopus)*	-	-	BCC	Nesting occurs in Alaska and northern Canada; winters in coastal Oregon, California, south to Central America; wintering habitat includes tidal mudflats, coral reefs, lagoons, marshes, swamps, estuaries, sandy beaches, and rocky shores.	October-March	Absent; there is no suitable wintering habitat onsite, and this species does not nest in the region.
Long-billed curlew (*Numenius americanus*)	-	-	BCC	Breeds east of the Cascades in Washington, Oregon, northeastern California (Siskiyou, Modoc, Lassen counties), east-central California (Inyo County), through Great Basin region into Great Plains. Winters in California, Texas, and Louisiana. Wintering habitat includes tidal mudflats and estuaries, wet pastures, sandy beaches, salt marsh, managed wetlands, evaporation ponds, sewage ponds, and grasslands.	September-March (wintering)	Absent; there is no suitable wintering habitat onsite, and this species does not nest in the region.

Table 1. Potentially Occurring Special-Status Species

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	FESA	CESA/ NPPA	Other			
Marbled godwit (*Limosa fedoa*)	-	-	BCC	Nests in Montana, North and South Dakota, Minnesota, into Canada. Winter range along Pacific Coast from British Columbia south to Central America, with small numbers wintering in interior California. Wintering habitat includes coastal mudflats, meadows, estuaries, sandy beaches, sandflats, and salt ponds.	August-April (Migrant/ Wintering in CA)	Absent; there is no suitable wintering habitat onsite, and this species does not nest in the region.
Short-billed Dowitcher *(Limnodromus griseus)*	-	-	BCC	Nests in Canada, southern Alaska; winters in coastal California south to South America; wintering habitat includes coastal mudflats and brackish lagoons	Wintering/ Migrant period: late-August-May	Absent; there is no suitable wintering habitat onsite, and this species does not nest in the region.
White-tailed kite (*Elanus leucurus*)	-	-	CFP, SJMSCP	Nesting occurs within trees in low elevation grassland, agricultural, wetland, oak woodland, riparian, savannah, and urban habitats.	March-August	Potential; larger trees onsite represent potential nesting habitat.
Cooper's hawk *(Accipiter cooperii)*	-	-	CDFW WL; SJMSCP	Nests in trees in riparian woodlands in deciduous, mixed and evergreen forests, as well as urban landscapes	March-July	Potential; larger trees onsite represent potential nesting habitat.
Bald eagle (*Haliaeetus leucocephalus*)	Delisted	CE	CFP, BCC	Typically nests in forested areas near large bodies of water in the northern half of California; nest in trees and rarely on cliffs; wintering habitat includes forest and woodland communities near water bodies (e.g. rivers, lakes), wetlands, flooded agricultural fields, open grasslands	February – September (nesting); October-March (wintering)	Absent; there is no suitable habitat onsite.

Table 1. Potentially Occurring Special-Status Species

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	FESA	CESA/ NPPA	Other			
Swainson's hawk (*Buteo swainsoni*)	-	CT	BCC, SJMSCP	Nesting occurs in trees in agricultural, riparian, oak woodland, scrub, and urban landscapes. Forages over grassland, agricultural lands, particularly during disking/harvesting, irrigated pastures	March-August	Potential; larger trees onsite represent potential nesting habitat.
Burrowing owl *(Athene cunicularia)*	-	-	BCC, SSC, SJMSCP	Nests in burrows or burrow surrogates in open, treeless, areas within grassland, steppe, and desert biomes. Often with other burrowing mammals (e.g. prairie dogs, California ground squirrels). May also use human-made habitat such as agricultural fields, golf courses, cemeteries, roadside, airports, vacant urban lots, and fairgrounds.	February-August	Potential; California ground squirrel burrows throughout the site, especially near the irrigation ditch, represent potential habitat.
Lewis' woodpecker (*Melanerpes lewis*)	-	-	BCC	In California, breeds in Siskiyou and Modoc Counties, Warmer Mountains, inner coast ranges from Tehama to San Luis Obispo Counties, San Bernardino Mountains, and Big Pine Mountain (Inyo County); nesting habitat includes open ponderosa pine forest, open riparian woodland, logged/burned forest, and oak woodlands. Does not breed on the west side of Sierran crest (Beedy and Pandalfino 2013).	April-September (breeding); September-March (winter in Central Valley).	Absent; there is no suitable wintering habitat onsite, and this species does not nest in the region.
Nuttall's woodpecker *(Dryobates nuttallii)*	-	-	BCC	Resident from northern California south to Baja California. Nests in tree cavities in oak woodlands and riparian woodlands.	April-July	Absent; there is no suitable habitat onsite.

Table 1. Potentially Occurring Special-Status Species

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	FESA	CESA/ NPPA	Other			
Loggerhead shrike (*Lanius ludovicianus*)	-	-	BCC, SSC; SJMSCP	Found throughout California in open country with short vegetation, pastures, old orchards, grasslands, agricultural areas, open woodlands. Not found in heavily forested habitats.	March-July	Potential; trees and shrubs onsite represent potential nesting habitat.
Least Bell's vireo (*Vireo bellii pusillus*)	FE	CE	BCC	In California, breeding range includes Ventura, Los Angeles, Riverside, Orange, San Diego, and San Bernardino counties, and rarely Stanislaus and Santa Clara counties Nesting habitat includes dense, low shrubby vegetation in riparian areas, brushy fields, young second-growth woodland, scrub oak, coastal chaparral and mesquite brushland. Winters in southern Baja California Sur.	April 1-July 31	Absent; there is no suitable habitat onsite.
Yellow-billed magpie (*Pica nuttallii*)	-	-	BCC	Endemic to California; found in the Central Valley and coast range south of San Francisco Bay and north of Los Angeles County; nesting habitat includes oak savannah with large in large expanses of open ground; also found in urban parklike settings.	April-June	Potential; larger trees onsite represent potential nesting habitat.
Oak titmouse (*Baeolophus inornatus*)			BCC	Nests in tree cavities within dry oak or oak-pine woodland and riparian; where oaks are absent, they nest in juniper woodland, open forests (gray, Jeffrey, Coulter, pinyon pines and Joshua tree)	March-July	Absent; there is no suitable habitat onsite.

Table 1. Potentially Occurring Special-Status Species

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	FESA	CESA/ NPPA	Other			
Wrentit (*Chamaea fasciata*)	-	-	BCC	Coastal sage scrub, northern coastal scrub, chaparral, dense understory of riparian woodlands, riparian scrub, coyote brush and blackberry thickets, and dense thickets in suburban parks and gardens.	March-August	Absent; there is no suitable habitat onsite.
California thrasher (*Toxostoma redivivum*)	-	-	BCC	Resident and endemic to coastal and Sierra Nevada-Cascade foothill areas of California. Nests are usually well hidden in dense shrubs, including scrub oak, California lilac, and chamise.	February-July	Absent; there is no suitable habitat onsite.
Lawrence's goldfinch (*Spinus lawrencei*)	-	-	BCC	Breeds in Sierra Nevada and inner Coast Range foothills surrounding the Central Valley and the southern Coast Range to Santa Barbara County east through southern California to the Mojave Desert and Colorado Desert into the Peninsular Range. Nests in arid and open woodlands with chaparral or other brushy areas, tall annual weed fields, and a water source (e.g. small stream, pond, lake), and to a lesser extent riparian woodland, coastal scrub, evergreen forests, pinyon-juniper woodland, planted conifers, and ranches or rural residences near weedy fields and water.	March-September	Absent; there is no suitable habitat onsite.
Song sparrow "Modesto" (*Melospiza melodia heermanni*)	-	-	BCC, SSC	Resident in central and southwest California, including Central Valley; nests in marsh, scrub habitat	April-June	Absent; there is no suitable habitat onsite.

Table 1. Potentially Occurring Special-Status Species

Common Name (Scientific Name)	Status FESA	Status CESA/ NPPA	Status Other	Habitat Description	Survey Period	Potential To Occur Onsite
San Clemente spotted towhee (*Pipilo maculatus clementae*)	-	-	BCC, SSC	Resident on Santa Catalina and Santa Rosa Islands; extirpated on San Clemente Island, California. Breeds in dense, broadleaf shrubby brush, thickets, and tangles in chaparral, oak woodland, island woodland, and Bishop pine forest.	April-July	Absent; there is no suitable habitat onsite. This subspecies does not occur in the region.
Tricolored blackbird (*Agelaius tricolor*)	-	CT	BCC, SSC, SJMSCP	Breeds locally west of Cascade-Sierra Nevada and southeastern deserts from Humboldt and Shasta Cos south to San Bernardino, Riverside and San Diego Counties. Central California, Sierra Nevada foothills and Central Valley, Siskiyou, Modoc and Lassen Counties. Nests colonially in freshwater marsh, blackberry bramble, milk thistle, triticale fields, weedy (mustard, mallow) fields, giant cane, safflower, stinging nettles, tamarisk, riparian scrublands and forests, fiddleneck and fava bean fields.	March-August	Absent; there is no suitable habitat onsite.
Saltmarsh common yellowthroat (*Geothlypis trichas sinuosa*)	-	-	BCC, SSC	Breeds in salt marshes of San Francisco Bay; winters San Francisco south along coast to San Diego County	March-July	Absent; there is no suitable habitat onsite. This subspecies does not occur in the region.

Table 1. Potentially Occurring Special-Status Species

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	FESA	CESA/ NPPA	Other			
Mammals						
Riparian brush rabbit *(Sylvilagus bachmani riparius)*	FE	CE	-	Riparian brush rabbits inhabit dense, brushy areas of valley riparian forests marked by extensive thickets of California wild rose (*Rosa californica*), California blackberries (*Rubus ursinus*), and willows (*Salix* spp.). Thriving mats of low-growing vines and shrubs serve as ideal living sites where they build tunnels under and through the vegetation.	Any season	Absent; there is no suitable habitat onsite.

Status Codes NOTE:

FESA	Federal Endangered Species Act
CESA	California Endangered Species Act
FE	FESA listed, Endangered.
FT	FESA listed, Threatened.
FC	Candidate for FESA listing as Threatened or Endangered.
BCC	USFWS Bird of Conservation Concern (USFWS 2008).
CR	CESA- or NPPA-listed, Rare.
CT	CESA- or NPPA-listed, Threatened.
CE	CESA or NPPA listed, Endangered.
CFP	California Fish and Game Code Fully Protected Species (§ 3511-birds, § 4700-mammals, §5 050-reptiles/amphibians).
CDFW WL	CDFW Watch List
SSC	CDFW Species of Special Concern (CDFW, updated July 2017).
SJMSCP	SJMSCP Covered Species
1B	CRPR/Rare or Endangered in California and elsewhere.
2B	Plants rare, threatened, or endangered in California but more common elsewhere.
4	CRPR/Plants of Limited Distribution – A Watch List.
0.1	Threat Rank/Seriously threatened in California (over 80 percent of occurrences threatened / high degree and immediacy of threat)
0.2	Threat Rank/Moderately threatened in California (20-80 percent occurrences threatened / moderate degree and immediacy of threat)
0.3	Threat Rank/Not very threatened in California (<20 percent of occurrences threatened / low degree and immediacy of threat or no current threats known)
Delisted	Formally Delisted (delisted species are monitored for five years).

4.6.1 Plants

There is one potential special-status plant, Sanford's arrowhead, that may occur within the Study Area

Sanford's Arrowhead

Sanford's arrowhead (*Sagittaria sanfordii*) is not listed pursuant to the federal or California ESAs but is designated as a CRPR 1B.2 species. This species is a perennial rhizomatous herb that occurs in shallow, freshwater marshes and swamps (CNPS 2020). Sanford's arrowhead blooms from May through October and is known to occur at elevations ranging from sea level to 2,133 feet above MSL (CNPS 2020). Sanford's arrowhead is endemic to California; the current range of this species includes Butte, Del Norte, El Dorado, Fresno, Merced, Mariposa, Marin, Napa, Orange, Placer, Sacramento, San Bernardino, San Joaquin, Shasta, Solano, Tehama, Tulare, Ventura, and Yuba counties; it is believed to be extirpated from both Orange and Ventura counties (CNPS 2020). The irrigation ditch running along the northern boundary represents onsite marginally suitable habitat for this species.

4.6.2 Invertebrates

The Study Area is comprised entirely of agricultural or disturbed habitats. There is no suitable habitat for special-status invertebrates.

4.6.3 Fish

The Study Area is comprised primarily of agricultural or disturbed habitats and includes the south half of the agricultural ditch running along the northern site boundary. There is no suitable habitat for special-status fish.

4.6.4 Amphibians

The Study Area is comprised entirely of agricultural or disturbed habitats. There is no suitable habitat for special-status amphibians.

4.6.5 Reptiles

The Study Area supports marginally suitable habitat for two special-status reptiles: giant garter snake (*Thamnophis gigas*) and northwestern pond turtle (*Actinemys marmorata*). The following is a brief discussion of special-status reptiles with the potential to occur within the Study Area.

Giant Garter Snake

The giant garter snake is listed as a threatened species pursuant to both the California and federal ESAs and a SJMSCP covered species. Giant garter snakes typically inhabit perennial ponds, marshes, slow-moving streams, and agricultural ditches containing adequate water during the spring and summer months. Giant garter snakes are most active from early spring through mid-fall (USFWS 1999). The giant garter snake is endemic to the floors of the Sacramento and San Joaquin valleys of California and probably occurred historically from Butte County south to Buena Vista Lake in Kern County (USFWS 1999). The irrigation ditch and adjacent uplands located along the northern border represents marginally suitable habitat for giant garter snake. The intermittent nature of the irrigation ditch, absence of dense emergent vegetation cover in the channel, and farmed adjacent uplands reduces, but does not eliminate, the likelihood for giant garter snake presence in the Study Area.

Northwestern Pond Turtle

The northwestern pond turtle is not listed and protected under either the federal or California ESAs but is considered a CDFW SSC and a SJMSCP covered species. They can occur in a variety of waters including ponds, lakes, streams, reservoirs, settling ponds of wastewater treatment plants, and other permanent and ephemeral wetlands (Bury et al. 2012). In streams and other lotic features, they generally require slack or slow water microhabitats and basking areas such as logs, rocks, banks, and brush piles for thermoregulation (Bury et al. 2012). The intermittent nature and shallow depths of the irrigation ditch reduces, but does not eliminate, the likelihood for northwestern pond turtle presence in the Study Area..

4.6.6 Birds

The Study Area supports potentially suitable nesting and foraging habitat for several special-status birds, including white-tailed kite (*Elanus leucurus*), Cooper's hawk (*Accipiter cooperii*), Swainson's hawk (*Buteo swainsoni*), burrowing owl (*Athene cunicularia*), loggerhead shrike (*Lanius ludovicianus*), and yellow-billed magpie (*Pica nuttallii*). The following is a brief discussion of special-status birds with the potential to occur within the Study Area.

White-Tailed Kite

White-tailed kite is not listed pursuant to either the federal or California ESAs; however, the species is fully protected pursuant to Section 3511 of the California Fish and Game Code and a SJMSCP covered species. This species is a common resident in the Central Valley and the entire length of the California coast, and all areas up to the Sierra Nevada foothills and southeastern deserts (Dunk 2020). In northern California, white-tailed kite nesting occurs from March through early August, with nesting activity peaking from March through June. Nesting occurs in trees within riparian, oak woodland, savannah, and agricultural communities that are near foraging areas such as low elevation grasslands, agricultural, meadows, farmlands, savannahs, and emergent wetlands (Dunk 2020). The trees located within the onsite ruderal areas and in ruderal areas bordering the Study Area represent potential nesting habitat for this species.

Cooper's Hawk

Cooper's hawk is not listed pursuant to either the federal or California ESAs; however, it is a CDFW "watch list" species and a SJMSCP covered species. Typical nesting and foraging habitats include riparian woodland, dense oak woodland, and other woodlands near water. Cooper's hawk nest throughout California from Siskiyou County to San Diego County and includes the Central Valley (Rosenfield et al. 2020). Breeding occurs during March through July, with a peak from May through July. The trees located within the onsite ruderal areas and in ruderal areas bordering the Study Area represent potential nesting habitat for this species.

Swainson's Hawk

The Swainson's hawk is listed as a threatened species and protected pursuant to the California ESA and a SJMSCP covered species. This species nests in North America (Canada, western U.S., and Mexico) and typically winters from South America north to Mexico. However, a small population has been observed wintering in the Sacramento-San Joaquin River Delta (Bechard et al. 2020). In California, the nesting season for Swainson's hawk ranges from mid-March to late August.

Swainson's hawks nest within tall trees in a variety of wooded communities including riparian, oak woodland, roadside landscape corridors, urban areas, and agricultural areas, among others. Foraging habitat includes open grassland, savannah, low-cover row crop fields, and livestock pastures. In the Central Valley, Swainson's hawks typically feed on a combination of California vole (*Microtus californicus*), California ground squirrel, ring-necked pheasant (*Phasianus colchicus*), many passerine birds, and grasshoppers (*Melanopulus* species). Swainson's hawks are opportunistic foragers and will readily forage in association with agricultural mowing, harvesting, disking, and irrigating (Estep 1989). The removal of vegetative cover by such farming activities results in more readily available prey items for this species. The trees located within the onsite ruderal areas and in ruderal areas bordering the Study Area represent potential nesting habitat for this species. Suitable Swainson's hawk foraging habitat onsite is limited to the fallow agricultural field.

Burrowing Owl

The burrowing owl is not listed pursuant to either the federal or California ESAs; however, it is designated as a BCC by the USFWS, an SSC by the CDFW, and is a SJMSCP covered species. Burrowing owls inhabit dry open rolling hills, grasslands, desert floors, and open bare ground with gullies and arroyos. They can also inhabit developed areas such as golf courses, cemeteries, roadsides within cities, airports, vacant lots in residential areas, school campuses, and fairgrounds (Poulin et al. 2020). This species typically uses burrows created by fossorial mammals, most notably the California ground squirrel, but may also use man-made structures such as concrete culverts or pipes; concrete, asphalt, or wood debris piles; or openings beneath concrete or asphalt pavement (CDFG 2012). The breeding season typically occurs between February 1 and August 31 (CDFG 2012). No burrowing owls or sign were observed during the initial site assessment in May 2020, but there are ground squirrel burrows scattered along the irrigation ditch adjacent upland, including within the vineyard, that represent potential habitat for burrowing owls.

Loggerhead Shrike

The loggerhead shrike is not listed pursuant to either the federal or California ESAs; but is considered a BCC by the USFWS, an SSC by the CDFW, and is a SJMSCP covered species. Loggerhead shrikes nest throughout California except the northwestern corner, montane forests, and high deserts (Small 1994). Loggerhead shrikes nest in small trees and shrubs in open country with short vegetation such as pastures, old orchards, mowed roadsides, cemeteries, golf courses, agricultural fields, riparian areas, and open woodlands (Yosef 2020). The nesting season extends from March through July. Small trees and shrubs in the ruderal areas onsite and adjacent to the site represent potentially suitable nesting habitat for this species.

Yellow-Billed Magpie

The yellow-billed magpie is not listed pursuant to either the federal or California ESAs but is considered a USFWS BCC. This endemic species is a yearlong resident of the Central Valley and Coast Ranges from San Francisco Bay to Santa Barbara County. Yellow-billed magpies build large, bulky nests in trees in a variety of open woodland habitats, typically near grassland, pastures or cropland. Nest building begins in late-January to mid-February, which may take up to six to eight weeks to complete, with eggs laid during April-May, and fledging during May-June (Koenig and Reynolds 2020). The young leave the nest at about 30 days after hatching (Koenig and Reynolds 2020). Yellow-billed magpies are highly susceptible to West Nile Virus, which may have been the cause of death to thousands of magpies during 2004-2006 (Koenig and Reynolds 2020). The trees located within the ruderal areas onsite and bordering the Study Area represent potential nesting habitat for this species.

Migratory Bird Treaty Act Protected Birds

While not considered special status as previously defined, the Study Area supports potential nesting habitat for other, more common, bird species that are protected under the MBTA and the Fish and Game Code of California. These could include common species such as northern mockingbird and house finch, among others. Trees, shrubs, and annual grassland onsite and immediately adjacent the site represents potential nesting habitat for protected birds.

protected birds.

4.6.7 Mammals

The Study Area is comprised entirely of agricultural or disturbed habitats. There is no suitable habitat for special-status mammals.

4.7 Sensitive Natural Communities

No sensitive natural communities were found onsite during the field assessment.

4.8 Wildlife Movement/Corridors

The Study Area is comprised of agricultural lands and does not support significant wildlife habitat. It is located in an agricultural setting surrounded by roads. The irrigation ditch located along the northern boundary may support localized wildlife movement. However, there are no signification habitat features (e.g., wetlands) within or adjacent to the Study Area. Project development is not expected to impact wildlife movement. The Survey Area does not support known nursery sites or mule deer fawning areas (CDFW 2020b). No nursery sites were identified during the field assessment.

4.9 Critical Habitat

There is no designated Critical Habitat within the Project.

4.10 Oak Trees

Native oak trees (e.g. Valley and blue oak [*Quercus douglasii*]) are present along the northern and western boundaries and centrally located in the southern portion of the Survey Area (Figure 2).

5.0 RECOMMENDATIONS

5.1 Waters of the U.S. and State

The only aquatic resource with the Study Area is an irrigation ditch located along the northern boundary. There are no proposed direct impacts to the irrigation ditch according to the Project Applicant.

5.2 Special-Status Species

5.2.1 SJMSCP Preconstruction Surveys

The following categories of preconstruction surveys conducted by the JPA are necessary for the implementation of the SJMSCP:

- The San Joaquin Council of Governments (SJCOG) shall conduct preconstruction surveys to verify vegetation types affected by the project and to determine if SJMSCP Covered Species are present and, if present, attaching Incidental Take Minimization Measures as conditions of project approval (see SJMSCP Section 5.2.2.5 for survey methodologies). These preconstruction surveys shall be conducted in the field when a project is located on suitable habitat for one or more of the SJMSCP Covered Species.
- Preconstruction surveys conducted prior to (or, for some Incidental Take Minimization Measures, during) ground-disturbing activities to determine if SJMSCP Covered Species have been successfully relocated and/or to determine if other Incidental Take Minimization Measures have been implemented, as specified in the SJMSCP conditions of approval.

5.2.2 Sanford's Arrowhead

The irrigation ditch onsite represents potentially suitable habitat for Sanford's arrowhead. While the likelihood of Sanford's arrowhead is low due to the intermittent nature of the ditch, the potential cannot be ruled out based on this assessment. The following SJMSCP measure is recommended to reduce potential impacts to Sanford's arrowhead:

- Preconstruction survey shall occur based on blooming period for the species (May-October) and in accordance with the provisions of SJMSCP Section 5.2.2.5 (B) unless otherwise approved pursuant to SJMSCP Section 5.2.2.5 (C), unless full avoidance of all potential suitable habitat for the species occurs pursuant to SJMSCP Sections 5.5.9 (F) for narrowly distributed plant species or unless no kill/no conversion of occupied habitat limits are lifted pursuant to SJMSCP Section 5.5.2.1.

5.2.3 Western Pond Turtle

The SJMSCP only addresses impacts to potential western pond turtle nesting habitat, of which there is none within the Study Area. However, the site supports potential upland habitat that may be used by foraging and transitory turtles. The following measures are recommended to reduce potential impacts to western pond turtles:

- A western pond turtle preconstruction survey will be conducted by a qualified biologist within 14 days prior to the initiation of ground disturbance (e.g., tree/vegetation removal, mass grading). The survey will consist of the entire Project footprint, including accessible areas within 100 feet.
- If individual western pond turtles are found during the preconstruction survey, a qualified biologist with a CDFW Scientific Collecting Permit shall relocate the individuals, with the concurrence of CDFW, to a site with suitable habitat. Relocation methods shall be approved by CDFW.

5.2.4 Giant Garter Snake

For areas with potential giant garter snake habitat, the following measures from the SJMSCP are required:

- Construction shall occur during the active period for the snake, between May 1 and October 1. SJCOG, with concurrence of the permitting Agencies, shall determine if additional measures are necessary to minimize and avoid take for construction between October 2 and April 30.
- Limit vegetation clearing within 200 feet of the banks of potential giant garter snake aquatic habitat to the minimal necessary.
- Where feasible, confine movement of heavy equipment within 200 feet of the banks of potential giant garter snake aquatic habitat to existing roadways to minimize habitat disturbance.
- Prior to ground disturbance, all onsite construction personnel shall be given instruction regarding the presence of SJMSCP Covered Species and the importance of avoiding impacts to these species and their habitats.
- Install temporary fencing at the edge of the construction area and the adjacent irrigation ditch.
- Restrict working areas, spoils and equipment storage and other project activities to areas outside of the irrigation ditch.
- Maintain water quality and limit construction runoff into the irrigation ditch through best-management-practices.
- A preconstruction survey for giant garter snake (conducted after completion of environmental reviews and prior to ground disturbance) shall occur within 24 hours of ground disturbance.

5.2.5 Swainson's Hawk

The 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 Applicant elect to retain a nest tree, and in order to encourage tree retention, the following SJMSCP Incidental Take Minimization Measure shall be implemented during construction actives:

- 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, measure from the nest.
- If the Applicant elects to remove a nest tree, the nest trees may be removed between September 1 and February 15, when the nests are unoccupied.

5.2.6 Burrowing Owl

The presence of ground squirrels and squirrel burrows are attractive to burrowing owls. Burrowing owls may be discouraged from entering or occupying construction area by discouraging the presence of ground squirrels. The Applicant could employ one of the following practices early in the planning process, to prevent ground squirrels from occupying the Project:

- Plant new vegetation entirely covering the site at a height of approximately 36 inches above the ground. Vegetation should be retained until construction begins.
- Disk or plow the entire project site to destroy any ground squirrel burrows. At the same time burrows are destroyed, ground squirrels should be removed by employing approved methods to prevent reoccupation of the Project site. Detailed descriptions of these methods are included in Appendix A of the SJMSCP, *Protecting Endangered Species, Interim Measures for Use of Pesticides in San Joaquin County*, dated March 2000. They include the use of anticoagulants, zinc phosphide, fumigants, or traps.

If the above measures were not attempted or were unsuccessful, and burrowing owls are known to occupy the Project site (per the SJMSCP preconstruction survey), then the following measures shall be implemented:

- During the non-breeding season (September 1 through January 31) burrowing owls occupying the Project site should be evicted from the Project site by passive relocation as described in the CDFW's Staff Report on Burrowing Owls (CDFG 2012). Passive relocation is a technique of installing one-way doors in burrow openings to temporarily or permanently evict burrowing owls and prevent burrow re-occupation (CDFG 2012).
- During the breeding season (February 1 through August 31) occupied burrows shall not be disturbed and shall be provided within a 75-meter protective buffer until and unless SJCOG, with concurrence of the permitting Agencies, or unless a qualified biologist approved by the permitting Agencies verifies through non-invasive means that either 1) the birds have not begun

egg laying, or 2) juveniles from the occupied burrows are foraging independently and are capable of independent survival. Once the fledglings are capable of independent survival, the burrow can be destroyed.

5.2.7 San Joaquin County Multi-Species Habitat Conservation and Open Space Plan and Migratory Bird Treaty Act Protected Birds (including Raptors)

The Survey Area supports suitable nesting habitat for a variety of special-status birds and birds protected under the MBTA. To minimize impacts to protected bird and active nests during construction, the following mitigation measures are recommended:

- Conduct a pre-construction nesting raptor and bird survey of all suitable habitat on the Project site within 14 days of the commencement ground disturbance (e.g., tree/vegetation removal, mass grading) during the nesting season (February 1 – August 31). Where accessible, surveys should be conducted within 100 feet of the Project site.
- If active nests are found, a no-disturbance buffer around the nest shall be established. Per the SJMSCP, a 100-foot buffer shall be established and maintained during the nesting season for white-tailed kite, Cooper's hawk, loggerhead shrike, yellow-billed magpie, and other birds protected under the MBTA.
- The buffer shall be maintained until the fledglings are capable of flight and become independent of the nest, to be determined by a qualified biologist. Once the young are independent of the nest, no further measures are necessary.

5.3 Sensitive Natural Communities

There are no sensitive natural communities onsite. No measures are recommended.

5.4 Wildlife Movement/Corridors and Nursery Sites

Wildlife have potential to use the Project site for localized wildlife movement. However, Project development would not constitute a significant loss of the available migration habitat in the area. No measures are recommended.

5.5 Oak Trees

Oak trees are protected under Title 9 (Development Title), Division 15, Chapter 9-1505 of the Ordinance Code of San Joaquin County, California. There are scattered valley oaks found along the northern and western boundaries of the Survey Area. The following measures are recommended to reduce impacts to oak trees:

- Avoid removal of existing oak trees to the extent feasible.

- If removal of oak trees is required, a certified arborist shall survey the site to identify Heritage Oak Trees, Historical Trees, and/or Native Oak Trees, as defined by the Ordinance Code. The arborist report shall be submitted to the County.
- The removal of a Native Oak Tree, Heritage Oak Tree, or Historical Tree shall require an approved Improvement Plan application, as specified in Chapter 9-884 of Title 9-Development Title, and shall be subject to the provisions of this Chapter, unless exempted by Sections 9-1505.8 or 9-1505.9.

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LIST OF ATTACHMENTS

Attachment A – Special-Status Species Searches (9-Quad CNPS Search, CNNDB Search, and Study Area IPaC Search)

Attachment B – Representative Site Photographs

ATTACHMENT A

Special-Status Species Searches
(9-Quad CNPS Search, CNNDB Search, and Study Area IPaC Search)

CNPS California Native Plant Society

Inventory of Rare and Endangered Plants

*The database used to provide updates to the Online Inventory is under construction. View updates and changes made since May 2019 here.

Plant List

19 matches found. *Click on scientific name for details*

Search Criteria

Found in Quads 3812124, 3812123, 3812122, 3812114, 3812113, 3812112, 3712184 3712183 and 3712182;

Modify Search Criteria Export to Excel Modify Columns Modify Sort Display Photos

Scientific Name	Common Name	Family	Lifeform	Blooming Period	CA Rare Plant Rank	State Rank	Global Rank
Astragalus tener var. tener	alkali milk-vetch	Fabaceae	annual herb	Mar-Jun	1B.2	S1	G2T1
Atriplex cordulata var. cordulata	heartscale	Chenopodiaceae	annual herb	Apr-Oct	1B.2	S2	G3T2
Blepharizonia plumosa	big tarplant	Asteraceae	annual herb	Jul-Oct	1B.1	S1S2	G1G2
Brasenia schreberi	watershield	Cabombaceae	perennial rhizomatous herb (aquatic)	Jun-Sep	2B.3	S3	G5
Carex comosa	bristly sedge	Cyperaceae	perennial rhizomatous herb	May-Sep	2B.1	S2	G5
Castilleja campestris var. succulenta	succulent owl's-clover	Orobanchaceae	annual herb (hemiparasitic)	(Mar)Apr-May	1B.2	S2S3	G4?T2T3
Centromadia parryi ssp. rudis	Parry's rough tarplant	Asteraceae	annual herb	May-Oct	4.2	S3	G3T3
Chloropyron palmatum	palmate-bracted bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	May-Oct	1B.1	S1	G1
Delphinium recurvatum	recurved larkspur	Ranunculaceae	perennial herb	Mar-Jun	1B.2	S2?	G2?
Extriplex joaquinana	San Joaquin spearscale	Chenopodiaceae	annual herb	Apr-Oct	1B.2	S2	G2
Hibiscus lasiocarpos var. occidentalis	woolly rose-mallow	Malvaceae	perennial rhizomatous herb (emergent)	Jun-Sep	1B.2	S3	G5T3
Lathyrus jepsonii var. jepsonii	Delta tule pea	Fabaceae	perennial herb	May-Jul(Aug-Sep)	1B.2	S2	G5T2
Legenere limosa	legenere	Campanulaceae	annual herb	Apr-Jun	1B.1	S2	G2
Lilaeopsis masonii	Mason's lilaeopsis	Apiaceae	perennial rhizomatous herb	Apr-Nov	1B.1	S2	G2
Limosella australis	Delta mudwort	Scrophulariaceae	perennial stoloniferous herb	May-Aug	2B.1	S2	G4G5
Sagittaria sanfordii	Sanford's arrowhead	Alismataceae	perennial rhizomatous herb (emergent)	May-Oct(Nov)	1B.2	S3	G3

Scutellaria lateriflora	side-flowering skullcap	Lamiaceae	perennial rhizomatous herb	Jul-Sep	2B.2	S2	G5
Symphyotrichum lentum	Suisun Marsh aster	Asteraceae	perennial rhizomatous herb	(Apr)May-Nov	1B.2	S2	G2
Trifolium hydrophilum	saline clover	Fabaceae	annual herb	Apr-Jun	1B.2	S2	G2

Suggested Citation

California Native Plant Society, Rare Plant Program. 2020. Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.39). Website http://www.rareplants.cnps.org [accessed 11 June 2020].

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The Jepson Flora Project
The Consortium of California Herbaria
CalPhotos

Questions and Comments
rareplants@cnps.org

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Selected Elements by Element Code

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Lodi South (3812113) OR Thornton (3812124) OR Lodi North (3812123) OR Lockeford (3812122) OR Terminous (3812114) OR Waterloo (3812112) OR Holt (3712184) OR Stockton East (3712182) OR Stockton West (3712183))

Element Code	Species	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
AAAAA01180	***Ambystoma californiense*** California tiger salamander	Threatened	Threatened	G2G3	S2S3	WL
AAABF02020	***Spea hammondii*** western spadefoot	None	None	G3	S3	SSC
AAABH01050	***Rana boylii*** foothill yellow-legged frog	None	Endangered	G3	S3	SSC
ABNKC06010	***Elanus leucurus*** white-tailed kite	None	None	G5	S3S4	FP
ABNKC19070	***Buteo swainsoni*** Swainson's hawk	None	Threatened	G5	S3	
ABNME03041	***Laterallus jamaicensis coturniculus*** California black rail	None	Threatened	G3G4T1	S1	FP
ABNSB10010	***Athene cunicularia*** burrowing owl	None	None	G4	S3	SSC
ABPBW01114	***Vireo bellii pusillus*** least Bell's vireo	Endangered	Endangered	G5T2	S2	
ABPBX03010	***Setophaga petechia*** yellow warbler	None	None	G5	S3S4	SSC
ABPBXA3010	***Melospiza melodia*** song sparrow ("Modesto" population)	None	None	G5	S3?	SSC
ABPBXB0020	***Agelaius tricolor*** tricolored blackbird	None	Threatened	G2G3	S1S2	SSC
AFCHA0209K	***Oncorhynchus mykiss irideus pop. 11*** steelhead - Central Valley DPS	Threatened	None	G5T2Q	S2	
AFCHB01040	***Hypomesus transpacificus*** Delta smelt	Threatened	Endangered	G1	S1	
AFCHB03010	***Spirinchus thaleichthys*** longfin smelt	Candidate	Threatened	G5	S1	
AFCJB34020	***Pogonichthys macrolepidotus*** Sacramento splittail	None	None	GNR	S3	SSC
AMAEB01021	***Sylvilagus bachmani riparius*** riparian brush rabbit	Endangered	Endangered	G5T1	S1	
ARAAD02030	***Emys marmorata*** western pond turtle	None	None	G3G4	S3	SSC
ARADB36150	***Thamnophis gigas*** giant gartersnake	Threatened	Threatened	G2	S2	
CTT44110CA	***Northern Hardpan Vernal Pool*** Northern Hardpan Vernal Pool	None	None	G3	S3.1	

Element Code	Species	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
CTT52410CA	***Coastal and Valley Freshwater Marsh*** Coastal and Valley Freshwater Marsh	None	None	G3	S2.1	
CTT61430CA	***Great Valley Valley Oak Riparian Forest*** Great Valley Valley Oak Riparian Forest	None	None	G1	S1.1	
CTT71130CA	***Valley Oak Woodland*** Valley Oak Woodland	None	None	G3	S2.1	
ICBRA03030	***Branchinecta lynchi*** vernal pool fairy shrimp	Threatened	None	G3	S3	
ICBRA03150	***Branchinecta mesovallensis*** midvalley fairy shrimp	None	None	G2	S2S3	
ICBRA06010	***Linderiella occidentalis*** California linderiella	None	None	G2G3	S2S3	
ICBRA10010	***Lepidurus packardi*** vernal pool tadpole shrimp	Endangered	None	G4	S3S4	
IICOL48011	***Desmocerus californicus dimorphus*** valley elderberry longhorn beetle	Threatened	None	G3T2	S2	
PDAPI0M051	***Cicuta maculata var. bolanderi*** Bolander's water-hemlock	None	None	G5T4T5	S2?	2B.1
PDAPI19030	***Lilaeopsis masonii*** Mason's lilaeopsis	None	Rare	G2	S2	1B.1
PDAST1C011	***Blepharizonia plumosa*** big tarplant	None	None	G1G2	S1S2	1B.1
PDASTE8470	***Symphyotrichum lentum*** Suisun Marsh aster	None	None	G2	S2	1B.2
PDCAB01010	***Brasenia schreberi*** watershield	None	None	G5	S3	2B.3
PDCAM0C010	***Legenere limosa*** legenere	None	None	G2	S2	1B.1
PDCHE040B0	***Atriplex cordulata var. cordulata*** heartscale	None	None	G3T2	S2	1B.2
PDCHE041F3	***Extriplex joaquinana*** San Joaquin spearscale	None	None	G2	S2	1B.2
PDFAB0F8R1	***Astragalus tener var. tener*** alkali milk-vetch	None	None	G2T1	S1	1B.2
PDFAB250D2	***Lathyrus jepsonii var. jepsonii*** Delta tule pea	None	None	G5T2	S2	1B.2
PDFAB400R5	***Trifolium hydrophilum*** saline clover	None	None	G2	S2	1B.2
PDLAM1U0Q0	***Scutellaria lateriflora*** side-flowering skullcap	None	None	G5	S2	2B.2
PDMAL0H0R3	***Hibiscus lasiocarpos var. occidentalis*** woolly rose-mallow	None	None	G5T3	S3	1B.2

Element Code	Species	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
PDRAN0B1J0	***Delphinium recurvatum*** recurved larkspur	None	None	G2?	S2?	1B.2
PDSCR0D3Z1	***Castilleja campestris var. succulenta*** succulent owl's-clover	Threatened	Endangered	G4?T2T3	S2S3	1B.2
PDSCR0J0J0	***Chloropyron palmatum*** palmate-bracted bird's-beak	Endangered	Endangered	G1	S1	1B.1
PDSCR10030	***Limosella australis*** Delta mudwort	None	None	G4G5	S2	2B.1
PMALI040Q0	***Sagittaria sanfordii*** Sanford's arrowhead	None	None	G3	S3	1B.2
PMCYP032Y0	***Carex comosa*** bristly sedge	None	None	G5	S2	2B.1

Record Count: 46

IPaC **U.S. Fish & Wildlife Service**

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

NOT FOR CONSULTATION

Location

San Joaquin County, California

Local office

Sacramento Fish And Wildlife Office

(916) 414-6600
(916) 414-6713

Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

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1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information.
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS

NOT FOR CONSULTATION

Riparian Brush Rabbit *Sylvilagus bachmani riparius* — Endangered
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/6189

Reptiles

NAME	STATUS
Giant Garter Snake *Thamnophis gigas* No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/4482	Threatened

Amphibians

NAME	STATUS
California Red-legged Frog *Rana draytonii* There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/2891	Threatened
California Tiger Salamander *Ambystoma californiense* There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/2076	Threatened

Fishes

NAME	STATUS
Delta Smelt *Hypomesus transpacificus* There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/321	Threatened

Insects

NAME	STATUS
Valley Elderberry Longhorn Beetle *Desmocerus californicus dimorphus* There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/7850	Threatened

Crustaceans

NAME	STATUS

NOT FOR CONSULTATION

Vernal Pool Fairy Shrimp Branchinecta lynchi — Threatened

There is **final** critical habitat for this species. Your location is outside the critical habitat.
https://ecos.fws.gov/ecp/species/498

Vernal Pool Tadpole Shrimp Lepidurus packardi — Endangered

There is **final** critical habitat for this species. Your location is outside the critical habitat.
https://ecos.fws.gov/ecp/species/2246

Flowering Plants

NAME	STATUS
Fleshy Owl's-clover Castilleja campestris ssp. succulenta There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/8095	Threatened

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

NOT FOR CONSULTATION

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php

- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NOT FOR CONSULTATION

NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)
Bald Eagle Haliaeetus leucocephalus This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Jan 1 to Aug 31
Burrowing Owl Athene cunicularia This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9737	Breeds Mar 15 to Aug 31
California Thrasher Toxostoma redivivum This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Jan 1 to Jul 31

Common Yellowthroat Geothlypis trichas sinuosa — Breeds May 20 to Jul 31

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/2084

Lawrence's Goldfinch Carduelis lawrencei — Breeds Mar 20 to Sep 20

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9464

Lewis's Woodpecker Melanerpes lewis — Breeds Apr 20 to Sep 30

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9408

Long-billed Curlew Numenius americanus — Breeds elsewhere

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/5511

Marbled Godwit Limosa fedoa — Breeds elsewhere

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9481

Nuttall's Woodpecker Picoides nuttallii — Breeds Apr 1 to Jul 20

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/9410

Oak Titmouse Baeolophus inornatus — Breeds Mar 15 to Jul 15

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9656

Rufous Hummingbird selasphorus rufus — Breeds elsewhere

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/8002

Short-billed Dowitcher Limnodromus griseus — Breeds elsewhere

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9480

NOT FOR CONSULTATION

Song Sparrow Melospiza melodia — Breeds Feb 20 to Sep 5

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Spotted Towhee Pipilo maculatus clementae — Breeds Apr 15 to Jul 20

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/4243

Tricolored Blackbird Agelaius tricolor — Breeds Mar 15 to Aug 10

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/3910

Whimbrel Numenius phaeopus — Breeds elsewhere

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9483

Wrentit Chamaea fasciata — Breeds Mar 15 to Aug 10

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Yellow-billed Magpie Pica nuttalli — Breeds Apr 1 to Jul 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9726

NOT FOR CONSULTATION

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ “Proper Interpretation and Use of Your Migratory Bird Report” before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that

week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.

2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

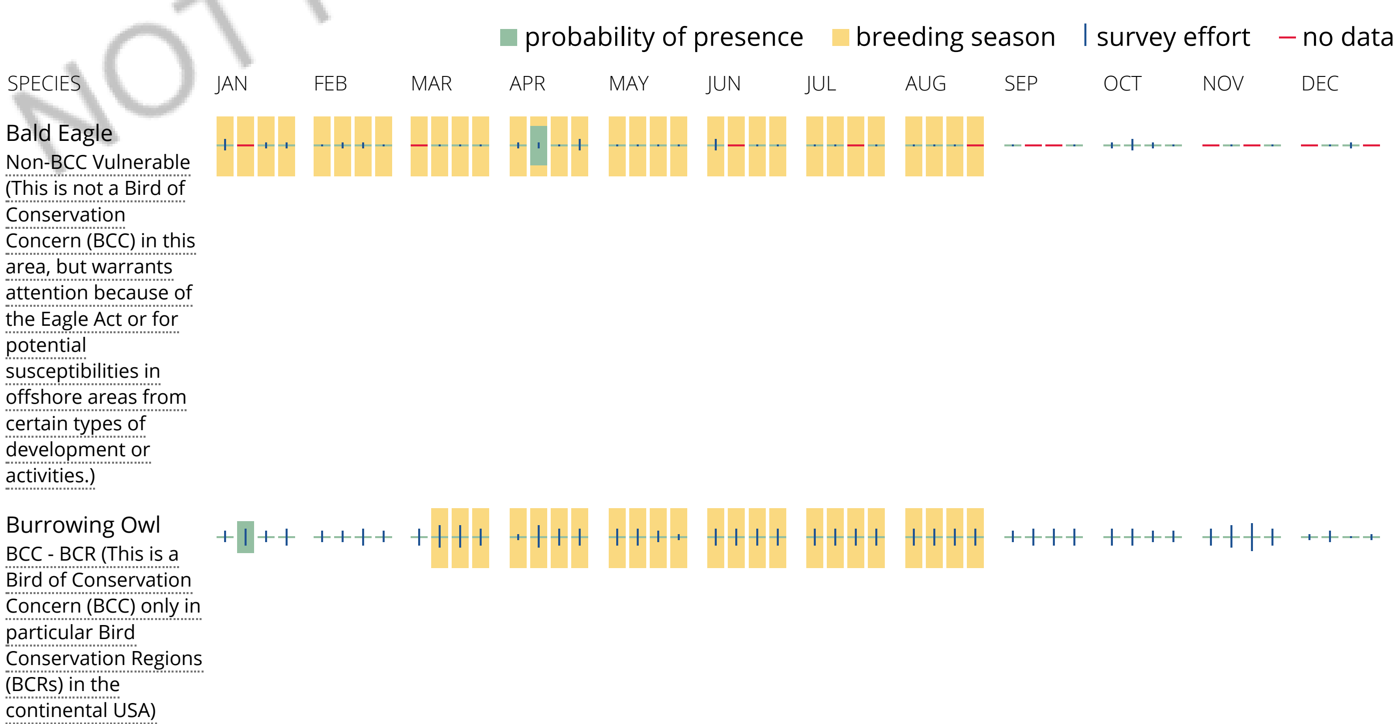
Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

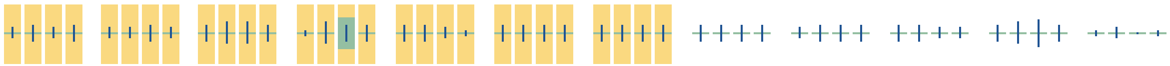
No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

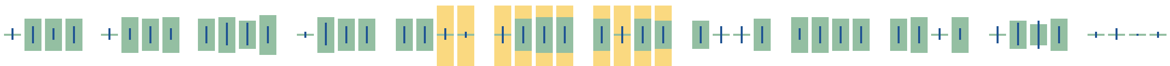
NOT FOR CONSULTATION



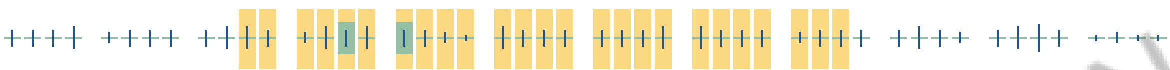
California Thrasher
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



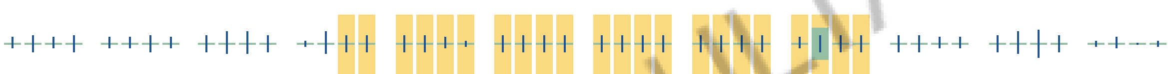
Common Yellowthroat
BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)



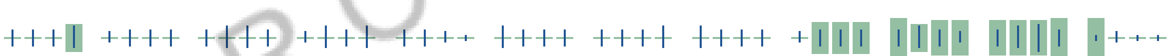
Lawrence's Goldfinch
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



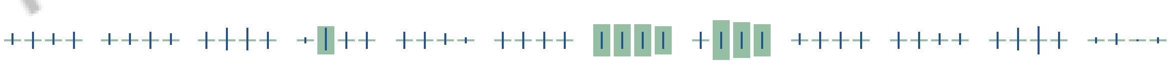
Lewis's Woodpecker
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



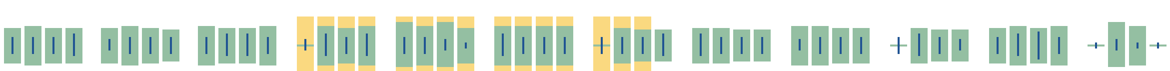
Long-billed Curlew
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Marbled Godwit
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

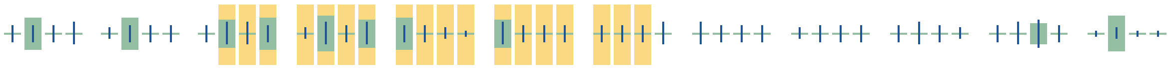


Nuttall's Woodpecker
BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)

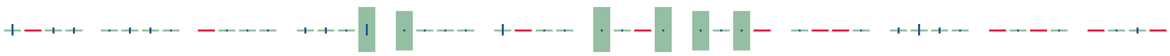


NOT FOR CONSULTATION

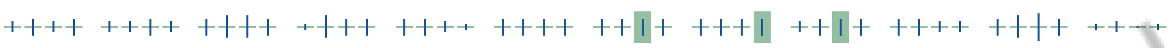
Oak Titmouse
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Rufous Hummingbird
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

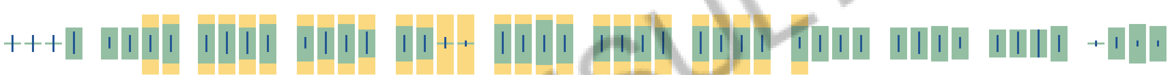


Short-billed Dowitcher
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

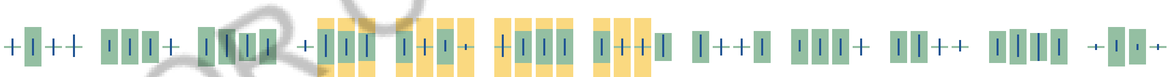


SPECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC

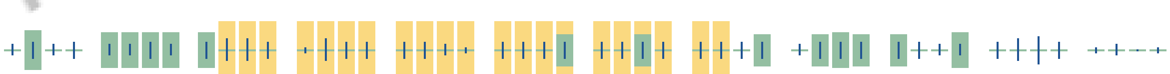
Song Sparrow
BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)



Spotted Towhee
BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)



Tricolored Blackbird
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Whimbrel
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

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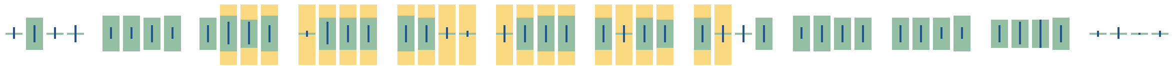
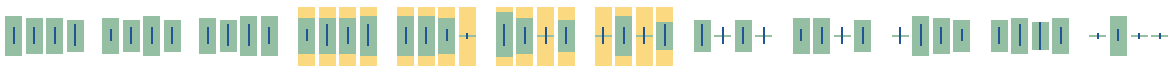
Wrentit
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Yellow-billed Magpie
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures and/or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

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To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ “What does IPaC use to generate the migratory birds potentially occurring in my specified location”. Please be aware this report provides the “probability of presence” of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the “no data” indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to

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confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

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Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

RIVERINE
  R4SBCx

A full description for each wetland code can be found at the National Wetlands Inventory website

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

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ATTACHMENT B

Representative Site Photos

Photo 1. Vineyard, Facing W, 5-21-2020

Photo 2. Vineyard and Ruderal Habitat, Facing S, 5-21-2020

Photo 3. Fallow Agricultural Field, Facing E, 5-21-2020

Photo 4. Ruderal Habitat, Eastern Boundary, Facing N, 5-21-2020

Photo 5. Ruderal Habitat, Facing South, 5-21-2020

Photo 6. Ruderal Habitat, Western Boundary, Facing N, 5-21-2020

Photo 7. Northern Boundary Irrigation Ditch, Facing W, 5-2-2020

Photo 8. NW Corner of Study Area, Facing W, 5-21-2020

APPENDIX F

Greenhouse Gases CalEEMod Report Output: Proposed Project
Total Construction-Related and Operational Gasoline Usage
February 2022
ECORP Consulting, Inc.

Proposed Project
Total Construction-Related and Operational
Gasoline Usage

Total Automotive Gallons During Project Construction

Action	Carbon Dioxide Equivalents (CO_2e) in Metric Tons	Conversion of Metric Tons to Kilograms	Construction Equipment Emission Factor[1]	Total Gallons of Fuel Consumed
Phase 1 Project Construction	1325	1325000	10.15	130,542
Phase 2 Project Construction (first year)	1454	1454000	10.15	143,251
Phase 2 Project Construction (second year)	1204	1204000	10.15	118,621
	Per CalEEMod Output Files.	Per Climate Registry Equation 13e	Per Climate Registry Equation 13e	

Notes:
[1] Fuel used by all construction equipment, including vehicle hauling trucks, assumed to be diesel.

Sources:
Climate Registry. 2016. *General Reporting Protocol for the Voluntary Reporting Program version 2.1*. January 2016.
http://www.theclimateregistry.org/wp-content/uploads/2014/11/General-Reporting-Protocol-Version-2.1.pdf
ECORP Consulting. 2020. Air Quality & Greenhouse Gas Assessment for the Gill Medical Center LLC, Health Facility and Hospital Project

Total Automotive Gallons During Project Operations

Area	Sub-Area	Cal. Year	Season	Veh_tech	EMFAC AC2011 Category	Fuel_GAS	Fuel_DSL	Daily Total	ANNUAL TOTAL
Sub-Areas	San Joaquin County	2019	Annual	All Vehicles	All Vehicles	401.16	1136.33	1537.49	561183.85

Sources:
Californai Air Resource Board. 2017. EMFAC2017 Mobile Emissions Model.

Total Helicopter Gallons During Project Operations

Table 1. Trip Dimensions

Parameter	Value	Units	Source
LTOs per Year	52	LTO/year	Heliport Design Document (Heliplanners, 2021)
LTOs per Day	3	LTO/day	Project Operations
Time per Flight	3.5	hours	Conservative Estimate
Number of Engines	2	each	Design Specifications

Table 2. Operational Parameters for T400-CP-400 Engine LTOs[1]

Mode	Power Setting	Fuel Flow Rate (lb/hr)	Duration (min)
Taxi/Idle-out	Ground Idle	136	8.00
Take off	Maximum	1,069	2.27
Climb out	Intermediate	406	4.53
Crusing[2]	Cruse	279	181.40
Approach	Cruse	279	6.80
Taxi/Idle -in	Ground Idle	136	7.00

Equations
1. LTO Emissions (lbs/trip) = Duration in mixing zone (min) * Fuel Flow Rate (lbs/hr) / 60 (min/hr) Emission Factor (lb/1,000 lb) / 1,000 (lb fuel) * 2 (engines)
2. Daily Emissions (lbs/day) = Trip Emissions (lb/trip) * Daily Trips (trips/day)

Annual Fuel Usage[3] (gal)
13,548

APPENDIX G

Hydrology and Water Quality

Appendix G1:	Water Supply Assessment for the Gill Medical Center, September 9, 2021 ECORP Consulting, Inc.
Appendix G2:	Test Boring, Well Installation and Sampling, and Aquifer Testing Summary Report, Gill Women's Medical Center Project, August 11, 2021 Terracon Consultants, Inc.
Appendix G3:	Percolation Test Results Letter, Gill Women's Medical Center, August 11, 2021 Terracon Consultants, Inc.

APPENDIX G1

Water Supply Assessment for the Gill Medical Center,
September 9, 2021
ECORP Consulting, Inc.

Water Supply Assessment
for the
Gill Medical Center

San Joaquin County, California

Prepared for:

Gill Medical Center, LLC
Lodi, California

Prepared by:

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS
2525 Warren Drive
Rocklin, California 95677

September 9, 2021

TABLE OF CONTENTS

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LIST OF ACRONYMS AND ABBREVIATIONS

Term	**Description**
APN	Assessor's Parcel Number
CEQA	California Environmental Quality Act
COSMUD	City of Stockton Municipal Utilities Department service area
DWR	Department of Water Resources
DWR Guidebook	*Guidebook for Implementation of Senate Bill 610 and Senate Bill 221 of 2001 to Assist Water Suppliers, Cities, and Counties in Integrating Water and Land Use Planning, published by the California Department of Water Resources*
ESJGA	Eastern San Joaquin Groundwater Authority
ft bgs	feet below ground surface
ft msl	feet above mean sea level
gpd/ft	gallons per day per foot
GSP	Groundwater Sustainability Plan
Project	Gill Medical Center
SB	Senate Bill
SF	square-foot
SGMA	Sustainable Groundwater Management Act of 2014
SOI	Sphere of Influence
UWMPs	Urban Water Management Plans
WSA	Water Supply Assessment

I

1.0 INTRODUCTION

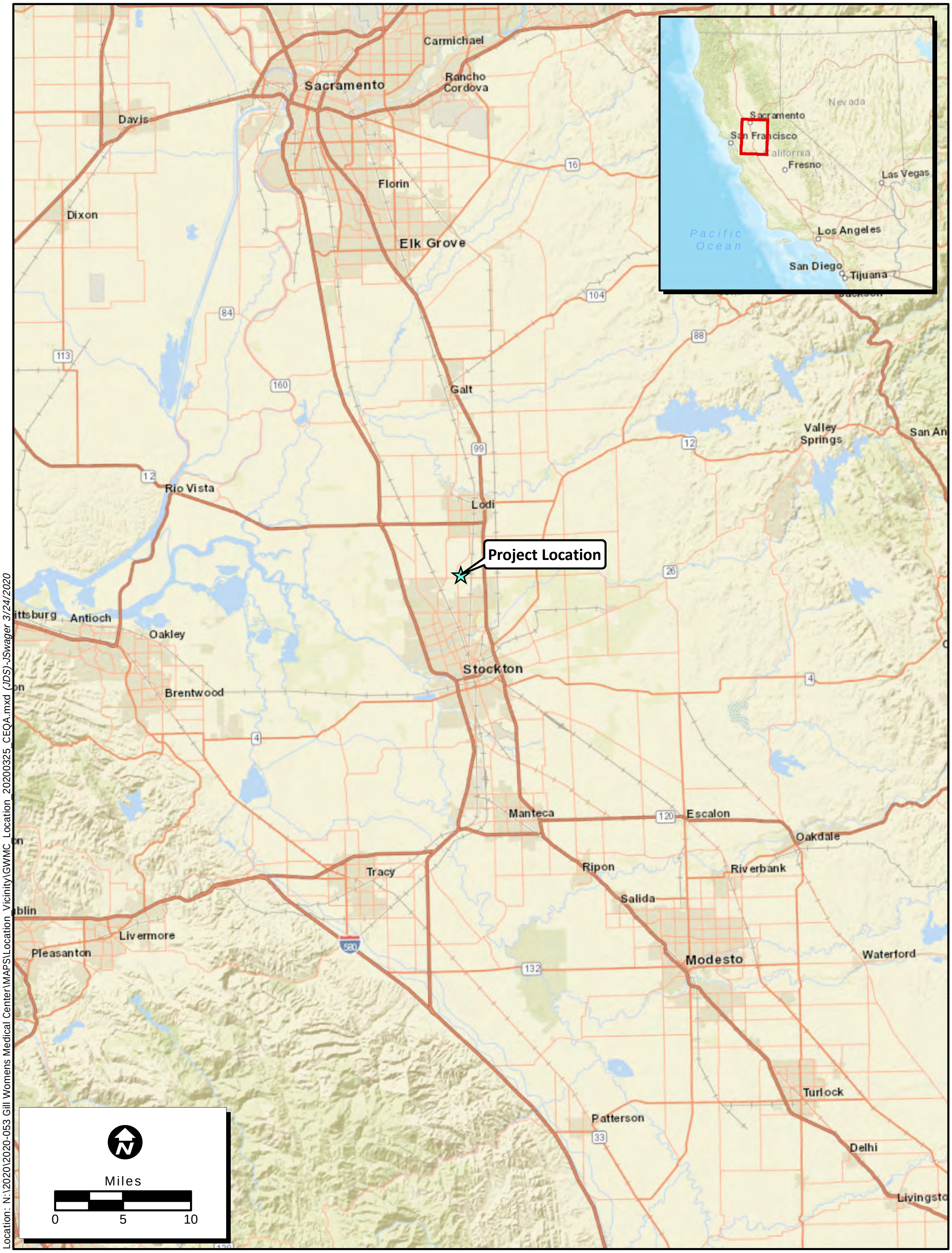
This Water Supply Assessment has been prepared for the proposed Gill Medical Center (Project) in San Joaquin County, California (Figures 1 and 2). The overall Project includes a birthing center, medical offices, and a hospital to be constructed on approximately 42 acres that are currently active agricultural land to the northeast of the intersection of Eight Mile Road and West Lane, north of Stockton, California.

Water Code Sections 10910 through 10915 were amended by Senate Bill (SB) 610 in 2002. SB 610 requires that under specific circumstances, as detailed below, an assessment of available water supplies must be conducted. The purpose of the assessment is to determine if available water supplies are sufficient to serve the demand generated by the Project, as well as the reasonably foreseeable demand in the region over the next 20 years under average normal year, single dry year, and multiple dry year conditions. Water Code Section 10910 was further amended by SB 1262 on September 24, 2016 to require a Water Supply Assessment to include additional information regarding the groundwater basin designation and adjacent water systems. This report provides the information required for a Water Supply Assessment (WSA), as described in the October 2003 *Guidebook for Implementation of Senate Bill 610 and Senate Bill 221 of 2001 to Assist Water Suppliers, Cities, and Counties in Integrating Water and Land Use Planning*, published by the California Department of Water Resources (DWR Guidebook) along with the additional information required by SB 1262.

SB 1263, approved by the governor in September 2016, applies to projects which will include an application for a new public water system. A technical report must be submitted to the Lead Agency and to the State Water Resources Control Board at least six months prior to initiating construction of any water system components. The report must identify any existing public water systems within 3 miles of the project and evaluate the feasibility of those systems annexing, connecting to, or otherwise providing domestic water to the proposed new water system. The primary requirements of SB 1263 as they relate to the Project are discussed in this WSA.

2.0 PROJECT DESCRIPTION

The Project site is located approximately 1 mile north of the current boundaries of the City of Stockton in unincorporated San Joaquin County, California (Figure 1). As shown in Figure 2, the proposed 42.4-acre Project site is located at 11000 North West Lane and encompasses all or portions of three existing legal parcels totaling 60.8 acres; Assessor's Parcel Numbers (APN): 059-080-07, 059-080-29, & 059-080-30. The Project proposes a lot line adjustment that would exclude 18.4 acres from the Project site including the eastern portion of APN 059-080-30 (11013 Ham Lane) and active farmland to the northwest. The Project site is located in the southwest quarter of Section 35, Township 3 North, Range 6 East, Mount Diablo Base and Meridian.



Location: N:\2020\2020-053 Gill Womens Medical Center\MAPS\Location_Vicinity\GWMC_Location_20200325_CEQA.mxd (JDS)-JSwager 3/24/2020

Map Date: 3/24/2020

Sources: ESRI, San Joaquin County

Figure 1. Regional Location Map

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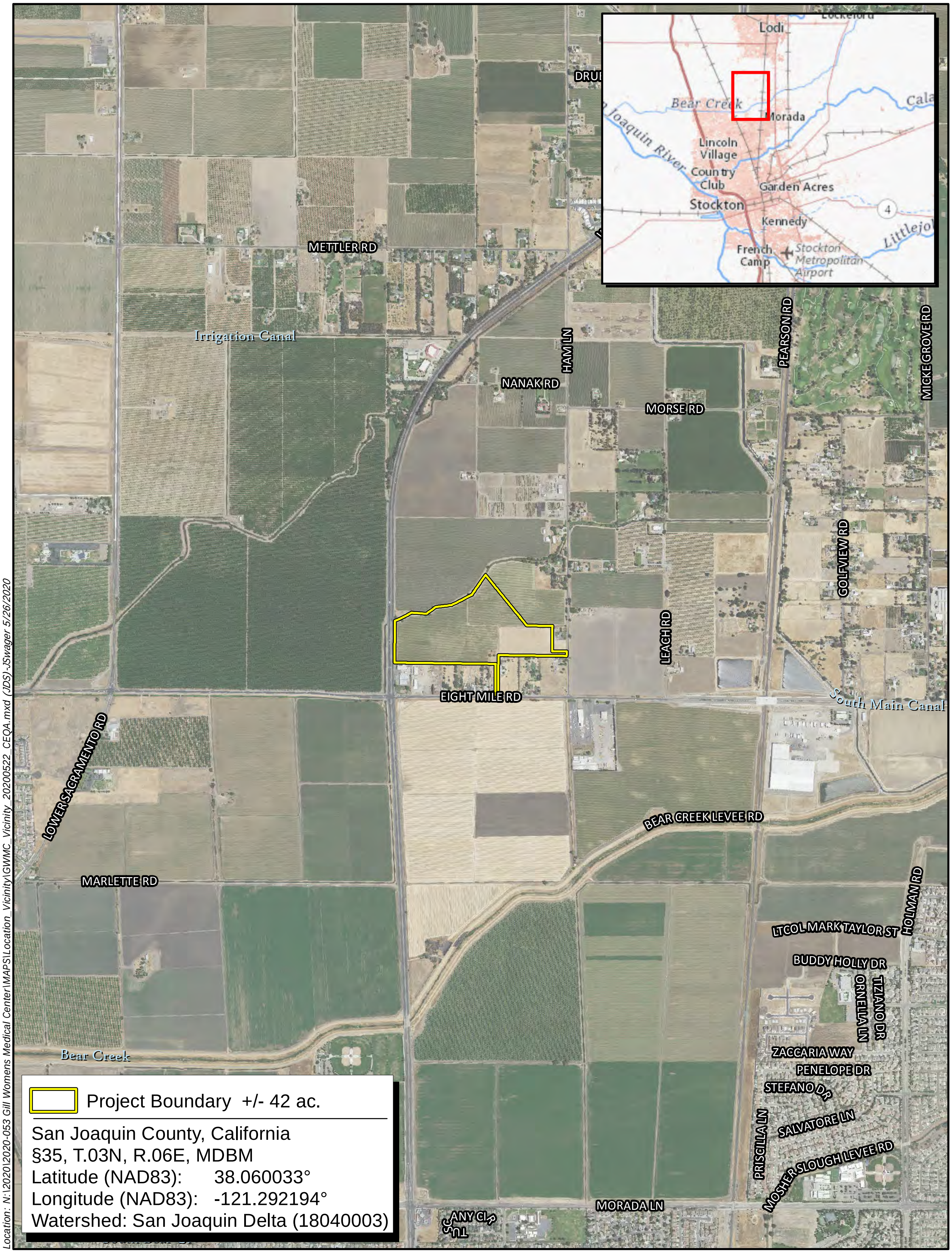
2020-053 Gill Medical Center



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Map Date: 5/26/2020

Sources: ESRI, NAIP (2018), San Joaquin County, NJA Architecture

Scale in Feet

0 1,000 2,000

ECORP Consulting, Inc.
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Figure 2. Local Vicinity Map

2020-053 Gill Medical Center

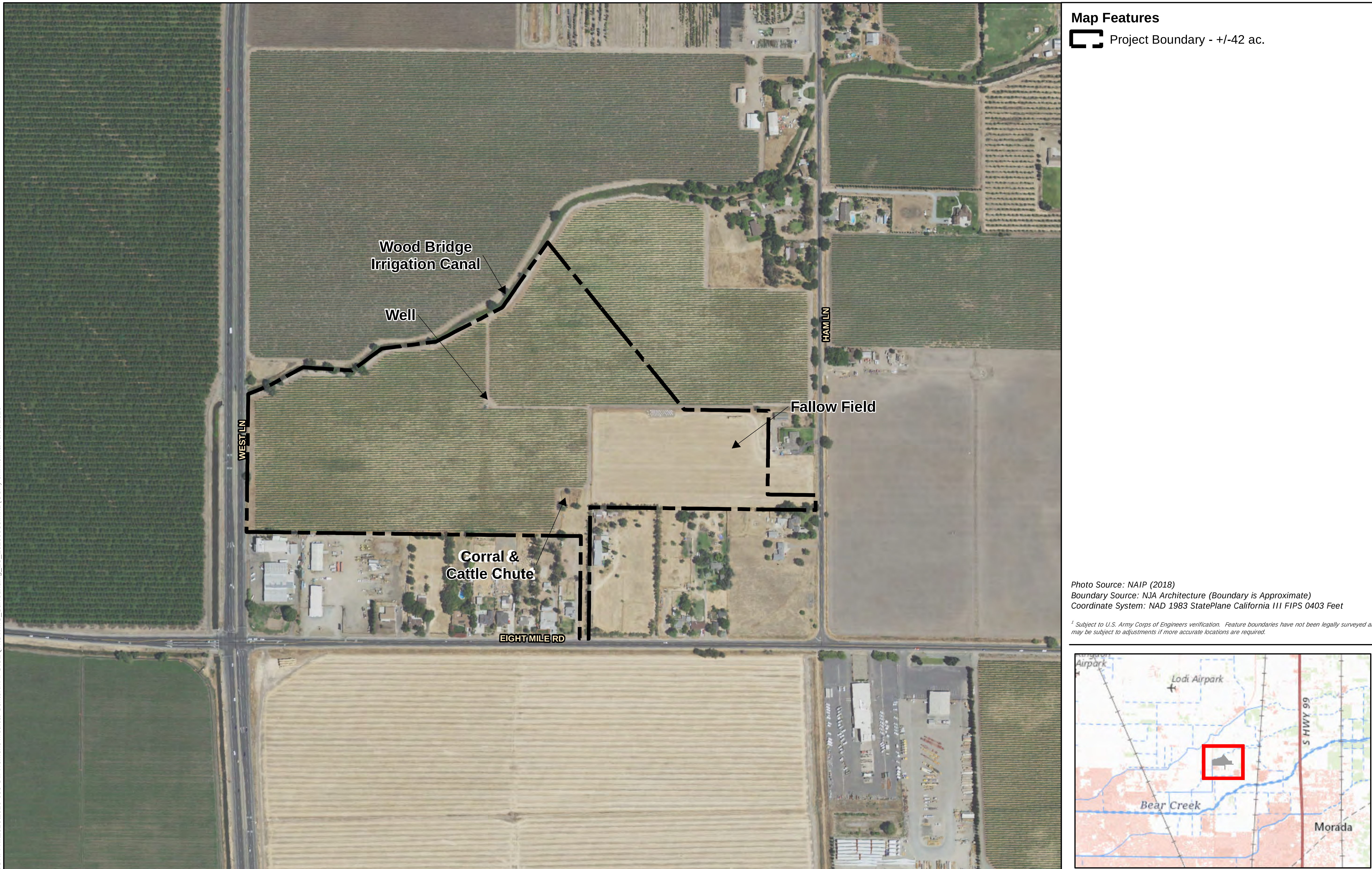
Existing Project site land use and improvements are shown in Figure 3. As shown, with the exception an approximately 10-acre rectangular-shaped field on the east side, the majority of the Project site is currently in agricultural production. Site improvements include vineyards, a dilapidated corral and cattle chute located near the mid-point of the southern site boundary, and a former gas well converted to a water well in the approximate center of the property. This well is referred to as the "North Stockton Unit A" 1 well (API: 0407700519). Well operation is by electric pump. An overhead electric line extends approximately 1,430 feet along the south side of an existing farm road from North Ham Lane to the well site. A farm road also extends north from the well site to the northern property boundary, where it connects with a perimeter farm road that runs along the northern, eastern and western site boundaries. Finally, the southern half of the existing Woodbridge Irrigation District canal is located onsite along the northern site boundary, between West Lane and the northern most point of the Phase 2 development area.

The Project is proposed on an approximately 42.4-acre site located northeast of the West Lane-Eight Mile Road intersection in San Joaquin County, north of the City of Stockton. Figure 4 provides a computer-generated aerial rendering of the Project as viewed from the West Lane main entrance looking east. Figure 5 provides a plan view of the proposed development. The Project is proposed in two phases over approximately 10 years.

Phase 1 development would include an approximately 36,000 square-foot (SF) single story Medical Center. The Medical Center would be equipped with 12 beds and provide labor-and-delivery-focused services, including alternate birthing options, and hospital emergency room services.

Phase 1 site improvements would include 282 onsite parking stalls and storm water retention areas. Potable water and wastewater collection and treatment would be provided by a proposed onsite well and septic system. The onsite well would be a Small Public Water System per State Division of Drinking Water and County Environmental Health Department standards. Phase 1 development would be completed within 5 years of Project approval.

Phase 2 would include a 60,000 ± SF two-story medical office building, a 140,000 ± SF three-story 100 bed hospital expansion, an emergency helipad landing area, and 4,000 ± SF physical plant building. Phase 2 site improvements would include an additional 1,000 onsite parking stalls and development of additional onsite storm water retention areas. Potable water and wastewater collection and treatment would be provided by the proposed Phase 1 onsite well and an expanded Phase 2 septic system. Phase 2 development would be completed within 10 years of Project approval.



ECORP: N:\2020\2020-053 Gill Womens Medical Center\MAPS\CEQA\GWMC_Surrounding_LU_20200930.mxd (CCH)-chinkelman 9/30/2020

Map Date: 9/30/2020

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Figure 3. Existing Site Conditions

2020-053 Gill Medical Center

Rendering A: View of proposed Phase 1 Gill Medical Center building main entrance looking north.

Rendering B: Bird's eye view of Phase 1 Gill Medical Center building (foreground) and Phase 2 Hospital, Medical Office Building and support infrastructure looking east (background).

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Figure 4. Project Renderings

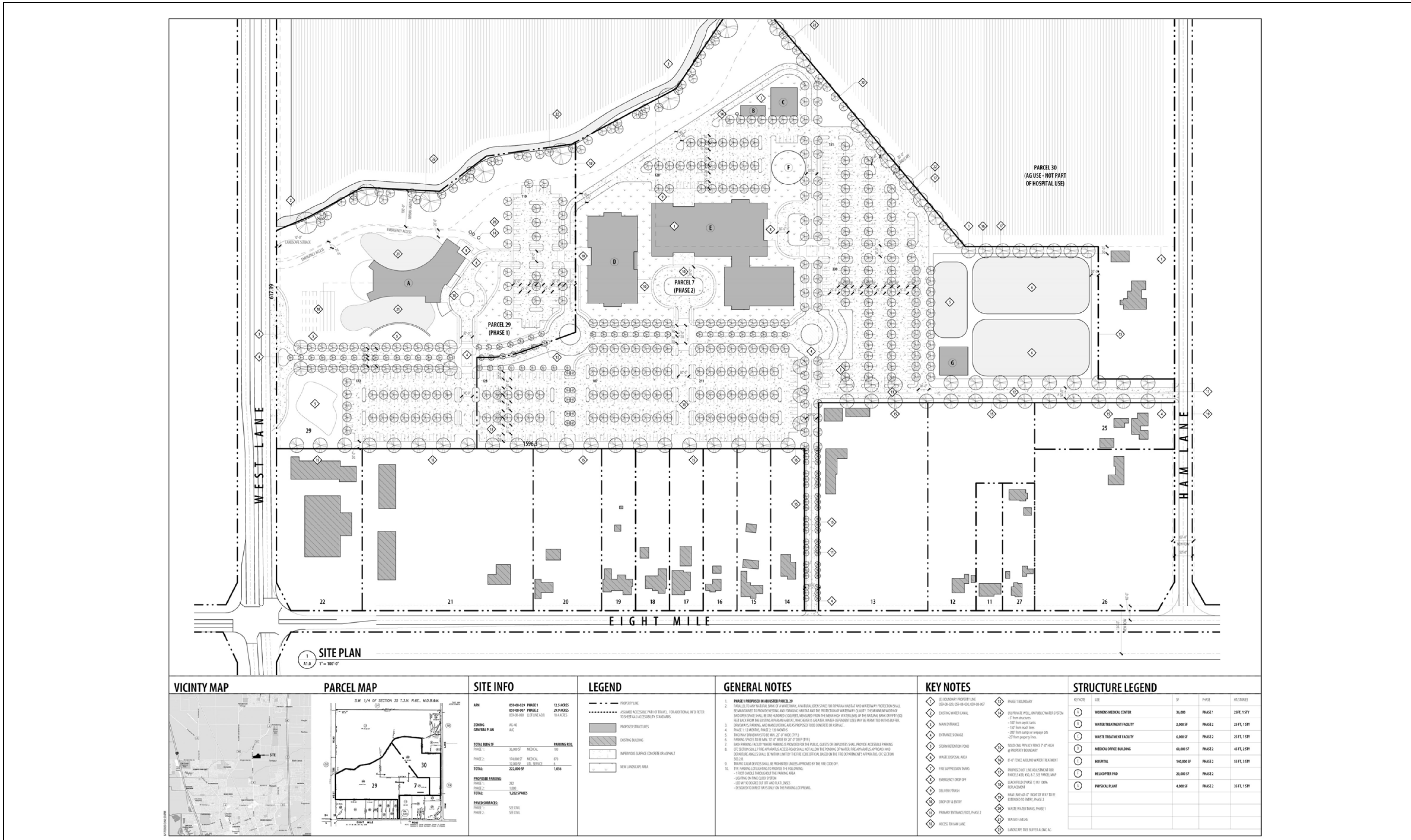

Figure 5. Site Plan

2020-053 Gill Medical Center

3.0 WATER SUPPLY PLANNING UNDER SB 610 AND SB 1262

SB 610, effective January 1, 2002, amends Sections 10910 through 10915 of the Water Code by requiring preparation of a WSA for development projects subject to the California Environmental Quality Act (CEQA) and other criteria, as discussed below. SB 610 also amends Section 10631 of the Water Code, which relates to Urban Water Management Plans (UWMPs). The WSA process under SB 610 is designed to rely on the information typically contained in UWMPs, where available On September 24, 2016, SB 1262 further amended Section 10910 of the Water Code to require additional information related to adjacent public water systems and the status of the groundwater basin. These amendments provide additional consistency with the Sustainable Groundwater Management Act of 2014, as discussed further in Section 4.4.

The first step in the WSA process is to determine whether SB 610 applies to the proposed Project. If so, documentation of available water supplies, anticipated Project demand, and the sufficiency of supplies must be conducted. These issues are summarized by the following questions, as outlined in the DWR Guidebook:

1. Is the proposed Project subject to CEQA?
2. Is the proposed Project a "Project" under SB 610?
3. Is there a public water system that will service the proposed Project?
4. Is there a current UWMP that accounts for the project demand?
5. Is groundwater a component of the supplies for the Project?
6. Are there sufficient supplies to serve the Project over the next 20 years?

Each of these issues are discussed in the following sections as they relate to the proposed Project.

3.1 Is the Proposed Project Subject to CEQA?

The first step in the SB 610 process is to determine whether the Proposed Project is subject to CEQA. Water Code Section 10910(a) states that any city or county that determines that an application meets the definition of *project*, per Water Code Section 10912 (see Section 3.2, below), and is subject to CEQA, shall prepare a WSA for the project. CEQA applies to projects requiring issuance of a discretionary permit by a public agency, projects undertaken by a public agency, or projects funded by a public agency. The proposed Gill Medical Center, as described in Section 2.0, requires discretionary approval by San Joaquin County, a public agency. Therefore, the Project is subject to CEQA. This WSA has been prepared to support the environmental review that will be conducted by San Joaquin County under CEQA.

3.2 Is the Proposed Project a *Project* Under SB 610?

The second step in the SB 610 process is to determine if the Proposed Project meets the definition of *project* under Water Code Section 10912(a). Under Section 10912(a) a *project* is defined as meeting any of the following criteria:

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 defined above; or
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.

As described in Section 2.0, the total floor area combined for Phase 1 and Phase 2 is 240,000 square feet. There would also be approximately 8,000 square feet or water and wastewater treatment facilities. The total number of employees is anticipated to be approximately 600 persons. As discussed in Section 5.0, the Project water demand would be substantially less than that required by a 500-dwelling unit project. Thus, the Project falls below the criteria to be considered a *project* under Water Code Section 10912(a). However, due to the significance of the Project and the status of the underlying groundwater basin, this WSA has been prepared in case certain aspects of the Project change and to address the sustainability of the water supply.

3.3 Is There a Public Water System That Will Service the Proposed Project?

Section 10912(c) of the Water Code identifies a public water system as a system for the provision of piped water to the public for human consumption that has 3,000 or more service connections. The Project is located outside of the City of Stockton and outside of the City's Sphere of Influence (SOI) but within the City of Stockton Municipal Utilities Department service area (COSMUD 2021a, b). The nearest large water main terminates approximately one mile south of the Project site in West Lane. However, the City's current policy is that municipal services will not be provided outside of the current SOI, and that policy is reflected in both the Water Master Plan (COSMUD, 2021a) and the UWMP (COSMUD 2021b). As described in Section 2.0 and in more detail below, the Project would provide its own water needs through existing onsite groundwater wells. Since the Project would not be connected to another water system, the Project would not result in an existing water system becoming a public water system as a result of the Project (per SB 1262 modifications to Water Code Section 10910(b)).

3.4 Is There a Current Urban Water Management Plan That Accounts for the Project Demand?

As described in Section 3.3, the COSMUD UWMP does not account for the Project demand or any other future projects located outside of the City of Stockton SOI. Since there is no UWMP for the Project area, this WSA is based upon available and relevant information, including public records, the technical studies and assessments submitted with the application for the Proposed Project, and other relevant documents, as cited in Section 8.0. Since this WSA has been prepared for use by the CEQA lead agency, this document includes an evaluation of whether the total projected water supplies, determined to be available 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, in accordance with Water Code § 10910(c)(4).

3.5 Is Groundwater a Component of the Supplies for the Project?

Water Code Section 10910(f), paragraphs 1 through 5, must be addressed if groundwater is a source of supply for the Proposed Project. Groundwater will be the sole water supply for the Project. Therefore, an assessment of groundwater conditions is included in this document.

Water Code Section 10910(f) paragraphs 1 through 5, as modified by SB 1262, state the following:

(f) If a water supply for a proposed project includes groundwater, the following additional information shall be included in the water supply assessment:

(1) A review of any information contained in the urban water management plan relevant to the identified water supply for the proposed project.

(2) (A) A description of any groundwater basin or basins from which the proposed project will be supplied. (B) 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. (C) For a basin that has not been adjudicated that is a basin designated as high- or medium priority pursuant to Section 10722.4, information regarding the following: (i) Whether the department has identified the basin as being subject to critical conditions of overdraft pursuant to Section 12924; and (ii) If a

groundwater sustainability agency has adopted a groundwater sustainability plan or has an approved alternative, a copy of that alternative or plan. (D) For a basin that has not been adjudicated that is a basin designated as low- or very-low priority pursuant to Section 10722.4, 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.

(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, historic use records.

(4) 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, historic use records.

(5) 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.

Pursuant to paragraph 1, there is not an UWMP that addresses the Project demand, or the adjacent and surrounding properties, as discussed in Section 3.4. Therefore, the information and evaluations presented in this WSA are based primarily on other publicly available reports and documents from the California Department of Water Resources (DWR), along with groundwater studies conducted for other sites and projects in the region.

Paragraph 2 is addressed in Section 4.1, below, including a description of the groundwater basin and groundwater conditions.

To address the items described in Paragraph 3, Section 5.0 presents available information regarding current and future water consumption at the Project site.

To address paragraph 4, Sections 4.1 and 4.2 include a discussion of the amount and location of groundwater pumping and recharge that may occur in the groundwater basin. Section 5.0 presents available information regarding current and future water consumption at the Project site.

The Paragraph 5 requirement to provide an analysis of the sufficiency of the groundwater basin to meet the projected water demand associated with the Proposed Project is addressed in Section 6.0.

3.6 Are There Sufficient Supplies to Serve the Project Over the Next Twenty Years?

Water Code Section 10910(c)(4) requires the WSA to "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 future planned uses, including agricultural and manufacturing uses."

The sufficiency of water supply for the proposed Project is addressed in Section 6.0.

4.0 PROJECT WATER SUPPLY

Water for the existing vineyards on the Project site are provided by an old natural gas well that has been converted to a water well, as described in Section 2.0. The Project will replace approximately 32 acres of vineyards. For the Proposed Project, water would be supplied by a new recently installed well near the center of the Project site. Overall conditions within the groundwater basin are described in Section 4.1. Details regarding the existing supply wells and volumes of water that were historically pumped are provided in Section 4.2. Section 4.3 identifies the available groundwater supply within the basin.

A series of three bills passed by the California legislature were signed by Governor Edmund "Jerry" Brown on September 16, 2014. These three bills, Assembly Bill 1739, SB 1168, and SB 1319, together comprise the Sustainable Groundwater Management Act of 2014 (SGMA). SGMA provides a structure under which local agencies are to develop a sustainable groundwater management program. SGMA focuses on basins or subbasins designated by DWR as high- or medium-priority basins, and those with critical conditions of overdraft.

The Project is within the Eastern San Joaquin Subbasin of the San Joaquin Valley groundwater basin. The Eastern San Joaquin Subbasin is classified as a high-priority basin that exhibits critical conditions of overdraft, according to the SGMA Basin Prioritization Dashboard (DWR 2021a). The Eastern San Joaquin Groundwater Authority (ESJGA) has submitted a Final Groundwater Sustainability Plan (GSP) to DWR, in accordance with the requirements of SGMA (ESJGA 2019). Most of the following information presented related to the groundwater basin and available groundwater supplies is based on the GSP.

4.1 Groundwater Basin

The proposed Gill Medical Center is located within the Eastern San Joaquin Subbasin within the larger San Joaquin Valley Groundwater Basin. The Eastern San Joaquin Subbasin is designated as basin number 5-022.01 by the DWR (2006). The subbasin area is shown on Figure 6. The basin encompasses most of San Joaquin County east of the San Joaquin River and Sacramento-San Joaquin Delta, with an area of approximately 1,195 square miles (ESLGA 2019), or approximately 765,000 acres.

The Eastern San Joaquin Subbasin consists of one principal aquifer that provides water for domestic, irrigation, and municipal water supply. The principal aquifer is composed of three water production zones:

- Shallow Zone that consists of the alluvial sands and gravels of the Modesto, Riverbank, and Upper Turlock Lake formations;
- Intermediate Zone that consists of the Lower Turlock Lake and Laguna formations; and
- Deep Zone that consists of the consolidated sands and gravels of the Mehrten Formation.

In the Project area, the base of the Shallow Zone is approximately 300 feet below ground surface (ft bgs) while the base of the Deep Zone is at least 1,000 ft bgs (ESJGA 2019). Aquifer transmissivities range from 90,000 gallons per day per foot (gpd/ft) in the Shallow Zone to 59,500 gpd/ft in the Intermediate Zone, to 250,000 gpd/ft in the Deep Zone. While there are clay and silt zones that form aquitards throughout the geologic formations listed above, the extent of the aquitards is limited and the entire thickness of the principal aquifer is hydraulically connected, meaning that groundwater can move relatively easily from one depth or one zone to another.

Based on groundwater contour maps provided in the GSP (Figures 2-37 and 2-38 in ESJGA 2019), groundwater generally flows radially inward from the perimeter of the Subbasin toward a large pumping depression in the center of the Subbasin (see Figure 7). The pumping depression is located to the east of the City of Stockton. In the Project vicinity, the groundwater surface elevation is approximately 30 feet below sea level. The hydraulic gradient, or slope of the groundwater surface, averages approximately five to 10 feet per mile, which is equivalent to a gradient of about 0.001 to 0.002 ft/ft.

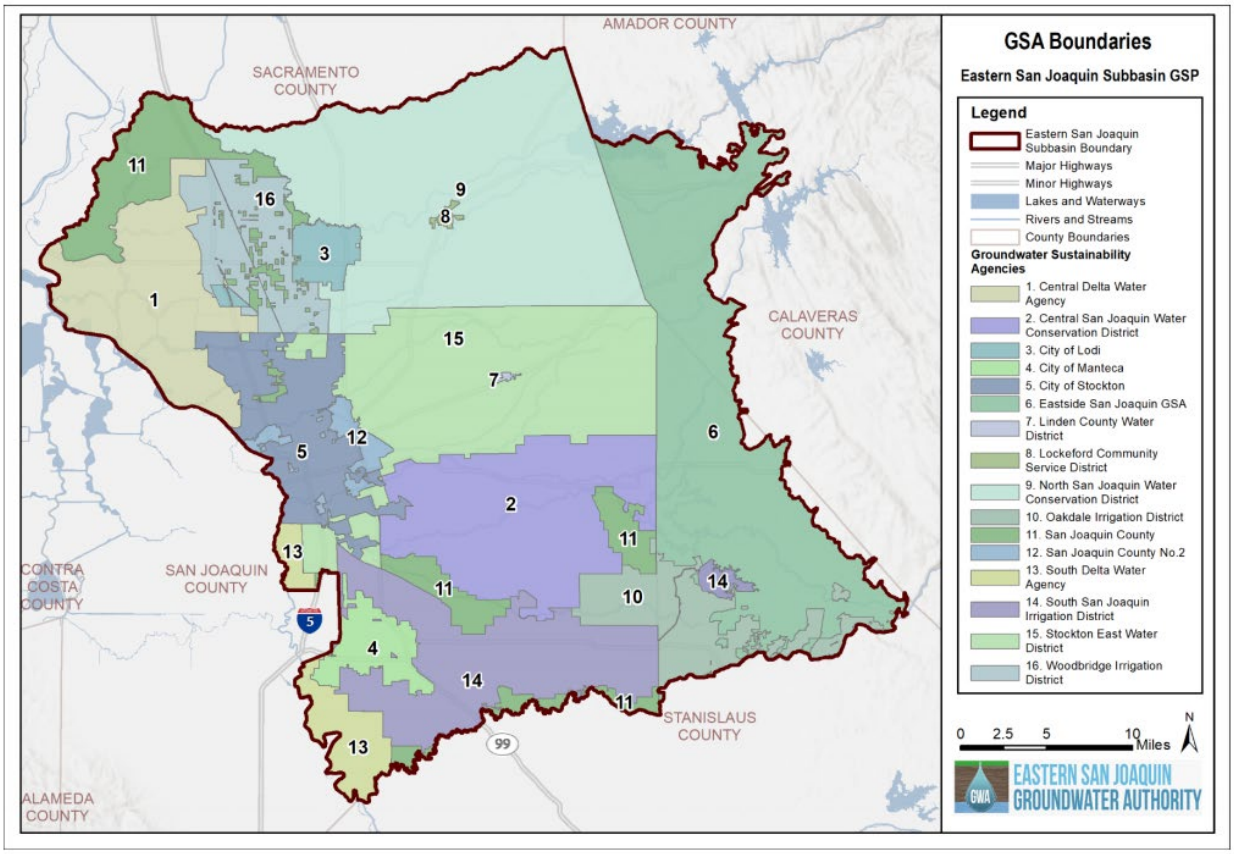

Figure 6. Eastern San Joaquin Subbasin

In general, groundwater levels within the East San Joaquin Valley Subbasin exhibit minor seasonal fluctuations of a few feet due to increased pumping demand in the summer and increased recharge during the winter and spring. The more significant trend has been a persistent decline in groundwater levels ranging from 20 feet to more than 60 feet in most areas of the Subbasin since the 1960s, especially in the area of the pumping depression shown on Figure 7. However, groundwater levels have remained relatively stable within the City of Stockton, potentially because municipal water demands tend to be appreciably lower than agricultural water use on a per-acre basis. Figure 8 shows hydrographs of groundwater levels throughout the Subbasin from 1960 to 2017.

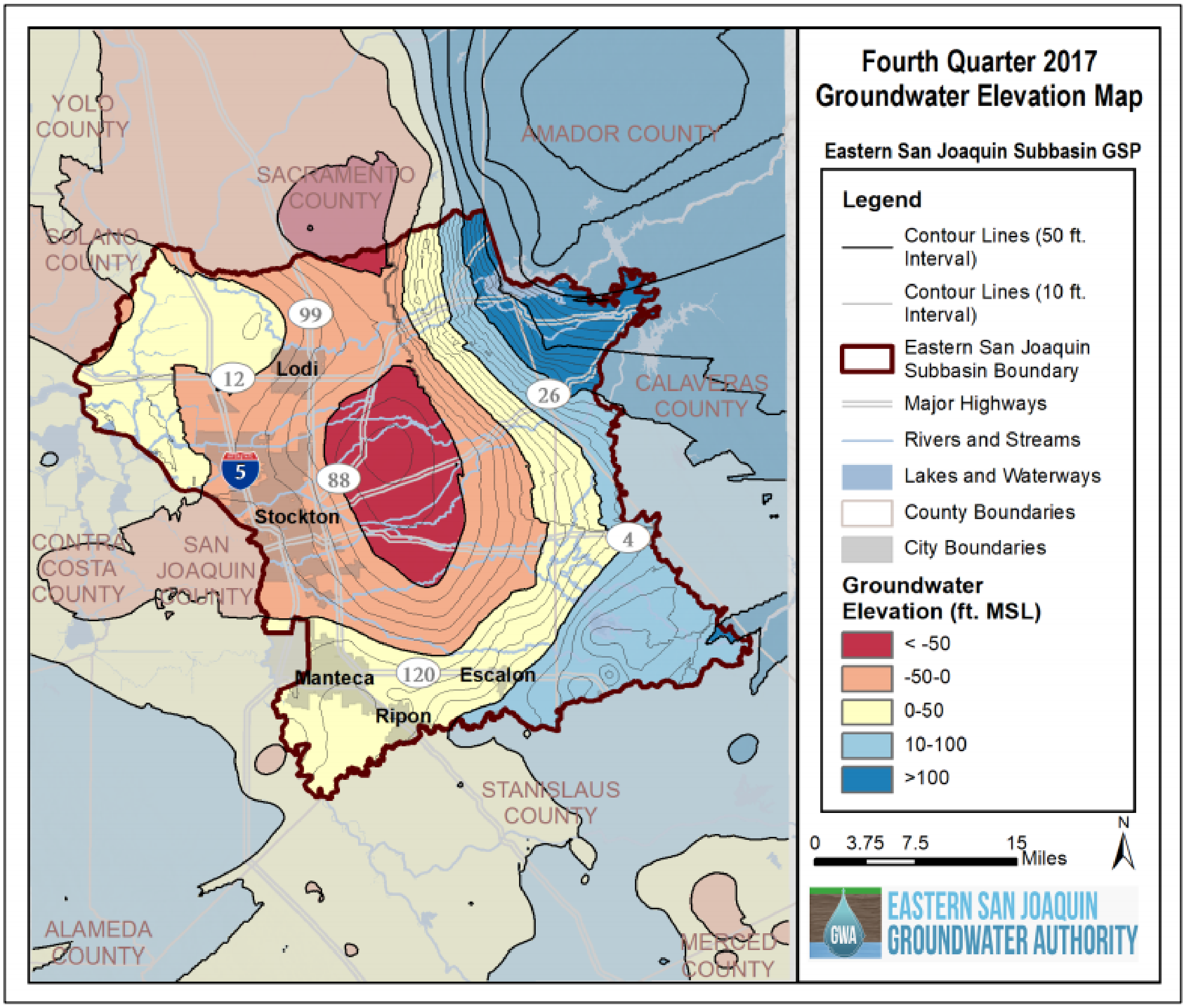

Figure 7. Fourth Quarter 2017 Groundwater Contours Pumping Depression Shown in Red

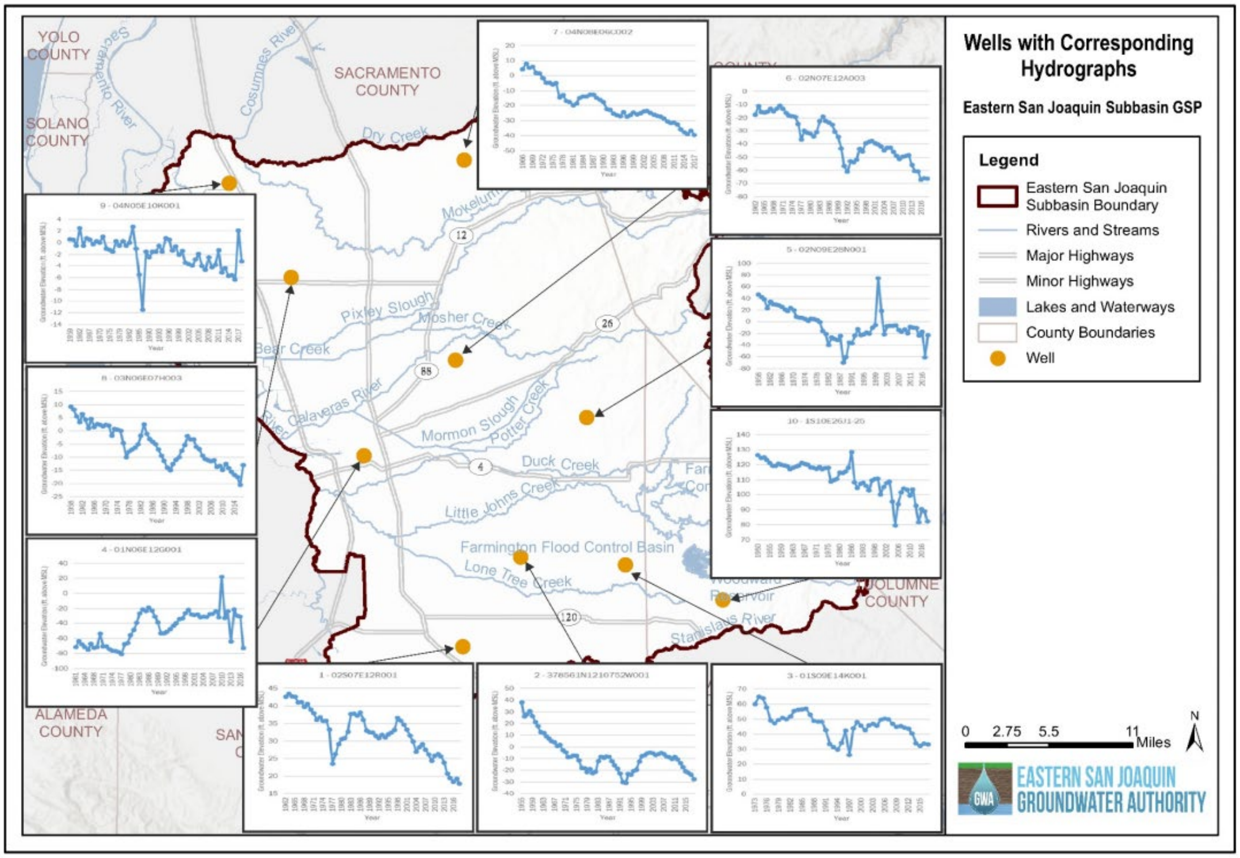

Figure 8. Groundwater Hydrographs in the Eastern San Joaquin Subbasin

4.2 Existing Water Use

Prior to 1995, the site was primarily used for cattle grazing. In 1995, the land was converted to a vineyard. The vineyard currently occupies approximately 32 acres of the 42-acre Project site.

The existing irrigation well was installed in 1961 (State Water Well Drillers Report No. 67139). The well encountered alternating layers of sand and clay to a total depth of 208 ft bgs. Water production occurs from perforated intervals extending from 116 ft bgs to 165 ft bgs. At the time the well was installed, the depth to groundwater was reported to be 42 ft bgs. The depth to groundwater in a test well installed on the Project site in 2021 was 58 ft bgs (see additional discussion in Section 4.3). The ground surface elevation at the location of the wells is approximately 25 feet above mean sea level (ft msl, NAVD 88). Thus, the groundwater surface elevation beneath the site has decreased from about -17 ft msl (i.e., 17 feet below sea level) in 1961 to -33 ft msl in 2021.

Vineyard water demand in the Central Valley is reported to be in the range of 2.5 acre-feet per acre (Sumner 2016). Thus, the average current water demand for the vineyard area on the Project site is in the range of 80 acre-feet per year.

4.3 Available Groundwater Supply

The current volume of fresh (i.e., non-saline) groundwater in storage within the principal aquifer in the Eastern San Joaquin Subbasin is estimated to be 53 million acre-feet (ESJGA 2019). The amount of groundwater in storage has decreased by approximately 0.01 percent per year, or about 5,300 acre-feet per year, between 1995 and 2015. According to the GSP, a reduction in beneficial uses, which is an undesirable result under SGMA, would not occur until the volume of water in storage is reduced by 23 million acre-feet, to a total of 30 million acre-feet (ESJGA 2019). Under the current rate of decrease in water storage, it would take several thousand years to reduce the volume in storage to the level of concern identified in the GSP. As such, it is highly unlikely the Subbasin will experience conditions under which the volume of stored groundwater poses a concern, although the depth to access that groundwater will increase over time, potentially requiring the deepening of many wells resulting in increasing drilling and pumping costs, and higher energy demand.

The GSP established measurable objectives in wells related to chronic lowering of groundwater levels in representative monitoring wells throughout the Subbasin. The two closest representative wells to the Project site are referred to as the Swenson-3 well, located in the western part of the City of Stockton, approximately four miles southwest of the Project site, and State Well Number 02N07E29B001 (referred to as well 29B herein), located approximately five miles southeast of the Project site, near the westernmost edge of the pumping depression identified in Figure 7, above. The current groundwater level at the Swenson-3 well is -19.3 ft msl and the groundwater elevation is expected to remain at that level through at least 2035. At well 29B, the current groundwater elevation is at an elevation of -49.8 ft msl and the groundwater level is anticipated to decline to -65 ft msl by 2035. The measurable objective for chronic lowering of groundwater in the GSP (ESJGA 2019) is -19.3 ft msl for the Swenson-3 well and -80.4 ft msl for well 29B.

Table 1 (taken from Table 2-17 in ESJGA 2019) shows the water demand and available water supplies and change in groundwater storage over the past 50 years, for different hydrologic water year types (DWR 2021b). During wet and normal years, which have occurred for 24 of the past 50 years, there is a net increase in groundwater in storage in the Subbasin, ranging from an average of 20,000 acre-feet per year under normal hydrologic conditions to an average of 185,000 acre-feet per year during wet hydrologic conditions. During below normal, dry, and critically dry hydrologic conditions, which have occurred for 26 of the past 50 years, there is a net decrease in groundwater storage of 113,000 acre-feet per year, 164,000 acre-feet per year, and 223,000 acre-feet per year, respectively. Over the last 50 years, the amount of groundwater in storage has decreased by an average of 34,000 acre-feet per year, or a total of 1,700,000 acre-feet. The largest annual change in groundwater storage of 223,000 acre-feet per year shown in Table 2 represents 0.4 percent of the total groundwater in storage in the Subbasin. The total reduction of groundwater in storage over the last 50 years is 3.2 percent of the total groundwater in storage in the Subbasin.

Table 1. Historical Water Demand and Supplies Based on Hydrological Water Year Type

Component	Water Year Type (San Joaquin River Index)					
	Wet	Above Normal	Below Normal	Dry	Critical	50-Year
Number of Years[1]	**17**	**7**	**4**	**8**	**14**	**50**
Precipitation, AF/year (Precipitation, inches)	**1,376,000 (21.6)**	**987,000 (15.5)**	**866,000 (13.6)**	**790,000 (12.4)**	**652,000 (10.2)**	**984,000 (15.4)**
Water Demand (AF/year)						
Ag Demand	1,088,000	1,107,000	1,108,000	1,112,000	1,117,000	1,104,000
Urban Demand	230,000	228,000	225,000	225,000	222,000	226,000
Total Demand[2]	***1,318,000***	***1,335,000***	***1,333,000***	***1,337,000***	***1,339,000***	***1,330,000***
Water Supply (AF/year)						
Total Surface Water Supply	565,000	559,000	518,000	507,000	488,000	529,000
Agricultural	450,000	446,000	416,000	408,000	395,000	426,000
Urban and Industrial	114,000	113,000	102,000	98,000	93,000	103,000
Total Groundwater Supply	753,000	776,000	815,000	830,000	851,000	801,000
Agricultural	639,000	662,000	693,000	705,000	725,000	681,000
Urban and Industrial	115,000	116,000	124,000	126,000	128,000	121,000
Total Supply (AF/year)[2]	***1,318,000***	***1,335,000***	***1,333,000***	***1,337,000***	***1,339,000***	***1,330,000***
Change in Groundwater Storage (AF/year)[2]	***185,000***	***20,000***	***-113,000***	***-164,000***	***-223,000***	***-34,000***

Notes:

[1] List of projected water budget water years by water year type:
Wet: 1969, 1974, 1975, 1978, 1980, 1982, 1983, 1986, 1993, 1995, 1996, 1997, 1998, 2005, 2006, 2011, 2017
Above Normal: 1970, 1973, 1979, 1984, 1999, 2000, 2010
Below Normal: 1971, 2003, 2009, 2018
Dry: 1972, 1981, 1985, 2001, 2002, 2004, 2012, 2016
Critical: 1976, 1977, 1987, 1988, 1989, 1990, 1991, 1992, 1994, 2007, 2008, 2013, 2014, 2015

[2] Summations in table may not match the numbers in the table. This is due to the rounding of model results.

In March 2021, Terracon Consultants, Inc. installed a test well at the Project site (Terracon 2021). The test well was drilled to a total depth of 450 ft bgs, encountering alternating layers of sand and clay within the Principal Aquifer. The well was completed with 8.625-inch diameter PVC casing and screened from 270 ft bgs to 450 ft bgs.

After well development, a series of pumping tests were conducted in the test boring. An initial test was conducted for approximately five hours at a rate of 467 gpm. The drawdown in the pumping well was 28 feet at the end of the test, resulting in a specific capacity of 17 gpm per foot of drawdown.

A 24-hour hour aquifer pumping test was subsequently conducted at an average rate of approximately 430 gpm. Drawdown and recovery were measured in the test well and at several other locations ranging from 186 feet to 2,000 feet from the test well. The test well and other monitored locations are shown on Figure 9.

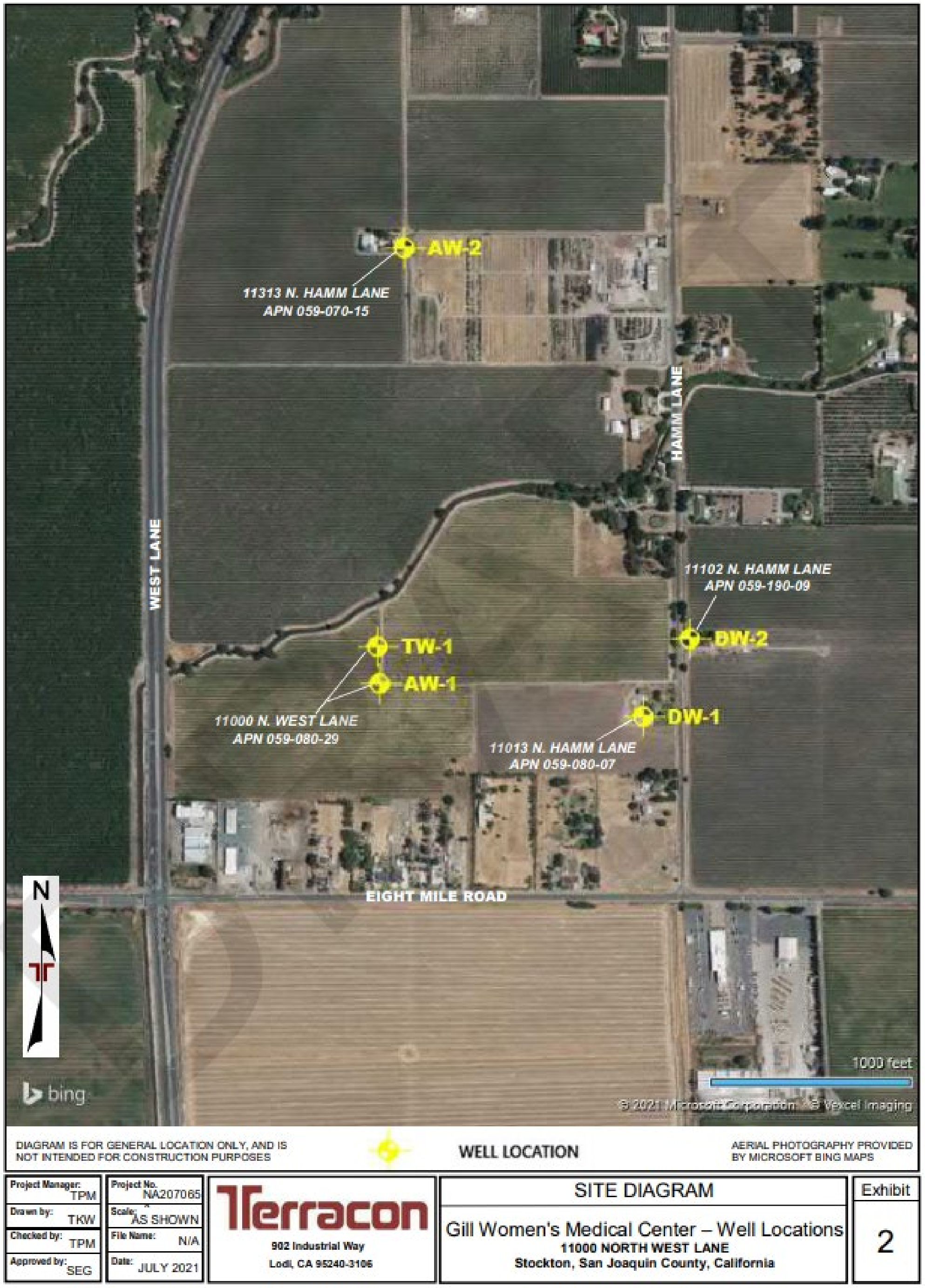

Figure 9. Location of 2021 Test Well and Locations Monitored During Aquifer Pumping Test

The maximum drawdown observed in the test well was 28 feet, consistent with that observed during the initial five-hour test. The data from the test well indicate that the aquifer transmissivity is between 88,000 gpd/ft and 158,000 gpd/ft. These values are consistent with the range of transmissivity values described in the GSP (ESJGA 2019) (see Section 4.1).

The data from the nearest monitoring point (AW-1 on Figure 9, 186 feet from the test well) indicates that the maximum effect of pumping at this distance was 0.35 foot, or approximately 4.2 inches. At the more distal wells (AW-2, DW-1, and DW-2 on Figure 9, 1,400 feet to 2,000 feet from the test well), regional groundwater levels varied by at least two to three feet during the 10 days that water levels were monitored prior, during, and after the aquifer pumping test. Those regional fluctuations, caused by groundwater pumping from other properties, was several orders of magnitude greater than the effect from pumping the test well at 430 gpm for 24 hours.

For the Project, it is anticipated that groundwater pumping would occur from the Principal Aquifer at a rate of approximately 400 gpm for several hours per day. Based on the results of the aquifer pumping test, groundwater pumping for the Project would have an imperceptible effect on water levels at adjacent properties.

4.4 Groundwater Sustainability

As described above, the East San Joaquin Subbasin is classified as a high priority basin that exhibits critical conditions of overdraft, based on DWR SGMA criteria (DWR 2021a). The ESJGA has submitted a GSP for the Subbasin. GSPs are intended to identify conditions in the groundwater basin and determine how the groundwater resource can be sustainably managed. SGMA regulations (Section 10721(v)) defined sustainable groundwater management as "management and use of groundwater in a manner than can be maintained during the planning and implementation horizon without causing undesirable results." SGMA defines undesirable results as:

1. Chronic lowering of groundwater levels indicating a significant and unreasonable depletion of supply;
2. Significant and unreasonable reduction of groundwater storage;
3. Significant and unreasonable seawater intrusion;
4. Significant and unreasonable degraded groundwater quality;
5. Significant and unreasonable land subsidence; and
6. Depletions of interconnected surface water that have significant and unreasonable adverse impacts on beneficial uses of the surface water.

The GSP (ESJGA 2019) indicates that undesirable results #3 and #5 have not historically been of concern in the Subbasin. The primary concerns relate to lowering of groundwater levels that could affect groundwater storage, groundwater quality, and interconnected surface water.

Sustainable yield is defined for SGMA purposes as "the maximum quantity of water, calculated over a base period representative of long-term conditions in the basin and including any temporary surplus, that can be withdrawn annually from a groundwater supply without causing an undesirable result." (CWC §10721(w)). Sustainable yield for the Eastern San Joaquin Subbasin is evaluated in the GSP (ESJGA 2019) with a goal of achieving a long-term (50-year) change in Subbasin groundwater storage of zero. This approach is conservative (i.e., protective of groundwater resources) because a change in storage of greater than zero could occur without causing undesirable results. The sustainable yield evaluation in the GSP assumes that future projects that reduce groundwater pumping or increase recharge will be introduced over the next 20 years, so groundwater levels will continue to decline until 2040. The sustainable yield for the Subbasin identified in the GSP is 715,000 acre-feet per year, plus or minus 10 percent.

To reach the sustainable yield over the 50-year planning period, 78,000 acre-feet of additional groundwater recharge or reduction in groundwater pumping would need to be achieved.

Table 6-1 of the GSP (ESJGA 2019) identifies numerous planned and potential projects to reduce groundwater pumping and increase recharge. Planned projects are those that are already at a stage (e.g., with respect to planning, funding, and permitting) where they can be completed by 2040. Potential projects are currently in the planning stage and may move forward if funding becomes available. The eight planned projects identified in the GSP will have a combined groundwater demand reduction of over 88,000 acre-feet per year. The nine potential projects would have a combined reduction in groundwater demand of over 32,000 acre-feet per year if implemented. Thus, the planned projects alone are more than sufficient to bring the groundwater basin back into balance within the timeframe evaluated in the GSP.

5.0 PROJECT WATER DEMAND

Project water demand is identified in a technical memorandum from Siegfried Engineering, Inc. (2020). The Phase 1 potable water demand is projected to be approximately 4,800 gpd, or 5.4 acre-feet per year. The Phase 2 potable demand is anticipated to be 32,500 gpd, or 36.4 acre-feet per year. The potable water used at the facility would be treated by an onsite wastewater treatment facility and then either used to offset the irrigation demand of 30 acre-feet per year or percolated into the subsurface where it would recharge groundwater. Thus, the annual groundwater use for the Project would be 42 acre-feet per year potable demand less a net 12 acre-feet per year that would be recharged back to the aquifer. Thus, the total consumptive use is equivalent to the irrigation demand since all potable water would be recycled or recharged to the aquifer. The total Project demand is appreciably less than the current 80 acre-feet per year used to irrigate the existing 32-acres of vineyard on the Project site.

6.0 DRY YEAR SUPPLY

Pumping from the existing irrigation well at the Project site to irrigate the approximately 32 acres of vineyards has been occurring since 1995. Based on Note 1 under Table 2, this period included the following hydrologic water year types with less than normal rainfall:

- Below normal: 2003, 2009, 2018
- Dry: 2001, 2002, 2004, 2012, 2016
- Critically Dry: 2007, 2008, 2013, 2014, 2015

Multiple periods of below normal rainfall occurred from 2001 through 2004 and again from 2007 through 2016. The current water year, 2021, is also a critically dry year.

The existing vineyards on the Project site are a permanent crop that must be irrigated no matter what the hydrologic conditions. Thus, the past and current irrigation rate of 80 acre-feet per year has been maintained through several multiple dry-year periods and through at least individual critically dry years. As described in Section 4.3, the volume of groundwater in storage would need to be reduced by 23 million acre-feet before beneficial uses would be affected and, at current groundwater utilization rates that would not occur for several thousand years.

On a more moderate basis, the GSP demonstrates that current groundwater extraction rates would not cause the water levels in GSA monitoring wells throughout the Eastern San Joaquin Subbasin to fall below the measurable objectives identified in the GSP for at least the next 20 years (ESJGA 2019). Beyond that timeframe, planned and potential projects would be implemented that would bring the groundwater basin into balance and halt further declines in groundwater levels.

Based on the above analysis, the available groundwater supply at the Project site for individual dry years and multiple dry-year periods is at least 80 acre-feet per year.

Table 3 summarizes the available supply compared to the Project demand for normal, dry, and multiple dry-year periods over the next 20 years.

Table 2. Available Water Supply Compared with Demand for Various Hydrologic Conditions (acre-feet per year)			
	Normal Year	**Dry Year**	**Multiple Dry Year**
Available Groundwater Supply	80	80	80
Potable Demand	42	42	42
Irrigation Demand	30	30	30
Recycled Water	30	30	30
Return to Aquifer	12	12	12
Net Demand	30	30	30

7.0 FINDINGS

This WSA has been prepared in accordance with SB 610 and SB 1262 to support the CEQA environmental review for the proposed Project and provides an assessment of water supply adequacy for the Project in accordance with Water Code Sections 10910 through 10915. The water demand for the Proposed Project will consist of potable water needed for the planned medical facilities and landscape irrigation. The overall net water demand over the next 20 years will be 30 acre-feet per year after accounting for recycling of wastewater and/or groundwater recharge of treated wastewater.

Evaluation of conditions in the groundwater basin indicates that groundwater levels will not drop below measurable objectives in the next 20 years. After that time, planned and potential projects would bring the Subbasin into balance such that groundwater utilization would not exceed the sustainable yield. Therefore, there will be sufficient water available for the Project during single dry year and multiple dry year periods over at least the next 20 years.

8.0 REFERENCES CITED

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Terracon. 2021. Test Boring, Well Installation and Sampling, and Aquifer Testing Summary Report, Gill Women's Medical Center Project, 11000 North West Lane, Stockton, San Joaquin County, California.

APPENDIX A

Water Well Drillers Report for the Existing Onsite Irrigation Well

5 M

1659

ORIGINAL
File Original, Duplicate and Triplicate with the
REGIONAL WATER POLLUTION
CONTROL BOARD No.______ F.P.
[redacted] appropriate number)

WATER WELL DRILLERS REPORT

(Sections 7076, 7077, 7078, Water Code)

STATE OF CALIFORNIA 1704

Do Not Fill In
Nº 67139
State Well No. 3N/6E-35M
U.H.
Other Well No. 3N/6E-35M50

[redacted] OWNER:

Nam
Addi

(2) LOCATION OF WELL:

County San Joaquin Owner's number, if any—
R. F. D. or Street No.
West Lane to wyde, ... Eight Mile Road 300 ft ... east ... field

(3) TYPE OF WORK (check):

New well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (check):

Domestic ☐ Industrial ☐ Municipal ☐
Irrigation ☒ Test Well ☐ Other ☐

(5) EQUIPMENT:

Rotary ☐
Cable ☒
Dug Well ☐

(6) CASING INSTALLED:

SINGLE ☒ DOUBLE ☐

From ft.	to ft.	Diam.	Gage or Wall
0	168	14	10
[redacted]			

If gravel packed

Diameter of Bore	from ft.	to ft.

Type and size of shoe or well ring 3/8X4X14 Size of gravel:
Describe joint Butt

(7) PERFORATIONS:

Type of perforator used Mills
Size of perforations 2 1/2 in., length, by 1/4 in.

From ft.	to ft.	Perf. per row	Rows per ft.
116	118		
124	129		
146	160		
164	165		

(8) CONSTRUCTION:

Was a surface sanitary seal provided? ☐ Yes ☐ No To what depth ft.
Were any strata sealed against pollution? ☐ Yes ☐ No If yes, note depth of strata
From ft. to ft.
Method of Sealing

(9) WATER LEVELS:

Depth at which water was first found ft.
Standing level before perforating ft.
[redacted] level after perforating 42 ft.

(10) WELL TESTS:

Was a pump test made? ☐ Yes ☐ No If yes, by whom?
Yield: gal./min. with ft. draw down after hrs.
Temperature of water Was a chemical analysis made? ☐ Yes ☐ No
Was electric log made of well? ☐ Yes ☐ No

(11) WELL LOG:

Total depth 208 ft. Depth of completed well 208 ft.
Formation: *Describe by color, character, size of material, and structure.*

ft. to	ft.	Formation
0	4	Top soil
4	10	clay
10	11	sand
11	15	clay
15	22	sand
22	27	clay
27	30	sandstone
30	38	clay
38	40	sand
40	46	clay
46	48	sand
48	50	sandstone
50	56	clay
56	60	clay
60	70	sandstone
70	80	sand
80	83	clay
83	88	sand
88	96	clay
96	100	sandstone
100	116	clay
116	118	sand
118	124	clay
124	129	sand + sandstone
129	130	clay
130	135	sand
135	146	clay
146	160	sand
160	164	clay
164	165	sand
165	178	clay
178	181	sand
181	199	clay
199	208	sand + Pea Gravel

FOR OFFICIAL USE ONLY

Work started 7-14 1961 Completed 7-19 1961

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Valley Water Well Drilling & Pump Co.
(Person, firm, or corporation) (Typed or printed)
Address P.O. Box 112, Modesto, Calif.

[SIGNED] Leo A. Henderson
Well Driller

License No. ______ Dated ______, 19____

87026 6-57 50M QUIN △ SPO

DWR 188 (REV. 3-54)

APPENDIX G2

Test Boring, Well Installation and Sampling, and
Aquifer Testing Summary Report
Gill Women's Medical Center Project,
August 11, 2021
Terracon Consultants, Inc.

Test Boring, Well Installation and Sampling, and Aquifer Testing Summary Report

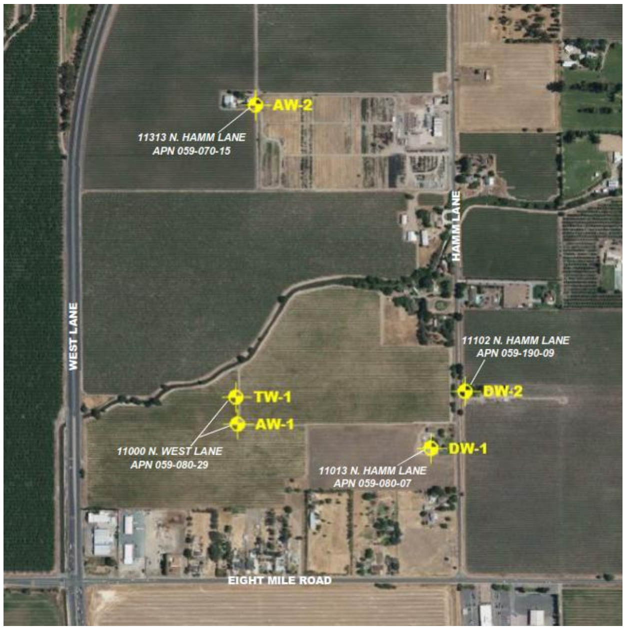
Gill Women's Medical Center Project

11000 North West Lane

Stockton, San Joaquin County, California

August 11, 2021

Terracon Project No. NA207065A



Prepared for:
Gill Women's Medical Center, LLC
Lodi, California

Prepared by:
Terracon Consultants, Inc.
Lodi, California

August 11, 2021

Gill Women's Medical Center, LLC
999 South Fairmont Avenue, Suite 205
Lodi, California 95240

Attn: Mr. Chaman Gill
P: (209) 334-6583
E: chamangill@gmail.com

Re: **Test Boring, Well Installation and Sampling, and Aquifer Testing Summary Report**
Gill Women's Medical Center
11000 North West Lane
Stockton, San Joaquin County, California
Terracon Project No. NA207065A

Dear Mr. Gill:

Terracon Consultants, Inc. (Terracon) is pleased to submit our report of activities completed at the site referenced above. The report presents data from recent field activities to install a new well to assess groundwater quality and estimated groundwater production rates. Terracon conducted the services in general accordance with our proposal dated January 6, 2021, Agreement for Services dated January 15, 2021 and Supplement to Agreement for Services dated February 19, 2021 (Terracon Proposal No. PNA207065A).

Terracon appreciates this opportunity to provide environmental services to Gill Women's Medical Center. Should you have any questions or require additional information, please do not hesitate to contact our office at (209) 367-3701.

Sincerely,
Terracon Consultants, Inc.

For

Tony P. Mikacich, P.G. 9918
Environmental Department Manager

Scott E. Gable, P.G. 6366
Regional Services Specialist

TABLE OF CONTENTS

TEST BORING, WELL INSTALLATION AND SAMPLING, AND AQUIFER TESTING SUMMARY REPORT

GILL WOMEN'S MEDICAL CENTER
11000 NORTH WEST LANE
STOCKTON, SAN JOAQUIN COUNTY, CALIFORNIA
TERRACON PROJECT NO. NA207065A

August 11, 2021

1.0 SITE DESCRIPTION

The site consists of an approximately 42-acre tract of agricultural land located at 11000 North West Lane, 11013 North Ham Lane, and 11105 North Ham Lane in Stockton, San Joaquin County, California, Assessor Parcel Numbers (APNs) 059-080-29, 059-080-07, and 059-080-30, respectively. A topographic map of the area is presented in Appendix A – Exhibit 1. The site is improved with a grape vineyard, one agricultural groundwater well, and the newly installed testing well. A site diagram including the project well locations is presented in Appendix A – Exhibit 2.

2.0 SCOPE OF SERVICES

Terracon's scope of services included completion of the following tasks:

- Test boring advancement, downhole geophysical electrical logs (e-logging), and well design;
- Well completion, development, and pump installation;
- Groundwater sampling for water quality;
- Aquifer testing; and,
- Reporting.

2.1 Objectives

The objective of the project was to install a new groundwater well to evaluate groundwater quality at the site for future potable use, and estimate potential groundwater production rates in support of future site use. A production rate goal of 300 gallons per minute (gpm) to 500 gpm was conveyed by the project team for future site plans.

3.0 PRE-MOBILIZATION ACTIVITIES

Pre-mobilization activities included permitting, utility locating, health & safety planning, and site preparation activities.

3.1 Permitting

Prior to drilling activities D&D Drilling Inc. (DBA Valley Drilling Company) (Valley Drilling) of Galt California obtained an irrigation and agricultural water supply well permit (Number WP0041730) from San Joaquin County Environmental Health Department (EHD).

3.2 Utility Locating

Terracon marked the soil boring and well location and contacted Underground Service Alert USA-811 North, a public service utility locator (Dig Alert Ticket No: W104800083-00W) for clearance of public underground utilities a minimum of 72-hours prior to subsurface activities.

To evaluate the presence of other potential underground utilities within the proposed drilling location, a private geophysical survey was performed across the work area and in the immediate proposed soil boring and well location. The geophysical survey was performed on February 23, 2021 by Ground Penetrating Radar Systems, LLC (GPRS) before drilling commenced on March 1, 2021. Underground utilities were not identified in the immediate area of the proposed soil boring and well location using ground penetrating radar (GPR) or electromagnetic meter (EM) devices.

3.3 Health and Safety Planning

Terracon has a commitment to the safety of all its employees. As such, and in accordance with our *Incident and Injury Free®* safety goals, Terracon conducted the fieldwork under a site-specific health and safety plan developed for this project. Work was performed using the Occupational Health and Safety Administration (OSHA) Level D work attire consisting of hard hats, safety glasses, protective gloves, hearing protection, and protective boots.

3.4 Site Preparation

On February 24 and 25, 2021, prior to boring advancement, Valley Drilling removal a total of three rows of grape vines totaling 240 feet in length in the immediate area of the drill site for equipment access. In addition, approximately 10 truckloads of gravel/roadbase material was placed on the access roads and at the proposed boring and well location to mitigate potential wet weather issues and heavy equipment access.

4.0 FIELD ACTIVITIES

4.1 Test Boring Advancement

The test boring was advanced in compliance with San Joaquin County Well Standards, dated 2005, by Valley Drilling, a California C-57 licensed driller (No. 299383) experienced in the scope of work. The test boring field activities were performed from March 1 through March 3, 2021. The scope of work included the following items:

- A 6-inch diameter test boring was completed by Valley Drilling using a truck-mounted mud-rotary drill rig to a total depth of 455 feet below ground surface (bgs). Biodegradable drilling mud was mixed with cuttings from the borehole and circulated to keep the borehole open during drilling and geophysical logging. A "mud pit" measuring approximately 6 feet wide by 10 feet long by 5 feet deep was excavated adjacent to the boring location and used to contain and circulate drill cuttings and drill fluids. After the drilling activities were complete the pit was backfilled to surface grade using a backhoe.
- After achieving the test boring total drill depth of 455 feet bgs on March 3, 2021, the drill bit and string was removed from the boring and borehole geophysical logging was performed by NorCal Geophysical Consultants, Inc. (a Terracon Company) of Cotati, California. Downhole electric logging devices included natural gamma, short and long-spaced resistivity, point resistance, caliper log, and spontaneous potential (SP). The geophysical logging suite documented expected subsurface stratigraphy including; lithology and bed thickness, stratigraphic correlation, formation porosity, permeability, clay content, water quality, and differentiation between multiple water-bearing units. Based on an evaluation of the geophysical log, which in part showed positive measurements for natural gamma, short normal resistivity, and single point resistivity, typically associated with water-bearing zones. The following approximate zones were interpreted to produce more relative groundwater; 204-212 ft-bgs, 218-232 ft-bgs, 236-242 ft-bgs, 260-266 ft-bgs, 310-334 ft-bgs, 352-376 ft-bgs, and 380-386 ft-bgs. The geophysical log is presented in Appendix B.
- Following the geophysical logging, a well design was evaluated by Terracon, NorCal Geophysical, and Valley Drilling, and was proposed to the client based on the test boring data.

4.2 Geology/Hydrogeology

In general, Terracon encountered light brown to dark brown inner-bedded silts, sands and clays to a total explored depth of 455 feet bgs. The borehole logging was performed using drill cuttings and is presented in Appendix C - California Department of Water Resources (DWR) Well Completion Report (Form 188). Saturated soil was first identified in drill cuttings from approximately 60 ft-bgs. Static groundwater was measured at approximately 58 feet bgs after well construction and during well development and testing. As presented in the section above, the geophysical log is presented in Appendix B.

4.3 Well Installation and Development

Field work included over-drilling the test boring to approximately 14-inches in diameter, well construction, submersible pump installation, and development activities. The well completion was performed in accordance with guidelines from the San Joaquin County Well Standards, February 2005 and communications with SJCEHD staff.

4.4 Well Installation Activities

Based on Terracon's understanding of the project and approved scope of work, the following activities were performed.

On March 17, 2021, Valley Drilling used mud-rotary drill rig to over-drill the 6-inch diameter boring to a 14-inch diameter boring to the total depth of 455 feet bgs. The well was then constructed in the boring with 180 feet of 8-inch diameter, 0.032-inch machine slotted, PVC casing from a total depth of 450 feet bgs up to 270 feet bgs. The actual machined slot size and slotted interval of the well casing was determined based upon the borehole cuttings and downhole geophysical log records, and input by the drilling company with experience building similar wells in the immediate area. Blank PVC casing was used from approximately 270 feet bgs to the surface. The filter pack material consisted of 0.25-inch diameter washed pea gravel. A 10.3 sack mix sand slurry cement grout was used to seal the well from approximately 200 feet bgs to the surface. A copy of the California DWR Well Completion Report (Form 188) is presented in Appendix C.

4.4.1 Well Development

Following the well installation, the well was developed initially using air-lifting and finished using a submersible pump. The well was pumped until the drilling fluids were displaced and groundwater was pumping clear. During development activities pumping was increased to test the estimated flow rate of the well. Development water was dispersed on the ground through three 2-inch discharge hoses extending 100 feet in multiple directions and allowed to evaporate over time.

4.4.2 Pump Installation

On March 22 through March 25, 2021, following the well installation and initial well development, a 6-inch diameter Pentair Berkeley submersible pump Model 6TMH rated for 450 gallons per minute (gpm) was installed in the well. The pump specifications including a pump curve is presented in Appendix C. The pump was installed with approximately 273 feet of 4-inch diameter galvanized steel piping. A temporary electrical panel was installed near the wellhead and a portable 460-volt generator was used to power the well pump during the field activities. The generator was used for electrical power during well development and aquifer testing. The submersible pump was also used to collect groundwater samples.

4.4.3 Wellhead Surveying

On May 12, 2021, following the well installation activities, the wellhead was surveyed by Shoup Land Surveying of Lodi California, a California-licensed land surveyor as required by the County and State. The top of the well casing was measured at 33.10 feet-above mean sea level (ft.-amsl). The well coordinates are shown on the DWR Well Completion Report (Form 188) in Appendix C.

5.0 GROUNDWATER SAMPLING FOR WATER QUALITY

On April 28, 2021, after the completion of the well and development, and during the pump testing, groundwater samples were collected for water quality. Groundwater samples were collected using the submersible pump installed in the well. The well head piping was fitted with a spigot that allowed for sampling. Prior to the collection of the groundwater samples, field parameters including; pH, TDS, conductivity, temperature, turbidity, and oxidation reduction potential (ORP) were collected using a Horiba U52 water quality meter to measure groundwater parameters. After multiple readings of stabilized parameters, the groundwater quality samples were collected and placed directly into laboratory provide sample containers. Groundwater samples were placed on ice and follow chain-of-custody procedures and transported to a California-certified laboratory.

For compliance with Federal Safe Drinking Water Standards and Chapter 15, Title 22 of the of the California Code of Regulations (CCR), groundwater samples were analyzed for the list of analytes presented in Appendix D. Table 1 – Summary of Groundwater Analytical Results lists the results of the analytical laboratory test methods used for compliance with the California State Water Resources Control Board Division of Drinking Water (DDW) Program for public drinking water systems. A summary of the groundwater results is provided below. The laboratory analytical reports are presented in Appendix E.

5.1 Summary of Groundwater Analytical Results

Data packages were checked for completeness upon receipt from the laboratory to ensure that data and QA/QC information requested were present. Data quality was assessed by considering holding times, surrogate recovery, method blanks, matrix spike and matrix spike duplicate recovery, and method reporting limits. Based upon our interpretation of quality control information provided by the laboratory, it is our opinion that the overall dataset is useable as qualified for the purposes of this report.

The following presents a summary of the groundwater analytical results.

- Specific Conductivity was reported in the groundwater sample collected from well TW-1 at a measurement of 228 micromhos per centimeter (µmhos/cm).

- Select general minerals and ions including; chlorate [28 micrograms per liter (µg/L)], chloride [6.0 milligrams per liter (mg/L)], fluoride (0.12 mg/L), nitrate as N (0.71 mg/L), nitrite as NO_3 (3.1 mg/L), nitrate and nitrite as N (0.71 mg/L), and sulfate (6.9 mg/L) were reported above laboratory reporting limits.
- Select metals including; aluminum (11 µg/L), arsenic (4.5 µg/L), barium (69 µg/L), chromium (11 µg/L), copper (11 µg/L), mercury (0.021 µg/L), uranium (0.79 µg/L), and vanadium (33 µg/L) were reported above laboratory reporting limits.
- Strontium 90 was reported at a concentration of 0.610 picoCuries per Liter (pCi/L).
- Gross alpha was reported at 3.13 ± 1.15 pCi/L.
- Gross beta was reported at 1.42 ± 1.01 pCi/L.
- Total alpha radium (226) was reported at 0.228 ± 0.175 pCi/L.
- Tritium was reported at 349 ± 275 pCi/L.
- Radium 228 was reported at 0.630 ± 0.696 pCi/L.
- Dioxin 2,3,7,8 TCDD was not reported above the laboratory MDL 1.70 pg/L.
- 1,2-Dibromochloropropane (DBCP) was not reported above the laboratory MDL of 0.0063 µg/L.
- The remaining analytes including bacteria indicators, perchlorate, VOCs, EDB and DBCP, asbestos, dioxins, organochlorine pesticides, chlorinated herbicides, nitrogen and phosphorous pesticides, SVOCs, carbamates, glyphosate, endothall, diquat and paraquat, halocetic acids, acrylamide, cyanide, and epichlorohydrin were not reported above their respective laboratory reporting limits.

The groundwater analytical results are summarized in Table 1 of Appendix D.

6.0 AQUIFER TESTING AND ANALYSIS

Aquifer testing was performed on the newly completed well to assess the groundwater yield from the well measured as flow rate (Q) in gallons per minute (gpm), and transmissivity (T) in gallons per day, per foot of aquifer thickness (gpd/ft), in addition to draw-down, well yield, efficiency, and storativity. Aquifer testing began with a Step-Drawdown test, followed by a Constant-Rate test. Aquifer test exhibits and tables are presented in Appendix F.

Existing features that were used to collect groundwater level data included the new well TW-1 and on-site well AW-1, as well as three other offsite wells identified in this report as DW-1, DW-2, and AW-2. See Appendix A - Exhibit 2 for the well locations. Well completion reports for the on- and offsite monitoring wells are presented in Appendix C.

Electronic data loggers were deployed in these wells during aquifer testing for groundwater level measurements. Manual groundwater level measurements were also collected from onsite well AW-1.

6.1 Step-Drawdown Test

A step-drawdown test commenced at 11:24 PDT on April 27, 2021 with the initial discharge rate set at a rate of 467 gallons per minute. The purpose of the step drawdown test was to determine the target production rate for the constant rate tests discussed in the next section.

The static depth to groundwater (DTW) in TW-1 was measured prior to commencing pumping. After pumping commenced, DTW measurements were collected from TW-1 at regular intervals during 171 minutes of discharge. While a step test commonly includes several different discharge rates, the data collected during the testing indicated that the well should be able to produce the target sustainable yield; accordingly, only a single pumping rate (i.e., 467 gpm) was employed during the drawdown phase of the step test.

Once the Step-drawdown test was complete, and the data was collected, the pumping was halted at 14:15 PDT. The DTW in TW-1 was measured at regular intervals to document the recovery of the aquifer towards static water levels.

Measurements collected during drawdown and recovery phases of the step test, along with calculated values used in the analyses of aquifer testing measurements, are presented in Appendix F **Table A**. Graphs of time versus DTW data collected from TW-1 during both the drawdown and recovery phases of the step test are presented in **Exhibit A**. To facilitate analyses of the step drawdown test data using the Jacob Straight Line method, the data is plotted on a semi-logarithmic graph with drawdown (i.e., displacement from static) and residual drawdown (i.e., remaining displacement from static) plotted on the linear axes and time plotted on the logarithmic axis.

Applying the Jacob Straight Line method to the step test data (see **Table B**) indicates that the aquifer transmissivity ranges from 55,000 to 106,000 gpd/ft. During the approximately 3 hours of pumping at 467 gpm, drawdown in the pumping well was about 28 feet; this suggests that the specific capacity of the aquifer/well system observed during the step test is roughly 17 gpm per foot of drawdown (gpm/ft).

6.2 Aquifer Drawdown and Recovery Testing

The constant rate drawdown phase of aquifer hydraulic testing commenced at 18:00 PDT on April 27, 2021 with pumping from TW-1. While the discharge rate was somewhat variable, with a measured pumping rate ranging from as low as 421 gpm to a maximum of 476 gpm, over the 24 hours of the well pumping, the average rate from TW-1 over the final 12 hours of pumping was approximately 430 gpm. With the drawdown phase complete, pumping was halted at 17:50 PDT on April 28, 2021.

The DTW measurements were collected at regular time intervals in TW-1 and in a nearby agricultural well (AW-1), located 186 feet south of TW-1. In addition to these wells, unvented pressure transducers with integrated dataloggers were installed in three other wells located between 1,400 and 2,000 feet from TW-1. The discharge rate from TW-1 was low relative to the potential yield of the well; consequently, the data from the transducers indicated neither significant drawdown nor recovery related to the hydraulic testing at TW-1. The groundwater level data recorded by the pressure transducers is presented in a later section.

Measurements collected from TW-1 during drawdown and recovery phases of the aquifer test, along with calculated values used in the analyses of aquifer testing measurements, are presented in **Table C**. The time versus DTW data collected from TW-1 during both the drawdown and recovery phases of the aquifer test are presented in **Exhibit B**. To facilitate analyses of the step test data using the Jacob Straight Line method, the data is plotted on a semi-logarithmic graph with drawdown (i.e., displacement from static), recovery as drawdown (i.e., recovery from maximum drawdown), and residual drawdown (i.e., remaining displacement from static) plotted on the linear axes and time plotted on the logarithmic axis.

Note that the final reading for residual drawdown is a negative value. This indicates there the regional groundwater level rose at least 0.2 feet over the course of the aquifer drawdown and recovery tests. However, the Jacob Straight Line method for estimating aquifer transmissivity relies on the slope *of the straight line; the slope of the best-fit line over the span of t/t' < 50 is expected to be similar even if a correction function was discernable and could be applied.*

Applying the Jacob Straight Line method to the aquifer test data (see **Table B**) indicates that the aquifer transmissivity ranges from 88,000 to 158,000 gpd/ft. The specific capacity observed during the pump test was approximately 15 gpm/ft (i.e., 28 feet of drawdown at 430 gpm) is comparable to that observed during the step test.

While water levels were monitored at AW-1 during the drawdown and recovery phases of the aquifer test, the pump in AW-1 unexpectedly started approximately 30 minutes into the test and remained running for more than two hours. The groundwater discharge rate from AW-1 is unknown; owing to this interference, aquifer parameters were not estimated at this location. Charts indicating DTW measurements recorded during the aquifer test are presented as **Exhibit C.1** (full set) and **Exhibit C.2** (enhanced vertical scale).

While aquifer parameters are not calculated for AW-1, the recovery portion of the testing indicates that water level rebound during the aquifer test was 0.35-ft at a radial distance of 186 feet from the pumping well. This observation indicates that water level impacts from drawdown and recovery at the more-distal wells would be significantly less, considering that these well locations are an order-of-magnitude further from TW-1 than is AW-1.

Pressure Transducer Data Logging at Distal Wells

As noted above, pressure transducers were installed in three wells to record the water pressure and temperature prior to, during, and following the aquifer testing. The purpose of installing pressure transducers was to understand the impact of pumping at TW-1 on these distal wells. Graphs presenting the transducer data, which have been adjusted to remove the effects of barometric pressure changes using data recorded at the Stockton Municipal Airport weather station, are presented in **Exhibit D**. There are several significant features in the data sets as described below.

- All three charts are plotted using the same scaling factors for pressure head (left axis) and temperature (right axis).
- Pressure head values are plotted in blue while temperature values are plotted in orange.
- The transducer at DW-1 stopped recording data around 16:20 PDT on April 27, 2021.
- Temperature changes recorded by the AW-2 transducer appear to correspond to significant pressure changes. Although pumping records at AW-2 are not available, these are interpreted as being related to pump on/off cycles.
- There are a multitude of drop lines along the pressure head curves in DW-1 and DW-2. These perturbances are interpreted as being related to local, short-duration pumping events, likely supplying water to the residences.
- Consistent with limited groundwater level impacts at nearby AW-1, pumping at TW-1 appears to have a minimal impact on groundwater levels at the remote wells.
- Regional water levels vary by several feet in the distal wells over the ~10 days the transducers were installed in the wells. These water level changes dwarf changes resulting from pumping at TW-1 and are interpreted as being related to groundwater resource utilization by others.

Aquifer Testing Discussion / Conclusions

The objective of aquifer hydraulic testing was to evaluate the potential for the aquifer/well system to provide water for the facility at a nominal flow rate between 300 gpm and 500 gpm. The hydraulic testing results indicate that, over a 24-hour period, the system yield realizes the objective. Projecting the observed time-drawdown curve into the future, the test results suggest the long-term yield is sustainable.

The pressure transducer data indicates there is significant variation (i.e., 2-3 feet) in the groundwater level data for wells located between 1,400 and 2,000 feet from TW-1. This variability, which represents variable groundwater resource utilization by others, is orders-of-magnitude larger than the anticipated effects from longer-term pumping that would be required by the facility to support their operations.

7.0 FINDINGS AND CONCLUSIONS

Based on the scope of services described in this report and subject to the limitations described herein, Terracon concludes the following:

- Specific Conductivity was reported in the groundwater sample collected from well TW-1 at a measurement of 228 µmhos/cm.

- Select general minerals and ions were reported above laboratory reporting limits and should be considered for future site use.
- Select metals were reported above laboratory reporting limits and should be considered for future site use.
- Radionuclides were reported above laboratory reporting limits and should be considered for future site use.
- Dioxin 2,3,7,8 TCDD and DBCP were not reported above the laboratory MDLs.
- The remaining groundwater analytical results were not reported above their respective laboratory reporting limits.
- The step test data indicates that the aquifer transmissivity ranges from 55,000 to 106,000 gpd/ft. During the approximately 3 hours of pumping at 467 gpm, drawdown in the pumping well was about 28 feet; this suggests that the specific capacity of the aquifer/well system observed during the step test is roughly 17 gpm per foot of drawdown (gpm/ft).
- The constant rate test data indicates that the aquifer transmissivity ranges from 88,000 to 158,000 gpd/ft. The specific capacity observed during the pump test was approximately 15 gpm/ft (i.e., 28 feet of drawdown at 430 gpm) is comparable to that observed during the step test.
- The recovery portion of the testing at well AW-1 indicates that water level rebound during the aquifer test was 0.35-ft at a radial distance of 186 feet from the pumping well. This observation indicates that water level impacts from drawdown and recovery at the more-distal wells would be significantly less.
- The hydraulic testing results indicate that, over a 24-hour period, the system yield realizes the objective of a pumping rate between 300 gpm and 500 gpm. Projecting the observed time-drawdown curve into the future, the test results suggest the long-term yield is sustainable.
- Groundwater level variability, which represents variable groundwater resource utilization by others, is orders-of-magnitude larger than the anticipated effects from longer-term pumping that would be required by the facility to support their operations.
- Based on the findings of this report, the local aquifer appears to be sufficient to supply the volume of groundwater needed for the planned development.

8.0 RECOMMENDATIONS

If the well is proposed to be used in the future for irrigation and agricultural uses, a permanent power supply should be considered for regular well operation.

If the well is not used, or is inoperable for more than one year, the well should be abandoned per local County and State requirements and guidelines.

9.0 STANDARD OF CARE AND RELIANCE

9.1 Standard of Care

Terracon's services were performed in a manner consistent with generally accepted practices of the profession undertaken in similar studies in the same geographical area during the same time. Terracon makes no warranties, either express or implied, regarding the findings, conclusions, or recommendations. Please note that Terracon does not warrant the work of laboratories, regulatory agencies, or other third parties supplying information used in the preparation of the report. These services were performed in accordance with the scope of work agreed with you, our client, as reflected in our proposal.

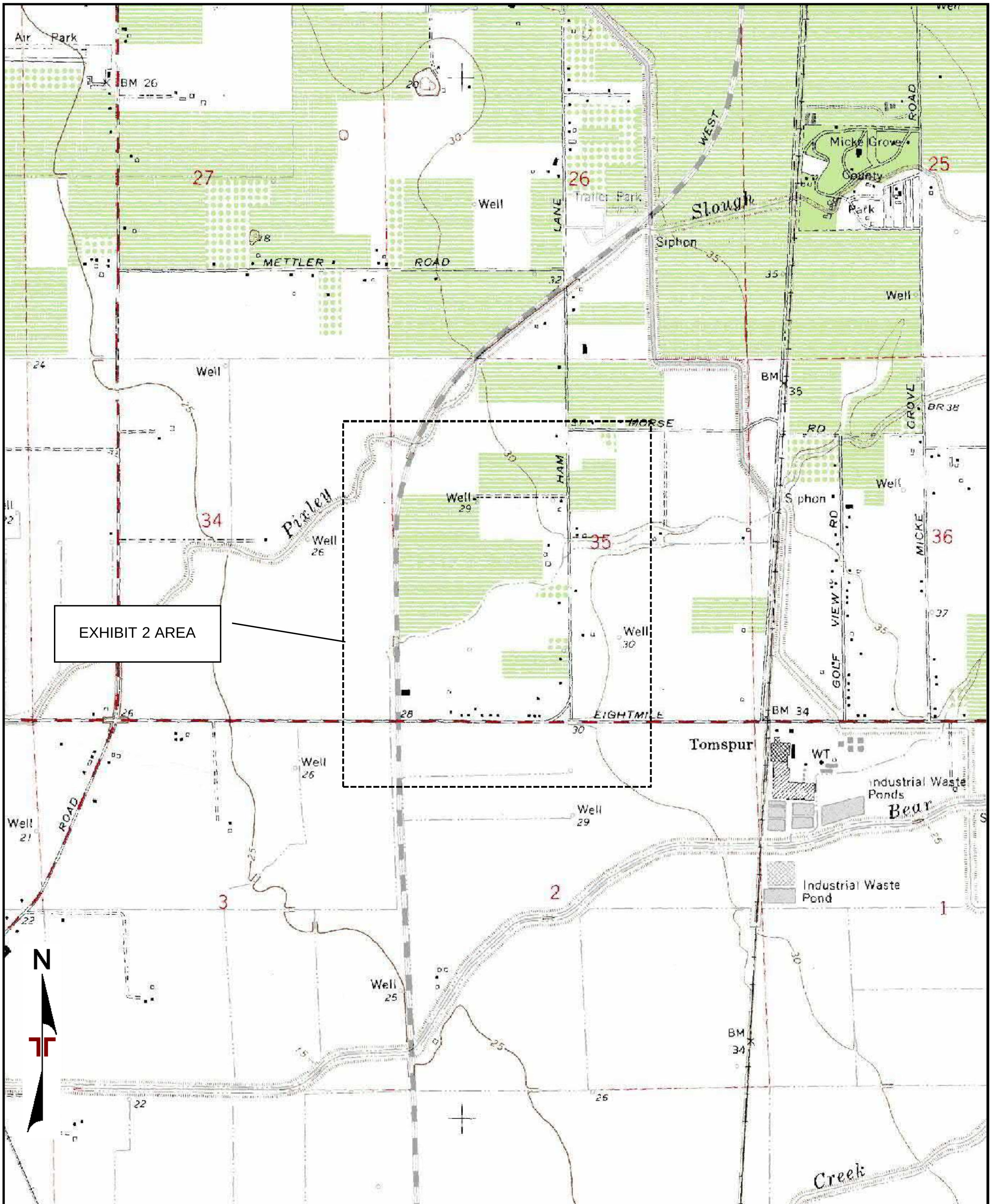
9.2 Additional Scope Limitations

Findings, conclusions, and recommendations resulting from these services are based upon information derived from the on-site activities and other services performed under this scope of work; such information is subject to change over time. Certain indicators of the presence of hazardous substances, petroleum products, or other constituents may have been latent, inaccessible, unobservable, non-detectable, or not present during these services. We cannot represent that the site contains no hazardous substances, toxic materials, petroleum products, or other latent conditions beyond those identified during this report. Subsurface conditions may vary from those encountered at specific borings or wells or during other surveys, tests, assessments, investigations, or exploratory services. The data, interpretations, findings, and our recommendations are based solely upon data obtained at the time and within the scope of these services.

9.3 Reliance

This report has been prepared for the exclusive use of Gill Women's Medical Center, and any authorization for use or reliance by any other party (except a governmental entity having jurisdiction over the site) is prohibited without the express written authorization of Gill Women's Medical Center and Terracon. Any unauthorized distribution or reuse is at Gill Women's Medical Center sole risk. Notwithstanding the foregoing, reliance by authorized parties will be subject to the terms, conditions, and limitations stated in the proposal, Summary report, and our Consultant Agreement and Supplement to Agreement. The limitation of liability defined in the terms and conditions is the aggregate limit of Terracon's liability to Gill Women's Medical Center and all relying parties unless otherwise agreed in writing.

APPENDIX A
EXHIBIT 1 – TOPOGRAPHIC MAP
EXHIBIT 2 – SITE DIAGRAM



TOPOGRAPHIC MAP IMAGE COURTESY OF THE U.S. GEOLOGICAL SURVEY
QUADRANGLES INCLUDE: LODI SOUTH, CA (1/1/1976).

Project Manager: TPM	NA207065	Terracon	TOPOGRAPHIC MAP
Drawn by: TKW	A 1"=2,000'		Gill Women's Medical Center **11000 NORTH WEST LANE** **Stockton, San Joaquin County, California**
Checked by: TPM	N/A		1
Approved by: SEG	AUG 2021		

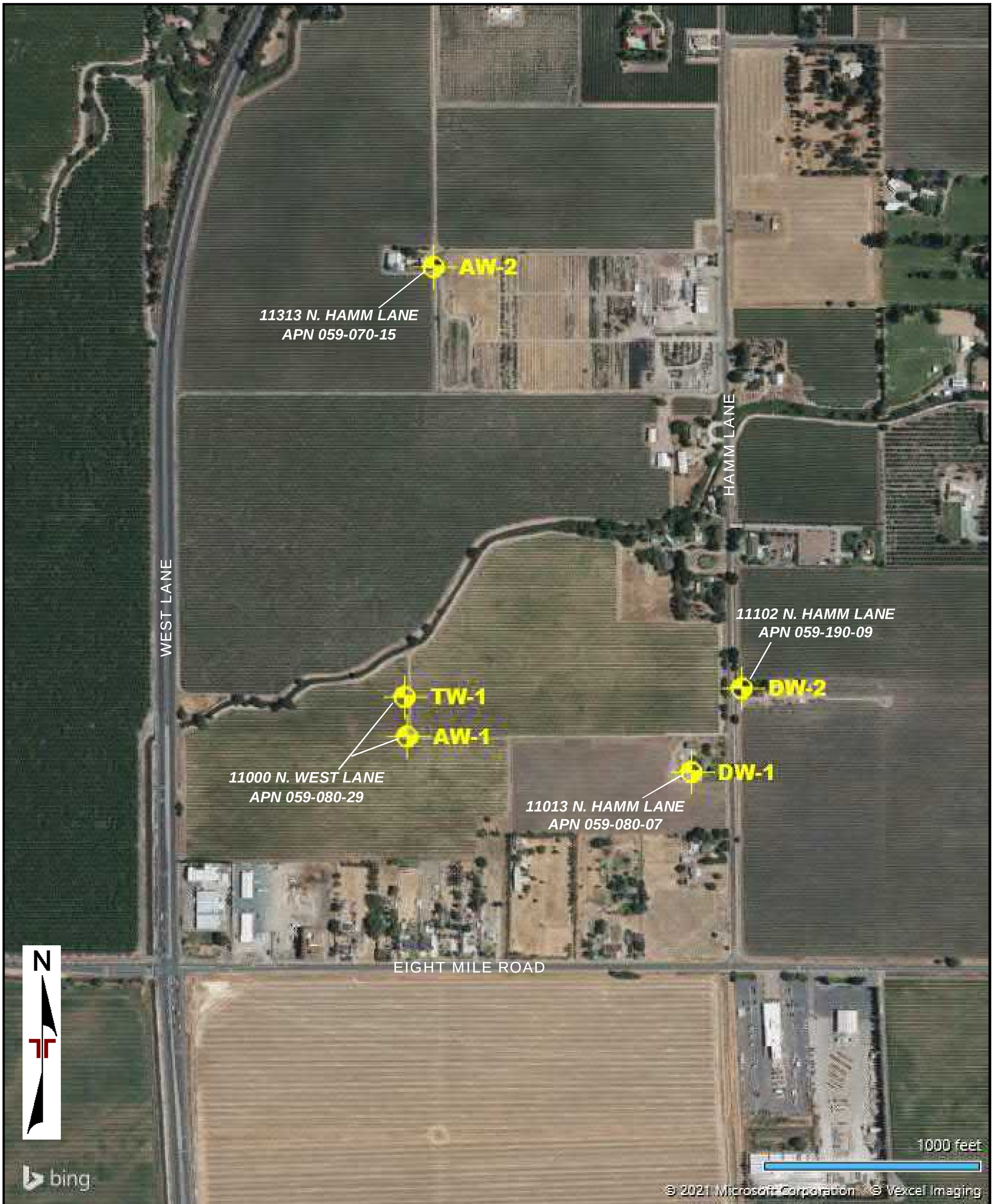


DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

WELL LOCATION

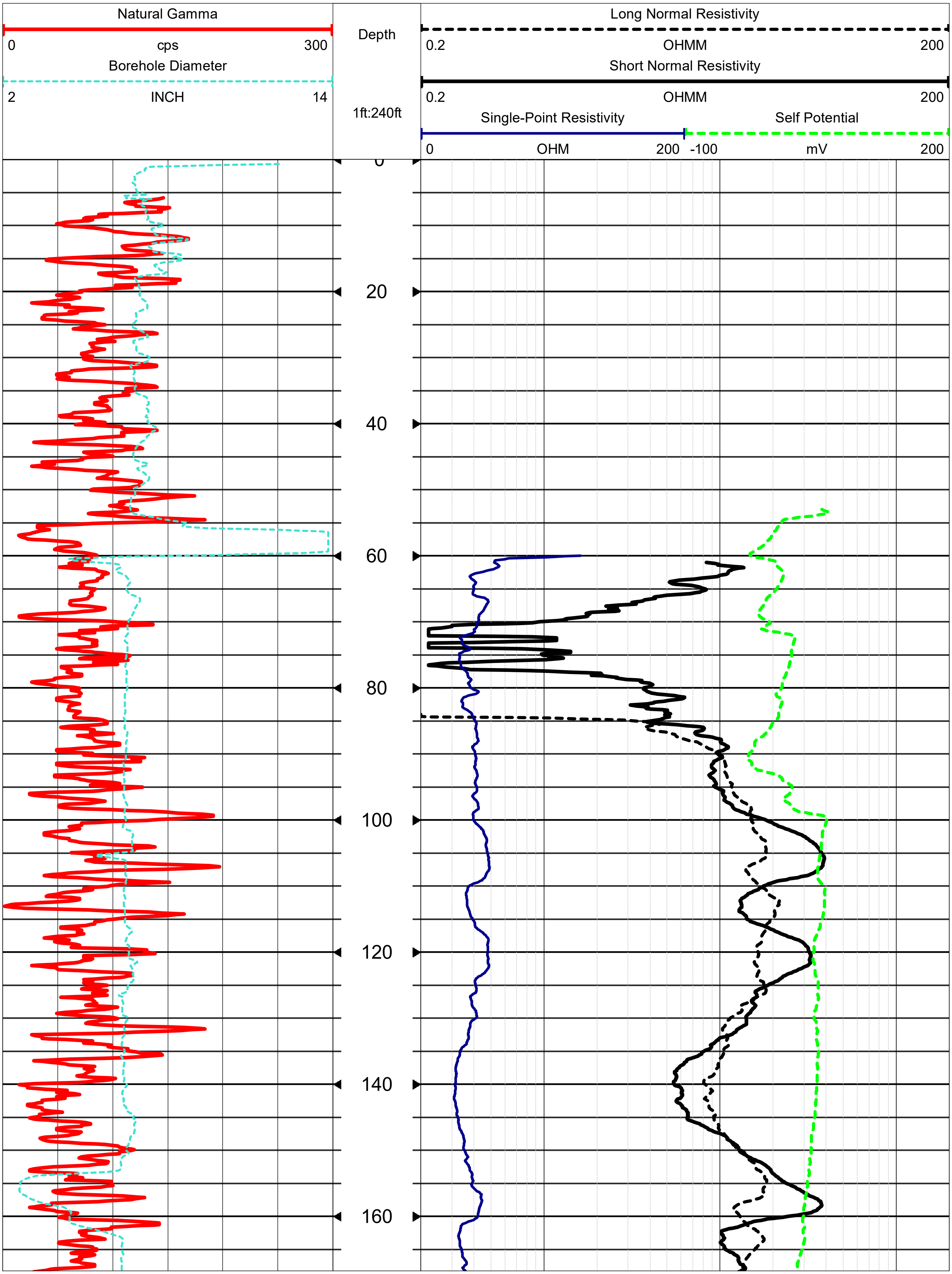
AERIAL PHOTOGRAPHY PROVIDED BY MICROSOFT BING MAPS

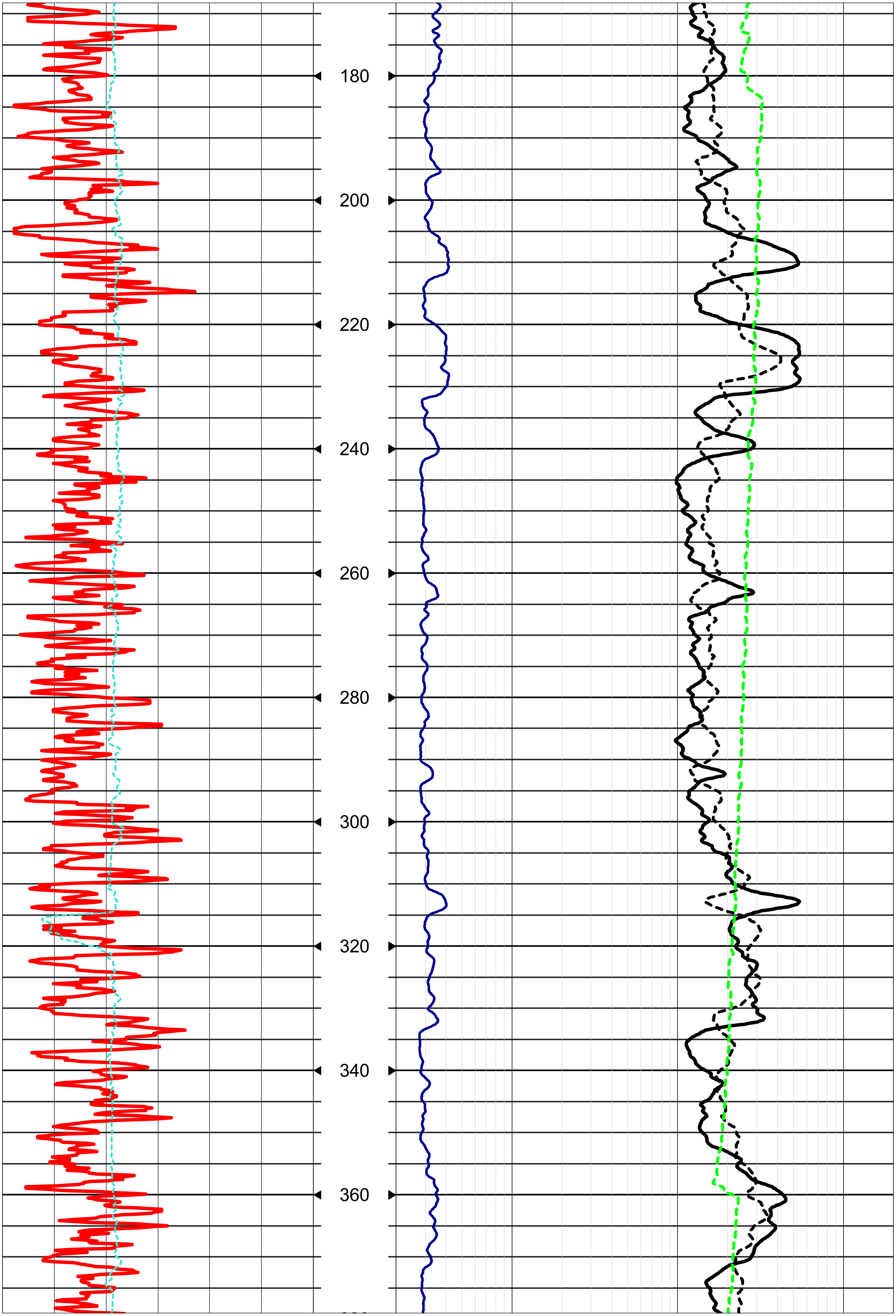
Project Manager: TPM	Project No. NA207065	Terracon	SITE DIAGRAM	Exhibit
Drawn by: TKW	Scale: AS SHOWN	902 Industrial Way Lodi, CA 95240-3106	Gill Women's Medical Center – Well Locations **11000 NORTH WEST LANE** **Stockton, San Joaquin County, California**	2
Checked by: TPM	File Name: N/A			
Approved by: SEG	Date: AUG 2021			

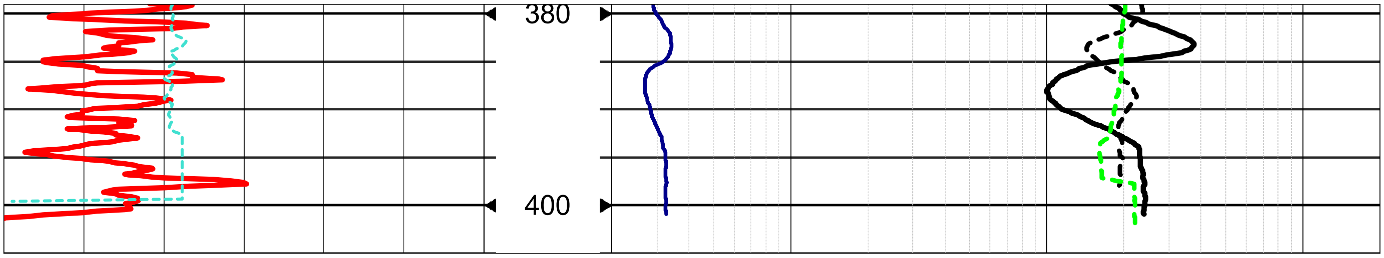
APPENDIX B
GEOPHYSICAL LOGS

NORCAL GEOPHYSICAL CONSULTANTS, INC.	**GAMMA, CALIPER & ELECTRIC LOGS**	COMPANY: Terracon Consultants WELL ID: GW1 FIELD: Stockton COUNTY: San Joaquin DATE: March 3, 2021 CASING: N/A JOB NO. NS217004 STATE: CA

NOTES:




180
200
220
240
260
280
300
320
340
360


380
400

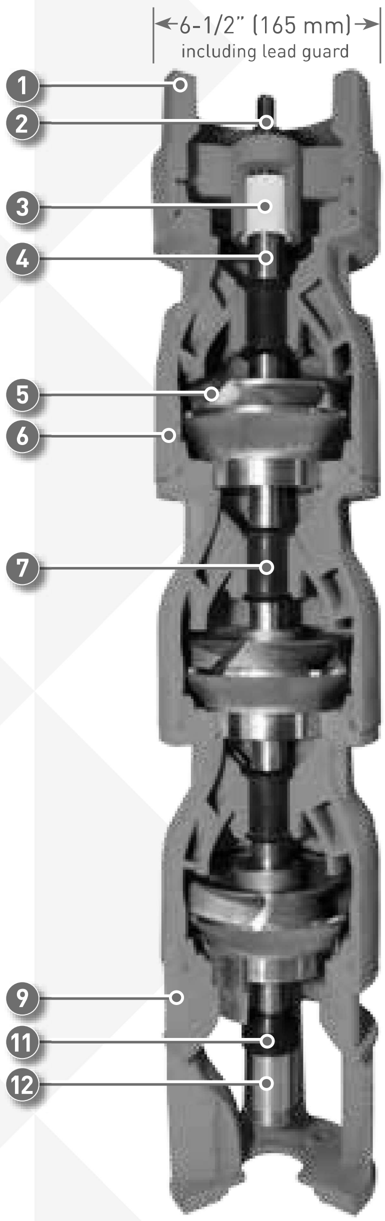
APPENDIX C

SUBMERSIBLE PUMP SPECIFICATIONS AND CURVE, DWR FORM 188, AND WELL COMPLETION REPORTS

NEW!

BERKELEY® 6TMH SERIES
SUBMERSIBLE TURBINE PUMPS

The 6TMH pump series features abrasion and corrosion resistant materials for maximum performance and longevity under the toughest operating conditions, and delivers industry-leading efficiences and head per stage.



1. **Discharge – Ductile iron ASTM 536-84**
   Threaded with large wrench flats and sized for the pump's flow range
2. **Upthrust nut / screw - 304 Stainless Steel**
   Factory pre-set upthrust screw is retained by a stainless steel lockout, providing maximum upthrust protection.
3. **Discharge bearing - Vesconite®**
   Low friction, no water swell, long life. Specific for water-immersed applications, clean or dirty
4. **Shaft - 416 stainless steel**
   Precision ground and polished for reduced running friction and increased service life
5. **Impeller - 304 stainless steel, investment cast**
   Smooth and efficient performance, long life
6. **Bowls - Class 30 cast iron**
   Heavy-walled construction incorporates precision hydraulic design for maximum efficiency and performance. Coated internal passageways on the 6TMH-450 series increases overall pump efficiency and performance.
7. **Isolator bearings - neoprene**
   Unique design channels abrasives away from the stainless steel shaft bearing journal.
8. **Lead guard - 302 stainless steel**
   Protects the motor leads across the full length of the pump (not shown)
9. **Suction bracket - Ductile iron ASTM 536-84**
   Machined for both 4" and 6" motor registers. Designed to effectively divert debris away from the spline engagement area, maximizing durability.
10. **Suction screen – 304 stainless steel**
    Form fitted, provides corrosion resistance, and prevents particulates larger than .19" (4.8 mm) from entering the pump (not shown).
11. **Sand boot - Buna-N (nitrile rubber)**
    Protects coupling and motor splines from abrasive wear.
12. **Motor coupling - 416 stainless steel**
    Fully machined for positive fit; highly corrosion resistant

Vesconite® is a registered trademark of Virginia Engineering Services (Pty) Limited. Berkeley® and Pentair are registered trademarks of Pentair Ltd.

PENTAIR

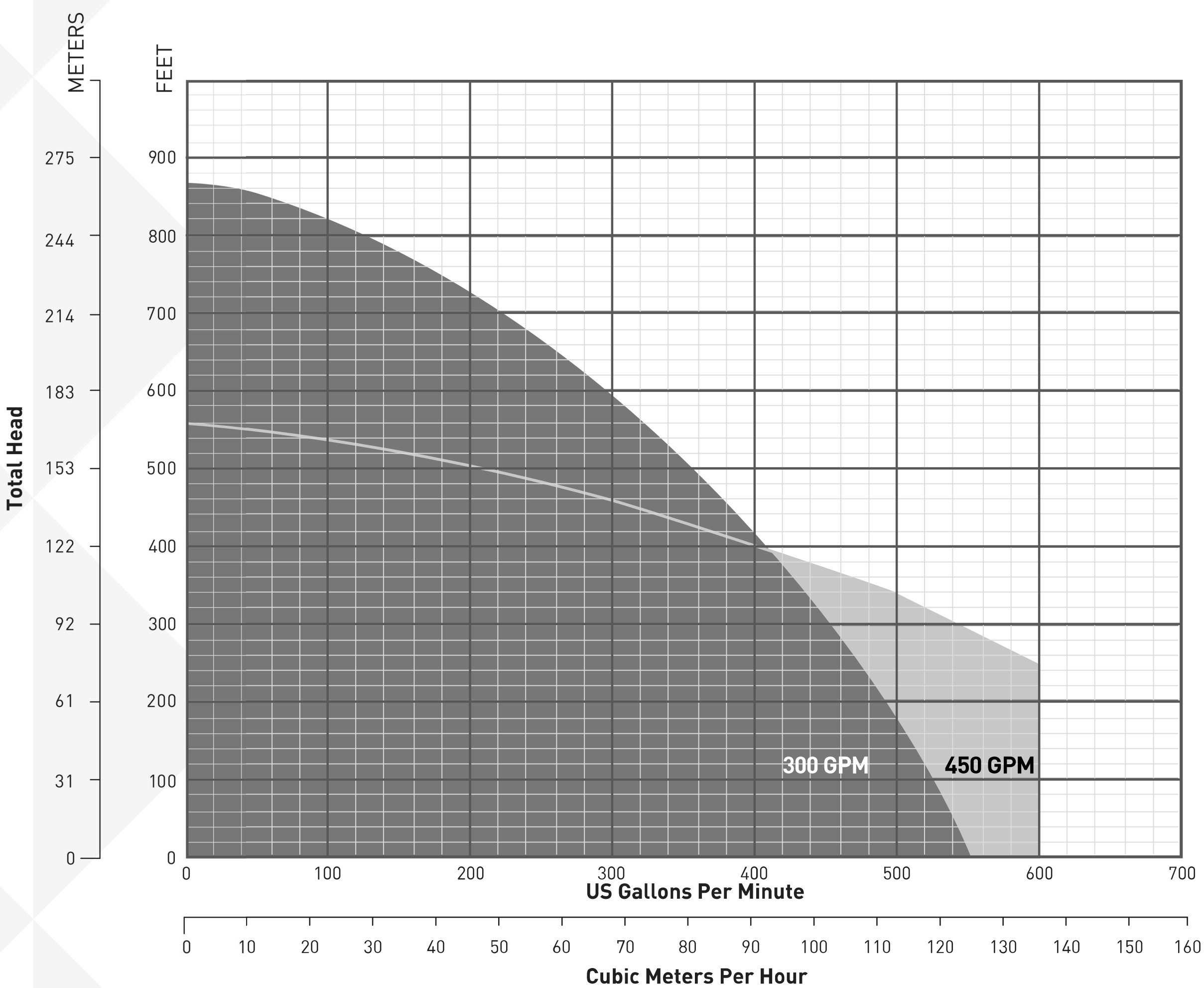
www.BerkeleyPumps.com

SUBMERSIBLE TURBINE PUMPS

Materials of Construction

Part Name	Material	Reference
shaft, motor coupling	416 stainless steel	AISI 416 stainless steel
bowls	Class 30 cast iron	ASTM Class 30
impeller, suction screen, upthrust screw and nut	304 stainless steel	AISI 304 stainless steel
lead guard	302 stainless steel	AISI 302 stainless steel
motor bracket, discharge	ductile iron	ASTM A536-84 65-45-12
sand boot	Buna-N (nitrile rubber)	
isolator bearings	neoprene	
discharge bearing	Vesconite®	

BEC2 ELECTRONIC CATALOG
Powerful pump selection and application software.
Visit www.berkeleypumps.com
and click the BEC2 icon to get started.



PENTAIR

293 WRIGHT STREET, DELAVAN, WI 53115 www.BerkeleyPumps.com
PH: 888-237-5353 ORDERS FAX: 800-321-8793

Vesconite® is a registered trademark of Virginia Engineering Services (Pty) Limited. All other brand or product names are trademarks or registered trademarks of Pentair.
Because we are continuously improving our products and services, Pentair reserves the right to change specifications without prior notice.

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State of California

Well Completion Report

Form DWR 188 Submitted 5/11/2021
WCR2021-005710

Owner's Well Number ______ Date Work Began 03/15/2021 Date Work Ended 03/17/2021

Local Permit Agency San Joaquin County Environmental Health Department

Secondary Permit Agency ______ Permit Number WP0041730 Permit Date 02/23/2021

Well Owner (must remain confidential pursuant to Water Code 13752)

Name JASBIR S GILL FAMILY LTD PTP, JASBIR GILL

Mailing Address P.O. BOX 1450

City LODI State CA Zip 95241

Planned Use and Activity

Activity New Well

Planned Use Water Supply Irrigation - Agriculture

Well Location

Address 11000 N WEST LANE RD

City LODI Zip 95242 County San Joaquin

	Deg.	Min.	Sec.	
Latitude	38	3	36.1763	N
Longitude	-121	17	46.1176	W

Dec. Lat. 38.060049 Dec. Long. -121.2961438

Vertical Datum ______ Horizontal Datum WGS84

Location Accuracy ______ Location Determination Method ______

APN 05908029

Township 03 N

Range 06 E

Section 35

Baseline Meridian Mount Diablo

Ground Surface Elevation ______

Elevation Accuracy ______

Elevation Determination Method ______

Borehole Information

Orientation Vertical Specify ______

Drilling Method Direct Rotary Drilling Fluid Polymer

Total Depth of Boring 450 Feet

Total Depth of Completed Well 450 Feet

Water Level and Yield of Completed Well

Depth to first water 80 (Feet below surface)

Depth to Static Water Level ______ (Feet) Date Measured ______

Estimated Yield* ______ (GPM) Test Type ______

Test Length ______ (Hours) Total Drawdown ______ (feet)

*May not be representative of a well's long term yield.

Geologic Log - Free Form

Depth from Surface Feet to Feet		Description
0	15	CLAY
15	40	SANDSTONE
40	45	CLAY
45	60	SANDSTONE
60	65	CLAY
65	120	SANDSTONE/CLAY
120	130	CLAY
130	190	SANDSTONE
190	208	CLAY
208	250	SANDSTONE
250	260	CLAY
260	295	SANDSTONE
295	305	CLAY
305	380	SANDSTONE
380	385	CLAY

385	420	SANDSTONE
420	425	CLAY
425	440	SANDSTONE
440	450	CLAY

Casings

Casing #	Depth from Surface Feet to Feet		Casing Type	Material	Casings Specificatons	Wall Thickness (inches)	Outside Diameter (inches)	Screen Type	Slot Size if any (inches)	Description
1	0	270	Blank	PVC	OD: 8.625 in. | SDR: 21 | Thickness: 0.410 in.	0.41	8.625			
2	270	450	Screen	PVC	OD: 8.625 in. | SDR: 21 | Thickness: 0.410 in.	0.41	8.625	Milled Slots	0.032	

Annular Material

Depth from Surface Feet to Feet		Fill	Fill Type Details	Filter Pack Size	Description
0	200	Cement	10.3 Sack Mix		
200	450	Other Fill	See description.	.25	PEA GRAVEL

Other Observations:

Borehole Specifications

Depth from Surface Feet to Feet		Borehole Diameter (inches)
0	450	14

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

Name D & D DRILLING INC DBA VALLEY DRILLING CO
Person, Firm or Corporation

P O BOX 42 | GALT | CA | 95632
Address | City | State | Zip

Signed *electronic signature received* | 05/11/2021 | 299383
C-57 Licensed Water Well Contractor | Date Signed | C-57 License Number

DWR Use Only

CSG #	State Well Number	Site Code	Local Well Number

N W

Latitude Deg/Min/Sec Longitude Deg/Min/Sec

TRS:

APN:

STATE OF CALIFORNIA - CALIFORNIA NATURAL RESOURCES AGENCY GAVIN NEWSOM, *Governor*

DEPARTMENT OF WATER RESOURCES
NORTH CENTRAL REGION OFFICE
3500 INDUSTRIAL BOULEVARD
WEST SACRAMENTO, CA 95691

August 3, 2020

Ms. Hilary Garcia
Terracon
902 Industrial Way
Lodi , CA 95240

Dear Ms. Garcia:

In response to your request, enclosed is a copy of the Well Completion Report which most closely matches the description for the well for the following location:

> 11000 N. West Lane, Lodi, CA; San Joaquin County
> WCR: #67139
> The well was located using the following: well construction details.

If you need additional information or have any questions, please contact Haley Hattendorf at (916) 376-9614 or fax (916) 376-9676.

Sincerely,

Haley Hattendorf

Haley Hattendorf, E.I.T.
Groundwater Supply Assessment and
Special Studies Section

Enclosures

2659

E
M

ORIGINAL
File Original, Duplicate and Triplicate with the
REGIONAL WATER POLLUTION
CONTROL BOARD No. FP
(Insert appropriate number)

WATER WELL DRILLERS REPORT

(Sections 7076, 7077, 7078, Water Code)

STATE OF CALIFORNIA

1704

Do Not Fill In
No 67139
State Well No. 3N/6E-35M
Other Well No. 3N/6E-35M 90

(1) OWNER:
Name
Address

(2) LOCATION OF WELL:
County San Joaquin Owner's number, if any—
R. F. D. or Street No. West Lane Road north of Eight Mile Road 300 yds. east in field

(3) TYPE OF WORK (check):
New well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (check):
Domestic ☐ Industrial ☐ Municipal ☐
Irrigation ☒ Test Well ☐ Other ☐

(5) EQUIPMENT:
Rotary ☐
Cable ☒
Dug Well ☐

(6) CASING INSTALLED:
SINGLE ☒ DOUBLE ☐

From ft.	to ft.	Diam.	Gage or Wall
0	168	14	10

If gravel packed

Diameter of Bore	from ft.	to ft.

Type and size of shoe or well ring 7/8 X 4 X 14
Size of gravel:
Describe joint Butt

(7) PERFORATIONS:
Type of perforator used Mills
Size of perforations 2 1/2 in., length, by 1/4 in.

From ft.	to ft.	Perf. per row	Rows per ft.
116	118		
124	135		
146	160		
164	165		

(8) CONSTRUCTION:
Was a surface sanitary seal provided? ☐ Yes ☐ No To what depth ft.
Were any strata sealed against pollution? ☐ Yes ☐ No If yes, note depth of strata
From ft. to ft.
Method of Sealing

(9) WATER LEVELS:
Depth at which water was first found ft.
Standing level before perforating ft.
Standing level after perforating 42 ft.

(10) WELL TESTS:
Was a pump test made? ☐ Yes ☐ No If yes, by whom?
Yield: gal./min. with ft. draw down after hrs.
Temperature of water Was a chemical analysis made? ☐ Yes ☐ No
Was electric log made of well? ☐ Yes ☐ No

(11) WELL LOG:
Total depth 208 ft. Depth of completed well 208 ft.
Formation: Describe by color, character, size of material, and structure.

ft.	to ft.	Formation
0	4	Top soil
4	10	clay
10	11	sand
11	15	clay
15	22	sand
22	27	clay
27	30	sandstone
30	38	clay
38	40	sand
40	46	clay
46	48	sand
48	50	sandstone
50	56	clay
56	60	sand
60	70	sandstone
70	80	sand
80	83	clay
83	88	sand
88	96	clay
96	100	sandstone
100	116	clay
116	118	sand
118	124	clay
124	129	sand + sandstone
129	130	clay
130	135	sand
135	146	clay
146	160	sand
160	164	clay
164	165	sand
165	178	clay
178	181	sand
181	199	clay
199	208	sand + Pea Gravel

FOR OFFICIAL USE ONLY

Work started 7-14 1961. Completed 7-19 1961

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Valley Water Well Drilling & Pump Co.
(Person, firm, or corporation) (Typed or printed)
Address Rt 9 Box 112, Modesto Calif

[SIGNED] Leo A. Henderson
Well Driller

License No. Dated , 19

57026 6-57 50M QUIN SPO

DWR 188 (REV. 3-54)

STATE OF CALIFORNIA - CALIFORNIA NATURAL RESOURCES AGENCY GAVIN NEWSOM, *Governor*

DEPARTMENT OF WATER RESOURCES
NORTH CENTRAL REGION OFFICE
3500 INDUSTRIAL BOULEVARD
WEST SACRAMENTO, CA 95691

June 1, 2021

Ms. Tamara Woods
Terracon Consultants
902 Industrial Way
Lodi , CA 95240

Dear Ms. Woods:

In response to your request, enclosed is a copy of the Well Completion Report which most closely matches the description for the well for the following location:

> 11013 N Hamm Lane, Lodi, CA; San Joaquin County
> WCR: #270884
> The well was located using the following: APN, address.

If you need additional information or have any questions, please contact Haley Hattendorf at (916) 376-9614 or fax (916) 376-9676.

Sincerely,

Haley Hattendorf, E.I.T.
Groundwater Supply Assessment and
Special Studies Section

Enclosures

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

WATER WELL DRILLERS REPORT

ORIGINAL
File with DWR

Do not fill in

No. 270884

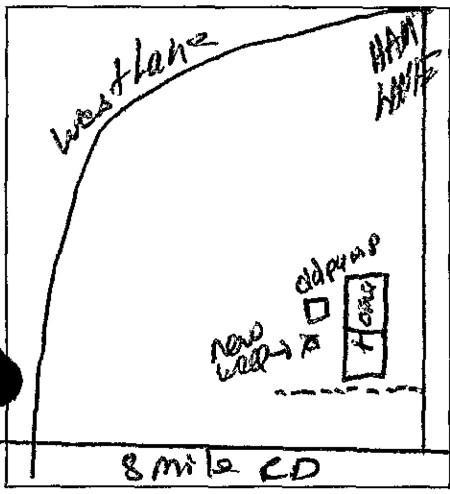
Notice of Intent No. ______
Local Permit No. or Date 89-2221

059-080-007

State Well No. ______
Other Well No. 03N06E35P

(1)
Ad
Ci

(2) LOCATION OF WELL (See instructions):
County San Joaquin Owner's Well Number ______
Well address if different from above ______
Township 3N Range 6E Section 35
Distance from cities, roads, railroads, fences, etc. ~~well is directly behind home about 10 ft from existing well~~



WELL LOCATION SKETCH

(3) TYPE OF WORK:
New Well ☒ Deepening ☐
Reconstruction ☐
Reconditioning ☐
Horizontal Well ☐
Destruction ☐ (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic ☒
Irrigation ☐
Industrial ☐
Test Well ☐
Municipal ☐
Other ☒
(Describe)

(5) EQUIPMENT:
Rotary ☐ Reverse ☐
Cable ☒ Air ☐
Other ☐ Bucket ☐

(6) GRAVEL PACK:
Yes ☐ No ☒ Size ______
Diameter of bore ______
Packed from ______ to ______ ft.

(7) CASING INSTALLED:
Steel ☒ Plastic ☐ Concrete ☐

From ft.	To ft.	Dia. in.	Gage or Wall
0	193	8 5/8	.156

(8) PERFORATIONS:
Type of perforation or size of screen ______

From ft.	To ft.	Slot size

(9) WELL SEAL:
Was surface sanitary seal provided? Yes ☒ No ☐ If yes, to depth 100 ft.
Were strata sealed against pollution? Yes ☐ No ☐ Interval ______ ft.
Method of sealing cement grout

(10) WATER LEVELS:
Depth of first water, if known 65 ft.
Standing level after well completion 63 ft.

(11) WELL TESTS:
Was well test made? Yes ☐ No xx If yes, by whom? ______
Type of test Pump ☐ Bailer ☐ Air lift ☐
Depth to water at start of test ______ ft. At end of test ______ ft.
Discharge ______ gal/min after ______ hours Water temperature ______
Chemical analysis made? Yes ☐ No ☐ If yes, by whom? ______
Was electric log made Yes ☐ No ☐ If yes, attach copy to this report

(12) WELL LOG: Total depth ______ ft. Completed depth ______ ft.

from ft.	to ft.	Formation (Describe by color, character, size or material)
0	4	sandy soil
4	18	sandy clay
18	25	brown sand
25	28	clay
28	40	sand some gravel
40	50	brown sandy clay
50	62	light cream clay&sandy clay
62	80	brown sandy clay
80	84	sand&gravel
84	90	red brown sandy clay
90	101	coarse sand&gravel
101	125	clay
125	129	sand
129	144	sandy clay&clay
144	150	sand
150	165	sandy clay
165	168	sand
168	174	mostly brittle clay some soft spots
174	179	silty sandy clay
179	184	mosty brittle clay&sandstone
184	189	soft clay some sand
189	195	med brown clay, some brittle clay
195	197	coarse sand
197	202	hard sndy clay
202	211	coarse sand and gravel

CONFIDENTIAL NOT FOR PUBLIC USE WATER CODE SEC. 13752

Work started ______ 19 ______ Completed Sept 1989

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

Signed ______ (Well Driller)
NAME Thayer Well Drilling
(Person, firm, or corporation) (Typed or printed)
Address 6281 Treosti Pl
City Valley Springs ZIP ______
License No. 391542 Date of this report ______

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

DWR 188 (REV. 12-86) 86 96355

DEPARTMENT OF WATER RESOURCES
NORTH CENTRAL REGION OFFICE
3500 INDUSTRIAL BOULEVARD
WEST SACRAMENTO, CA 95691

June 15, 2021

Ms. Tamara Woods
Terracon Consultants
902 Industrial Way
Lodi , CA 95240

Dear Ms. Woods:

In response to your request, enclosed is a copy of the Well Completion Report which most closely matches the description for the well for the following location:

11046 N Ham Lane, Lodi, CA; San Joaquin County
WCR: #805034
The well was located using the following: address.

If you need additional information or have any questions, please contact Haley Hattendorf at (916) 376-9614 or fax (916) 376-9676.

Sincerely,

Haley Hattendorf

Haley Hattendorf, E.I.T.
Groundwater Supply Assessment and
Special Studies Section

Enclosures

ORIGINAL
File with DWR

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

No. 805034

DWR USE ONLY — DO NOT FILL IN
03N06E35
STATE WELL NO./STATION NO.
380837 LATITUDE — 1211709 LONGITUDE
0591190111 APN/TRS/OTHER

Page ___ of ___
Owner's Well No. ___
Date Work Began ___, Ended ___
Local Permit Agency SAN JOAQUIN
Permit No. 0036989 Permit Date ___

GEOLOGIC LOG

ORIENTATION (✓) ___ VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)
DRILLING METHOD ___ FLUID ___

DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION Describe material, grain size, color, etc.
1	17	SANDY
18	22	CLAY
23	42	CLAY SAND
43	50	CLAY
51	67	SAND
68	84	CLAY
85	92	SAND
93	115	CLAY
116	130	SAND - ROCKS
131	147	CLAY
148	188	SAND
189	208	CLAY
209	221	SAND - GRAVEL
222	233	CLAY
234	265	SAND - GRAVEL

TOTAL DEPTH OF BORING 265 (Feet)
TOTAL DEPTH OF COMPLETED WELL ___ (Feet)

WELL OWNER
[redacted]

WELL LOCATION
Address 11046 N HAM LN
City ___
County ___
APN Book ___ Page ___ Parcel ___
Township ___ Range ___ Section ___
Latitude ___ DEG. MIN. SEC. NORTH Longitude ___ DEG. MIN. SEC. WEST

LOCATION SKETCH
NORTH — WEST — EAST — SOUTH
Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. **PLEASE BE ACCURATE & COMPLETE.**

ACTIVITY (✓)
✓ NEW WELL
MODIFICATION/REPAIR
___ Deepen
___ Other (Specify)
___ DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

PLANNED USES (✓)
✓ WATER SUPPLY
✓ Domestic ___ Public
___ Irrigation ___ Industrial
MONITORING ___
TEST WELL ___
CATHODIC PROTECTION ___
HEAT EXCHANGE ___
DIRECT PUSH ___
INJECTION ___
VAPOR EXTRACTION ___
SPARGING ___
REMEDIATION ___
OTHER (SPECIFY) ___

WATER LEVEL & YIELD OF COMPLETED WELL
DEPTH TO FIRST WATER ___ (Ft.) BELOW SURFACE
DEPTH OF STATIC WATER LEVEL 78 (Ft.) & DATE MEASURED ___
ESTIMATED YIELD * 200 (GPM) & TEST TYPE AIR
TEST LENGTH 4 (Hrs.) TOTAL DRAWDOWN ___ (Ft.)
* May not be representative of a well's long-term yield.

CASING (S)

DEPTH FROM SURFACE Ft.	to Ft.	BORE-HOLE DIA. (Inches)	BLANK	SCREEN	CON-DUCTOR	FILL PIPE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
1	225	12	✓				PVC	6		
				✓						32T/1
265	225			✓			PVC	6		

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	to Ft.	CE-MENT (✓)	BEN-TONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
1	120	✓			
120	265			✓	BirdEye

ATTACHMENTS (✓)
___ Geologic Log
___ Well Construction Diagram
___ Geophysical Log(s)
___ Soil/Water Chemical Analyses
___ Other ___
ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT
I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.
NAME A & R GROSS Drilling
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)
PO BOX 178 WOODBRIDGE CA 95253
ADDRESS CITY STATE ZIP
Signed [signature] 3-7-04 377385
WELL DRILLER/AUTHORIZED REPRESENTATIVE DATE SIGNED C-57 LICENSE NUMBER

DWR 188 REV. 11-97 IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

APPENDIX D
TABLES
TABLE 1 – SUMMARY OF GROUNDWATER ANALYTICAL RESULTS

Table 1 - Summary of Groundwater Well Analytical Results
Gill Women's Medical Center
11000 North West Lane
Stockton, California 95242
Terracon Project No. NA207065A

Sample ID	Units	TW-1-W
Sample Date		4/28/2021
Bacteria Indicators by EPA Standard Method (SM) 9221		
Fecal Coliform	MPN/100ml	ND<1.8
Total Coliform	MPN/100ml	ND<1.8
E. Coli	MPN/100ml	ND<1.8
Specific Conductivity at 25 C by Method SM2510B		
Specific Conductivity	µmhos/cm	**228**
General Minerals and Ions by EPA Method 300.1		
Bromate	µg/L	ND<0.20
Chlorate	µg/L	**28**
Chloride	mg/L	**6.0**
Chlorite	µg/L	ND<0.14
Fluoride	mg/L	**0.12**
Nitrate as N	mg/L	**0.71**
Nitrate as NO3-	mg/L	**3.1**
Nitrite as N	mg/L	ND<0.026
Nitrite as NO2-	mg/L	ND<0.085
Nitrate & Nitrite as N	mg/L	**0.71**
Sulfate	mg/L	**6.9**
Perchlorate by EPA Method 314.0		
Perchlorate	µg/L	ND<0.27
Metals by EPA Methods 200.8		
Aluminum	µg/L	**11**
Antimony	µg/L	ND<0.060
Arsenic	µg/L	**4.5**
Barium	µg/L	**69**
Beryllium	µg/L	ND<0.060
Cadmium	µg/L	ND<0.030
Chromium	µg/L	**11**
Copper	µg/L	**11**
Nickel	µg/L	ND<0.15
Selenium	µg/L	ND<0.42
Thallium	µg/L	ND<0.010
Mercury	µg/L	**0.021**
Uranium	µg/L	**0.79**
Vanadium	µg/L	**33**
Organics		
Volatile Organic Compounds (VOCs) by EPA Method 524.3		
All VOCs	µg/L	ND

Terracon

EDB and DBCP by EPA Method E524.3		
1,2-Dibromoethane (EDB)	µg/L	ND<0.015
1,2-Dibromochloropropane (DBCP)	µg/L	ND<0.0063
Radionuclides		
Strontium 90	pci/L	**0.610**
Gross Alpha	pci/L	**3.13 ± 1.15**
Gross Beta	pci/L	**1.42 ± 1.01**
Total Alpha Radium (226)	pci/L	**0.228 ± 0.175**
Tritium	pci/L	**349 ± 275**
Radium 228	pci/L	**0.630 ± 0.696**
Other		
Asbestos by EPA Method 600 R-94/134		
Asbestos	MFL	ND<0.2
Dioxin 2,3,7,8-TCDD by EPA Method E1613B		
2,3,7,8-TCDD	pg/L	ND<1.70
Organochlorine Pesticides (OCPs) & Polychlorinated Biphenyls (PCBs) by EPA Method E505		
OCPs & PCBs	µg/L	ND
Chlorinated Herbicides (CHs) by EPA Method E515.3		
CHs	µg/L	ND
Nitrogen (N) and Phosphorous (P) containing Pesticides by EPA Method E525.2		
N and P containing Pesticides	µg/L	ND
Semi-Volatile Organic Compounds (SVOCs) by EPA Method E525.2		
SVOCs	µg/L	ND
Carbamates by HPLC with Derivatization by EPA Method E531.1		
Carbamates HPLC w/ Derivatization	µg/L	ND
Glyphosate by HPLC with Derivatization by EPA Method E547		
Glyphosate	µg/L	ND<2.2
Endothall by GC-MS by EPA Method E548.1		
Endothall	µg/L	ND<4.1
Diquat and Paraquat by EPA Method E549.2		
Diquat	µg/L	ND<1.6
Paraquat	µg/L	ND<3.5
Halocetic Acids by EPA Method E552.2		
Halocetic Acids	µg/L	ND
Acrylamide by HPLC Method SW8316		
Acrylamide	µg/L	ND<2.0
Cyanide, Total by Method Kelada-01		
Total Cyanide	µg/L	ND<0.77
Epichlorohydrin by HPLC Method MAI		
Epichlorohydrin	µg/L	ND<1.0

Notes:

ND = Not detected above laboratory reported detection limit (RL)

Bold value indicates a detection.

<Value = Analyte not detected above the laboratory RL

MFL = Millions of Fibers per Liter over 10 µm in length

mg/L = Milligrams per Liter

MPN/100 ml = Most Probable Number per 100 Milliliter

pci/L = Picocuries per Liter

pg/L = Picograms per Liter

µg/L = Micrograms per Liter

µmhos/cm = Micromhos per centimeter

APPENDIX E
ANALYTICAL REPORT AND CHAIN OF CUSTODY

McCampbell Analytical, Inc.

"When Quality Counts"

Analytical Report

WorkOrder:	2104H15	**Amended:**	08/06/2021
		Revision:	1
Report Created for:	Terracon		
	902 Industrial Way Lodi, CA 95240		
Project Contact:	Tony P. Mikacich		
Project P.O.:			
Project:	NA207065A; Gill Medical Center		
Project Received:	04/29/2021		

Analytical Report reviewed & approved for release on 06/02/2021 by:

Susan Thompson
Project Manager

The report shall not be reproduced except in full, without the written approval of the laboratory. The analytical results relate only to the items tested. Results reported conform to the most current NELAP standards, where applicable, unless otherwise stated in a case narrative.

McCampbell Analytical, Inc.
"When Quality Counts"

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Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mccampbell.com / E-mail: main@mccampbell.com

Glossary of Terms & Qualifier Definitions

Client: Terracon
Project: NA207065A; Gill Medical Center
WorkOrder: 2104H15

Glossary Abbreviation

%D	Serial Dilution Percent Difference
95% Interval	95% Confident Interval
CPT	Consumer Product Testing not NELAP Accredited
DF	Dilution Factor
DI WET	(DISTLC) Waste Extraction Test using DI water
DISS	Dissolved (direct analysis of 0.45 µm filtered and acidified water sample)
DLT	Dilution Test (Serial Dilution)
DUP	Duplicate
EDL	Estimated Detection Limit
ERS	External reference sample. Second source calibration verification.
ITEF	International Toxicity Equivalence Factor
LCS	Laboratory Control Sample
LQL	Lowest Quantitation Level
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit
ML	Minimum Level of Quantitation
MS	Matrix Spike
MSD	Matrix Spike Duplicate
N/A	Not Applicable
ND	Not detected at or above the indicated MDL or RL
NR	Data Not Reported due to matrix interference or insufficient sample amount.
PDS	Post Digestion Spike
PDSD	Post Digestion Spike Duplicate
PF	Prep Factor
RD	Relative Difference
RL	Reporting Limit (The RL is the lowest calibration standard in a multipoint calibration.)
RPD	Relative Percent Deviation
RRT	Relative Retention Time
SPK Val	Spike Value
SPKRef Val	Spike Reference Value
SPLP	Synthetic Precipitation Leachate Procedure
ST	Sorbent Tube
TCLP	Toxicity Characteristic Leachate Procedure
TEQ	Toxicity Equivalents
TZA	TimeZone Net Adjustment for sample collected outside of MAI's UTC.
WET (STLC)	Waste Extraction Test (Soluble Threshold Limit Concentration)

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Glossary of Terms & Qualifier Definitions

Client: Terracon
Project: NA207065A; Gill Medical Center
WorkOrder: 2104H15

Analytical Qualifiers

H	Samples were analyzed out of hold time
J	Result is less than the RL/ML but greater than the MDL. The reported concentration is an estimated value.
a14	Reporting limit raised due to the physical nature of the sample.

Quality Control Qualifiers

F1	MS/MSD recovery and/or RPD is out of acceptance criteria; LCS validates the prep batch.
F2	LCS/LCSD recovery and/or RPD/RSD is out of acceptance criteria.
F7	The LCS/LCSD recovery is above the upper control limit. The target analyte(s) were Not Detected (ND); therefore, the data is reportable.

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Analytical Report

Client:	Terracon	**WorkOrder:**	2104H15
Date Received:	04/29/2021 12:35	**Extraction Method:**	E1613B
Project:	NA207065A; Gill Medical Center	**Analytical Method:**	E1613B
		Unit:	pg/L

2,3,7,8-TCDD

Client ID	Lab ID	Matrix	Date Collected
TW-1-W-4/28/21	**2104H15-001G**	**Water**	**04/28/2021 12:00**

Analytes	TEF WHO '05	Result	MDL	RL	DF	Ion Ratio	RRT	TEQ	Date Analyzed
2,3,7,8-TCDD		ND	1.70	5.00	1				05/12/2021 00:10
Total Toxicity Equivalence (TEQ):								**0**	

Cleanup Standard	REC (%)	Limits	Date Analyzed
37Cl-2,3,7,8-TCDD	74	42-164	05/12/2021 00:10
Labeled Compound Recovery	**REC (%)**	**Limits**	
13C-2,3,7,8-TCDD	77	31-137	05/12/2021 00:10

Date Analyzed	InstrumentID	FileID	Analyst	Comments	BatchID	Date Prepared
05/12/2021 00:10	**GC36**	**5112116**	**KBO**	**-**	**221141**	**05/05/2021 11:01**

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Analytical Report

Client:	Terracon	**WorkOrder:**	2104H15
Date Received:	04/29/2021 12:35	**Extraction Method:**	E300.1
Date Prepared:	04/30/2021	**Analytical Method:**	E300.1
Project:	NA207065A; Gill Medical Center	**Unit:**	µg/L

Inorganic Anions - Disinfection By-Products

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
TW-1-W-4/28/21	**2104H15-001O**	**Water**	**04/28/2021 12:00**	**IC5 05032103.D**	**220651**

Analytes	Result	MDL	RL	DF	Date Analyzed
Bromate	ND	0.20	5.0	1	04/30/2021 20:24
Chlorate	**28**	0.40	5.0	1	04/30/2021 20:24
Chlorite	ND	0.14	5.0	1	04/30/2021 20:24

Analyst(s): AO

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Analytical Report

Client:	Terracon	**WorkOrder:**	2104H15
Date Received:	04/29/2021 12:35	**Extraction Method:**	E300.1
Date Prepared:	04/29/2021	**Analytical Method:**	E300.1
Project:	NA207065A; Gill Medical Center	**Unit:**	mg/L

Inorganic Anions by IC

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
TW-1-W-4/28/21	2104H15-001E	Water	04/28/2021 12:00	IC4 08052102.D	220533

Analytes	Result	MDL	RL	DF	Date Analyzed
Chloride	**6.0**	0.49	1.0	10	04/29/2021 22:58
Fluoride	**0.12**	0.030	0.10	1	04/29/2021 16:22
Nitrate as N	**0.71**	0.046	0.10	1	04/29/2021 16:22
Nitrate as $NO3^{-}$	**3.1**	0.20	0.44	1	04/29/2021 16:22
Nitrite as N	ND	0.026	0.10	1	04/29/2021 16:22
Nitrite as $NO2^{-}$	ND	0.085	0.33	1	04/29/2021 16:22
Nitrate & Nitrite as N	**0.71**	NA	0.10	1	04/29/2021 16:22
Sulfate	**6.9**	0.57	1.0	10	04/29/2021 22:58

Surrogates	REC (%)	Limits	
Malonate	101	90-115	04/29/2021 16:22

Analyst(s): AO

Analytical Comments: a14

Analytical Report

Client:	Terracon	**WorkOrder:**	2104H15
Date Received:	04/29/2021 12:35	**Extraction Method:**	E314.0
Date Prepared:	04/29/2021	**Analytical Method:**	E314.0
Project:	NA207065A; Gill Medical Center	**Unit:**	µg/L

Perchlorate

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
TW-1-W-4/28/21	**2104H15-001A**	**Water**	**04/28/2021 12:00**	**IC1 21042913.CHW**	**220531**

Analytes	Result	MDL	RL	DF	Date Analyzed
Perchlorate	ND	0.27	0.50	1	04/29/2021 18:07

Analyst(s): AO

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Analytical Report

Client:	Terracon	**WorkOrder:**	2104H15
Date Received:	04/29/2021 12:35	**Extraction Method:**	E505
Date Prepared:	04/29/2021	**Analytical Method:**	E505
Project:	NA207065A; Gill Medical Center	**Unit:**	µg/L

Organochlorine Pesticides & PCBs

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
TW-1-W-4/28/21	2104H15-001H	Water	04/28/2021 12:00	GC20 04292172.D	220557

Analytes	Result	MDL	RL	DF	Date Analyzed
a-BHC	ND	0.0025	0.010	1	04/30/2021 02:09
b-BHC	ND	0.0012	0.0050	1	04/30/2021 02:09
d-BHC	ND	0.0012	0.0050	1	04/30/2021 02:09
g-BHC	ND	0.0019	0.020	1	04/30/2021 02:09
Chlordane (Technical)	ND	0.026	0.10	1	04/30/2021 02:09
a-Chlordane	ND	0.0019	0.050	1	04/30/2021 02:09
g-Chlordane	ND	0.0022	0.050	1	04/30/2021 02:09
p,p-DDT	ND	0.0043	0.010	1	04/30/2021 02:09
Endosulfan I	ND	0.0022	0.020	1	04/30/2021 02:09
Endosulfan II	ND	0.0049	0.020	1	04/30/2021 02:09
Endosulfan sulfate	ND	0.0026	0.050	1	04/30/2021 02:09
Endrin	ND	0.0034	0.010	1	04/30/2021 02:09
Endrin Aldehyde	ND	0.0036	0.050	1	04/30/2021 02:09
Endrin ketone	ND	0.0039	0.050	1	04/30/2021 02:09
Heptachlor Epoxide	ND	0.0030	0.010	1	04/30/2021 02:09
Hexachlorobenzene	ND	0.0066	0.50	1	04/30/2021 02:09
Hexachlorocyclopentadiene	ND	0.0052	1.0	1	04/30/2021 02:09
Heptachlor	ND	0.0028	0.010	1	04/30/2021 02:09
Methoxychlor	ND	0.0048	0.10	1	04/30/2021 02:09
Toxaphene	ND	0.12	0.50	1	04/30/2021 02:09
Aroclor1016	ND	0.090	0.50	1	04/30/2021 02:09
Aroclor1221	ND	0.090	0.50	1	04/30/2021 02:09
Aroclor1232	ND	0.090	0.50	1	04/30/2021 02:09
Aroclor1242	ND	0.090	0.50	1	04/30/2021 02:09
Aroclor1248	ND	0.090	0.50	1	04/30/2021 02:09
Aroclor1254	ND	0.090	0.50	1	04/30/2021 02:09
Aroclor1260	ND	0.090	0.50	1	04/30/2021 02:09
PCBs, total	ND	NA	0.50	1	04/30/2021 02:09

Surrogates	REC (%)	Limits	
Decachlorobiphenyl	100	70-130	04/30/2021 02:09

Analyst(s): CK

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Analytical Report

Client:	Terracon	**WorkOrder:**	2104H15
Date Received:	04/29/2021 12:35	**Extraction Method:**	SW8151A
Date Prepared:	05/03/2021	**Analytical Method:**	E515.3
Project:	NA207065A; Gill Medical Center	**Unit:**	µg/L

Chlorinated Herbicides

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
TW-1-W-4/28/21	2104H15-001F	Water	04/28/2021 12:00	GC15A 05042140.D	220679

Analytes	Result	MDL	RL	DF	Date Analyzed
Bentazon	ND	0.17	1.0	1	05/05/2021 11:13
2,4-D (Dichlorophenoxyacetic acid)	ND	0.35	1.0	1	05/05/2021 11:13
Dalapon	ND	0.47	1.0	1	05/05/2021 11:13
DCPA (mono & diacid)	ND	0.12	0.20	1	05/05/2021 11:13
Dicamba	ND	0.27	1.0	1	05/05/2021 11:13
Dinoseb (DNBP)	ND	0.072	1.0	1	05/05/2021 11:13
Pentachlorophenol (PCP)	ND	0.065	0.20	1	05/05/2021 11:13
Picloram	ND	0.27	1.0	1	05/05/2021 11:13
2,4,5-TP (Silvex)	ND	0.099	1.0	1	05/05/2021 11:13

Surrogates	REC (%)	Limits	
DCAA	99	70-130	05/05/2021 11:13

Analyst(s): DP

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Analytical Report

Client:	Terracon	**WorkOrder:**	2104H15
Date Received:	04/29/2021 12:35	**Extraction Method:**	E524.3
Date Prepared:	05/03/2021	**Analytical Method:**	E524.3
Project:	NA207065A; Gill Medical Center	**Unit:**	µg/L

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
TW-1-W-4/28/21	2104H15-001S	Water	04/28/2021 12:00	GC38 05032112.D	220790

Analytes	Result	MDL	RL	DF	Date Analyzed
tert-Amyl Methyl Ether (TAME)	ND	0.081	0.40	1	05/03/2021 14:57
Benzene	ND	0.066	0.40	1	05/03/2021 14:57
Bromobenzene	ND	0.059	0.40	1	05/03/2021 14:57
Bromochloromethane	ND	0.083	0.40	1	05/03/2021 14:57
Bromodichloromethane	ND	0.12	0.40	1	05/03/2021 14:57
Bromoform	ND	0.17	0.40	1	05/03/2021 14:57
Bromomethane	ND	0.32	0.40	1	05/03/2021 14:57
2-Butanone (MEK)	ND	1.1	4.0	1	05/03/2021 14:57
t-Butyl alcohol (TBA)	ND	1.1	4.0	1	05/03/2021 14:57
n-Butyl benzene	ND	0.078	0.40	1	05/03/2021 14:57
sec-Butyl benzene	ND	0.070	0.40	1	05/03/2021 14:57
tert-Butyl benzene	ND	0.12	0.40	1	05/03/2021 14:57
Carbon disulfide	ND	0.16	0.40	1	05/03/2021 14:57
Carbon tetrachloride	ND	0.12	0.40	1	05/03/2021 14:57
Chlorobenzene	ND	0.027	0.40	1	05/03/2021 14:57
Chloroethane	ND	0.098	0.40	1	05/03/2021 14:57
Chloroform	ND	0.087	0.40	1	05/03/2021 14:57
Chloromethane	ND	0.23	0.40	1	05/03/2021 14:57
2-Chlorotoluene	ND	0.053	0.40	1	05/03/2021 14:57
4-Chlorotoluene	ND	0.070	0.40	1	05/03/2021 14:57
Dibromochloromethane	ND	0.15	0.40	1	05/03/2021 14:57
1,2-Dibromo-3-chloropropane	ND	0.36	0.80	1	05/03/2021 14:57
1,2-Dibromoethane (EDB)	ND	0.30	0.80	1	05/03/2021 14:57
Dibromomethane	ND	0.071	0.40	1	05/03/2021 14:57
1,2-Dichlorobenzene	ND	0.061	0.40	1	05/03/2021 14:57
1,3-Dichlorobenzene	ND	0.043	0.40	1	05/03/2021 14:57
1,4-Dichlorobenzene	ND	0.040	0.40	1	05/03/2021 14:57
Dichlorodifluoromethane	ND	0.094	0.40	1	05/03/2021 14:57
1,1-Dichloroethane	ND	0.064	0.40	1	05/03/2021 14:57
1,2-Dichloroethane (1,2-DCA)	ND	0.071	0.40	1	05/03/2021 14:57
1,1-Dichloroethene	ND	0.13	0.40	1	05/03/2021 14:57
cis-1,2-Dichloroethene	ND	0.082	0.40	1	05/03/2021 14:57
trans-1,2-Dichloroethene	ND	0.070	0.40	1	05/03/2021 14:57
1,2-Dichloropropane	ND	0.081	0.40	1	05/03/2021 14:57
1,3-Dichloropropane	ND	0.076	0.40	1	05/03/2021 14:57
2,2-Dichloropropane	ND	0.10	0.40	1	05/03/2021 14:57
1,1-Dichloropropene	ND	0.057	0.40	1	05/03/2021 14:57

(Cont.)

CA ELAP 1644

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Analytical Report

Client:	Terracon	**WorkOrder:**	2104H15
Date Received:	04/29/2021 12:35	**Extraction Method:**	E524.3
Date Prepared:	05/03/2021	**Analytical Method:**	E524.3
Project:	NA207065A; Gill Medical Center	**Unit:**	µg/L

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
TW-1-W-4/28/21	2104H15-001S	Water	04/28/2021 12:00	GC38 05032112.D	220790

Analytes	Result	MDL	RL	DF	Date Analyzed
cis-1,3-Dichloropropene	ND	0.15	0.40	1	05/03/2021 14:57
trans-1,3-Dichloropropene	ND	0.16	0.40	1	05/03/2021 14:57
Diisopropyl ether (DIPE)	ND	0.068	0.40	1	05/03/2021 14:57
Ethylbenzene	ND	0.075	0.40	1	05/03/2021 14:57
Ethyl tert-butyl ether (ETBE)	ND	0.070	0.40	1	05/03/2021 14:57
Freon 113	ND	0.071	0.40	1	05/03/2021 14:57
Hexachlorobutadiene	ND	0.072	0.40	1	05/03/2021 14:57
Isopropylbenzene	ND	0.25	0.40	1	05/03/2021 14:57
4-Isopropyl toluene	ND	0.074	0.40	1	05/03/2021 14:57
Methyl-t-butyl ether (MTBE)	ND	0.079	0.40	1	05/03/2021 14:57
Methylene chloride	ND	1.9	2.0	1	05/03/2021 14:57
4-Methyl-2-pentanone (MIBK)	ND	0.29	1.6	1	05/03/2021 14:57
Naphthalene	ND	0.57	1.0	1	05/03/2021 14:57
n-Propyl benzene	ND	0.070	0.40	1	05/03/2021 14:57
Styrene	ND	0.23	0.40	1	05/03/2021 14:57
1,1,1,2-Tetrachloroethane	ND	0.097	0.40	1	05/03/2021 14:57
1,1,2,2-Tetrachloroethane	ND	0.076	0.40	1	05/03/2021 14:57
Tetrachloroethene	ND	0.043	0.40	1	05/03/2021 14:57
Toluene	ND	0.14	0.40	1	05/03/2021 14:57
1,2,3-Trichlorobenzene	ND	0.19	0.40	1	05/03/2021 14:57
1,2,4-Trichlorobenzene	ND	0.14	0.40	1	05/03/2021 14:57
1,1,1-Trichloroethane	ND	0.090	0.40	1	05/03/2021 14:57
1,1,2-Trichloroethane	ND	0.087	0.40	1	05/03/2021 14:57
Trichloroethene	ND	0.073	0.40	1	05/03/2021 14:57
Trichlorofluoromethane	ND	0.12	0.40	1	05/03/2021 14:57
1,2,4-Trimethylbenzene	ND	0.15	0.40	1	05/03/2021 14:57
1,3,5-Trimethylbenzene	ND	0.075	0.40	1	05/03/2021 14:57
Vinyl chloride	ND	0.084	0.20	1	05/03/2021 14:57
m,p-Xylene	ND	0.12	0.80	1	05/03/2021 14:57
o-Xylene	ND	0.092	0.40	1	05/03/2021 14:57
Xylenes, Total	ND	NA	0.40	1	05/03/2021 14:57
1,3-Dichloropropene, Total	ND	NA	0.40	1	05/03/2021 14:57

(Cont.)

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Analytical Report

Client:	Terracon	**WorkOrder:**	2104H15
Date Received:	04/29/2021 12:35	**Extraction Method:**	E524.3
Date Prepared:	05/03/2021	**Analytical Method:**	E524.3
Project:	NA207065A; Gill Medical Center	**Unit:**	µg/L

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
TW-1-W-4/28/21	2104H15-001S	Water	04/28/2021 12:00	GC38 05032112.D	220790

Analytes	Result	MDL	RL	DF	Date Analyzed
Surrogates	REC (%)		Limits		
tert-Butyl methyl ether-d3	97		70-130		05/03/2021 14:57
4-BFB	100		70-130		05/03/2021 14:57
1,2-dichlorobenzene-d4	99		70-130		05/03/2021 14:57

Analyst(s): JEM

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Analytical Report

Client:	Terracon	**WorkOrder:**	2104H15
Date Received:	04/29/2021 12:35	**Extraction Method:**	E524.3
Date Prepared:	04/30/2021	**Analytical Method:**	E524.3
Project:	NA207065A; Gill Medical Center	**Unit:**	µg/L

EDB and DBCP

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
TW-1-W-4/28/21	2104H15-002A	Water	04/28/2021 12:00	GC38 04292129.D	220588

Analytes	Result	MDL	RL	DF	Date Analyzed
1,2-Dibromo-3-chloropropane	ND	0.0063	0.010	1	04/30/2021 11:05
1,2-Dibromoethane (EDB)	ND	0.015	0.020	1	04/30/2021 11:05

Surrogates	REC (%)	Limits	Date Analyzed
tert-Butyl methyl ether-d3	93	70-130	04/30/2021 11:05
4-BFB	95	70-130	04/30/2021 11:05
1,2-dichlorobenzene-d4	101	70-130	04/30/2021 11:05

Analyst(s): HK

Analytical Report

Client:	Terracon	**WorkOrder:**	2104H15
Date Received:	04/29/2021 12:35	**Extraction Method:**	E525.2
Date Prepared:	05/03/2021	**Analytical Method:**	E525.2
Project:	NA207065A; Gill Medical Center	**Unit:**	µg/L

Nitrogen and Phosphorous containing Pesticides

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
TW-1-W-4/28/21	2104H15-001I	Water	04/28/2021 12:00	GC25 F0503210220.D	220680

Analytes	Result	MDL	RL	DF	Date Analyzed
Alachlor	ND	0.082	0.25	1	05/03/2021 23:17
Atrazine	ND	0.11	0.25	1	05/03/2021 23:17
Diazinon	ND	0.097	0.25	1	05/03/2021 23:17
Molinate	ND	0.085	0.25	1	05/03/2021 23:17
Simazine	ND	0.17	0.25	1	05/03/2021 23:17
Thiobencarb	ND	0.082	0.25	1	05/03/2021 23:17

Surrogates	REC (%)	Limits	
1-Bromo-2-Nitrobenzene	104	60-130	05/03/2021 23:17

Analyst(s): STA

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Analytical Report

Client:	Terracon	**WorkOrder:**	2104H15
Date Received:	04/29/2021 12:35	**Extraction Method:**	E525.2
Date Prepared:	05/04/2021	**Analytical Method:**	E525.2
Project:	NA207065A; Gill Medical Center	**Unit:**	µg/L

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
TW-1-W-4/28/21	2104H15-001R	Water	04/28/2021 12:00	GC42 05052120.D	220803

Analytes	Result	MDL	RL	DF	Date Analyzed
Benzo (a) pyrene	ND	0.040	0.040	1	05/05/2021 19:52
Bis (2-ethylhexyl) Adipate	ND	0.20	0.20	1	05/05/2021 19:52
Bis (2-ethylhexyl) Phthalate	ND	0.20	0.20	1	05/05/2021 19:52

Surrogates	REC (%)	Limits	
Triphenyl phosphate	83	70-130	05/05/2021 19:52

Analyst(s): HD

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Analytical Report

Client:	Terracon	**WorkOrder:**	2104H15
Date Received:	04/29/2021 12:35	**Extraction Method:**	E531.1
Date Prepared:	05/03/2021	**Analytical Method:**	E531.1
Project:	NA207065A; Gill Medical Center	**Unit:**	µg/L

Carbamates by HPLC with Derivatization

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
TW-1-W-4/28/21	2104H15-001K	Water	04/28/2021 12:00	HPLC1 05032131.D	220724

Analytes	Result	MDL	RL	DF	Date Analyzed
3-Hydroxycarbofuran	ND	1.1	2.0	1	05/04/2021 23:42
Aldicarb (Temik)	ND	1.3	2.0	1	05/04/2021 23:42
Aldicarb sulfoxide	ND	0.92	2.0	1	05/04/2021 23:42
Aldoxycarb (Aldicarb Sulfone)	ND	0.88	2.0	1	05/04/2021 23:42
Carbaryl (Sevin)	ND	1.4	2.0	1	05/04/2021 23:42
Carbofuran (Furadan)	ND	1.4	2.0	1	05/04/2021 23:42
Methiocarb (Mesurol)	ND	1.2	2.0	1	05/04/2021 23:42
Methomyl (Lannate)	ND	0.62	2.0	1	05/04/2021 23:42
Oxamyl	ND	0.89	2.0	1	05/04/2021 23:42
Propoxur (Baygon)	ND	1.3	2.0	1	05/04/2021 23:42

Surrogates	REC (%)	Limits	
BDMC	108	65-135	05/04/2021 23:42

Analyst(s): JS

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Analytical Report

Client:	Terracon	**WorkOrder:**	2104H15
Date Received:	04/29/2021 12:35	**Extraction Method:**	E547
Date Prepared:	04/30/2021	**Analytical Method:**	E547
Project:	NA207065A; Gill Medical Center	**Unit:**	µg/L

Glyphosate by HPLC with Derivatization

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
TW-1-W-4/28/21	**2104H15-001P**	**Water**	**04/28/2021 12:00**	**HPLC1 05022116.D**	**220605**

Analytes	Result	MDL	RL	DF	Date Analyzed
Glyphosate	ND	2.2	5.0	1	05/02/2021 17:41

Analyst(s): ANL

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Analytical Report

Client:	Terracon	**WorkOrder:**	2104H15
Date Received:	04/29/2021 12:35	**Extraction Method:**	E548.1
Date Prepared:	04/30/2021	**Analytical Method:**	E548.1
Project:	NA207065A; Gill Medical Center	**Unit:**	µg/L

Endothall by GC-MS

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
TW-1-W-4/28/21	2104H15-001L	Water	04/28/2021 12:00	GC8 04302107.D	220580

Analytes	Result	MDL	RL	DF	Date Analyzed
Endothall	ND	4.1	20	1	04/30/2021 12:43

Analyst(s): TD

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Analytical Report

Client:	Terracon	**WorkOrder:**	2104H15
Date Received:	04/29/2021 12:35	**Extraction Method:**	E549.2
Date Prepared:	04/29/2021	**Analytical Method:**	E549.2
Project:	NA207065A; Gill Medical Center	**Unit:**	µg/L

Diquat and Paraquat

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
TW-1-W-4/28/21	**2104H15-001J**	**Water**	**04/28/2021 12:00**	**HPLC2 04292106.D**	**220551**

Analytes	Result	MDL	RL	DF	Date Analyzed
Diquat	ND	1.6	4.0	1	04/29/2021 19:22
Paraquat	ND	3.5	4.0	1	04/29/2021 19:22

Analyst(s): ANL

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Analytical Report

Client:	Terracon	**WorkOrder:**	2104H15
Date Received:	04/29/2021 12:35	**Extraction Method:**	E552.2
Date Prepared:	04/30/2021	**Analytical Method:**	E552.2
Project:	NA207065A; Gill Medical Center	**Unit:**	µg/L

Haloacetic Acids

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
TW-1-W-4/28/21	2104H15-001N	Water	04/28/2021 12:00	GC50 04302128.d	220581

Analytes	Result	MDL	RL	DF	Date Analyzed
Dibromoacetic acid (DBAA)	ND	0.052	0.13	1	05/01/2021 06:54
Dichloroacetic acid (DCAA)	ND	0.065	0.13	1	05/01/2021 06:54
Monobromoacetic acid (MBAA)	ND	0.063	0.13	1	05/01/2021 06:54
Monochloroacetic acid (MCAA)	ND	0.094	0.27	1	05/01/2021 06:54
Trichloroacetic acid (TCAA)	ND	0.076	0.13	1	05/01/2021 06:54
HAA5	ND	NA	1.0	1	05/01/2021 06:54

Surrogates	REC (%)	Limits	
2,3-Dibromopropionic Acid	89	70-130	05/01/2021 06:54

Analyst(s): DP

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Analytical Report

Client:	Terracon	**WorkOrder:**	2104H15
Date Received:	04/29/2021 12:35	**Extraction Method:**	SW8316
Date Prepared:	05/05/2021	**Analytical Method:**	SW8316
Project:	NA207065A; Gill Medical Center	**Unit:**	µg/L

Acrylamide by HPLC

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
TW-1-W-4/28/21	**2104H15-001M**	**Water**	**04/28/2021 12:00**	**HPLC2 05062122.D**	**220877**

Analytes	Result	Qualifiers	MDL	RL	DF	Date Analyzed
Acrylamide	ND	H	2.0	10	1	05/06/2021 16:20

Analyst(s): JS

NELAP 4033ORELAP

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Analytical Report

Client:	Terracon	**WorkOrder:**	2104H15
Date Received:	04/29/2021 12:35	**Extraction Method:**	Kelada-01
Date Prepared:	05/03/2021	**Analytical Method:**	Kelada-01
Project:	NA207065A; Gill Medical Center	**Unit:**	µg/L

Cyanide, Total

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
TW-1-W-4/28/21	2104H15-001D	Water	04/28/2021 12:00	WC_SKALAR 05032021B1_45	220692

Analytes	Result	MDL	RL	DF	Date Analyzed
Total Cyanide	ND	0.77	1.0	1	05/03/2021 13:35

Analyst(s): JN

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Analytical Report

Client:	Terracon	**WorkOrder:**	2104H15
Date Received:	04/29/2021 12:35	**Extraction Method:**	MAI
Date Prepared:	05/02/2021	**Analytical Method:**	MAI-HPLC
Project:	NA207065A; Gill Medical Center	**Unit:**	µg/L

Epichlorohydrin by HPLC

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
TW-1-W-4/28/21	**2104H15-001Q**	**Water**	**04/28/2021 12:00**	**HPLC2 05022116.D**	**220672**

Analytes	Result	MDL	RL	DF	Date Analyzed
Epichlorohydrin	ND	1.0	1.0	1	05/02/2021 23:19

Analyst(s): JS

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Analytical Report

Client:	Terracon	**WorkOrder:**	2104H15
Date Received:	04/29/2021 12:35	**Extraction Method:**	E200.8
Date Prepared:	05/03/2021	**Analytical Method:**	E200.8
Project:	NA207065A; Gill Medical Center	**Unit:**	µg/L

Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
TW-1-W-4/28/21	**2104H15-001C**	**Water**	**04/28/2021 12:00**	**ICP-MS3 032SMPL.D**	**220710**

Analytes	Result	Qualifiers	MDL	RL	DF	Date Analyzed
Aluminum	**11**	J	0.88	50	1	05/03/2021 14:14
Antimony	ND		0.060	6.0	1	05/03/2021 14:14
Arsenic	**4.5**		0.53	2.0	1	05/03/2021 14:14
Barium	**69**	J	0.12	100	1	05/03/2021 14:14
Beryllium	ND		0.060	1.0	1	05/03/2021 14:14
Cadmium	ND		0.030	1.0	1	05/03/2021 14:14
Chromium	**11**		0.090	10	1	05/03/2021 14:14
Copper	**11**		0.090	10	1	05/03/2021 14:14
Mercury	**0.021**	J	0.010	1.0	1	05/03/2021 14:14
Nickel	ND		0.15	10	1	05/03/2021 14:14
Selenium	ND		0.42	5.0	1	05/03/2021 14:14
Thallium	ND		0.010	1.0	1	05/03/2021 14:14
Uranium	**0.79**		0.0030	0.50	1	05/03/2021 14:14
Vanadium	**33**		0.12	3.0	1	05/03/2021 14:14

Analyst(s): WV

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Analytical Report

Client:	Terracon	**WorkOrder:**	2104H15
Date Received:	04/29/2021 12:35	**Extraction Method:**	SM2510 B
Date Prepared:	04/30/2021	**Analytical Method:**	SM2510B
Project:	NA207065A; Gill Medical Center	**Unit:**	µmhos/cm @ 25°C

Specific Conductivity at 25°C

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
TW-1-W-4/28/21	2104H15-001A	Water	04/28/2021 12:00	WetChem	220645

Analytes	Result	MDL	RL	DF	Date Analyzed
Specific Conductivity	**228**	10.0	10.0	1	04/30/2021 16:52

Analyst(s): NYG

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Analytical Report

Client:	Terracon	**WorkOrder:**	2104H15
Date Received:	04/29/2021 12:35	**Extraction Method:**	SM9221B2B3CE1F
Date Prepared:	04/29/2021 13:30	**Analytical Method:**	SM9221B2B3CE1F
Project:	NA207065A; Gill Medical Center	**Unit:**	MPN/100ml

Fecal Coliform, Total Coliform, & E. Coli, Enumeration

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
TW-1-W-4/28/21	**2104H15-001B**	**Water**	**04/28/2021 12:00**	**MICROBIOLOGY**	**220522**

Analytes	Result	MDL	RL	DF	95% Interval	Date Analyzed
Fecal Coliform	ND	1.8	1.8	1	---	05/02/2021 11:04
Total Coliform	ND	1.8	1.8	1	---	05/02/2021 11:04
E. Coli	ND	1.8	1.8	1	---	05/02/2021 11:04

Analyst(s): AB

CLIENT: Terracon
Work Order: 2104H15
Project: NA207065A; Gill Medical Center

ANALYTICAL QC SUMMARY REPORT

BatchID: **221141**

SampleID: **MB-221141** TestCode: **1613_FULL_W** Units: **pg/L** Prep Date: **5/5/2021**
Batch ID: **221141** TestNo: **E1613B** Run ID: **GC36_210511B** Analysis Date: **5/11/2021**

Analyte	Result	MDL	PQL	SPKValue	SPKRefVal	%REC	Limits	RPDRefVal	%RPD	RPDLimit	Qual
2,3,7,8-TCDD	ND	1.70	5.00				-				
Cleanup Standard											
37Cl-2,3,7,8-TCDD	82.4			100		82	35 - 197				
Labeled Compound Recovery											
13C-2,3,7,8-TCDD	807			1000		81	25 - 164				

CLIENT: Terracon
Work Order: 2104H15
Project: NA207065A; Gill Medical Center

ANALYTICAL QC SUMMARY REPORT

BatchID: **221141**

SampleID: **LCS-221141**	TestCode: **1613_FULL_W**	Units: **pg/L**	Prep Date: **5/5/2021**
Batch ID: **221141**	TestNo: **E1613B**	Run ID: **GC36_210511C**	Analysis Date: **5/11/2021**

Analyte	Result	MDL	PQL	SPKValue	SPKRefVal	%REC	Limits	RPDRefVal	%RPD	RPDLimit	Qual
2,3,7,8-TCDD	92.8	1.70	5.00	100	0	93	67 - 158				
Cleanup Standard											
37Cl-2,3,7,8-TCDD	71.0			100		71	31 - 191				
Labeled Compound Recovery											
13C-2,3,7,8-TCDD	800			1000		80	20 - 175				

CLIENT: Terracon
Work Order: 2104H15
Project: NA207065A; Gill Medical Center

ANALYTICAL QC SUMMARY REPORT

BatchID: **221141**

SampleID: **LCSD-221141**	TestCode: **1613_FULL_W**	Units: **pg/L**	Prep Date: **5/5/2021**
Batch ID: **221141**	TestNo: **E1613B**	Run ID: **GC36_210511C**	Analysis Date: **5/11/2021**

Analyte	Result	MDL	PQL	SPKValue	SPKRefVal	%REC	Limits	RPDRefVal	%RPD	RPDLimit	Qual
2,3,7,8-TCDD	89.0	1.70	5.00	100	0	89	67 - 158	92.8	4.18	20	
Cleanup Standard											
37Cl-2,3,7,8-TCDD	81.2			100		81	31 - 191				
Labeled Compound Recovery											
13C-2,3,7,8-TCDD	758			1000		76	20 - 175				

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Quality Control Report

Client:	Terracon	**WorkOrder:**	2104H15
Date Prepared:	04/30/2021	**BatchID:**	220651
Date Analyzed:	04/30/2021	**Extraction Method:**	E300.1
Instrument:	IC5	**Analytical Method:**	E300.1
Matrix:	Water	**Unit:**	µg/L
Project:	NA207065A; Gill Medical Center	**Sample ID:**	MB/LCS/LCSD-220651 2104H15-001OMS/MSD

QC Summary Report for E300.1

Analyte	MB Result	MDL	RL			
Bromate	ND	0.200	5.00	-	-	-
Chlorate	ND	0.400	5.00	-	-	-
Chlorite	ND	0.140	5.00	-	-	-

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Bromate	40.0	39.8	40	100	99	85-115	0.464	10
Chlorate	40.4	39.6	40	101	99	85-115	1.85	10
Chlorite	39.2	39.4	40	98	99	85-115	0.534	10

Analyte	MS DF	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Bromate	1	36.5	38.3	40	ND	91	96	85-115	4.98	10
Chlorate	1	65.9	67.9	40	27.73	95	100	85-115	3.06	10
Chlorite	1	35.7	38.0	40	ND	89	95	85-115	6.34	10

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Quality Control Report

Client:	Terracon	**WorkOrder:**	2104H15
Date Prepared:	04/29/2021 - 04/30/2021	**BatchID:**	220533
Date Analyzed:	04/29/2021 - 04/30/2021	**Extraction Method:**	E300.1
Instrument:	IC4	**Analytical Method:**	E300.1
Matrix:	Water	**Unit:**	mg/L
Project:	NA207065A; Gill Medical Center	**Sample ID:**	MB/LCS/LCSD-220533 2104H15-001EMS/MSD

QC Summary Report for E300.1

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
Chloride	ND	0.0490	0.100	-	-	-
Fluoride	ND	0.0300	0.100	-	-	-
Nitrate as N	ND	0.0460	0.100	-	-	-
Nitrate as $NO3^{-}$	ND	0.200	0.440	-	-	-
Nitrite as N	ND	0.0260	0.100	-	-	-
Nitrite as $NO2^{-}$	ND	0.0850	0.330	-	-	-
Sulfate	ND	0.0570	0.100	-	-	-
Surrogate Recovery						
Malonate	0.103			0.1	103	90-115

(Cont.)

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Quality Control Report

Client:	Terracon	**WorkOrder:**	2104H15
Date Prepared:	04/29/2021 - 04/30/2021	**BatchID:**	220533
Date Analyzed:	04/29/2021 - 04/30/2021	**Extraction Method:**	E300.1
Instrument:	IC4	**Analytical Method:**	E300.1
Matrix:	Water	**Unit:**	mg/L
Project:	NA207065A; Gill Medical Center	**Sample ID:**	MB/LCS/LCSD-220533 2104H15-001EMS/MSD

QC Summary Report for E300.1

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Chloride	1.02	1.03	1	102	102	85-115	0.0264	20
Fluoride	1.02	1.02	1	102	102	85-115	0.579	20
Nitrate as N	1.02	1.02	1	102	102	85-115	0.0786	20
Nitrate as NO3¯	4.51	4.51	4.4	102	103	85-115	0.0792	20
Nitrite as N	1.05	1.04	1	105	104	85-115	1.16	20
Nitrite as NO2¯	3.45	3.41	3.3	104	103	85-115	1.16	20
Sulfate	1.04	1.04	1	104	104	85-115	0.219	20
Surrogate Recovery								
Malonate	0.103	0.103	0.10	103	103	90-115	0.134	20

Analyte	MS DF	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Chloride	1	6.55	6.84	1	6.06	49,F1	78,F1	85-115	4.46	20
Fluoride	1	0.998	1.03	1	0.1217	88	90	85-115	2.64	20
Nitrate as N	1	1.61	1.66	1	0.7086	90	96	85-115	3.19	20
Nitrate as NO3¯	1	7.14	7.37	4.4	3.138	91	96	85-115	3.19	20
Nitrite as N	1	0.944	0.943	1	ND	94	94	85-115	0.127	20
Nitrite as NO2¯	1	3.10	3.10	3.3	ND	94	94	85-115	0.126	20
Sulfate	1	7.33	7.62	1	6.82	50,F1	80,F1	85-115	3.97	20
Surrogate Recovery										
Malonate	1	0.0911	0.0930	0.10		91	93	90-115	1.97	20

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Quality Control Report

Client:	Terracon	**WorkOrder:**	2104H15
Date Prepared:	04/29/2021	**BatchID:**	220531
Date Analyzed:	04/29/2021	**Extraction Method:**	E314.0
Instrument:	IC1	**Analytical Method:**	E314.0
Matrix:	Water	**Unit:**	µg/L
Project:	NA207065A; Gill Medical Center	**Sample ID:**	MB/LCS/LCSD-220531 2104H15-001AMS/MSD

QC Summary Report for E314.0 (Perchlorate)

Analyte	MB Result	MDL	RL			
Perchlorate	ND	0.270	0.500	-	-	-

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Perchlorate	4.73	4.97	5	95	99	85-115	4.95	15

Analyte	MS DF	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Perchlorate	1	4.48	4.37	5	ND	90	87	80-120	2.49	20

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Quality Control Report

Client:	Terracon	**WorkOrder:**	2104H15
Date Prepared:	04/29/2021	**BatchID:**	220557
Date Analyzed:	04/30/2021	**Extraction Method:**	E505
Instrument:	GC20	**Analytical Method:**	E505
Matrix:	Drinking Water	**Unit:**	µg/L
Project:	NA207065A; Gill Medical Center	**Sample ID:**	MB/LCS/LCSD-220557

QC Summary Report for E505

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
a-BHC	ND	0.00250	0.0100	-	-	-
b-BHC	ND	0.00120	0.00500	-	-	-
d-BHC	ND	0.00120	0.00500	-	-	-
g-BHC	ND	0.00190	0.0200	-	-	-
Chlordane (Technical)	ND	0.0260	0.100	-	-	-
a-Chlordane	ND	0.00190	0.0500	-	-	-
g-Chlordane	ND	0.00220	0.0500	-	-	-
p,p-DDT	ND	0.00430	0.0100	-	-	-
Endosulfan I	ND	0.00220	0.0200	-	-	-
Endosulfan II	ND	0.00490	0.0200	-	-	-
Endosulfan sulfate	ND	0.00260	0.0500	-	-	-
Endrin	ND	0.00340	0.0100	-	-	-
Endrin Aldehyde	ND	0.00360	0.0500	-	-	-
Endrin ketone	ND	0.00390	0.0500	-	-	-
Heptachlor Epoxide	ND	0.00300	0.0100	-	-	-
Hexachlorobenzene	ND	0.00660	0.500	-	-	-
Hexachlorocyclopentadiene	ND	0.00520	1.00	-	-	-
Heptachlor	ND	0.00280	0.0100	-	-	-
Methoxychlor	ND	0.00480	0.100	-	-	-
Toxaphene	ND	0.120	0.500	-	-	-
Aroclor1016	ND	0.0900	0.500	-	-	-
Aroclor1221	ND	0.0900	0.500	-	-	-
Aroclor1232	ND	0.0900	0.500	-	-	-
Aroclor1242	ND	0.0900	0.500	-	-	-
Aroclor1248	ND	0.0900	0.500	-	-	-
Aroclor1254	ND	0.0900	0.500	-	-	-
Aroclor1260	ND	0.0900	0.500	-	-	-
Surrogate Recovery						
Decachlorobiphenyl	1.20			1.25	96	70-130

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CA ELAP 1644

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Quality Control Report

Client:	Terracon	**WorkOrder:**	2104H15
Date Prepared:	04/29/2021	**BatchID:**	220557
Date Analyzed:	04/30/2021	**Extraction Method:**	E505
Instrument:	GC20	**Analytical Method:**	E505
Matrix:	Drinking Water	**Unit:**	µg/L
Project:	NA207065A; Gill Medical Center	**Sample ID:**	MB/LCS/LCSD-220557

QC Summary Report for E505

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
a-BHC	1.57	1.60	1.25	126	128	70-130	1.86	20
b-BHC	1.09	1.10	1.25	87	88	70-130	1.07	20
d-BHC	1.11	1.13	1.25	88	91	70-130	2.45	20
g-BHC	1.30	1.32	1.25	104	106	70-130	1.54	20
a-Chlordane	1.11	1.12	1.25	89	90	70-130	1.18	20
g-Chlordane	0.974	1.02	1.25	78	81	70-130	4.11	20
Endosulfan I	1.27	1.26	1.25	102	100	70-130	1.28	20
Endosulfan II	1.12	1.18	1.25	89	94	70-130	5.11	20
Endosulfan sulfate	1.17	1.24	1.25	94	99	70-130	5.05	20
Endrin	1.14	1.19	1.25	91	95	70-130	4.39	20
Endrin Aldehyde	1.16	1.22	1.25	93	97	70-130	4.74	20
Endrin ketone	1.24	1.30	1.25	99	104	70-130	5.21	20
Heptachlor Epoxide	1.15	1.14	1.25	92	91	70-130	0.554	20
Hexachlorobenzene	1.19	1.20	1.25	95	96	70-130	0.747	20
Hexachlorocyclopentadiene	1.04	1.01	1.25	83	81	70-130	3.35	20
Heptachlor	1.36	1.37	1.25	109	110	70-130	1.03	20
Methoxychlor	1.16	1.23	1.25	93	98	70-130	5.39	20
Aroclor1016	3.99	3.97	3.75	106	106	70-130	0.536	20
Aroclor1260	3.88	3.94	3.75	103	105	70-130	1.62	20
Surrogate Recovery								
Decachlorobiphenyl	1.18	1.22	1.25	95	97	70-130	2.73	20

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Quality Control Report

Client:	Terracon	**WorkOrder:**	2104H15
Date Prepared:	05/03/2021	**BatchID:**	220679
Date Analyzed:	05/05/2021	**Extraction Method:**	SW8151A
Instrument:	GC15A	**Analytical Method:**	E515.3
Matrix:	Drinking Water	**Unit:**	µg/L
Project:	NA207065A; Gill Medical Center	**Sample ID:**	MB/LCS/LCSD-220679

QC Summary Report for E515.3

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
Bentazon	ND	0.170	1.00	-	-	-
2,4-D (Dichlorophenoxyacetic acid)	ND	0.350	1.00	-	-	-
2,4-DB	ND	0.330	1.00	-	-	-
DCPA (mono & diacid)	ND	0.120	0.200	-	-	-
Dicamba	ND	0.270	1.00	-	-	-
3,5-Dichlorobenzoic Acid	ND	0.180	1.00	-	-	-
Dinoseb (DNBP)	ND	0.0720	1.00	-	-	-
Pentachlorophenol (PCP)	ND	0.0650	0.200	-	-	-
Picloram	ND	0.270	1.00	-	-	-
Surrogate Recovery						
DCAA	10.8			10	108	70-130

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Bentazon	9.48	9.04	10	95	90	70-130	4.76	20
2,4-D (Dichlorophenoxyacetic acid)	9.63	9.23	10	96	92	70-130	4.29	20
DCPA (mono & diacid)	9.92	9.49	10	99	95	70-130	4.40	20
Dicamba	9.42	9.20	10	94	92	70-130	2.28	20
Dinoseb (DNBP)	9.18	8.44	10	92	84	70-130	8.49	20
Pentachlorophenol (PCP)	10.3	9.96	10	103	100	70-130	3.12	20
Picloram	8.54	7.95	10	85	80	70-130	7.10	20
Surrogate Recovery								
DCAA	9.66	9.47	10	97	95	70-130	2.00	20

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Quality Control Report

Client:	Terracon	**WorkOrder:**	2104H15
Date Prepared:	05/03/2021	**BatchID:**	220790
Date Analyzed:	05/03/2021	**Extraction Method:**	E524.3
Instrument:	GC38	**Analytical Method:**	E524.3
Matrix:	Drinking Water	**Unit:**	µg/L
Project:	NA207065A; Gill Medical Center	**Sample ID:**	MB/LCS/LCSD-220790 2104H15-001SMS/MSD

QC Summary Report for E524.3

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
tert-Amyl Methyl Ether (TAME)	ND	0.0810	0.400	-	-	-
Benzene	ND	0.0660	0.400	-	-	-
Bromobenzene	ND	0.0590	0.400	-	-	-
Bromochloromethane	ND	0.0830	0.400	-	-	-
Bromodichloromethane	ND	0.120	0.400	-	-	-
Bromoform	ND	0.170	0.400	-	-	-
Bromomethane	ND	0.320	0.400	-	-	-
2-Butanone (MEK)	ND	1.10	4.00	-	-	-
t-Butyl alcohol (TBA)	ND	1.10	4.00	-	-	-
n-Butyl benzene	ND	0.0780	0.400	-	-	-
sec-Butyl benzene	ND	0.0700	0.400	-	-	-
tert-Butyl benzene	ND	0.120	0.400	-	-	-
Carbon disulfide	ND	0.160	0.400	-	-	-
Carbon tetrachloride	ND	0.120	0.400	-	-	-
Chlorobenzene	ND	0.0270	0.400	-	-	-
Chloroethane	ND	0.0980	0.400	-	-	-
Chloroform	ND	0.0870	0.400	-	-	-
Chloromethane	ND	0.230	0.400	-	-	-
2-Chlorotoluene	ND	0.0530	0.400	-	-	-
4-Chlorotoluene	ND	0.0700	0.400	-	-	-
Dibromochloromethane	ND	0.150	0.400	-	-	-
1,2-Dibromo-3-chloropropane	ND	0.360	0.800	-	-	-
1,2-Dibromoethane (EDB)	ND	0.300	0.800	-	-	-
Dibromomethane	ND	0.0710	0.400	-	-	-
1,2-Dichlorobenzene	ND	0.0610	0.400	-	-	-
1,3-Dichlorobenzene	ND	0.0430	0.400	-	-	-
1,4-Dichlorobenzene	ND	0.0400	0.400	-	-	-
Dichlorodifluoromethane	ND	0.0940	0.400	-	-	-
1,1-Dichloroethane	ND	0.0640	0.400	-	-	-
1,2-Dichloroethane (1,2-DCA)	ND	0.0710	0.400	-	-	-
1,1-Dichloroethene	ND	0.130	0.400	-	-	-
cis-1,2-Dichloroethene	ND	0.0820	0.400	-	-	-
trans-1,2-Dichloroethene	ND	0.0700	0.400	-	-	-
1,2-Dichloropropane	ND	0.0810	0.400	-	-	-
1,3-Dichloropropane	ND	0.0760	0.400	-	-	-
2,2-Dichloropropane	ND	0.100	0.400	-	-	-
1,1-Dichloropropene	ND	0.0570	0.400	-	-	-
cis-1,3-Dichloropropene	ND	0.150	0.400	-	-	-

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Quality Control Report

Client:	Terracon	**WorkOrder:**	2104H15
Date Prepared:	05/03/2021	**BatchID:**	220790
Date Analyzed:	05/03/2021	**Extraction Method:**	E524.3
Instrument:	GC38	**Analytical Method:**	E524.3
Matrix:	Drinking Water	**Unit:**	µg/L
Project:	NA207065A; Gill Medical Center	**Sample ID:**	MB/LCS/LCSD-220790 2104H15-001SMS/MSD

QC Summary Report for E524.3

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
trans-1,3-Dichloropropene	ND	0.160	0.400	-	-	-
Diisopropyl ether (DIPE)	ND	0.0680	0.400	-	-	-
Ethylbenzene	ND	0.0750	0.400	-	-	-
Ethyl tert-butyl ether (ETBE)	ND	0.0700	0.400	-	-	-
Freon 113	ND	0.0710	0.400	-	-	-
Hexachlorobutadiene	ND	0.0720	0.400	-	-	-
Isopropylbenzene	ND	0.250	0.400	-	-	-
4-Isopropyl toluene	ND	0.0740	0.400	-	-	-
Methyl-t-butyl ether (MTBE)	ND	0.0790	0.400	-	-	-
Methylene chloride	ND	1.90	2.00	-	-	-
4-Methyl-2-pentanone (MIBK)	ND	0.290	1.60	-	-	-
Naphthalene	ND	0.570	1.00	-	-	-
n-Propyl benzene	ND	0.0700	0.400	-	-	-
Styrene	ND	0.230	0.400	-	-	-
1,1,1,2-Tetrachloroethane	ND	0.0970	0.400	-	-	-
1,1,2,2-Tetrachloroethane	ND	0.0760	0.400	-	-	-
Tetrachloroethene	ND	0.0430	0.400	-	-	-
Toluene	ND	0.140	0.400	-	-	-
1,2,3-Trichlorobenzene	ND	0.190	0.400	-	-	-
1,2,4-Trichlorobenzene	ND	0.140	0.400	-	-	-
1,1,1-Trichloroethane	ND	0.0900	0.400	-	-	-
1,1,2-Trichloroethane	ND	0.0870	0.400	-	-	-
Trichloroethene	ND	0.0730	0.400	-	-	-
Trichlorofluoromethane	ND	0.120	0.400	-	-	-
1,2,4-Trimethylbenzene	ND	0.150	0.400	-	-	-
1,3,5-Trimethylbenzene	ND	0.0750	0.400	-	-	-
Vinyl chloride	ND	0.0840	0.200	-	-	-
m,p-Xylene	ND	0.120	0.800	-	-	-
o-Xylene	ND	0.0920	0.400	-	-	-
Surrogate Recovery						
tert-Butyl methyl ether-d3	48.9			50	98	70-130
4-BFB	51.1			50	102	70-130
1,2-dichlorobenzene-d4	48.3			50	97	70-130

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Quality Control Report

Client:	Terracon	**WorkOrder:**	2104H15
Date Prepared:	05/03/2021	**BatchID:**	220790
Date Analyzed:	05/03/2021	**Extraction Method:**	E524.3
Instrument:	GC38	**Analytical Method:**	E524.3
Matrix:	Drinking Water	**Unit:**	µg/L
Project:	NA207065A; Gill Medical Center	**Sample ID:**	MB/LCS/LCSD-220790 2104H15-001SMS/MSD

QC Summary Report for E524.3

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
tert-Amyl Methyl Ether (TAME)	4.53	5.09	4	113	127	70-130	11.5	20
Benzene	3.86	4.24	4	96	106	70-130	9.37	20
Bromobenzene	4.13	4.59	4	103	115	70-130	10.4	20
Bromochloromethane	3.99	4.48	4	100	112	70-130	11.5	20
Bromodichloromethane	4.00	4.47	4	100	112	70-130	11.1	20
Bromoform	4.82	5.18	4	121	130	70-130	7.20	20
Bromomethane	3.26	3.45	4	82	86	70-130	5.56	20
2-Butanone (MEK)	20.9	23.2	16	131,F7	145,F7	70-130	10.4	20
t-Butyl alcohol (TBA)	24.7	25.4	16	154,F7	158,F7	70-130	2.57	20
n-Butyl benzene	3.84	4.63	4	96	116	70-130	18.6	20
sec-Butyl benzene	3.64	3.97	4	91	99	70-130	8.75	20
tert-Butyl benzene	3.78	4.07	4	95	102	70-130	7.41	20
Carbon disulfide	3.92	4.24	4	98	106	70-130	7.76	20
Carbon tetrachloride	3.87	4.27	4	97	107	70-130	9.89	20
Chlorobenzene	4.24	4.60	4	106	115	70-130	8.21	20
Chloroethane	3.25	3.72	4	81	93	70-130	13.4	20
Chloroform	3.85	4.22	4	96	106	70-130	9.11	20
Chloromethane	3.20	3.52	4	80	88	70-130	9.76	20
2-Chlorotoluene	3.76	4.16	4	94	104	70-130	10.2	20
4-Chlorotoluene	4.20	4.49	4	105	112	70-130	6.71	20
Dibromochloromethane	4.71	5.07	4	118	127	70-130	7.39	20
1,2-Dibromo-3-chloropropane	2.72	3.05	2	136,F7	152,F7	70-130	11.2	20
1,2-Dibromoethane (EDB)	2.34	2.57	2	117	128	70-130	9.33	20
Dibromomethane	4.38	4.97	4	109	124	70-130	12.6	20
1,2-Dichlorobenzene	4.11	4.40	4	103	110	70-130	6.85	20
1,3-Dichlorobenzene	3.97	4.28	4	99	107	70-130	7.47	20
1,4-Dichlorobenzene	4.06	4.42	4	102	111	70-130	8.48	20
Dichlorodifluoromethane	3.31	3.65	4	83	91	70-130	9.96	20
1,1-Dichloroethane	3.78	4.15	4	95	104	70-130	9.17	20
1,2-Dichloroethane (1,2-DCA)	3.99	4.46	4	100	112	70-130	11.2	20
1,1-Dichloroethene	3.91	4.21	4	98	105	70-130	7.37	20
cis-1,2-Dichloroethene	3.84	4.22	4	96	106	70-130	9.40	20
trans-1,2-Dichloroethene	3.89	4.29	4	97	107	70-130	9.69	20
1,2-Dichloropropane	3.82	4.24	4	95	106	70-130	10.6	20
1,3-Dichloropropane	4.71	5.15	4	118	129	70-130	8.83	20
2,2-Dichloropropane	3.83	4.25	4	96	106	70-130	10.3	20
1,1-Dichloropropene	3.93	4.22	4	98	105	70-130	7.12	20
cis-1,3-Dichloropropene	4.21	4.50	4	105	113	70-130	6.71	20

(Cont.)

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Quality Control Report

Client:	Terracon	**WorkOrder:**	2104H15
Date Prepared:	05/03/2021	**BatchID:**	220790
Date Analyzed:	05/03/2021	**Extraction Method:**	E524.3
Instrument:	GC38	**Analytical Method:**	E524.3
Matrix:	Drinking Water	**Unit:**	µg/L
Project:	NA207065A; Gill Medical Center	**Sample ID:**	MB/LCS/LCSD-220790 2104H15-001SMS/MSD

QC Summary Report for E524.3

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
trans-1,3-Dichloropropene	4.57	5.00	4	114	125	70-130	9.03	20
Diisopropyl ether (DIPE)	3.87	4.26	4	97	106	70-130	9.71	20
Ethylbenzene	4.22	4.64	4	105	116	70-130	9.63	20
Ethyl tert-butyl ether (ETBE)	4.16	4.63	4	104	116	70-130	10.8	20
Freon 113	3.94	4.23	4	99	106	70-130	7.03	20
Hexachlorobutadiene	4.11	4.40	4	103	110	70-130	6.80	20
Isopropylbenzene	3.84	4.27	4	96	107	70-130	10.7	20
4-Isopropyl toluene	3.94	4.31	4	98	108	70-130	8.96	20
Methyl-t-butyl ether (MTBE)	4.58	5.08	4	115	127	70-130	10.3	20
Methylene chloride	4.34	4.61	4	109	115	70-130	5.91	20
4-Methyl-2-pentanone (MIBK)	5.18	5.51	4	130	138,F7	70-130	6.02	20
Naphthalene	5.17	5.55	4	129	139,F7	70-130	7.07	20
n-Propyl benzene	3.74	4.26	4	94	106	70-130	13.0	20
Styrene	4.26	4.62	4	106	115	70-130	8.15	20
1,1,1,2-Tetrachloroethane	4.38	4.75	4	110	119	70-130	8.01	20
1,1,2,2-Tetrachloroethane	5.33	5.70	4	133,F7	143,F7	70-130	6.73	20
Tetrachloroethene	4.19	4.58	4	105	114	70-130	8.99	20
Toluene	3.92	4.40	4	98	110	70-130	11.4	20
1,2,3-Trichlorobenzene	4.52	4.95	4	113	124	70-130	8.97	20
1,2,4-Trichlorobenzene	4.32	4.61	4	108	115	70-130	6.50	20
1,1,1-Trichloroethane	3.88	4.32	4	97	108	70-130	10.7	20
1,1,2-Trichloroethane	4.80	5.19	4	120	130	70-130	7.88	20
Trichloroethene	4.03	4.47	4	101	112	70-130	10.5	20
Trichlorofluoromethane	4.06	4.41	4	101	110	70-130	8.27	20
1,2,4-Trimethylbenzene	3.79	4.25	4	95	106	70-130	11.5	20
1,3,5-Trimethylbenzene	3.79	4.27	4	95	107	70-130	11.9	20
Vinyl chloride	1.94	2.11	2	97	105	70-130	8.15	20
m,p-Xylene	8.42	9.33	8	105	117	70-130	10.2	20
o-Xylene	4.14	4.51	4	104	113	70-130	8.44	20
Surrogate Recovery								
tert-Butyl methyl ether-d3	61.0	60.6	50	122	121	70-130	0.730	20
4-BFB	53.6	53.3	50	107	107	70-130	0.458	20
1,2-dichlorobenzene-d4	48.0	48.2	50	96	96	70-130	0.556	20

Analyte	MS DF	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit

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CA ELAP 1644

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Quality Control Report

Client:	Terracon	**WorkOrder:**	2104H15
Date Prepared:	05/03/2021	**BatchID:**	220790
Date Analyzed:	05/03/2021	**Extraction Method:**	E524.3
Instrument:	GC38	**Analytical Method:**	E524.3
Matrix:	Drinking Water	**Unit:**	µg/L
Project:	NA207065A; Gill Medical Center	**Sample ID:**	MB/LCS/LCSD-220790 2104H15-001SMS/MSD

QC Summary Report for E524.3

Analyte	MS DF	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
tert-Amyl Methyl Ether (TAME)	1	3.59	3.78	4	ND	90	94	70-130	5.22	20
Benzene	1	3.63	3.83	4	ND	91	96	70-130	5.36	20
Bromobenzene	1	4.32	4.52	4	ND	108	113	70-130	4.66	20
Bromochloromethane	1	3.73	3.87	4	ND	93	97	70-130	3.77	20
Bromodichloromethane	1	3.71	3.92	4	ND	93	98	70-130	5.53	20
Bromoform	1	3.48	3.69	4	ND	87	92	70-130	5.87	20
Bromomethane	1	3.07	3.30	4	ND	77	82	70-130	7.09	20
2-Butanone (MEK)	1	14.1	15.5	16	ND	88	97	70-130	9.60	20
t-Butyl alcohol (TBA)	1	16.0	18.1	16	ND	100	113	70-130	12.2	20
n-Butyl benzene	1	4.10	4.54	4	ND	102	113	70-130	10.2	20
sec-Butyl benzene	1	3.96	4.14	4	ND	99	103	70-130	4.43	20
tert-Butyl benzene	1	4.12	4.28	4	ND	103	107	70-130	3.89	20
Carbon disulfide	1	3.37	3.71	4	ND	84	93	70-130	9.45	20
Carbon tetrachloride	1	3.54	3.79	4	ND	88	95	70-130	7.00	20
Chlorobenzene	1	4.02	4.23	4	ND	101	106	70-130	5.07	20
Chloroethane	1	3.39	3.51	4	ND	85	88	70-130	3.57	20
Chloroform	1	3.68	3.98	4	ND	92	100	70-130	7.89	20
Chloromethane	1	2.97	3.08	4	ND	74	77	70-130	3.68	20
2-Chlorotoluene	1	4.05	4.36	4	ND	101	109	70-130	7.27	20
4-Chlorotoluene	1	4.23	4.66	4	ND	106	117	70-130	9.81	20
Dibromochloromethane	1	3.90	4.06	4	ND	97	101	70-130	4.07	20
1,2-Dibromo-3-chloropropane	1	2.10	2.20	2	ND	105	110	70-130	4.96	20
1,2-Dibromoethane (EDB)	1	1.87	1.99	2	ND	94	99	70-130	5.98	20
Dibromomethane	1	3.69	4.02	4	ND	92	100	70-130	8.51	20
1,2-Dichlorobenzene	1	4.15	4.26	4	ND	104	107	70-130	2.80	20
1,3-Dichlorobenzene	1	4.12	4.36	4	ND	103	109	70-130	5.70	20
1,4-Dichlorobenzene	1	4.19	4.37	4	ND	105	109	70-130	4.18	20
Dichlorodifluoromethane	1	2.96	3.10	4	ND	74	78	70-130	4.88	20
1,1-Dichloroethane	1	3.55	3.83	4	ND	89	96	70-130	7.69	20
1,2-Dichloroethane (1,2-DCA)	1	3.56	3.76	4	ND	89	94	70-130	5.60	20
1,1-Dichloroethene	1	3.39	3.72	4	ND	85	93	70-130	9.14	20
cis-1,2-Dichloroethene	1	3.57	3.89	4	ND	89	97	70-130	8.51	20
trans-1,2-Dichloroethene	1	3.57	3.88	4	ND	89	97	70-130	8.37	20
1,2-Dichloropropane	1	3.72	3.97	4	ND	93	99	70-130	6.67	20
1,3-Dichloropropane	1	4.05	4.16	4	ND	101	104	70-130	2.60	20
2,2-Dichloropropane	1	3.56	3.79	4	ND	89	95	70-130	6.32	20
1,1-Dichloropropene	1	3.67	3.92	4	ND	92	98	70-130	6.66	20
cis-1,3-Dichloropropene	1	3.74	3.90	4	ND	94	98	70-130	4.16	20

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Quality Control Report

Client:	Terracon	**WorkOrder:**	2104H15
Date Prepared:	05/03/2021	**BatchID:**	220790
Date Analyzed:	05/03/2021	**Extraction Method:**	E524.3
Instrument:	GC38	**Analytical Method:**	E524.3
Matrix:	Drinking Water	**Unit:**	µg/L
Project:	NA207065A; Gill Medical Center	**Sample ID:**	MB/LCS/LCSD-220790 2104H15-001SMS/MSD

QC Summary Report for E524.3

Analyte	MS DF	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
trans-1,3-Dichloropropene	1	3.92	4.13	4	ND	98	103	70-130	5.20	20
Diisopropyl ether (DIPE)	1	3.50	3.77	4	ND	87	94	70-130	7.36	20
Ethylbenzene	1	4.05	4.25	4	ND	101	106	70-130	4.79	20
Ethyl tert-butyl ether (ETBE)	1	3.44	3.72	4	ND	86	93	70-130	7.74	20
Freon 113	1	3.46	3.66	4	ND	87	92	70-130	5.65	20
Hexachlorobutadiene	1	4.45	4.79	4	ND	111	120	70-130	7.31	20
Isopropylbenzene	1	4.06	4.26	4	ND	101	106	70-130	4.77	20
4-Isopropyl toluene	1	4.10	4.32	4	ND	102	108	70-130	5.19	20
Methyl-t-butyl ether (MTBE)	1	3.44	3.71	4	ND	86	93	70-130	7.43	20
Methylene chloride	1	3.73	4.04	4	ND	93	101	70-130	8.09	20
4-Methyl-2-pentanone (MIBK)	1	3.57	3.78	4	ND	89	94	70-130	5.81	20
Naphthalene	1	3.92	4.16	4	ND	98	104	70-130	6.11	20
n-Propyl benzene	1	4.15	4.47	4	ND	104	112	70-130	7.30	20
Styrene	1	4.01	4.27	4	ND	100	107	70-130	6.09	20
1,1,1,2-Tetrachloroethane	1	3.94	4.21	4	ND	98	105	70-130	6.69	20
1,1,2,2-Tetrachloroethane	1	3.98	4.14	4	ND	99	103	70-130	3.94	20
Tetrachloroethene	1	3.92	4.03	4	ND	98	101	70-130	2.68	20
Toluene	1	3.79	3.96	4	ND	95	99	70-130	4.30	20
1,2,3-Trichlorobenzene	1	4.08	4.16	4	ND	102	104	70-130	1.87	20
1,2,4-Trichlorobenzene	1	3.98	4.30	4	ND	100	107	70-130	7.56	20
1,1,1-Trichloroethane	1	3.62	3.91	4	ND	90	98	70-130	7.75	20
1,1,2-Trichloroethane	1	3.86	4.13	4	ND	96	103	70-130	6.85	20
Trichloroethene	1	3.80	4.01	4	ND	95	100	70-130	5.54	20
Trichlorofluoromethane	1	3.64	3.95	4	ND	91	99	70-130	8.02	20
1,2,4-Trimethylbenzene	1	4.04	4.28	4	ND	101	107	70-130	5.81	20
1,3,5-Trimethylbenzene	1	4.07	4.30	4	ND	102	107	70-130	5.34	20
Vinyl chloride	1	1.27	1.27	2	ND	64,F1	64,F1	70-130	0.0944	20
m,p-Xylene	1	8.04	8.67	8	ND	101	108	70-130	7.46	20
o-Xylene	1	4.03	4.19	4	ND	101	105	70-130	3.85	20
Surrogate Recovery										
tert-Butyl methyl ether-d3	1	47.0	47.7	50		94	95	70-130	1.53	20
4-BFB	1	51.2	50.2	50		102	100	70-130	1.86	20
1,2-dichlorobenzene-d4	1	49.9	49.2	50		100	98	70-130	1.38	20

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Quality Control Report

Client:	Terracon	**WorkOrder:**	2104H15
Date Prepared:	04/29/2021 - 04/30/2021	**BatchID:**	220588
Date Analyzed:	04/29/2021 - 04/30/2021	**Extraction Method:**	E524.3
Instrument:	GC38	**Analytical Method:**	E524.3
Matrix:	Drinking Water	**Unit:**	µg/L
Project:	NA207065A; Gill Medical Center	**Sample ID:**	MB/LCS/LCSD-220588 2104H15-002AMS/MSD

QC Summary Report for E524.3

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
1,2-Dibromo-3-chloropropane	ND	0.00630	0.0100	-	-	-
1,2-Dibromoethane (EDB)	ND	0.0150	0.0200	-	-	-
Surrogate Recovery						
tert-Butyl methyl ether-d3	0.998			1	100	70-130
4-BFB	0.950			1	95	70-130
1,2-dichlorobenzene-d4	1.02			1	102	70-130

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
1,2-Dibromo-3-chloropropane	0.103	0.0974	0.10	103	97	70-130	5.77	20
1,2-Dibromoethane (EDB)	0.104	0.102	0.10	104	102	70-130	2.57	20
Surrogate Recovery								
tert-Butyl methyl ether-d3	1.03	1.02	1	103	102	70-130	1.04	20
4-BFB	0.968	0.956	1	97	96	70-130	1.22	20
1,2-dichlorobenzene-d4	1.00	1.01	1	100	100	70-130	0.405	20

Analyte	MS DF	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
1,2-Dibromo-3-chloropropane	1	0.120	0.0910	0.10	ND	120	91	70-130	27.7	30
1,2-Dibromoethane (EDB)	1	0.0998	0.0930	0.10	ND	100	93	70-130	7.09	30
Surrogate Recovery										
tert-Butyl methyl ether-d3	1	1.17	1.03	1		117	103	70-130	12.3	30
4-BFB	1	0.947	0.933	1		95	93	70-130	1.46	30
1,2-dichlorobenzene-d4	1	1.03	1.02	1		103	101	70-130	1.52	30

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Quality Control Report

Client:	Terracon	**WorkOrder:**	2104H15
Date Prepared:	05/03/2021	**BatchID:**	220680
Date Analyzed:	05/03/2021	**Extraction Method:**	E525.2
Instrument:	GC25	**Analytical Method:**	E525.2
Matrix:	Drinking Water	**Unit:**	µg/L
Project:	NA207065A; Gill Medical Center	**Sample ID:**	MB/LCS/LCSD-220680

QC Summary Report for E525.2

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
Alachlor	ND	0.0820	0.250	-	-	-
Atrazine	ND	0.110	0.250	-	-	-
Diazinon	ND	0.0970	0.250	-	-	-
Molinate	ND	0.0850	0.250	-	-	-
Simazine	ND	0.170	0.250	-	-	-
Thiobencarb	ND	0.0820	0.250	-	-	-
Surrogate Recovery						
1-Bromo-2-Nitrobenzene	0.489			0.5	98	43-130

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Alachlor	1.35	1.28	1.5	90	85	47-135	5.43	20
Atrazine	1.17	1.25	1.5	78	83	48-136	6.58	20
Diazinon	1.36	1.30	1.5	91	86	45-131	4.86	20
Molinate	1.42	1.26	1.5	94	84	48-131	11.6	20
Simazine	1.19	1.27	1.5	80	84	41-134	5.90	20
Thiobencarb	1.32	1.31	1.5	88	87	43-122	1.33	20
Surrogate Recovery								
1-Bromo-2-Nitrobenzene	0.529	0.482	0.50	106	96	43-130	9.23	20

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Quality Control Report

Client:	Terracon	**WorkOrder:**	2104H15
Date Prepared:	05/04/2021	**BatchID:**	220803
Date Analyzed:	05/05/2021	**Extraction Method:**	E525.2
Instrument:	GC42	**Analytical Method:**	E525.2
Matrix:	Drinking Water	**Unit:**	µg/L
Project:	NA207065A; Gill Medical Center	**Sample ID:**	MB/LCS/LCSD-220803

QC Summary Report for E525.2

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
Benzo (a) pyrene	ND	0.0400	0.0400	-	-	-
Bis (2-ethylhexyl) Adipate	ND	0.200	0.200	-	-	-
Bis (2-ethylhexyl) Phthalate	ND	0.200	0.200	-	-	-
Surrogate Recovery						
Triphenyl phosphate	0.434			0.5	87	70-130

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Benzo (a) pyrene	0.418	0.439	0.50	84	88	70-130	4.77	20
Bis (2-ethylhexyl) Adipate	3.90	3.91	5	78	78	70-130	0.160	20
Bis (2-ethylhexyl) Phthalate	3.94	4.04	5	79	81	70-130	2.60	20
Surrogate Recovery								
Triphenyl phosphate	0.499	0.502	0.50	100	100	70-130	0.611	20

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Quality Control Report

Client:	Terracon	**WorkOrder:**	2104H15
Date Prepared:	05/03/2021	**BatchID:**	220724
Date Analyzed:	05/04/2021 - 05/05/2021	**Extraction Method:**	E531.1
Instrument:	HPLC1	**Analytical Method:**	E531.1
Matrix:	Drinking Water	**Unit:**	µg/L
Project:	NA207065A; Gill Medical Center	**Sample ID:**	MB/LCS/LCSD-220724 2104H15-001KMS/MSD

QC Summary Report for E531.1

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
3-Hydroxycarbofuran	ND	1.10	2.00	-	-	-
Aldicarb (Temik)	ND	1.30	2.00	-	-	-
Aldicarb sulfoxide	ND	0.920	2.00	-	-	-
Aldoxycarb (Aldicarb Sulfone)	ND	0.880	2.00	-	-	-
Carbaryl (Sevin)	ND	1.40	2.00	-	-	-
Carbofuran (Furadan)	ND	1.40	2.00	-	-	-
Methiocarb (Mesurol)	ND	1.20	2.00	-	-	-
Methomyl (Lannate)	ND	0.620	2.00	-	-	-
Oxamyl	ND	0.890	2.00	-	-	-
Propoxur (Baygon)	ND	1.30	2.00	-	-	-
Surrogate Recovery						
BDMC	105			100	105	80-120

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Quality Control Report

Client:	Terracon	**WorkOrder:**	2104H15
Date Prepared:	05/03/2021	**BatchID:**	220724
Date Analyzed:	05/04/2021 - 05/05/2021	**Extraction Method:**	E531.1
Instrument:	HPLC1	**Analytical Method:**	E531.1
Matrix:	Drinking Water	**Unit:**	µg/L
Project:	NA207065A; Gill Medical Center	**Sample ID:**	MB/LCS/LCSD-220724 2104H15-001KMS/MSD

QC Summary Report for E531.1

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
3-Hydroxycarbofuran	58.7	53.2	50	117	106	80-120	9.89	20
Aldicarb (Temik)	50.9	46.0	50	102	92	80-120	10.1	20
Aldicarb sulfoxide	51.6	46.3	50	103	93	80-120	10.7	20
Aldoxycarb (Aldicarb Sulfone)	61.7	55.4	50	123,F2	111	80-120	10.7	20
Carbaryl (Sevin)	61.0	55.2	50	122,F2	110	80-120	10.1	20
Carbofuran (Furadan)	62.5	56.4	50	125,F2	113	80-120	10.3	20
Methiocarb (Mesurol)	63.8	58.3	50	128,F2	117	80-120	8.97	20
Methomyl (Lannate)	60.5	54.6	50	121,F2	109	80-120	10.2	20
Oxamyl	62.9	57.0	50	126,F2	114	80-120	9.91	20
Propoxur (Baygon)	60.4	54.8	50	121,F2	110	80-120	9.69	20
Surrogate Recovery								
BDMC	109	107	100	109	107	80-120	2.08	20

Analyte	MS DF	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
3-Hydroxycarbofuran	1	54.9	60.4	50	ND	110	121	65-135	9.50	20
Aldicarb (Temik)	1	43.6	47.4	50	ND	87	95	65-135	8.17	20
Aldicarb sulfoxide	1	48.5	53.1	50	ND	97	106	65-135	9.00	20
Aldoxycarb (Aldicarb Sulfone)	1	57.4	61.5	50	ND	115	123	65-135	6.96	20
Carbaryl (Sevin)	1	57.0	62.4	50	ND	114	125	65-135	8.96	20
Carbofuran (Furadan)	1	58.3	63.5	50	ND	117	127	65-135	8.51	20
Methiocarb (Mesurol)	1	59.8	64.4	50	ND	120	129	65-135	7.38	20
Methomyl (Lannate)	1	56.7	61.0	50	ND	113	122	65-135	7.24	20
Oxamyl	1	59.1	65.8	50	ND	118	132	65-135	10.6	20
Propoxur (Baygon)	1	57.2	62.2	50	ND	114	124	65-135	8.25	20
Surrogate Recovery										
BDMC	1	108	114	100		109	114	65-135	4.92	20

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Quality Control Report

Client:	Terracon	**WorkOrder:**	2104H15
Date Prepared:	04/30/2021	**BatchID:**	220605
Date Analyzed:	05/02/2021	**Extraction Method:**	E547
Instrument:	HPLC1	**Analytical Method:**	E547
Matrix:	Drinking Water	**Unit:**	µg/L
Project:	NA207065A; Gill Medical Center	**Sample ID:**	MB/LCS/LCSD-220605

QC Summary Report for E547

Analyte	MB Result	MDL	RL			
Glyphosate	ND	2.20	5.00	-	-	-

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Glyphosate	177	184	200	89	92	70-130	3.41	20

CA ELAP 1644

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Quality Control Report

Client:	Terracon	**WorkOrder:**	2104H15
Date Prepared:	04/30/2021	**BatchID:**	220580
Date Analyzed:	04/30/2021	**Extraction Method:**	E548.1
Instrument:	GC8	**Analytical Method:**	E548.1
Matrix:	Water	**Unit:**	µg/L
Project:	NA207065A; Gill Medical Center	**Sample ID:**	MB/LCS/LCSD-220580 2104H15-001LMS/MSD

QC Summary Report for E548.1

Analyte	MB Result	MDL	RL			
Endothall	ND	4.10	20.0	-	-	-

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Endothall	124	111	100	124	111	78-127	11.4	20

Analyte	MS DF	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Endothall	1	102	112	100	ND	102	112	46-148	8.82	30

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Quality Control Report

Client:	Terracon	**WorkOrder:**	2104H15
Date Prepared:	04/29/2021	**BatchID:**	220551
Date Analyzed:	04/29/2021	**Extraction Method:**	E549.2
Instrument:	HPLC2	**Analytical Method:**	E549.2
Matrix:	Drinking Water	**Unit:**	µg/L
Project:	NA207065A; Gill Medical Center	**Sample ID:**	MB/LCS/LCSD-220551 2104H15-001JMS/MSD

QC Summary Report for E549.2

Analyte	MB Result	MDL	RL			
Diquat	ND	1.60	4.00	-	-	-
Paraquat	ND	3.50	4.00	-	-	-

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Diquat	118	122	100	118	122	70-130	3.34	30
Paraquat	127	122	100	127	122	70-130	4.02	30

Analyte	MS DF	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Diquat	1	118	117	100	ND	118	117	70-130	0.403	30
Paraquat	1	106	108	100	ND	107	108	70-130	1.41	30

Quality Control Report

Client:	Terracon	**WorkOrder:**	2104H15
Date Prepared:	04/30/2021	**BatchID:**	220581
Date Analyzed:	05/01/2021	**Extraction Method:**	E552.2
Instrument:	GC50	**Analytical Method:**	E552.2
Matrix:	Drinking Water	**Unit:**	µg/L
Project:	NA207065A; Gill Medical Center	**Sample ID:**	MB/LCS/LCSD-220581

QC Summary Report for E552.2

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
Dibromoacetic acid (DBAA)	ND	0.0520	0.130	-	-	-
Dichloroacetic acid (DCAA)	ND	0.0650	0.130	-	-	-
Monobromoacetic acid (MBAA)	ND	0.0630	0.130	-	-	-
Monochloroacetic acid (MCAA)	ND	0.0940	0.270	-	-	-
Trichloroacetic acid (TCAA)	ND	0.0760	0.130	-	-	-
Surrogate Recovery						
2,3-Dibromopropionic Acid	11.7			13.3	88	70-130

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Dibromoacetic acid (DBAA)	3.20	3.16	4	80	79	70-130	1.14	30
Dichloroacetic acid (DCAA)	4.02	3.98	4	100	99	70-130	1.05	30
Monobromoacetic acid (MBAA)	4.02	3.99	4	100	100	70-130	0.618	30
Monochloroacetic acid (MCAA)	8.22	8.24	8	103	103	70-130	0.208	30
Trichloroacetic acid (TCAA)	3.20	3.19	4	80	80	70-130	0.310	30
Surrogate Recovery								
2,3-Dibromopropionic Acid	12.0	11.9	13.3	90	89	70-130	1.34	30

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Quality Control Report

Client:	Terracon	**WorkOrder:**	2104H15
Date Prepared:	05/05/2021	**BatchID:**	220877
Date Analyzed:	05/06/2021	**Extraction Method:**	SW8316
Instrument:	HPLC2	**Analytical Method:**	SW8316
Matrix:	Water	**Unit:**	µg/L
Project:	NA207065A; Gill Medical Center	**Sample ID:**	MB/LCS/LCSD-220877 2104H15-001MMS/MSD

QC Summary Report for SW8316

Analyte	MB Result	MDL	RL			
Acrolein (2-Propenal)	ND	2.00	5.00	-	-	-
Acrylamide	ND	2.00	10.0	-	-	-
Acrylonitrile	ND	2.00	2.00	-	-	-

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Acrolein (2-Propenal)	81.5	92.9	100	81	93	80-120	13.1	20
Acrylamide	82.8	97.1	100	83	97	80-120	15.9	20
Acrylonitrile	82.4	94.8	100	82	95	80-120	14.0	20

Analyte	MS DF	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Acrylamide	1	108	5170	100	ND	107	5170,F1	70-130	192,F1	20

NELAP 4033ORELAP

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Quality Control Report

Client:	Terracon	**WorkOrder:**	2104H15
Date Prepared:	05/03/2021	**BatchID:**	220692
Date Analyzed:	05/03/2021	**Extraction Method:**	Kelada-01
Instrument:	WC_SKALAR	**Analytical Method:**	Kelada-01
Matrix:	Water	**Unit:**	µg/L
Project:	NA207065A; Gill Medical Center	**Sample ID:**	MB/LCS/LCSD-220692

QC Summary Report for Kelada-01

Analyte	MB Result	MDL	RL			
Total Cyanide	ND	0.770	1.00	-	-	-

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Total Cyanide	41.5	41.1	40	104	103	80-120	1.09	20

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Quality Control Report

Client:	Terracon	**WorkOrder:**	2104H15
Date Prepared:	05/02/2021	**BatchID:**	220672
Date Analyzed:	05/03/2021 - 05/04/2021	**Extraction Method:**	MAI
Instrument:	HPLC2	**Analytical Method:**	MAI-HPLC
Matrix:	Water	**Unit:**	µg/L
Project:	NA207065A; Gill Medical Center	**Sample ID:**	MB/LCS/LCSD-220672 2104H15-001QMS/MSD

QC Summary Report for Epichlorohydrin

Analyte	MB Result	MDL	RL			
Epichlorohydrin	ND	1.00	1.00	-	-	-

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Epichlorohydrin	36.9	36.8	40	92	92	70-130	0.283	20

Analyte	MS DF	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Epichlorohydrin	1	35.7	43.4	40	ND	89	109	70-130	19.7	30

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Quality Control Report

Client:	Terracon	**WorkOrder:**	2104H15
Date Prepared:	05/03/2021	**BatchID:**	220710
Date Analyzed:	05/03/2021	**Extraction Method:**	E200.8
Instrument:	ICP-MS3	**Analytical Method:**	E200.8
Matrix:	Drinking Water	**Unit:**	µg/L
Project:	NA207065A; Gill Medical Center	**Sample ID:**	MB/LCS/LCSD-220710

QC Summary Report for Metals

Analyte	MB Result	MDL	RL			
Aluminum	ND	0.880	50.0	-	-	-
Antimony	ND	0.0600	6.00	-	-	-
Arsenic	ND	0.530	2.00	-	-	-
Barium	ND	0.120	100	-	-	-
Beryllium	ND	0.0600	1.00	-	-	-
Cadmium	ND	0.0300	1.00	-	-	-
Chromium	ND	0.0900	10.0	-	-	-
Copper	ND	0.0900	10.0	-	-	-
Mercury	ND	0.0100	1.00	-	-	-
Nickel	ND	0.150	10.0	-	-	-
Selenium	0.810,J	0.420	5.00	-	-	-
Thallium	ND	0.0100	1.00	-	-	-
Uranium	ND	0.00300	0.500	-	-	-
Vanadium	ND	0.120	3.00	-	-	-

(Cont.)

Quality Control Report

Client:	Terracon	**WorkOrder:**	2104H15
Date Prepared:	05/03/2021	**BatchID:**	220710
Date Analyzed:	05/03/2021	**Extraction Method:**	E200.8
Instrument:	ICP-MS3	**Analytical Method:**	E200.8
Matrix:	Drinking Water	**Unit:**	µg/L
Project:	NA207065A; Gill Medical Center	**Sample ID:**	MB/LCS/LCSD-220710

QC Summary Report for Metals

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Aluminum	500	500	500	100	100	85-115	0.100	20
Antimony	50.8	51.4	50	102	103	85-115	0.998	20
Arsenic	49.9	50.4	50	100	101	85-115	1.08	20
Barium	511	517	500	102	103	85-115	1.26	20
Beryllium	49.8	50.2	50	100	100	85-115	0.700	20
Cadmium	50.2	50.9	50	100	102	85-115	1.27	20
Chromium	46.9	47.6	50	94	95	85-115	1.48	20
Copper	49.6	50.0	50	99	100	85-115	0.803	20
Mercury	1.25	1.28	1.25	100	102	85-115	1.97	20
Nickel	49.8	49.9	50	100	100	85-115	0.341	20
Selenium	48.7	49.2	50	97	98	85-115	0.879	20
Thallium	46.9	47.5	50	94	95	85-115	1.36	20
Uranium	48.7	48.8	50	97	98	85-115	0.328	20
Vanadium	49.7	50.0	50	99	100	85-115	0.742	20

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Quality Control Report

Client:	Terracon	**WorkOrder:**	2104H15
Date Prepared:	04/30/2021	**BatchID:**	220645
Date Analyzed:	04/30/2021	**Extraction Method:**	SM2510 B
Instrument:	WetChem	**Analytical Method:**	SM2510B
Matrix:	Water	**Unit:**	µmhos/cm @ 25°C
Project:	NA207065A; Gill Medical Center	**Sample ID:**	CCV-220645

QC Summary Report for Specific Conductivity

Analyte	CCV REC (%)	CCV Limits
Specific Conductivity	100	90-110

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Quality Control Report

Client:	Terracon	**WorkOrder:**	2104H15
Date Prepared:	04/29/2021	**BatchID:**	220522
Date Analyzed:	04/30/2021 - 05/02/2021	**Extraction Method:**	SM9221B2B3CE1F
Instrument:	MICROBIOLOGY	**Analytical Method:**	SM9221B2B3CE1F
Matrix:	Drinking Water	**Unit:**	MPN/100ml
Project:	NA207065A; Gill Medical Center	**Sample ID:**	MB-220522 2104H15-001B

QC Summary Report for SM9221B2B3CE1F

Analyte	RL	Blank	Control	Sample Result	Dup / Serial Dilution Result	RPD	RPD Limit
Fecal Coliform		-	-	ND	ND	0	70
Total Coliform	1.00	ND	-	ND	ND	0	70
Enterobacter aerogenes (TC POS Control)	1.00	-	285	-	-	-	-
Pseudomonas aeruginosa (TC NEG Control)	1.00	-	0	-	-	-	-
Total Coliform	1.00	ND	-	ND	ND	0	70
E. Coli	1.00	ND	-	ND	ND	0	70
E. Coli	1.00	ND	-	ND	ND	0	70
E. coli (EC POS Control)	1.00	-	461	-	-	-	-
Enterobacter aerogenes (EC NEG Control)	1.00	-	0	-	-	-	-

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CHAIN-OF-CUSTODY RECORD

WorkOrder: 2104H15 **ClientCode: NAAL** **QuoteID: 212670**

[ ] WaterTrax [ ] WriteOn [ ] EDF [ ] EQuIS [ ] Dry-Weight [x] Email [ ] HardCopy [ ] ThirdParty [x] J-flag
[ ] Detection Summary [ ] Excel

Report to:
Tony P. Mikacich
Terracon
902 Industrial Way
Lodi, CA 95240
(209) 367-3701 FAX: (209) 369-4228

Email: tony.mikacich@terracon.com
cc/3rd Party:
PO:
Project: NA207065A; Gill Medical Center

Bill to:
Macy Thormahlen
Terracon
902 Industrial Way
Lodi, CA 95240
Macy.Thormahlen@terracon.com

Requested TATs: 15 days; 5 days;

Date Received: 04/29/2021
Date Logged: 04/29/2021

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below) 1	2	3	4	5	6	7	8	9	10	11	12
2104H15-001	TW-1-W-4/28/21	Water	4/28/2021 12:00	[ ]	G	E	O	A	H	F		S	I	R	K	P
2104H15-002	TW-1-W-4/28/21	Water	4/28/2021 12:00	[ ]							A					
2104H15-003	TW-1-W-4/28/21 TRIP BLANK 524.3_504	Water	<Not Provided>	[ ]							A					
2104H15-004	TW-1-W-4/28/21 TRIP BLANK 524BASIC	Water	<Not Provided>	[ ]								A				

Test Legend:

1	1613_TCDD_DW	2	300_1_W	3	300_1SPE_W(ug/L)	4	314_W
5	505_W	6	515_3_W	7	524_3_504_W	8	524_3Basic_W
9	525_2_507_W	10	525_2_W	11	531_1_W	12	547_W

Project Manager: Angela Rydelius **Prepared by: Lilly Ortiz**

The following SampID: 001A contains testgroup 314.0_W (Perchlorate).

Comments: Ok to do Uranium by 200.8 in house per Tony. 4/30/21

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).
Hazardous samples will be returned to client or disposed of at client expense.

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CHAIN-OF-CUSTODY RECORD

WorkOrder: 2104H15 **ClientCode: NAAL** **QuoteID: 212670**

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ EQuIS ☐ Dry-Weight ☑ Email ☐ HardCopy ☐ ThirdParty ☑ J-flag
☐ Detection Summary ☐ Excel

Report to:
Tony P. Mikacich
Terracon
902 Industrial Way
Lodi, CA 95240
(209) 367-3701 FAX: (209) 369-4228

Email: tony.mikacich@terracon.com
cc/3rd Party:
PO:
Project: NA207065A; Gill Medical Center

Bill to:
Macy Thormahlen
Terracon
902 Industrial Way
Lodi, CA 95240
Macy.Thormahlen@terracon.com

Requested TATs: 15 days; 5 days;

Date Received: 04/29/2021
Date Logged: 04/29/2021

Lab ID	Client ID	Matrix	Collection Date	Hold	13	14	15	16	17	18	19	20	21	22	23	24
					Requested Tests (See legend below)											
2104H15-001	TW-1-W-4/28/21	Water	4/28/2021 12:00	☐	L	J	N	M	T	D	Q	U	C	A	V	W
2104H15-002	TW-1-W-4/28/21	Water	4/28/2021 12:00	☐										A		
2104H15-003	TW-1-W-4/28/21 TRIP BLANK 524.3_504	Water	<Not Provided>	☐										A		
2104H15-004	TW-1-W-4/28/21 TRIP BLANK 524BASIC	Water	<Not Provided>	☐										A		

Test Legend:

13	548_1_W	14	549_2_W	15	552_2_W	16	8316_W
17	ASBESTOS_E100_2_DW	18	CN_W	19	Epichlorohydrin_W	20	GROSS ALPHA & BETA_W
21	METALSMS_DW	22	PRDisposal Fee	23	Radium226_W	24	Radium228_W

Project Manager: Angela Rydelius **Prepared by: Lilly Ortiz**

The following SampID: 001A contains testgroup 314.0_W (Perchlorate).

Comments: Ok to do Uranium by 200.8 in house per Tony. 4/30/21

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CHAIN-OF-CUSTODY RECORD

WorkOrder: 2104H15 **ClientCode: NAAL** **QuoteID: 212670**

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ EQuIS ☐ Dry-Weight ☑ Email ☐ HardCopy ☐ ThirdParty ☑ J-flag
☐ Detection Summary ☐ Excel

Report to:
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Email: tony.mikacich@terracon.com
cc/3rd Party:
PO:
Project: NA207065A; Gill Medical Center

Bill to:
Macy Thormahlen
Terracon
902 Industrial Way
Lodi, CA 95240
Macy.Thormahlen@terracon.com

Requested TATs: **15 days; 5 days;**

Date Received: **04/29/2021**
Date Logged: **04/29/2021**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below) 1	2	3	4	5	6	7	8	9	10	11	12
2104H15-001	TW-1-W-4/28/21	Water	4/28/2021 12:00	☐	A	Y	B	Z	X							
2104H15-002	TW-1-W-4/28/21	Water	4/28/2021 12:00	☐												
2104H15-003	TW-1-W-4/28/21 TRIP BLANK 524.3_504	Water	<Not Provided>	☐												
2104H15-004	TW-1-W-4/28/21 TRIP BLANK 524BASIC	Water	<Not Provided>	☐												

Test Legend:

1	SC_W	2	Strontium-90_W	3	TC&EC&FC_9221_DW	4	Tritium_W
5	URANIUM_W	6		7		8	
9		10		11		12	

Project Manager: Angela Rydelius **Prepared by: Lilly Ortiz**

The following SampID: 001A contains testgroup 314.0_W (Perchlorate).

Comments: Ok to do Uranium by 200.8 in house per Tony. 4/30/21

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).
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WORK ORDER SUMMARY

Client Name: TERRACON
Client Contact: Tony P. Mikacich
Contact's Email: tony.mikacich@terracon.com

Project: NA207065A; Gill Medical Center
Comments Ok to do Uranium by 200.8 in house per Tony. 4/30/21

Work Order: 2104H15
QC Level:
Date Logged: 4/29/2021

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ EQuIS ☑ Email ☐ HardCopy ☐ ThirdParty ☑ J-flag

LabID	ClientSampID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	Head Space	Dry-Weight	Collection Date & Time	TAT	Test Due Date	Sediment Content	Hold	SubOut
001A	TW-1-W-4/28/21	Water	E314.0 (Perchlorate)	2	250mL + 1-125 HDPE, unprsv.	☐	☐	4/28/2021 12:00	5 days	5/6/2021	None	☐	
001B	TW-1-W-4/28/21	Water	SM9221B2B3CE1F (FC, TC & E coli)	2	120mL w/Na2S2O3	☐	☐	4/28/2021 12:00	5 days	5/6/2021	None	☐	
001C	TW-1-W-4/28/21	Water	E200.8 (Metals) <Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Mercury, Nickel, Selenium, Thallium, Uranium>	1	250mL HDPE w/ HNO3	☐	☐	4/28/2021 12:00	5 days	5/6/2021	None	☐	
001D	TW-1-W-4/28/21	Water	Kelada-01 (Cyanide, Total)	1	250mL aHDPE w/ NaOH	☐	☐	4/28/2021 12:00	5 days	5/6/2021	None	☐	
001E	TW-1-W-4/28/21	Water	E300.1 (Inorganic Anions) <Fluoride, Nitrate & Nitrite as N, Nitrate as N, Nitrate as $NO3^{-}$, Nitrite as N, Nitrite as $NO2^{-}$>	1	125mL HDPE, unprsv.	☐	☐	4/28/2021 12:00	5 days	5/6/2021	None	☐	
				5	125mL HDPE, unprsv.	☐	☐				None	☐	
001F	TW-1-W-4/28/21	Water	E515.3 (OC Acidic Herbicides) <2,4,5-TP (Silvex)_2, 2,4-D (Dichlorophenoxyacetic acid)_2, Bentazon_2, Dalapon_2, DCPA (mono & diacid)_2, Dicamba_2, Dinoseb (DNBP)_2, Pentachlorophenol (PCP)_2, Picloram_2>	2	aVOA w/ Na2S2O3	☐	☐	4/28/2021 12:00	5 days	5/6/2021	None	☐	
001G	TW-1-W-4/28/21	Water	E1613 (2,3,7,8-TCDD only)	2	1LA Narrow Mouth, Unpres	☐	☐	4/28/2021 12:00	15 days	5/20/2021	None	☐	

NOTES: * STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).

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LabID	ClientSampID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	Head Space	Dry-Weight	Collection Date & Time	TAT	Test Due Date	Sediment Content	Hold	SubOut
001H	TW-1-W-4/28/21	Water	E505 (OC Pesticides+PCBs) <a-BHC_1, a-Chlordane_1, Aroclor1016_1, Aroclor1221_1, Aroclor1232_1, Aroclor1242_1, Aroclor1248_1, Aroclor1254_1, Aroclor1260_1, b-BHC_1, Chlordane (Technical)_1, d-BHC_1, Endosulfan I_1, Endosulfan II_1, Endosulfan sulfate_1, Endrin Aldehyde_1, Endrin ketone_1, Endrin_1, g-BHC_1, g-Chlordane_1, Heptachlor Epoxide_1, Heptachlor_1, Hexachlorobenzene_1, Hexachlorocyclopentadiene_1, Methoxychlor_1, p,p-DDT_1, PCBs, total_1, Toxaphene_1>	2	VOA w/ Na2S2O3	☐	☐	4/28/2021 12:00	5 days	5/6/2021	None	☐	
001I	TW-1-W-4/28/21	Water	E525.2 (ON/P Pesticides) <Alachlor_1, Atrazine_1, Diazinon_1, Molinate_1, Simazine_1, Thiobencarb_1>	1	1LA w/ Na2S2O3	☐	☐	4/28/2021 12:00	5 days	5/6/2021	None	☐	
001J	TW-1-W-4/28/21	Water	E549.2 (Diquat & Paraquat) <Diquat, Paraquat>	1	500mL aHDPE w/ H2SO4	☐	☐	4/28/2021 12:00	5 days	5/6/2021	None	☐	

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Client Contact: Tony P. Mikacich **QC Level:**
Contact's Email: tony.mikacich@terracon.com **Comments** Ok to do Uranium by 200.8 in house per Tony. 4/30/21 **Date Logged:** 4/29/2021

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LabID	ClientSampID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	Head Space	Dry-Weight	Collection Date & Time	TAT	Test Due Date	Sediment Content	Hold	SubOut
001K	TW-1-W-4/28/21	Water	E531.1 (Carbamates) <3-Hydroxycarbofuran, Aldicarb (Temik), Aldicarb sulfoxide, Aldoxycarb (Aldicarb Sulfone), Carbaryl (Sevin), Carbofuran (Furadan), Methiocarb (Mesurol), Methomyl (Lannate), Oxamyl, Propoxur (Baygon)>	2	aVOA w/ MAI Preservative	☐	☐	4/28/2021 12:00	5 days	5/6/2021	None	☐	
001L	TW-1-W-4/28/21	Water	E548.1 (Endothall) <Endothall>	1	500mL aG w/ Na2S2O3	☐	☐	4/28/2021 12:00	5 days	5/6/2021	None	☐	
001M	TW-1-W-4/28/21	Water	SW8316 (Acrylamide, Acrylonitrile & Acrolein) <Acrylamide>	2	aVOA, Unpres	☐	☐	4/28/2021 12:00	5 days	5/6/2021	None	☐	
001N	TW-1-W-4/28/21	Water	E552.2 (Haloacetic Acids) <Dibromoacetic acid (DBAA), Dibromoacetic acid (DBAA) _2, Dichloroacetic acid (DCAA), Dichloroacetic acid (DCAA) _2, HAA5, Monobromoacetic acid (MBAA), Monobromoacetic acid (MBAA) _2, Monochloroacetic acid (MCAA), Monochloroacetic acid (MCAA) _2, Trichloroacetic acid (TCAA), Trichloroacetic acid (TCAA) _2>	2	aVOA w/ NH4Cl	☐	☐	4/28/2021 12:00	5 days	5/6/2021	None	☐	
001O	TW-1-W-4/28/21	Water	E300.1 (Inorganic Anions DBP) <Bromate, Chlorate, Chlorite>	1	125mL aG w/ EDA	☐	☐	4/28/2021 12:00	5 days	5/6/2021	None	☐	
001P	TW-1-W-4/28/21	Water	E547 (Glyphosate) <Glyphosate>	2	aVOA w/ Na2S2O3	☐	☐	4/28/2021 12:00	5 days	5/6/2021	None	☐	

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WORK ORDER SUMMARY

Client Name: TERRACON | **Project:** NA207065A; Gill Medical Center | **Work Order:** 2104H15

Client Contact: Tony P. Mikacich | **QC Level:**

Contact's Email: tony.mikacich@terracon.com | **Comments** Ok to do Uranium by 200.8 in house per Tony. 4/30/21 | **Date Logged:** 4/29/2021

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LabID	ClientSampID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	Head Space	Dry-Weight	Collection Date & Time	TAT	Test Due Date	Sediment Content	Hold	SubOut
001Q	TW-1-W-4/28/21	Water	Epichlorohydrin by HPLC <Epichlorohydrin>	2	VOA w/ HCl	☐	☐	4/28/2021 12:00	5 days	5/6/2021	None	☐	
001R	TW-1-W-4/28/21	Water	E525.2 (SVOCs) <Benzo (a) pyrene, Bis (2-ethylhexyl) Adipate, Bis (2-ethylhexyl) Phthalate>	1	1LA w/ Na2S2O3	☐	☐	4/28/2021 12:00	5 days	5/6/2021	None	☐	

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LabID	ClientSampID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	Head Space	Dry-Weight	Collection Date & Time	TAT	Test Due Date	Sediment Content	Hold	SubOut
001S	TW-1-W-4/28/21	Water	E524.3 (VOCs) <1,1,1,2-Tetrachloroethane, 1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,1-Dichloropropene, 1,2,3-Trichlorobenzene, 1,2,4-Trichlorobenzene, 1,2,4-Trimethylbenzene, 1,2-Dibromo-3-chloropropane, 1,2-Dibromoethane (EDB), 1,2-Dichlorobenzene, 1,2-Dichloroethane (1,2-DCA), 1,2-Dichloropropane, 1,3,5-Trimethylbenzene, 1,3-Dichlorobenzene, 1,3-Dichloropropane, 1,3-Dichloropropene, Total, 1,4-Dichlorobenzene, 2,2-Dichloropropane, 2-Butanone (MEK), 2-Chlorotoluene, 4-Chlorotoluene, 4-Isopropyl toluene, 4-Methyl-2-pentanone (MIBK), Benzene, Bromobenzene, Bromochloromethane, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethene,	2	aVOA w/ Ascorbic acid & Maleic acid	☐	☐	4/28/2021 12:00	5 days	5/6/2021	None	☐	

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LabID	ClientSampID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	Head Space	Dry-Weight	Collection Date & Time	TAT	Test Due Date	Sediment Content	Hold	SubOut
			cis-1,3-Dichloropropene, Dibromochloromethane, Dibromomethane, Dichlorodifluoromethane, Diisopropyl ether (DIPE), Ethyl tert-butyl ether (ETBE), Ethylbenzene, Freon 113, Hexachlorobutadiene, Isopropylbenzene, m,p-Xylene, Methylene chloride, Methyl-t-butyl ether (MTBE), Naphthalene, n-Butyl benzene, n-Propyl benzene, o-Xylene, sec-Butyl benzene, Styrene, t-Butyl alcohol (TBA), tert-Amyl Methyl Ether (TAME), tert-Butyl benzene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethene, trans-1,3-Dichloropropene, Trichloroethene, Trichlorofluoromethane, Vinyl chloride, Xylenes, Total>										
001T	TW-1-W-4/28/21	Water	Asbestos-E100.2, EPA Protocol (MFL) (SUB)	1	1LA Narrow Mouth, Unpres	☐	☐	4/28/2021 12:00	5 days	5/6/2021	None	☐	SubOut
001U	TW-1-W-4/28/21	Water	E900 (Gross Alpha & Beta) (SUB)	1	1L HDPE, unprsv.	☐	☐	4/28/2021 12:00	5 days	5/6/2021	None	☐	SubOut
001V	TW-1-W-4/28/21	Water	E903.0 (Radium-226) (SUB)	1	1L HDPE w/ HNO3	☐	☐	4/28/2021 12:00	5 days	5/6/2021	None	☐	SubOut
001W	TW-1-W-4/28/21	Water	Era-05 (Radium-228) (SUB)	2	1L HDPE w/ HNO3	☐	☐	4/28/2021 12:00	5 days	5/6/2021	None	☐	SubOut
001X	TW-1-W-4/28/21	Water	EDOE U-04 (Uranium) (SUB)	1	1L HDPE, unprsv.	☐	☐	4/28/2021 12:00	5 days	5/6/2021	None	☑	SubOut

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LabID	ClientSampID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	Head Space	Dry-Weight	Collection Date & Time	TAT	Test Due Date	Sediment Content	Hold	SubOut
001Y	TW-1-W-4/28/21	Water	E905.0 (Strontium 90) (SUB)	1	1L HDPE w/ HNO3	☐	☐	4/28/2021 12:00	5 days	5/6/2021	None	☐	SubOut
001Z	TW-1-W-4/28/21	Water	E906.0 (Tritium) (SUB)	2	VOA, Unpres	☐	☐	4/28/2021 12:00	5 days	5/6/2021	None	☐	SubOut
002A	TW-1-W-4/28/21	Water	E524.3 (EDB & DBCP)	12	aVOA w/ Ascorbic acid & Maleic acid	☐	☐	4/28/2021 12:00	5 days	5/6/2021		☐	
003A	TW-1-W-4/28/21 TRIP BLANK 524.3_504	Water	E524.3 (EDB & DBCP)	12	aVOA w/ Ascorbic acid & Maleic acid	☐	☐	<Not Provided>	5 days	5/6/2021		☑	

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004A	TW-1-W-4/28/21 TRIP BLANK 524BASIC	Water	E524.3 (VOCs) <1,1,1,2-Tetrachloroethane, 1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,1-Dichloropropene, 1,2,3-Trichlorobenzene, 1,2,4-Trichlorobenzene, 1,2,4-Trimethylbenzene, 1,2-Dibromo-3-chloropropane, 1,2-Dibromoethane (EDB), 1,2-Dichlorobenzene, 1,2-Dichloroethane (1,2-DCA), 1,2-Dichloropropane, 1,3,5-Trimethylbenzene, 1,3-Dichlorobenzene, 1,3-Dichloropropane, 1,3-Dichloropropene, Total, 1,4-Dichlorobenzene, 2,2-Dichloropropane, 2-Butanone (MEK), 2-Chlorotoluene, 4-Chlorotoluene, 4-Isopropyl toluene, 4-Methyl-2-pentanone (MIBK), Benzene, Bromobenzene, Bromochloromethane, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethene,	2	aVOA w/ Ascorbic acid & Maleic acid	☐	☐	<Not Provided>	5 days	5/6/2021		☑	

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			cis-1,3-Dichloropropene, Dibromochloromethane, Dibromomethane, Dichlorodifluoromethane, Diisopropyl ether (DIPE), Ethyl tert-butyl ether (ETBE), Ethylbenzene, Freon 113, Hexachlorobutadiene, Isopropylbenzene, m,p-Xylene, Methylene chloride, Methyl-t-butyl ether (MTBE), Naphthalene, n-Butyl benzene, n-Propyl benzene, o-Xylene, sec-Butyl benzene, Styrene, t-Butyl alcohol (TBA), tert-Amyl Methyl Ether (TAME), tert-Butyl benzene, Tetrachloroethene, Toluene, trans-1,2-Dichloroethene, trans-1,3-Dichloropropene, Trichloroethene, Trichlorofluoromethane, Vinyl chloride, Xylenes, Total>										

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General COC

MAI Work Order # 2104415

McCAMPBELL ANALYTICAL, INC.

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CHAIN OF CUSTODY RECORD

Turn Around Time: 1 Day Rush		2 Day Rush		3 Day Rush		STD	Quote #	212670
J-Flag / MDL	●	ESL		Cleanup Approved		Dry Weight		Bottle Order #
Delivery Format: PDF	●	GeoTracker EDF		EDD		Write On (DW)		Detect Summary

Report To: Tony P. Mikacich
Bill To: Terracon
Company: Terracon (NAAL)
Email: tony.mikacich@terracon.com
Alt Email:
Tele: NA207065A
Project Name: Gill Medical Center
Project #: ~~NA20...~~
Project Location: 11000 West Lane
PO #
Sampler Signature: [signature]

Analysis Requested

SAMPLE ID Location / Field Point	Sampling Date	Sampling Time	#Containers	Matrix	Preservative	E314.0 (Perchlorate)	SM9221B2BSCE1F (FC, TC & E coli)	E200.8 (Metals)	Kelada-01 (Cyanide, Total)	E300.1 (Inorganic Anions)	E314.0 (Perchlorate)	E515.3 (OC Acidic Herbicides)	E1613 (2,3,7,8-TCDD only)	E505 (OC Pesticides+PCBs)	E525.2 (ON/P Pesticides)	E549.2 (Diquat & Paraquat)	E531.1 (Carbamates)	E548.1 (Endothall)	SW8316 (Acrylamide, Acrylonitrile & Acrolein)	E552.2 (Haloacetic Acids)	E300.1 (Inorganic Anions DBP)	Epichlorohydrin by HPLC	E547 (Glyphosate)	E525.2 (SVOCs)
TW-1-W-4/28/21	4-28-21	12pm		water	Varies	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x

MAI clients MUST disclose any dangerous chemicals known to be present in their submitted samples in concentrations that may cause immediate harm or serious future health endangerment as a result of brief, gloved, open air, sample handling by MAI staff. Non-disclosure incurs an immediate $250 surcharge and the client is subject to full legal liability for harm suffered. Thank you for your understanding and for allowing us to work safely.

* If metals are requested for water samples and the water type (Matrix) is not specified on the chain of custody, MAI will default to metals by E200.8.

Please provide an adequate volume of sample. If the volume is not sufficient for a MS/MSD a LCS/LCSD will be prepared in its place and noted in the report.

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
[signature]	4-29-21	9:33 Am	PD	4/29/21	933
			[signature]	4/29/21	1235

Comments / Instructions
*Raddum-226+228 Combined
*Gross Alpha Particle acitvity (excluding radon and uranium)
*Gross Beta particle activity
200.8=Al, Sb, As, Ba, Br, Cd, Cr, Cu, Hg, Ni, Se, Ti, 524Basic
pelase also report Freon 113

Matrix Code: DW=Drinking Water, GW=Ground Water, WW=Waste Water, SW=Seawater, S=Soil, SL=Sludge, A=Air, WP=Wipe, O=Other
Preservative Code: 1=4°C 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=ZnOAc/NaOH 7=None

Temp 0.7°C Initials [signature]

Page 1 of 2

General COC

MAI Work Order # 2104415

McCAMPBELL ANALYTICAL, INC.

1534 Willow Pass Rd. Pittsburg, Ca. 94565-1701
Telephone: (877) 252-9262 / Fax: (925) 252-9269
www.mccampbell.com main@mccampbell.com

CHAIN OF CUSTODY RECORD

Turn Around Time: 1 Day Rush | 2 Day Rush | 3 Day Rush | STD | Quote # 212670

J-Flag / MDL ● | ESL | Cleanup Approved | Dry Weight | Bottle Order #

Delivery Format: PDF ● | GeoTracker EDF | EDD | Write On (DW) | Detect Summary

Report To: Tony P. Mikacich Bill To: Terracon

Company: Terracon

Email: tony.mikacich@terracon.com

Alt Email: Tele: NA207065A

Project Name: Gill Medical Center Project #: ~~207065~~

Project Location: 11000 Wall Lane PO #

Sampler Signature: [signature]

Analysis Requested

SAMPLE ID Location / Field Point	Sampling Date	Sampling Time	#Containers	Matrix	Preservative	E524.3 (VOCs)	Asbestos-E100.2, EPA Protocol (MFL) (SUB)	E900 (Gross Alpha & Beta) (SUB)	E903.0 (Radium-226) (SUB)	E904.0 (Radium-228) (SUB)	EDOE U-04 (Uranium) (SUB)	E905.0 (Strontium 90) (SUB)	E906.0 (Tritium) (SUB)
TW-1-W-4/28/21	4-28-21	12pm		water	Varies	x	x	x	x	x	x	x	x

MAI clients MUST disclose any dangerous chemicals known to be present in their submitted samples in concentrations that may cause immediate harm or serious future health endangerment as a result of brief, gloved, open air, sample handling by MAI staff. Non-disclosure incurs an immediate $250 surcharge and the client is subject to full legal liability for harm suffered. Thank you for your understanding and for allowing us to work safely.

* If metals are requested for water samples and the water type (Matrix) is not specified on the chain of custody, MAI will default to metals by E200.8.

Please provide an adequate volume of sample. If the volume is not sufficient for a MS/MSD a LCS/LCSD will be prepared in its place and noted in the report.

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
[signature]	4-29-21	9:33 Am	[signature]	4/29/21	933
			[signature]	4/29/21	1235

Comments / Instructions: Short Hold time for (F.C, T.C, E.coli)

Matrix Code: DW=Drinking Water, GW=Ground Water, WW=Waste Water, SW=Seawater, S=Soil, SL=Sludge, A=Air, WP=Wipe, O=Other

Preservative Code: 1=4°C 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=ZnOAc/NaOH 7=None

Temp ______ °C Initials ______

Page 2 of 2

1534 Willow Pass Road, Pittsburg, CA 94565-1701
Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mccampbell.com / E-mail: main@mccampbell.com

Sample Receipt Checklist

Client Name:	**Terracon**	Date and Time Received:	**4/29/2021 12:35**
Project:	**NA207065A; Gill Medical Center**	Date Logged:	**4/29/2021**
		Received by:	Lilly Ortiz
WorkOrder №:	**2104H15** Matrix: Water	Logged by:	Lilly Ortiz
Carrier:	Patrick Johnson (MAI Courier)		

Chain of Custody (COC) Information

	Yes	No	NA
Chain of custody present?	☑	☐	
Chain of custody signed when relinquished and received?	☑	☐	
Chain of custody agrees with sample labels?	☑	☐	
Sample IDs noted by Client on COC?	☑	☐	
Date and Time of collection noted by Client on COC?	☑	☐	
Sampler's name noted on COC?	☑	☐	
COC agrees with Quote?	☑	☐	☐

Sample Receipt Information

	Yes	No	NA
Custody seals intact on shipping container/cooler?	☐	☐	☑
Custody seals intact on sample bottles?	☐	☐	☑
Shipping container/cooler in good condition?	☑	☐	
Samples in proper containers/bottles?	☑	☐	
Sample containers intact?	☑	☐	
Sufficient sample volume for indicated test?	☑	☐	

Sample Preservation and Hold Time (HT) Information

	Yes	No	NA
All samples received within holding time?	☑	☐	☐
Samples Received on Ice?	☑	☐	
	(Ice Type: WET ICE)		
Sample/Temp Blank temperature	Temp: 0.7°C		☐
ZHS conditional analyses: VOA meets zero headspace requirement (VOCs, TPHg/BTEX, RSK)?	☑	☐	☐
Sample labels checked for correct preservation?	☑	☐	
pH acceptable upon receipt (Metal: <2; Nitrate 353.2/4500NO3: <2; 522: <4; 218.7: >8)?	☑	☐	☐
UCMR Samples:			
pH tested and acceptable upon receipt (200.8: ≤2; 525.3: ≤4; 530: ≤7; 541: <3; 544: <6.5 & 7.5)?	☐	☐	☑
Free Chlorine tested and acceptable upon receipt (<0.1mg/L)?	☐	☐	☑

Comments:

May 21, 2021

McCampbell Analytical, Inc.
1534 Willow Pass Road
Pittsburgh, CA 94565

Subject: Subcontract Analysis for FGL Lab No. SP 2105736

Enclosed please find results for the following sample(s) which were received by FGL.

- Sub Contracted-Strontium 90

Please note that this analysis was performed by Pace Analytical (ELAP Certified Laboratory)

Thank you for using FGL Environmental.

Sincerely,

Cindy Aguirre Digitally signed by Cindy Aguirre
Title: Customer Service Rep
Date: 2021-05-21

Enclosure

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

May 20, 2021

Cindy Aguirre
FGL Environmental, Inc.
853 Corporation St.
Santa Paula, CA 930603005

RE: Project: SP 2105736
Pace Project No.: 30419084

Dear Cindy Aguirre:

Enclosed are the analytical results for sample(s) received by the laboratory on May 05, 2021. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Greensburg

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jacquelyn Collins
jacquelyn.collins@pacelabs.com
(724)850-5612
Project Manager

Enclosures

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

CERTIFICATIONS

Project:	SP 2105736
Pace Project No.:	30419084

Pace Analytical Services Pennsylvania

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
Delaware Certification
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Florida: Cert E871149 SEKS WET
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA180012
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: 2017020
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991
Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572018-1
New Hampshire/TNI Certification #: 297617
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-010
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: 02867
Texas/TNI Certification #: T104704188-17-3
Utah/TNI Certification #: PA014572017-9
USDA Soil Permit #: P330-17-00091
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 9526
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad
Wyoming Certification #: 8TMS-L

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Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

SAMPLE SUMMARY

Project: SP 2105736
Pace Project No.: 30419084

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30419084001	**2104H15-001 TW-1**	Water	04/28/21 12:00	05/05/21 10:15

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Greensburg, PA 15601
(724)850-5600

SAMPLE ANALYTE COUNT

Project: SP 2105736
Pace Project No.: 30419084

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30419084001	**2104H15-001 TW-1**	EPA 905.0	JJY	1

PASI-PA = Pace Analytical Services - Greensburg

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Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: SP 2105736
Pace Project No.: 30419084

Sample: 2104H15-001 TW-1 | **Lab ID: 30419084001** | Collected: 04/28/21 12:00 | Received: 05/05/21 10:15 | Matrix: Water
PWS: | Site ID: | Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Strontium-90	EPA 905.0	**-0.00500 ± 0.300 (0.610) C:98% T:NA**	pCi/L	05/17/21 17:21	10098-97-2	

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL - RADIOCHEMISTRY

Project: SP 2105736
Pace Project No.: 30419084

QC Batch:	446988	Analysis Method:	EPA 905.0
QC Batch Method:	EPA 905.0	Analysis Description:	905.0 Strontium 89/90
		Laboratory:	Pace Analytical Services - Greensburg

Associated Lab Samples: 30419084001

METHOD BLANK: 2156991 Matrix: Water

Associated Lab Samples: 30419084001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Strontium-90	0.131 ± 0.182 (0.403) C:102% T:NA	pCi/L	05/17/21 08:59	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALIFIERS

Project: SP 2105736
Pace Project No.: 30419084

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Act - Activity

Unc - Uncertainty: For Safe Drinking Water Act (SDWA) analyses, the reported Unc. Is the calculated Count Uncertainty (95% confidence interval) using a coverage factor of 1.96. For all other matrices (non-SDWA), the reported Unc. is the calculated Expanded Uncertainty (aka Combined Standard Uncertainty, CSU), reported at the 95% confidence interval using a coverage factor of 1.96.

Gamma Spec: The Unc. reported for all gamma-spectroscopy analyses (EPA 901.1), is the calculated Expanded Uncertainty (CSU) at the 95.4% confidence interval, using a coverage factor of 2.0.

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

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ENVIRONMENTAL FGL AGRICULTURAL
Analytical Chemists

Subcontract to Pace Analytical

CHAIN OF CUSTODY
AND ANALYSES REQUEST FORM

Chain of Custody Information

Lab Number:

Client: Fruit Growers Laboratory
Address: 853 Corporation St.
Santa Paula, CA 93060-3005

Phone: Fax:
Contact:
Project: **SP 2105736**
Purchase Order:

Sampler(s): Not Available

Compositor Setup Date: Time:

Samp Num	Location Description	Date Sampled	Time Sampled	Method of Sampling: Composite (C) Grab(G)	Type of Sample	Potable(P) Non-Potable(NP) Ag Waiver (AgW)	Bacti Type: Other(O) System(SYS) Source(SR) Waste(W)	Bacti Reason: Routine(ROUT) Repeat(RPT) Replace(RPL) Other(O) Special(SPL)	Sub Contracted-Strontium 90 905 Method 20200923JRH-1 250 ml(AGT)									
1	2104H15-001 TW-1	04/28/2021	12:00	G	W				1									0ci

WO#: 30419084
30419084

Remarks
«:Report Note:»Do not send to State!

Relinquished	Date	Time	Relinquished	Date	Time	Relinquished	Date	Time
CM	5-3-21	17:00						
Received By:	**Date**	**Time**	**Received By:**	**Date**	**Time**	**Received By:**	**Date**	**Time**
GLS	↓	↓	[signature]	5-5-21	1015			

Corporate Offices & Laboratory
853 Corporation Street
Santa Paula, CA 93060
TEL: (805)392-2000
Env FAX: (805)525-4172 / Ag FAX: (805)392-2063
CA ELAP Certification No. 1573

Office & Laboratory
2500 Stagecoach Road
Stockton, CA 95215
TEL: (209)942-0182
FAX: (209)942-0423
CA ELAP Certification No. 1563

Office & Laboratory
563 E. Lindo Avenue
Chico, CA 95926
TEL: (530)343-5818
FAX: (530)343-3807
CA ELAP Certification No. 2670

Office & Laboratory
3442 Empresa Drive, Suite D
San Luis Obispo, CA 93401
TEL: (805)783-2940
FAX: (805)783-2912
CA ELAP Certification No. 2775

Office & Laboratory
9415 W. Goshen Avenue
Visalia, CA 93291
TEL: (559)734-9473
FAX: (559)734-8435
CA ELAP Certification No. 2810

Pace Analytical®

Pace Greensburg Lab -Sample Container Count

#_30419084

lient FGL

ite

Profile Number 13358

Notes

ample Line Item	Matrix	AG1H	AG1S	AG1T	AG2U	AG3S	AG3U	AG5U	AG5T	BG1U	BG2U	BP1N	BP1U	BP2S	BP2U	BP3C	BP3N	BP3S	BP3U	DG9S	GCUB	VG9H	VG9T	VG9U	VOAK	WGFU	WGKU	ZPLC	
1	WT											1																	
2																													
3																													
4																													
5																													
6																													
7																													
8																													
9																													
10																													
11																													
12																													

ontainer Codes

Glass

JN	1 Gallon Jug with HNO3	DG9S	40mL amber VOA vial H2SO4
G5U	100mL amber glass unprserved	VG9U	40mL clear VOA vial
G5T	100mL amber glass Na Thiosulfate	VG9T	40mL clear VOA vial Na Thiosul
JN	1 Gallon Jug	VG9H	40mL clear VOA vial HCl
G1S	1L amber glass H2SO4	JGFU	4oz amber wide jar
G1H	1L amber glass HCl	WGFU	4oz wide jar unpreserved
G1T	1L amber glass Na Thiosulfate	BG2U	500mL clear glass unpreserved
G1U	1L clear glass unpreserved	AG2U	500mL amber glass unpreserve
G3S	250mL amber glass H2SO4	WGKU	8oz wide jar unpreserved
G3U	250mL amber glass unpreserved		

Plastic / Misc.

GCUB	1 Gallon Cubitainer
12GN	1/2 Gallon Cubitainer
SP5T	120mL Coliform Na Thiosulfate
BP1N	1L plastic HNO3
BP1U	1L plastic unpreserved
BP3S	250mL plastic H2SO4
BP3N	250mL plastic HNO3
BP3U	250mL plastic unpreserved
BP3C	250ml plastic NAOH
BP2S	500mL plastic H2SO4
BP2U	500mL plastic unpreserved

EZI	5g Encore
VOAK	Kit for Volatile Solid
I	Wipe/Swab
ZPLC	Ziploc Bag

WT	Water
SL	Solid
OL	Non-aqueous liquid
WP	Wipe

ENV-FRM-GBUR-0072 00 29Dec2020

Pittsburgh Lab Sample Condition Upon Receipt

Pace Analytical

Client Name: FGL   Project #: 30419084

Courier: ☐ Fed Ex ☑ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Other ______

Label	Rm
LIMS Login	UP1

Tracking #: 12 992 031 13 5963 8659

Custody Seal on Cooler/Box Present: ☐ yes ☑ no   Seals intact: ☐ yes ☑ no

Thermometer Used ______   Type of Ice: Wet Blue (None)

Cooler Temperature   Observed Temp ______ °C   Correction Factor: ______ °C   Final Temp: ______ °C

Temp should be above freezing to 6°C

Comments:	Yes	No	N/A	pH paper Lot# 1001101 / Date and Initials of person examining contents: Rm 5-5-21
Chain of Custody Present:	/			1.
Chain of Custody Filled Out:	/			2.
Chain of Custody Relinquished:	/			3.
Sampler Name & Signature on COC:		/		4.
Sample Labels match COC:	/			5.
-Includes date/time/ID Matrix: WT				
Samples Arrived within Hold Time:	/			6.
Short Hold Time Analysis (<72hr remaining):		/		7.
Rush Turn Around Time Requested:		/		8.
Sufficient Volume:	/			9.
Correct Containers Used:	/			10.
-Pace Containers Used:		/		
Containers Intact:	/			11.
Orthophosphate field filtered			/	12.
Hex Cr Aqueous sample field filtered			/	13.
Organic Samples checked for dechlorination:			/	14.
Filtered volume received for Dissolved tests			/	15.
All containers have been checked for preservation. exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, Non-aqueous matrix	/			16. PH<2
All containers meet method preservation requirements.	/			Initial when completed: Rm / Date/time of preservation: / Lot # of added preservative:
Headspace in VOA Vials (>6mm):			/	17.
Trip Blank Present:			/	18.
Trip Blank Custody Seals Present			/	
Rad Samples Screened < 0.5 mrem/hr	/			Initial when completed: Rm / Date: 5-5-21 / Survey Meter SN: 1563

Client Notification/ Resolution:

Person Contacted: ______ Date/Time: ______ Contacted By: ______

Comments/ Resolution: ______

☐ **A check in this box indicates that additional information has been stored in ereports.**

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

*PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS. The review is in the Status section of the Workorder Edit Screen.

2105736

McCampbell Analytical, Inc.

1534 Willow Pass Rd
Pittsburg, CA 94565-1701
Phone: (925) 252-9262
Fax: (925) 252-9269

SUB CHAIN-OF-CUSTODY RECORD

WorkOrder: 2104H15 ClientCode: NAAL EDF: NO

Standard TAT

Subcontractor:

FGL ENVIRONMENTAL
853 Corporation St
Santa Paula, CA 93060

TEL: (805) 392-2000
FAX: (805) 525-4172
ProjectNo: Gill Medical
Acct #:

Date Received: 04/29/2021

Lab ID	Client ID	Matrix	Collection Date	TAT	Requested Tests (see Legend below) 1	2	3	4	5	6	7	8
2104H15-001U	TW-1	Water	4/28/2021 12:00	STD	1							
2104H15-001V	TW-1	Water	4/28/2021 12:00	STD		1						
2104H15-001W	TW-1	Water	4/28/2021 12:00	STD			1					
2104H15-001X	TW-1	Water	4/28/2021 12:00	STD						1		
2104H15-001Y	TW-1	Water	4/28/2021 12:00	STD				1				
2104H15-001Z	TW-1	Water	4/28/2021 12:00	STD					1			

Test Legend:

1 GROSS ALPHA & BETA_W	2 RADIUM226_W	3 RADIUM228_W	4 STRONTIUM-90_W
5 TRITIUM_W	6 URANIUM_W	7	8

Comments: **PLEASE USE 'CLIENT ID' AS THE SAMPLE ID AND EMAIL ASAP!**

GLS TRACKING NUMBER 947400429214704121 28

GLS TRACKING NUMBER 947400429214704121 28

Please email results to at subdata@mccampbell.com upon completion.

		Date/Time			Date/Time
Relinquished by:	[signature]	4/29/21	Received by:	[signature]	
Relinquished by:	GLS	4/30/21	Received by:	DAB	4/30/21 10:00

KRT

ENVIRONMENTAL FGL AGRICULTURAL
Analytical Chemists

Subcontract to Pace Analytical

CHAIN OF CUSTODY
AND ANALYSES REQUEST FORM

Chain of Custody Information

Lab Number:

Client: Fruit Growers Laboratory
Address: 853 Corporation St.
Santa Paula, CA 93060-3005

Phone: Fax:
Contact:
Project: **SP 2105736**
Purchase Order:

Sampler(s): Not Available

Compositor Setup Date: Time:

Samp Num	Location Description	Date Sampled	Time Sampled	Method of Sampling: Composite (C) Grab(G)	Type of Sample	Potable(P) Non-Potable(NP) Ag Waiver (AgW)	Bacti Type: Other(O) System(SYS) Source(SR) Waste(W)	Bacti Reason: Routine(ROUT) Repeat(RPT)	Replace(RPL) Other(O) Special(SPL)	Sub Contracted-Strontium 90 905 Method 20200923JRH-1 250 ml(AGT)								
1	2104H15-001 TW-1	04/28/2021	12:00	G	W					1								

Remarks
«:Report Note:»Do not send to State!

Relinquished	Date	Time	Relinquished	Date	Time	Relinquished	Date	Time
Received By:	Date	Time	Received By:	Date	Time	Received By:	Date	Time

Condition Upon Receipt (Attach to COC)

Sample Receipt at SP:

1. Number of ice chests/packages received: **1**
2. Shipper tracking numbers **9474004292147041212 6**
3. Were samples received in a chilled condition?
   Temps: **RRT** / / / / / /
4. Surface water (SWTR) bact samples: A sample that has a temperature upon receipt of >10C, whether iced or not, should be flagged unless the time since sample collection has been less than two hours.
5. Do the number of bottles received agree with the COC? **[Yes]** No N/A
6. Verify sample date, time, sampler **[Yes]** No N/A
7. Were the samples received intact? (i.e. no broken bottles, leaks, etc.) **[Yes]** No
8. Were sample custody seals intact? Yes No **[N/A]**

Sample Verification, Labeling and Distribution:

1. Were all requested analyses understood and acceptable? **[Yes]** No
2. Did bottle labels correspond with the client's ID's? **[Yes]** No
3. Were all bottles requiring sample preservation properly preserved? Yes No **[N/A]** FGL
   [Exception: Oil & Grease, VOA and CrVI verified in lab]
4. VOAs checked for Headspace? Yes No **[N/A]**
5. Were all analyses within holding times at time of receipt? **[Yes]** No
6. Have rush or project due dates been checked and accepted? Yes No **[N/A]**

Include a copy of the COC for lab delivery. (Bacti. Inorganics and Radio)

Sample Receipt, Login and Verification completed by: Reviewed and Approved By **Alyssa P. Bavero** Digitally signed by Alyssa P. Bavero Title: Sample Receiving Date: 04/30/2021-14:32:09

Discrepency Documentation:

Any items above which are "No" or do not meet specifications (i.e. temps) must be resolved.

1. Person Contacted: ______ Phone Number: ______
   Initiated By: ______ Date: ______
   Problem:

   Resolution:

2. Person Contacted: ______ Phone Number: ______
   Initiated By: ______ Date: ______
   Problem:

   Resolution:

(2019889)
McCampbell Analytical, Inc.
SP 2105736
APB-04/30/2021-14:32:09

June 1, 2021

McCampbell Analytical, Inc.
1534 Willow Pass Road
Pittsburgh, CA 94565

Lab ID : SP 2105736
Customer : 2-19889

Laboratory Report

Introduction: This report package contains total of 5 pages divided into 3 sections:

Case Narrative	(2 pages)	: An overview of the work performed at FGL.
Sample Results	(1 page)	: Results for each sample submitted.
Quality Control	(2 pages)	: Supporting Quality Control (QC) results.

Case Narrative

This Case Narrative pertains to the following samples:

Sample Description	Date Sampled	Date Received	FGL Lab ID #	Matrix
2104H15-001 TW-1	04/28/2021	04/30/2021	SP 2105736-001	W

Sampling and Receipt Information: All samples were received in acceptable condition and within temperature requirements, unless noted on the Condition Upon Receipt (CUR) form. All samples arrived at room temperature. All samples were prepared and analyzed within the method specified hold time. All samples were checked for pH if acid or base preservation is required (except for VOAs). For details of sample receipt information, please see the attached Chain of Custody and Condition Upon Receipt Form.

Quality Control: All samples were prepared and analyzed according to the following tables:

Radio QC

900.0	05/10/2021:206888 All analysis quality controls are within established criteria
	05/04/2021:204854 All preparation quality controls are within established criteria (performed at FGL-SP ELAP# 1573)
903.0	05/26/2021:207886 All analysis quality controls are within established criteria
	05/18/2021:205261 All preparation quality controls are within established criteria (performed at FGL-SP ELAP# 1573)
906.0	05/04/2021:206551 All analysis quality controls are within established criteria
	05/03/2021:204804 All preparation quality controls are within established criteria (performed at FGL-SP ELAP# 1573)
Ra - 05	05/23/2021:207757 All analysis quality controls are within established criteria

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FAX: (559)734-8435
CA ELAP Certification No. 2810

June 1, 2021	Lab ID : SP 2105736
McCampbell Analytical, Inc.	Customer : 2-19889

Radio QC

Ra - 05	05/20/2021:205260 All preparation quality controls are within established criteria (performed at FGL-SP ELAP# 1573)

Certification:: I certify that this data package is in compliance with ELAP standards, both technically and for completeness, except for any conditions listed above. Release of the data contained in this data package is authorized by the Laboratory Director or his designee, as verified by the following electronic signature.

KD:DMB

Approved By **Kelly A. Dunnahoo, B.S.** FGL Digitally signed by Kelly A. Dunnahoo, B.S. Title: Laboratory Director Date: 2021-06-02

June 1, 2021

McCampbell Analytical, Inc.
1534 Willow Pass Road
Pittsburgh, CA 94565

Lab ID : SP 2105736-001
Customer ID : 2-19889

Sampled On : April 28, 2021-12:00
Sampled By : Not Available
Received On : April 30, 2021-10:00
Matrix : Water

Description : 2104H15-001 TW-1
Project : 2104H15 NAAL

Sample Result - Radio

Constituent	Result ± Error	MDA	Units	MCL/AL	Sample Preparation		Sample Analysis	
					Method	Date/ID	Method	Date/ID
Radio Chemistry								
Gross Alpha	3.13 ± 1.15	1.08	pCi/L	15/5	900.0	05/04/21-08:18 2P2104854	900.0	05/10/21-13:11 2A2106888
Gross Beta	1.42 ± 1.01	1.12	pCi/L	50	900.0	05/04/21-08:18 2P2104854	900.0	05/10/21-13:11 2A2106888
Total Alpha Radium (226)	0.228 ± 0.175	0.362	pCi/L		903.0	05/18/21-18:00 2P2105261	903.0	05/26/21-13:37 2A2107886
Tritium	349 ± 275	434	pCi/L	20000	906.0	05/03/21-07:35 2P2104804	906.0	05/04/21-03:20 2A2106551
Ra 228	0.630 ± 0.696	0.400	pCi/L		Ra - 05	05/20/21-19:00 2P2105260	Ra - 05	05/23/21-11:10 2A2107757

ND=Non-Detected. PQL=Practical Quantitation Limit. * PQL adjusted for dilution.

MDA = Minimum Detectable Activity (Calculated at the 95% confidence level) = Data utilized by DHS to determine matrix interference.
MCL / AL = Maximum Contamination Level / Action Level. Alpha's Action Level of 5 pCi/L is based on the Assigned Value (AV).
AV = Assigned Value(Gross Alpha Result + (0.84 x Error)). CCR Section 64442: Drinking Water Compliance Note: Do the following
If Gross Alpha's (AV) exceeds 5 pCi/L run Uranium. If Gross Alpha's (AV) minus Uranium exceeds 5 pCi/L run Radium 226.

Drinking Water Compliance:
Gross Alpha (AV) minus Uranium is less than or equal to 15 pCi/L
Uranium is less than or equal to 20 pCi/L
Radium 226 + Radium 228 is less than or equal to 5 pCi/L

Note: Samples are held for 3-6 months prior to disposal.

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June 1, 2021 Lab ID : SP 2105736
McCampbell Analytical, Inc. Customer : 2-19889

Quality Control - Radio

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Radio								
Alpha	900.0	05/10/21:206888JCA	CCV	cpm	7761	40.0 %	35-47	
			CCB	cpm		0.100	0.15	
Beta	900.0	05/10/21:206888JCA	CCV	cpm	7761	90.3 %	83-94	
			CCB	cpm		0.4000	0.54	
Gross Alpha	900.0	05/04/21:204854iwc	Blank	pCi/L		0.81	3	
			LCS	pCi/L	201.1	80.0 %	75-125	
			MS	pCi/L	201.1	82.3 %	60-140	
		(SP 2105736-001)	MSD	pCi/L	201.1	81.4 %	60-140	
			MSRPD	pCi/L	201.1	1.1%	≤30	
Gross Beta	900.0	05/04/21:204854iwc	Blank	pCi/L		0.37	4	
			LCS	pCi/L	35.53	107 %	84-160	
			MS	pCi/L	35.53	102 %	80-130	
		(SP 2105736-001)	MSD	pCi/L	35.53	99.4 %	80-130	
			MSRPD	pCi/L	201.1	2.5%	≤30	
Alpha	903.0	05/26/21:207886JCA	CCV	cpm	7750	40.1 %	37-46	
			CCB	cpm		0.0800	0.16	
Total Alpha Radium (226)	903.0	05/18/21:205261emv	RgBlk	pCi/L		0.07	2	
			LCS	pCi/L	23.31	59.6 %	52-107	
			BS	pCi/L	23.31	56.7 %	43-111	
			BSD	pCi/L	23.31	56.6 %	43-111	
			BSRPD	pCi/L	23.31	0.3%	≤35.5	
Tritium	906.0	05/03/21:204804jca	Blank	pCi/L		36.86	<433.74	
			LCS	pCi/L	1595	101%	75-125	
			BS	pCi/L	1595	96.5%	75-125	
			BSD	pCi/L	1595	97.3%	75-125	
			BSRPD	pCi/L	1595	0.8%	≤25	
	906.0	05/04/21:206551jca	CCV	cpm	23240	103%	90-110	
			CCB	cpm		156	500	
Beta	Ra - 05	05/23/21:207757emv	CCV	cpm	7752	91.1 %	84-94	
			CCB	cpm		0.4400	0.51	
Ra 228	Ra - 05	05/20/21:205260emv	RgBlk	pCi/L		0.03	3	
			LRS	pCi/L	15.01	80.4 %	65-108	
			BS	pCi/L	15.01	74.6 %	75-125	
			BSD	pCi/L	15.01	76.4 %	75-125	
			BSRPD	pCi/L	15.01	0.27	≤3	

Definition

CCV	: Continuing Calibration Verification - Analyzed to verify the instrument calibration is within criteria.
CCB	: Continuing Calibration Blank - Analyzed to verify the instrument baseline is within criteria.
Blank	: Method Blank - Prepared to verify that the preparation process is not contributing contamination to the samples.
RgBlk	: Method Reagent Blank - Prepared to correct for any reagent contributions to sample result.
LCS	: Laboratory Control Standard/Sample - Prepared to verify that the preparation process is not affecting analyte recovery.
LRS	: Laboratory Recovery Standard - Prepared to establish the batch recovery factor used in result calculations.
MS	: Matrix Spikes - A random sample is spiked with a known amount of analyte. The recoveries are an indication of how that sample matrix affects analyte recovery.
MSD	: Matrix Spike Duplicate of MS/MSD pair - A random sample duplicate is spiked with a known amount of analyte. The recoveries are an indication of how that sample matrix affects analyte recovery.
BS	: Blank Spikes - A blank is spiked with a known amount of analyte. It is prepared to verify that the preparation process is not affecting analyte recovery.
BSD	: Blank Spike Duplicate of BS/BSD pair - A blank duplicate is spiked with a known amount of analyte. It is prepared to verify that the preparation process is not affecting analyte recovery.
MSRPD	: MS/MSD Relative Percent Difference (RPD) - The MS relative percent difference is an indication of precision for the preparation and analysis.
BSRPD	: BS/BSD Relative Percent Difference (RPD) - The BS relative percent difference is an indication of precision for the preparation and analysis.
ND	: Non-detect - Result was below the DQO listed for the analyte.

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Quality Control - Radio

Definition	
DQO	: Data Quality Objective - This is the criteria against which the quality control data is compared.

May 21, 2021

McCampbell Analytical, Inc.
1534 Willow Pass Road
Pittsburgh, CA 94565

Subject: Subcontract Analysis for FGL Lab No. SP 2105736

Enclosed please find results for the following sample(s) which were received by FGL.

- Sub Contracted-Strontium 90

Please note that this analysis was performed by Pace Analytical (ELAP Certified Laboratory)

Thank you for using FGL Environmental.

Sincerely,

Cindy Aguirre Digitally signed by Cindy Aguirre
Title: Customer Service Rep
Date: 2021-05-21

Enclosure

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

May 20, 2021

Cindy Aguirre
FGL Environmental, Inc.
853 Corporation St.
Santa Paula, CA 930603005

RE: Project: SP 2105736
Pace Project No.: 30419084

Dear Cindy Aguirre:

Enclosed are the analytical results for sample(s) received by the laboratory on May 05, 2021. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Greensburg

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jacquelyn Collins
jacquelyn.collins@pacelabs.com
(724)850-5612
Project Manager

Enclosures

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

CERTIFICATIONS

Project: SP 2105736
Pace Project No.: 30419084

Pace Analytical Services Pennsylvania

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
Delaware Certification
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Florida: Cert E871149 SEKS WET
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA180012
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: 2017020
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991
Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572018-1
New Hampshire/TNI Certification #: 297617
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-010
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: 02867
Texas/TNI Certification #: T104704188-17-3
Utah/TNI Certification #: PA014572017-9
USDA Soil Permit #: P330-17-00091
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 9526
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad
Wyoming Certification #: 8TMS-L

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Greensburg, PA 15601
(724)850-5600

SAMPLE SUMMARY

Project: SP 2105736
Pace Project No.: 30419084

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30419084001	**2104H15-001 TW-1**	Water	04/28/21 12:00	05/05/21 10:15

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SAMPLE ANALYTE COUNT

Project: SP 2105736
Pace Project No.: 30419084

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30419084001	**2104H15-001 TW-1**	EPA 905.0	JJY	1

PASI-PA = Pace Analytical Services - Greensburg

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: SP 2105736
Pace Project No.: 30419084

Sample: 2104H15-001 TW-1 **Lab ID: 30419084001** Collected: 04/28/21 12:00 Received: 05/05/21 10:15 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Strontium-90	EPA 905.0	**-0.00500 ± 0.300 (0.610) C:98% T:NA**	pCi/L	05/17/21 17:21	10098-97-2	

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL - RADIOCHEMISTRY

Project: SP 2105736
Pace Project No.: 30419084

QC Batch:	446988	Analysis Method:	EPA 905.0
QC Batch Method:	EPA 905.0	Analysis Description:	905.0 Strontium 89/90
		Laboratory:	Pace Analytical Services - Greensburg

Associated Lab Samples: 30419084001

METHOD BLANK: 2156991 Matrix: Water

Associated Lab Samples: 30419084001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Strontium-90	0.131 ± 0.182 (0.403) C:102% T:NA	pCi/L	05/17/21 08:59	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALIFIERS

Project: SP 2105736
Pace Project No.: 30419084

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Act - Activity

Unc - Uncertainty: For Safe Drinking Water Act (SDWA) analyses, the reported Unc. Is the calculated Count Uncertainty (95% confidence interval) using a coverage factor of 1.96. For all other matrices (non-SDWA), the reported Unc. is the calculated Expanded Uncertainty (aka Combined Standard Uncertainty, CSU), reported at the 95% confidence interval using a coverage factor of 1.96.

Gamma Spec: The Unc. reported for all gamma-spectroscopy analyses (EPA 901.1), is the calculated Expanded Uncertainty (CSU) at the 95.4% confidence interval, using a coverage factor of 2.0.

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

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ENVIRONMENTAL FGL AGRICULTURAL
Analytical Chemists

Subcontract to Pace Analytical

CHAIN OF CUSTODY
AND ANALYSES REQUEST FORM

Chain of Custody Information

Lab Number:

Client: Fruit Growers Laboratory
Address: 853 Corporation St.
Santa Paula, CA 93060-3005

Phone: Fax:
Contact:
Project: **SP 2105736**
Purchase Order:

Sampler(s): Not Available

Compositor Setup Date: Time:

Samp Num	Location Description	Date Sampled	Time Sampled	Method of Sampling: Composite (C) Grab(G)	Type of Sample	Potable(P) Non-Potable(NP) Ag Waiver (AgW)	Bacti Type: Other(O) System(SYS) Source(SR) Waste(W)	Bacti Reason: Routine(ROUT) Repeat(RPT)	Replace(RPL) Other(O) Special(SPL)	Sub Contracted-Strontium 90 905 Method 20200923JRH-1 250 ml(AGT)								
1	2104H15-001 TW-1	04/28/2021	12:00	G	W					1								0ci

WO#: 30419084
30419084

Remarks
«:Report Note:»Do not send to State!

Relinquished	Date	Time	Relinquished	Date	Time	Relinquished	Date	Time
CM	5-3-21	17:00						
Received By: GLS	↓	↓	**Received By:** [signature]	5-5-21	1015	**Received By:**		

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Pace Greensburg Lab -Sample Container Count

#_30419084

lient FGL

Profile Number 13358

ite

Notes

ample Line Item	Matrix	AG1H	AG1S	AG1T	AG2U	AG3S	AG3U	AG5U	AG5T	BG1U	BG2U	BP1N	BP1U	BP2S	BP2U	BP3C	BP3N	BP3S	BP3U	DG9S	GCUB	VG9H	VG9T	VG9U	VOAK	WGFU	WGKU	ZPLC	
1	WT											1																	
2																													
3																													
4																													
5																													
6																													
7																													
8																													
9																													
10																													
11																													
12																													

ontainer Codes

Glass

JN	1 Gallon Jug with HNO3	DG9S	40mL amber VOA vial H2SO4
G5U	100mL amber glass unprserved	VG9U	40mL clear VOA vial
G5T	100mL amber glass Na Thiosulfate	VG9T	40mL clear VOA vial Na Thiosul
JN	1 Gallon Jug	VG9H	40mL clear VOA vial HCl
G1S	1L amber glass H2SO4	JGFU	4oz amber wide jar
G1H	1L amber glass HCl	WGFU	4oz wide jar unpreserved
G1T	1L amber glass Na Thiosulfate	BG2U	500mL clear glass unpreserved
G1U	1L clear glass unpreserved	AG2U	500mL amber glass unpreserved
G3S	250mL amber glass H2SO4	WGKU	8oz wide jar unpreserved
G3U	250mL amber glass unpreserved		

Plastic / Misc.

GCUB	1 Gallon Cubitainer
12GN	1/2 Gallon Cubitainer
SP5T	120mL Coliform Na Thiosulfate
BP1N	1L plastic HNO3
BP1U	1L plastic unpreserved
BP3S	250mL plastic H2SO4
BP3N	250mL plastic HNO3
BP3U	250mL plastic unpreserved
BP3C	250ml plastic NAOH
BP2S	500mL plastic H2SO4
BP2U	500mL plastic unpreserved

EZI	5g Encore
VOAK	Kit for Volatile Solid
I	Wipe/Swab
ZPLC	Ziploc Bag

WT	Water
SL	Solid
OL	Non-aqueous liquid
WP	Wipe

ENV-FRM-GBUR-0072 00 29Dec2020

Pittsburgh Lab Sample Condition Upon Receipt

Pace Analytical

Client Name: FGL　　Project # 30419084

Courier: ☐ Fed Ex ☑ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Other ______

Label	Rm
LIMS Login	UPJ

Tracking #: 12 992 031 13 5963 8659

Custody Seal on Cooler/Box Present: ☐ yes ☑ no　　Seals intact: ☐ yes ☑ no

Thermometer Used —　　Type of Ice: Wet Blue None

Cooler Temperature　Observed Temp — °C　Correction Factor: — °C　Final Temp: — °C

Temp should be above freezing to 6°C

pH paper Lot# 1001101　　Date and Initials of person examining contents: Rm 5-5-21

Comments:	Yes	No	N/A	
Chain of Custody Present:	/			1.
Chain of Custody Filled Out:	/			2.
Chain of Custody Relinquished:	/			3.
Sampler Name & Signature on COC:		/		4.
Sample Labels match COC:	/			5.
-Includes date/time/ID　Matrix: WT				
Samples Arrived within Hold Time:	/			6.
Short Hold Time Analysis (<72hr remaining):		/		7.
Rush Turn Around Time Requested:		/		8.
Sufficient Volume:	/			9.
Correct Containers Used:	/			10.
-Pace Containers Used:		/		
Containers Intact:	/			11.
Orthophosphate field filtered			/	12.
Hex Cr Aqueous sample field filtered			/	13.
Organic Samples checked for dechlorination:			/	14.
Filtered volume received for Dissolved tests			/	15.
All containers have been checked for preservation. exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, Non-aqueous matrix	/			16. PH<2
All containers meet method preservation requirements.	/			Initial when completed Rm / Date/time of preservation / Lot # of added preservative
Headspace in VOA Vials (>6mm):			/	17.
Trip Blank Present:			/	18.
Trip Blank Custody Seals Present			/	
Rad Samples Screened < 0.5 mrem/hr	/			Initial when completed: Rm　Date: 5-5-21　Survey Meter SN: 1563

Client Notification/ Resolution:

Person Contacted: ______ Date/Time: ______ Contacted By: ______

Comments/ Resolution: ______

☐ **A check in this box indicates that additional information has been stored in ereports.**

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

*PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS. The review is in the Status section of the Workorder Edit Screen.

2105736

McCampbell Analytical, Inc.

1534 Willow Pass Rd
Pittsburg, CA 94565-1701
Phone: (925) 252-9262
Fax: (925) 252-9269

SUB CHAIN-OF-CUSTODY RECORD

WorkOrder: 2104H15 ClientCode: NAAL EDF: NO

Subcontractor:

FGL ENVIRONMENTAL
853 Corporation St
Santa Paula, CA 93060

TEL: (805) 392-2000
FAX: (805) 525-4172
ProjectNo: Gill Medical
Acct #:

Standard TAT

Date Received: 04/29/2021

Lab ID	Client ID	Matrix	Collection Date	TAT	Requested Tests (see Legend below) 1	2	3	4	5	6	7	8
2104H15-001U	TW-1	Water	4/28/2021 12:00	STD	1							
2104H15-001V	TW-1	Water	4/28/2021 12:00	STD		1						
2104H15-001W	TW-1	Water	4/28/2021 12:00	STD			1					
2104H15-001X	TW-1	Water	4/28/2021 12:00	STD						1		
2104H15-001Y	TW-1	Water	4/28/2021 12:00	STD				1				
2104H15-001Z	TW-1	Water	4/28/2021 12:00	STD					1			

Test Legend:

1 GROSS ALPHA & BETA_W	2 RADIUM226_W	3 RADIUM228_W	4 STRONTIUM-90_W
5 TRITIUM_W	6 URANIUM_W	7	8

Comments: **PLEASE USE 'CLIENT ID' AS THE SAMPLE ID AND EMAIL ASAP!**

GLS TRACKING NUMBER 94740042921470412128

GLS TRACKING NUMBER 94740042921470412128

Please email results to at subdata@mccampbell.com upon completion.

		Date/Time			Date/Time
Relinquished by:	[signature]	4/29/21	Received by:	GLS	
Relinquished by:	GLS	4/30/21	Received by:	DAB	4/30/21 10:00

KRT

ENVIRONMENTAL FGL AGRICULTURAL
Analytical Chemists

Subcontract to Pace Analytical

CHAIN OF CUSTODY
AND ANALYSES REQUEST FORM

Chain of Custody Information

Lab Number:

Client: Fruit Growers Laboratory
Address: 853 Corporation St.
Santa Paula, CA 93060-3005

Phone: Fax:
Contact:
Project: **SP 2105736**
Purchase Order:

Sampler(s): Not Available

Compositor Setup Date: Time:

Samp Num	Location Description	Date Sampled	Time Sampled	Method of Sampling: Composite (C) Grab(G)	Type of Sample	Potable(P) Non-Potable(NP) Ag Waiver (AgW)	Bacti Type: Other(O) System(SYS) Source(SR) Waste(W)	Bacti Reason: Routine(ROUT) Repeat(RPT)	Replace(RPL) Other(O) Special(SPL)	Sub Contracted-Strontium 90 905 Method 20200923JRH-1 250 ml(AGT)								
1	2104H15-001 TW-1	04/28/2021	12:00	G	W					1								

Remarks
«:Report Note:»Do not send to State!

Relinquished	Date	Time	Relinquished	Date	Time	Relinquished	Date	Time
Received By:	Date	Time	Received By:	Date	Time	Received By:	Date	Time

Condition Upon Receipt (Attach to COC)

Sample Receipt at SP:

1. Number of ice chests/packages received: **1**
2. Shipper tracking numbers **94740042921470412126**
3. Were samples received in a chilled condition?
   Temps: **RRT** / / / / / /
4. Surface water (SWTR) bact samples: A sample that has a temperature upon receipt of >10C, whether iced or not, should be flagged unless the time since sample collection has been less than two hours.
5. Do the number of bottles received agree with the COC? **[Yes]** **No** **N/A**
6. Verify sample date, time, sampler **[Yes]** **No** **N/A**
7. Were the samples received intact? (i.e. no broken bottles, leaks, etc.) **[Yes]** **No**
8. Were sample custody seals intact? **Yes** **No** **[N/A]**

Sample Verification, Labeling and Distribution:

1. Were all requested analyses understood and acceptable? **[Yes]** **No**
2. Did bottle labels correspond with the client's ID's? **[Yes]** **No**
3. Were all bottles requiring sample preservation properly preserved? **Yes** **No** **[N/A]** **FGL**
   [Exception: Oil & Grease, VOA and CrVI verified in lab]
4. VOAs checked for Headspace? **Yes** **No** **[N/A]**
5. Were all analyses within holding times at time of receipt? **[Yes]** **No**
6. Have rush or project due dates been checked and accepted? **Yes** **No** **[N/A]**

Include a copy of the COC for lab delivery. (Bacti. Inorganics and Radio)

Sample Receipt, Login and Verification completed by: Reviewed and Approved By **Alyssa P. Bavero** Digitally signed by Alyssa P. Bavero
Title: Sample Receiving
Date: 04/30/2021-14:32:09

Discrepency Documentation:

Any items above which are "No" or do not meet specifications (i.e. temps) must be resolved.

1. Person Contacted: ______ Phone Number: ______
   Initiated By: ______ Date: ______
   Problem:

   Resolution:

2. Person Contacted: ______ Phone Number: ______
   Initiated By: ______ Date: ______
   Problem:

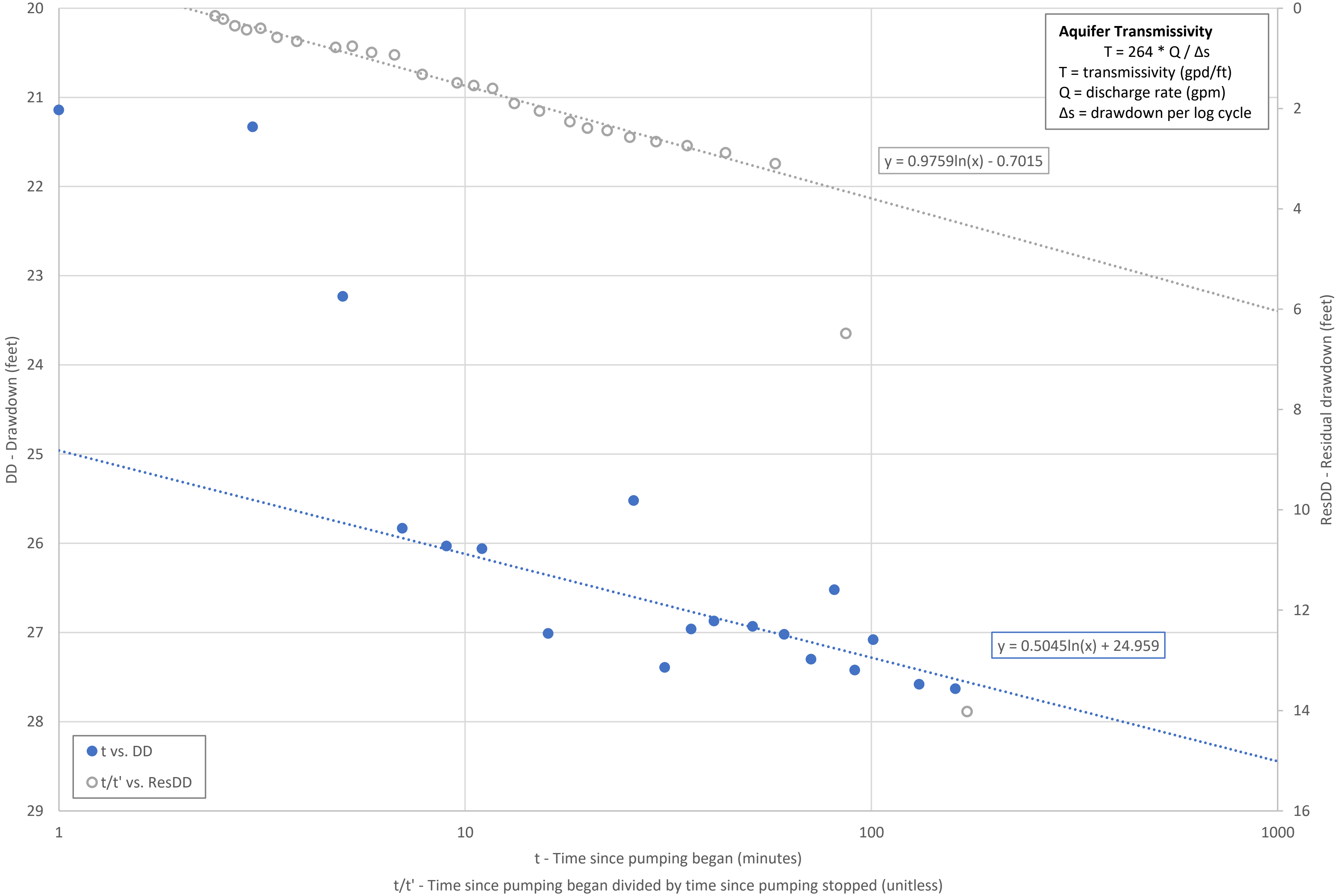
   Resolution:

(2019889)
McCampbell Analytical, Inc.
SP 2105736
APB-04/30/2021-14:32:09

APPENDIX F
AQUIFER TESTING DATA AND ANALYSIS

Exhibit A -- Aquifer Step Test of TW-1

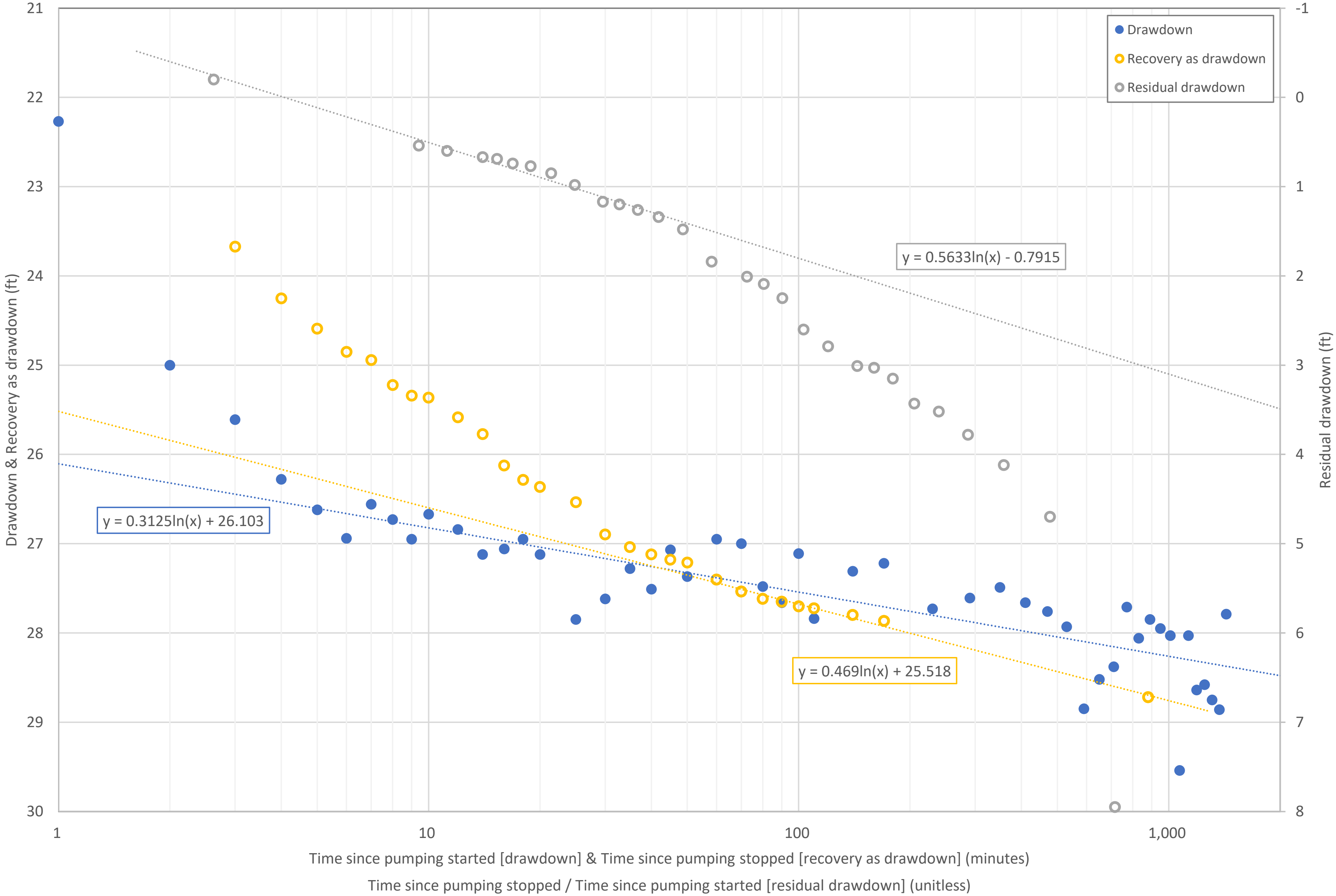
Gill Women's Medical Center



[OD:NA207065A:2021-04 aquifer_hydraulics.xlsx] 06/23/2021

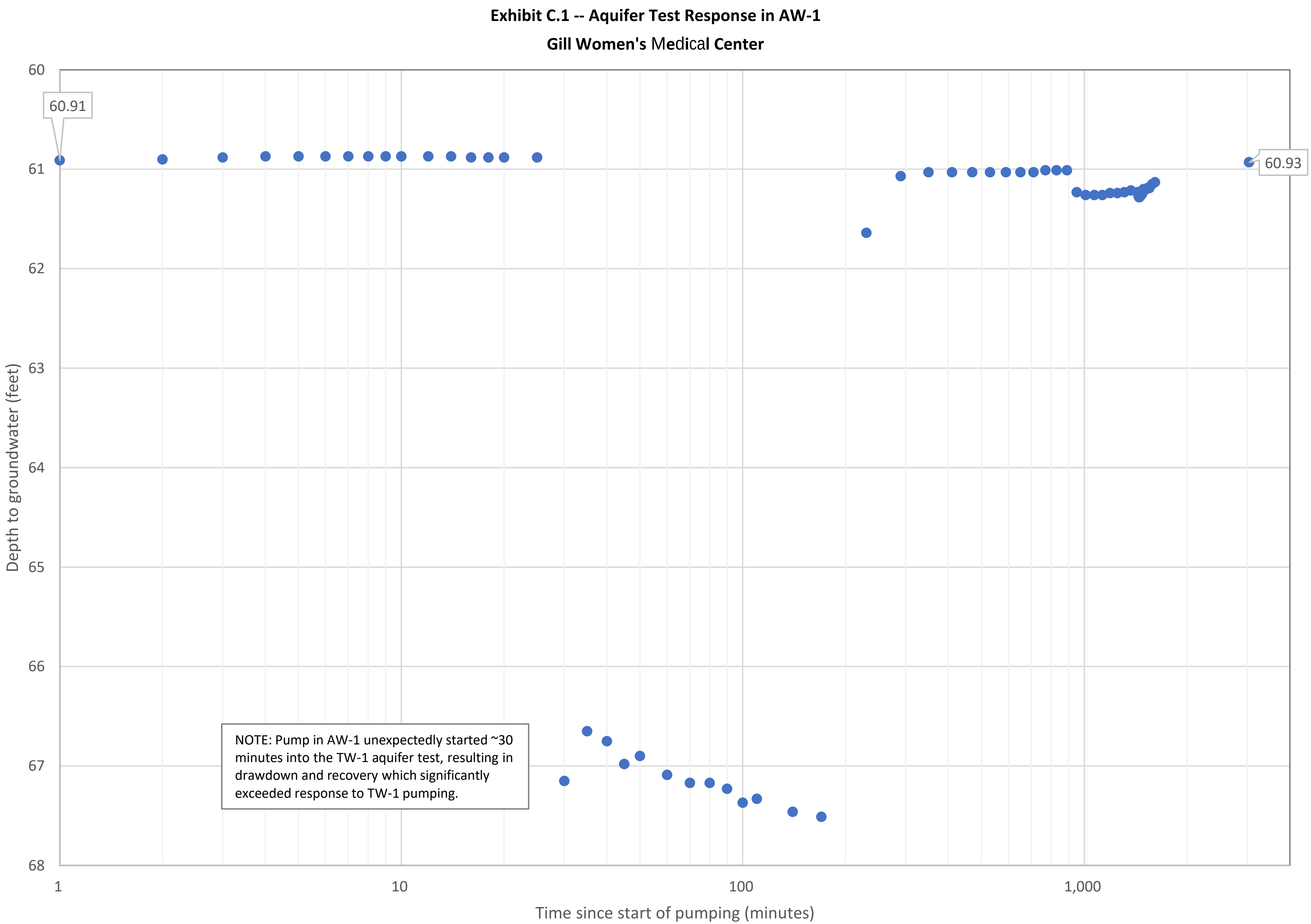
Exhibit B -- Aquifer Test of TW-1

Gill Women's Medical Center



[OD:NA207065A:2021-04 aquifer_hydraulics.xlsx]

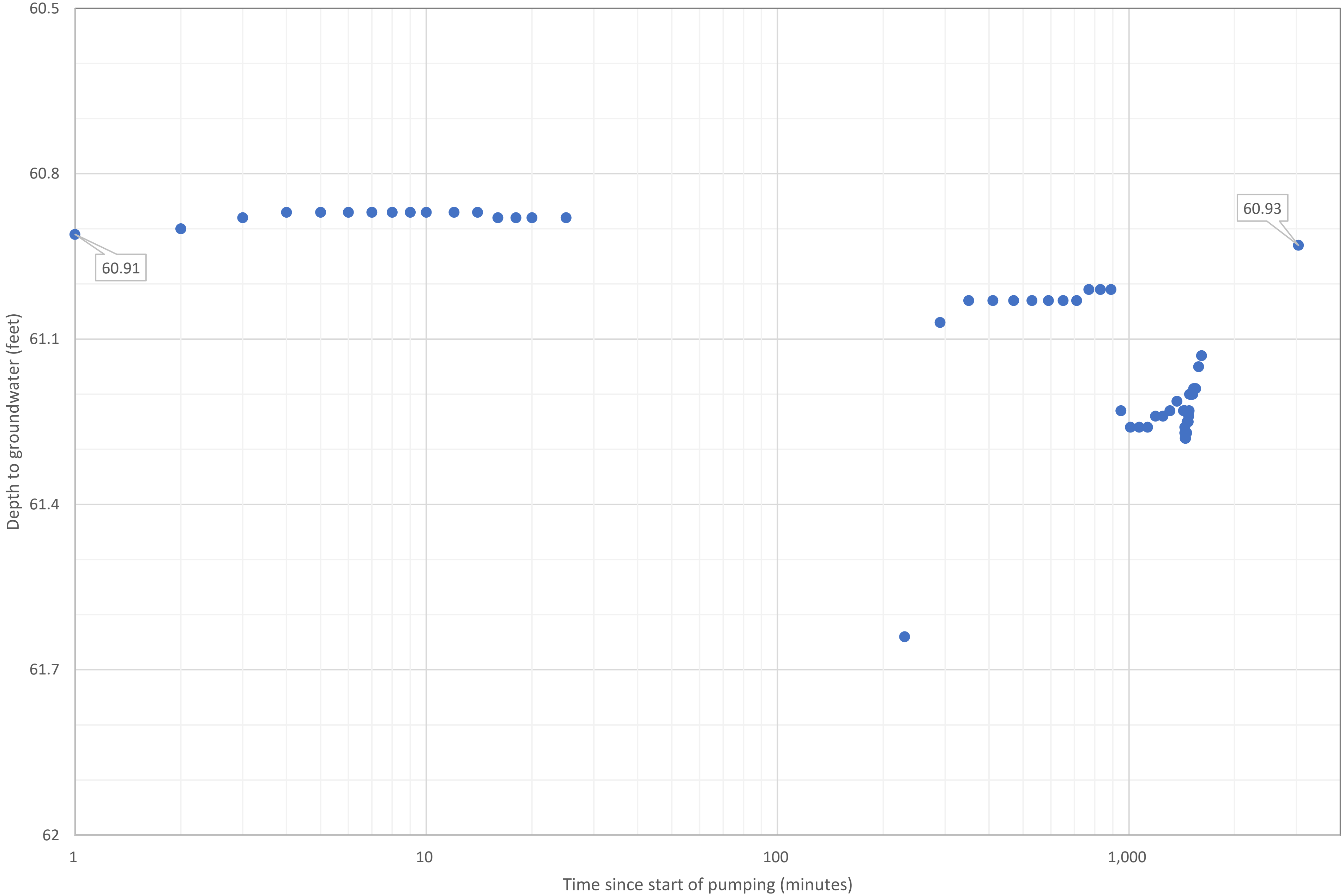
06/24/2021



[OD:NA207065A:2021-04 aquifer_hydraulics.xlsx] 06/24/2021

Exhibit C.2 -- Aquifer Test Response in AW-1

Gill Women's Medical Center

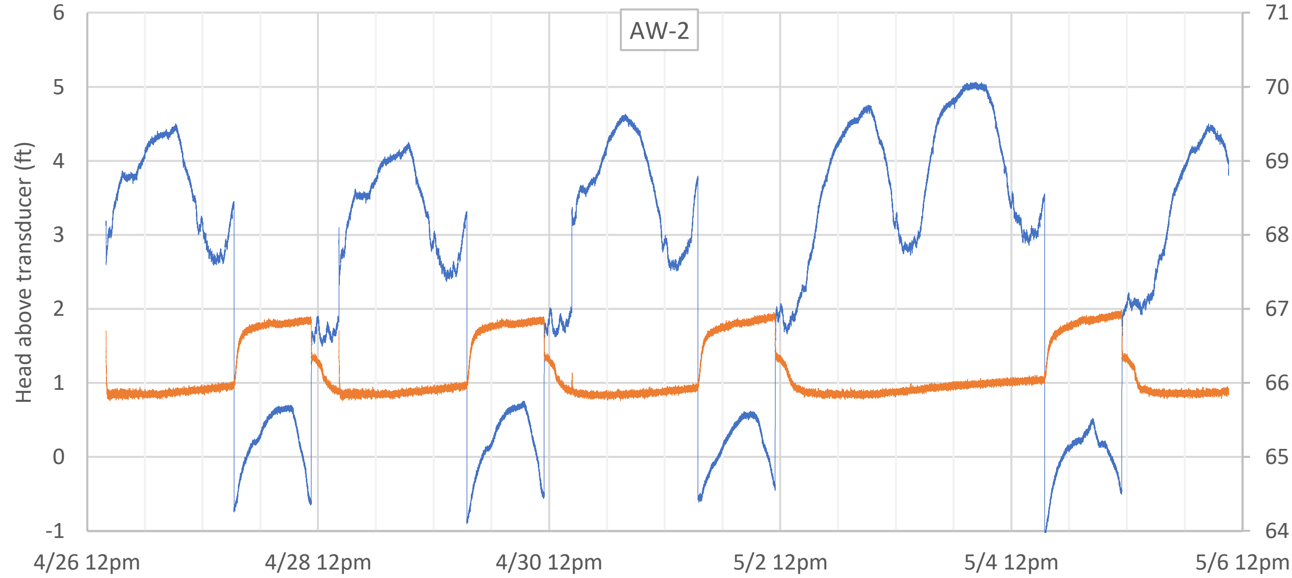


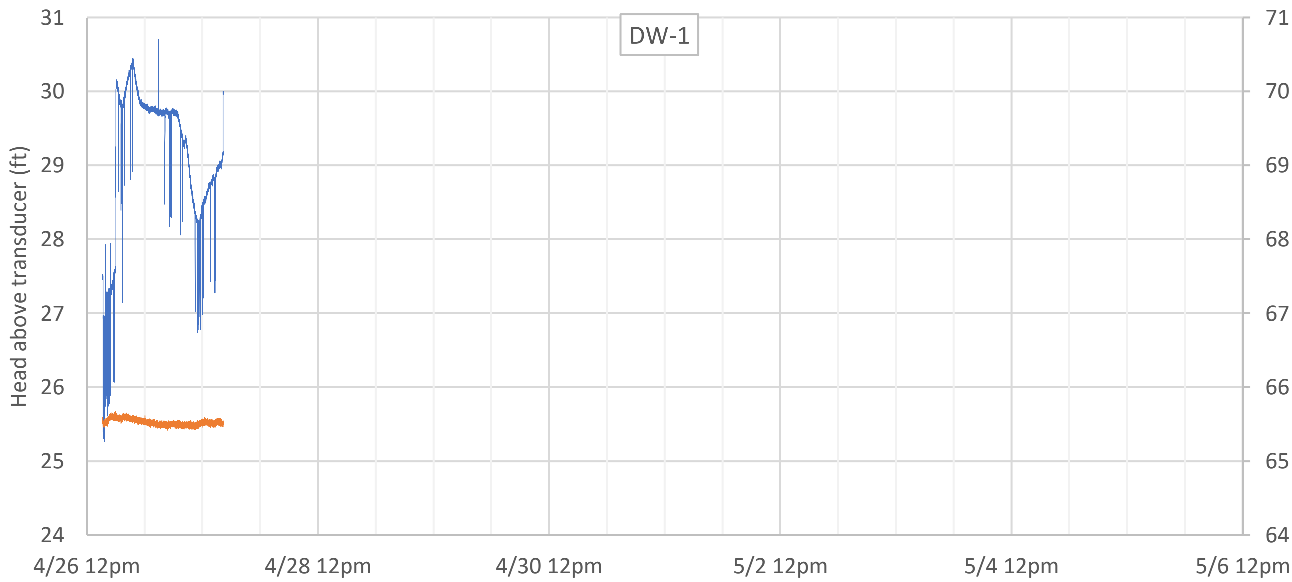
[OD:NA207065A:2021-04 aquifer_hydraulics.xlsx]

06/24/2021

Exhibit D -- Transducer Data Records at Remote Wells (Adjusted for Barometric Pressure Changes)

Gill Women's Medical Center





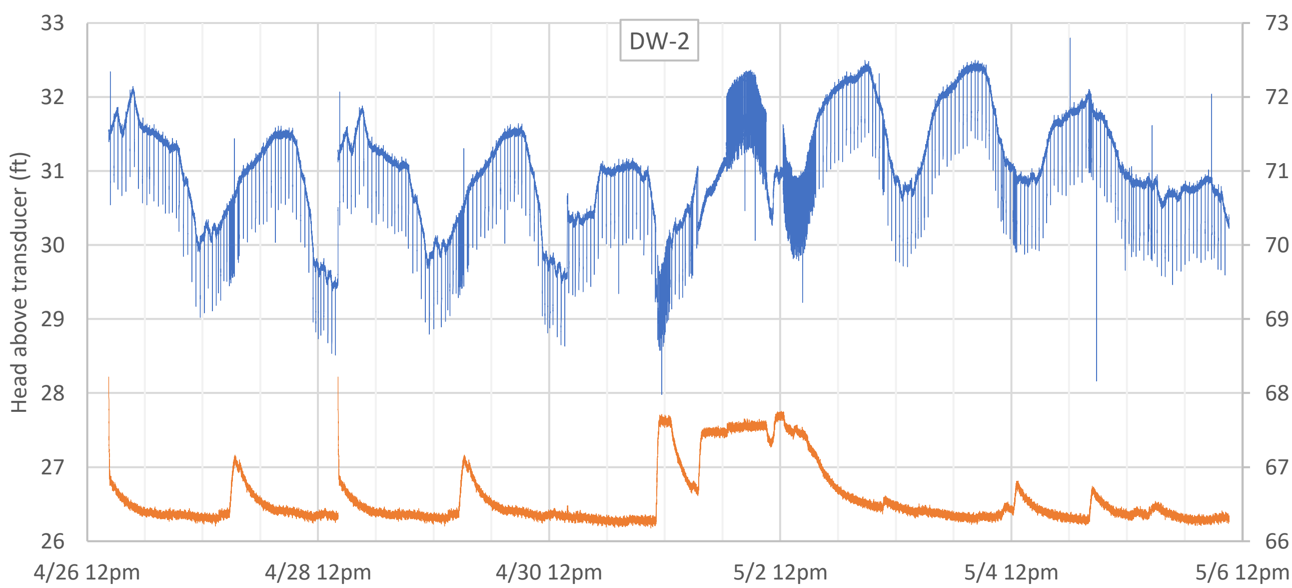


Table A -- Aquifer Step Test of TW-1

Gill Women's Medical Center

Step Test - Drawdown Phase

Time	Δt (min)	DD (ft)	DTW (ft)
11:24	*n/a*	*n/a*	61.39
11:25	1	21.14	82.53
11:27	3	21.33	82.72
11:29	5	23.23	84.62
11:31	7	25.83	87.22
11:33	9	26.03	87.42
11:35	11	26.06	87.45
11:40	16	27.01	88.40
11:50	26	25.52	86.91
11:55	31	27.39	88.78
12:00	36	26.96	88.35
12:05	41	26.87	88.26
12:15	51	26.93	88.32
12:25	61	27.02	88.41
12:35	71	27.30	88.69
12:45	81	26.52	87.91
12:55	91	27.42	88.81
13:05	101	27.08	88.47
13:35	131	27.58	88.97
14:05	161	27.63	89.02

NOTES

Δt - minutes elapsed since start of pumping

DTW - depth to water

DD - drawdown

Step Test - Recovery Phase

Time	t (min)	Δt (min)	t/t'	ResDD (ft)	DTW (ft)
14:15	*n/a*	171	*n/a*	*n/a*	89.03
14:16	1	172	172	14.02	75.41
14:17	2	173	86.5	6.48	67.87
14:18	3	174	58.0	3.10	64.49
14:19	4	175	43.8	2.88	64.27
14:20	5	176	35.2	2.74	64.13
14:21	6	177	29.5	2.66	64.05
14:22	7	178	25.4	2.57	63.96
14:23	8	179	22.4	2.44	63.83
14:24	9	180	20.0	2.39	63.78
14:25	10	181	18.1	2.26	63.65
14:27	12	183	15.3	2.05	63.44
14:29	14	185	13.2	1.90	63.29
14:31	16	187	11.7	1.60	62.99
14:33	18	189	10.5	1.54	62.93
14:35	20	191	9.55	1.49	62.88
14:40	25	196	7.84	1.32	62.71
14:45	30	201	6.70	0.93	62.32
14:50	35	206	5.89	0.88	62.27
14:55	40	211	5.28	0.76	62.15
15:00	45	216	4.80	0.78	62.17
15:15	60	231	3.85	0.66	62.05
15:25	70	241	3.44	0.58	61.97
15:35	80	251	3.14	0.40	61.79
15:45	90	261	2.90	0.43	61.82
15:55	100	271	2.71	0.35	61.74
16:06	111	282	2.54	0.22	61.61
16:15	120	291	2.43	0.15	61.54

NOTES

t - minutes elapsed since cessation of pumping

Δt - minutes elapsed since start of pumping *(t' equals Δt)*

DTW - depth to water

ResDD - residual DD relative to static

Table B -- Aquifer Testing Transmissivity Calculations

Gill Women's Medical Center

Phase	Type	Well	T (gpd/ft)	Q (gpm)	Δs (ft)
Step test / drawdown	time v. DD	TW-1	106,000	467	1.16
Step test / recovery	time v. ResDD	TW-1	55,000	467	2.25
Aquifer test / drawdown	time v. DD	TW-1	158,000	430	0.72
Aquifer test / recovery	time v. Recovery	TW-1	105,000	430	1.08
Aquifer test / recovery	time v. ResDD	TW-1	88,000	430	1.30

NOTES

gpd/ft - gallons per day per foot

gpm - gallons per minute

Δs - drawdown per log cycle

Table C -- Aquifer Test of TW-1

Gill Women's Medical Center

Aquifer Test - Drawdown Phase (TW-1)

Time	Δt (min)	DD (ft)	DTW (ft)
4/27 18:00	*n/a*	*n/a*	61.28
4/27 18:01	1	22.27	83.55
4/27 18:02	2	25.00	86.28
4/27 18:03	3	25.61	86.89
4/27 18:04	4	26.28	87.56
4/27 18:05	5	26.62	87.90
4/27 18:06	6	26.94	88.22
4/27 18:07	7	26.56	87.84
4/27 18:08	8	26.73	88.01
4/27 18:09	9	26.95	88.23
4/27 18:10	10	26.67	87.95
4/27 18:12	12	26.84	88.12
4/27 18:14	14	27.12	88.40
4/27 18:16	16	27.06	88.34
4/27 18:18	18	26.95	88.23
4/27 18:20	20	27.12	88.40
4/27 18:25	25	27.85	89.13
4/27 18:30	30	27.62	88.90
4/27 18:35	35	27.28	88.56
4/27 18:40	40	27.51	88.79
4/27 18:45	45	27.07	88.35
4/27 18:50	50	27.37	88.65
4/27 19:00	60	26.95	88.23
4/27 19:10	70	27.00	88.28
4/27 19:20	80	27.48	88.76
4/27 19:30	90	27.66	88.94
4/27 19:40	100	27.11	88.39
4/27 19:50	110	27.84	89.12
4/27 20:20	140	27.31	88.59
4/27 20:50	170	27.22	88.50
4/27 21:50	230	27.73	89.01
4/27 22:50	290	27.61	88.89
4/27 23:50	350	27.49	88.77
4/28 00:50	410	27.66	88.94
4/28 01:50	470	27.76	89.04
4/28 02:50	530	27.93	89.21
4/28 03:50	590	28.85	90.13
4/28 04:50	650	28.52	89.80
4/28 05:50	710	28.38	89.66
4/28 06:50	770	27.71	88.99
4/28 07:50	830	28.06	89.34
4/28 08:50	890	27.85	89.13
4/28 09:50	950	27.95	89.23
4/28 10:50	1,010	28.03	89.31
4/28 11:50	1,070	29.54	90.82
4/28 12:50	1,130	28.03	89.31
4/28 13:50	1,190	28.64	89.92
4/28 14:50	1,250	28.58	89.86
4/28 15:50	1,310	28.75	90.03
4/28 16:50	1,370	28.86	90.14
4/28 17:50	1,430	27.79	89.07

Step Test - Recovery Phase (TW-1)

Time	t (min)	Δt (min)	t/t'	ResDD (ft)	DTW (ft)
4/28 17:50	*n/a*	1,430	*n/a*	*n/a*	89.07
4/28 17:51	1	1,431	1,431	11.77	73.05
4/28 17:52	2	1,432	716	7.95	69.23
4/28 17:53	3	1,433	478	4.70	65.98
4/28 17:54	4	1,434	358	4.12	65.40
4/28 17:55	5	1,435	287	3.78	65.06
4/28 17:56	6	1,436	239	3.52	64.80
4/28 17:57	7	1,437	205	3.43	64.71
4/28 17:58	8	1,438	180	3.15	64.43
4/28 17:59	9	1,439	160	3.03	64.31
4/28 18:00	10	1,440	144	3.01	64.29
4/28 18:02	12	1,442	120	2.79	64.07
4/28 18:04	14	1,444	103	2.60	63.88
4/28 18:06	16	1,446	90.4	2.25	63.53
4/28 18:08	18	1,448	80.4	2.09	63.37
4/28 18:10	20	1,450	72.5	2.01	63.29
4/28 18:15	25	1,455	58.2	1.84	63.12
4/28 18:20	30	1,460	48.7	1.48	62.76
4/28 18:25	35	1,465	41.9	1.34	62.62
4/28 18:30	40	1,470	36.7	1.26	62.54
4/28 18:35	45	1,475	32.8	1.20	62.48
4/28 18:40	50	1,480	29.6	1.17	62.45
4/28 18:50	60	1,490	24.8	0.98	62.26
4/28 19:00	70	1,500	21.4	0.85	62.13
4/28 19:10	80	1,510	18.9	0.77	62.05
4/28 19:20	90	1,520	16.9	0.74	62.02
4/28 19:30	100	1,530	15.3	0.69	61.97
4/28 19:40	110	1,540	14.0	0.67	61.95
4/28 20:10	140	1,570	11.2	0.60	61.88
4/28 20:40	170	1,600	9.41	0.54	61.82
4/29 08:30	880	2,310	2.63	(0.20)	61.08

NOTES

Δt - minutes elapsed since start of pumping *(t' equals Δt)*
t - minutes elapsed since cessation of pumping
DTW - depth to water
DD - drawdown
ResDD - residual DD relative to static

APPENDIX G3

Percolation Test Results Letter, Gill Women's Medical Center
August 11, 2021
Terracon Consultants, Inc.

August 11, 2021

Gill Women's Medical Center LLC
999 S Fairmont Ave Suite 205
Lodi, California 95240

Attn: Chaman Gill
P: (209) 334-6583
E: chamangill@gmail.com

Re: Percolation Test Results Letter
Gill Women's Medical Center
11000 N. West Lane
Lodi, California
Terracon Project No. NA215089

Dear Mr. Gill:

We have completed the percolation testing at the proposed Gill Women's Medical Center site. The work was performed in accordance with our Supplemental CO authorized 7/7/2021. We received a site plan from NJA Architecture that indicates there will be three (3) storm retention ponds on the west side of the site and one (1) on the east side of the site. We performed three appropriately placed percolation tests at the approximate locations shown on the attached Exploration Plan. The results are presented below.

PERCOLATION TESTING

Three percolation tests were performed within the proposed stormwater retention basins and at the depths noted below. The tests were performed by drilling the test hole and then placing about 2 inches of gravel in the bottom of the hole. The hole was then cased with PVC pipe and gravel was placed around the outside of the pipe. Water was added to the hole and allowed to soak overnight. The percolation tests were performed the next day. The tests were performed by adding water to the holes to provide for about 3 to 4 feet of head above the bottom of the hole. Readings of the drop-in water surface elevation were made at 30-minute intervals over a period of about 4 hours.

The results of the percolation test are presented in the following table, with the lowest of the readings indicated. The lowest of the infiltration rates are also shown, as calculated by the Porchet Method (aka Inverse Borehole Method).

Test ID	Depth of test, ft.	Average head, ft.	Soil Type at Test Depth	Percolation Rate, inches per hour	Infiltration Rate, inches per hour
P1	5	4	Clayey sand	68.4	2.0
P2	4	3	Clayey sand	21.6	0.8
P3	5	4	Clayey sand	64.8	1.8

Our tests were performed using clean water; the storm water runoff will likely contain materials such as silt, leaves, oil residues, and other matter that may reduce the infiltration characteristics of the soils – we recommend that an appropriate safety factor be applied to the estimated percolation and infiltration rates for use in design. The safety factor should consider the level of filtration the system can provide. The percolation rates presented above are applicable at the locations and depths of the tests, if storm water facilities are installed at other locations/depths on the site, the rates may differ.

We provide the following considerations for the design, construction and maintenance of the storm water collection system. The long-term percolation and infiltration rates will depend on many factors, and can be reduced if the following conditions are present/not incorporated:

- Variability of site soils.
- Fine layering of soils
- Construction practices result in a compacted basin bottom
- Pre-treatment (filtration) of the influent is not provided, and/or
- Maintenance of the systems is not performed regularly.

<u>Subsurface Soil Variations:</u> Variations in subsurface soil conditions and the presence of fine layering that may not have been detected in the exploration program can affect the percolation rate of the receptor soils.

<u>Construction Considerations</u>: Operation of heavy equipment during construction may densify the receptor soils in the bottom of the storm drain system or the bio-swales. The soils exposed in the bottom of the systems should not be compacted and should remain in their native condition and/or should be scarified and protected from compaction.

<u>Maintenance of Facilities:</u> The percolation and infiltration rates of the receptor soils will be reduced in the event that fine sediment, organic materials, and/or oil residue are allowed to settle in basin or bio-swale areas. The use of a filtration system as well as a maintenance program is highly recommended. All intakes should be cleaned regularly following significant rains and prior

to the beginning of the rainy season. Satisfactory long-term performance of the bottom of the system will require some degree of maintenance, as possible.

This letter has been prepared for the exclusive use of our client for specific application to the project discussed and has been prepared in accordance with generally accepted geotechnical engineering practices. No warranties, either express or implied, are intended or made. In the event that changes in the nature, design, or location of the project as outlined in this report are planned, the conclusions and recommendations contained in this report shall not be considered valid unless Terracon reviews the changes and either verifies or modifies the conclusions of this report in writing.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning this letter report or if we may be of further service, please contact us.

Sincerely,
Terracon Consultants, Inc.

Rick Greeley, E.I.
Staff Engineer

Frederick Maurer Jr.
Geotechnical Engineer 2035
Geotechnical Department Manager

EXPLORATION PLAN

Gill Woman's Medical Center ■ Stockton, CA
August 11, 2021 ■ Terracon Project No. NA215089

DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

TOPOGRAPHIC MAP IMAGE COURTESY OF THE U.S. GEOLOGICAL SURVEY QUADRANGLES INCLUDE: LODI SOUTH, CA (1/1/1976).

APPENDIX H

Noise Impact Assessment, Gill Medical Center LLC, Health Facility and Hospital Project
February 2022
ECORP Consulting, Inc.

Noise Impact Assessment

Gill Medical Center LLC, Health Facility and Hospital Project

San Joaquin County, California

Prepared For:

Shore, McKinley, Conger and Jolley, LLP
3031 West March Lane Suite 230
Stockton, CA 95219.

February 2022

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

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Attachment C - Federal Highway Administration Highway Roadway Construction Noise Outputs – Project Construction Noise

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LIST OF ACRONYMS AND ABBREVIATIONS

ABC	Alternative Birthing Center
AG	General Agriculture
CMU	Concrete Masonry Unit
CNEL	Community Noise Equivalent Level
dB	Decibel
dBA	Decibel is A-weighted
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
Leq	Measure of ambient noise
OPR	Office of Planning and Research
OSHA	Federal Occupational Safety and Health Administration
OSHPD	Office of State Health Planning and Development
PPV	Peak particle velocity
Project	Gill Medical Center LLC, Health Facility and Hospital Project
RMS	Root mean square
SPWS	Small Public Water System
WEAL	Western Electro-Acoustic Laboratory, Inc.

1.0 INTRODUCTION

This report documents the results of a Noise Impact Assessment completed for the Gill Medical Center LLC, Health Facility and Hospital Project (Project), which includes the development of an Office of State Health Planning and Development (OSHPD 1) Hospital, a full-service Alternative Birthing Center (ABC) facility, and a Trauma III-designated OSHPD 1 hospital and associated medical office building in unincorporated San Joaquin County (County), California. This assessment was prepared as a comparison of predicted Project noise levels to noise standards promulgated by the San Joaquin County General Plan Noise Element and Municipal Code and the City of Stockton Municipal Code. The purpose of this report is to estimate Project-generated noise levels and to determine the level of impact the Project would have on the environment.

1.1 Project Location and Description

The Project site is located approximately one mile north of the City of Stockton in unincorporated San Joaquin County, California (see Figure 1. *Regional Location Map*). As shown in Figure 2. *Local Vicinity Map*, the proposed 42.4-acre Project site is located at 11000 North West Lane and encompasses all or portions of three existing legal parcels; Assessor's Parcel Numbers (APNs): 059-080-07, 059-080-29, & 059-080-30. The Project area is relatively flat. Existing site topography generally slopes and drains toward the south.

The Project site is currently in agricultural production. One existing residence is located on the property's east side with access from 11013 North Ham Lane. This residence is located on a ±10-acre rectangular-shaped portion of parcel 059-080-30 not currently planted in vineyards. A portion of the existing Woodbridge Irrigation District canal is located along the northern boundary of the Project site. A former gas well that was converted to a water well in July 1962 is located in the approximate center of the property. This well is referred to as the "North Stockton Unit A" 1 well (API: 0407700519). Well operation is by electric pump. An overhead electric line extends approximately 1,430 feet along the south side of an existing farm road from North Ham Lane to the well site. A farm road also extends north from the well site to the northern property boundary, where it connects with a perimeter farm road that runs along the north, east and west site boundaries.

The Project site is designated General Agricultural (AG) by the San Joaquin County General Plan and AG-40 by County Development Title (or zoning). According to the San Joaquin County Development Title, the AG Zone is established to preserve agricultural lands for the continuation of commercial agriculture enterprises. Minimum parcel sizes within the AG Zone are 20, 40, 80 or 160 acres, as specified by the precise zoning. The precise Development Title zone for Project site parcels is AG-40.

The Project site is surrounded by a mixture of agriculture, light industrial, and residential as shown in Table 1-1.

Table 1-1. Surrounding Land Uses

Direction	Description
North	The western half of the Project site's northern boundary is defined by the centerline of the existing Woodbridge Irrigation District (WID) agricultural canal. Active agriculture and scattered low-density rural residences exist north of the Project boundary. Pixley Slough is located approximately 0.5 mile north, and the City of Lodi is located approximately 2.5 miles north of the site.
East	The Project site's eastern boundary is defined by North Ham Lane, with active agriculture and scattered low-density rural residences beyond. The Union Pacific Railroad and Stockton City limits are located approximately 0.5 mile east with State Route (SR) 99 beyond at approximately 1.5 miles east of the site.
South	The Project site's southern boundary abuts the rear of existing industrial and rural residential development that fronts Eight Mile Road between West Lane and North Ham Lane. Eight Mile Road is located approximately 490 feet south of the southern site boundary and provides driveway access to the existing non-conforming industrial uses located north of Eight Mile Road West Lane and Ham Lane. South of Eight Mile Road is active agricultural, followed by Bear Creek and the City of Stockton, both located approximately one mile south of the site. South of the Project site and immediately south of Eight Mile Road, between West Lane on the west and the Union Pacific Railroad on the east, lies the 341-acre recently approved Tra Vigne development project. The Tra Vigne project site is currently located in San Joaquin County, immediately north of the City of Stockton. The Tra Vigne development project proposes annexation to the City of Stockton and a mix of land uses including single-family (1,728 units) and high-density residential (680 units), industrial, commercial, school, and traditional and non-traditional parks sites.
West	West Lane defines the Project site's western boundary. The WID agricultural canal lies immediately west of West Lane, followed by active agriculture. The City of Stockton lies approximately 0.75 miles west, with the Union Pacific Railroad (Sacramento) beyond at approximately 1.5 miles, and Interstate 5 at approximately 4 miles west.

The Project proposes the development of a 36,000+ square foot single story Medical Center designed to OSHPD 1 Hospital standards and equipped with 12 beds to provide labor and delivery focused services, including alternate birthing options, and hospital emergency room services. The facility would provide 24-hour inpatient care, including the basic services. Additionally, the Project would include a 60,000+ square foot medical two-story office building, a 140,000+ square foot, three-story 100 bed hospital expansion designed to OSHPD 1 Hospital standards, and a full-service emergency helipad landing area. In order to support these facilities, a total of 1,282 onsite parking stalls and onsite storm water detention areas would be constructed. Potable water and wastewater collection and treatment would be provided by two proposed onsite wells and septic systems, to be housed in a 4,000 square foot physical plant building. Project access is proposed from West Lane via a new entrance drive at the approximate midpoint of the western site boundary. Additionally, driveway entrances from Eight Mile Road and North Ham Lane are proposed. (See Figure 3. *Project Site Plan.*)

Table 1-2 summarizes statistics for the primary Project components. As shown, the Project is proposed to be constructed in two phases. Phase 1 improvements could become operational within five years of Project approval; Phase 2 facilities are planned for operation within 10 years. Phase 1 construction is tentatively scheduled to begin 2023 and is expected to take up to 12 months to complete. Phase 2 construction is tentatively scheduled to begin by 2029 and to take up to 20 months to complete.

Table 1-2. Project Components

Site Plan Key Note	Use	Square Feet	Phase	Height/Story
A	Medical Center	36,000	PHASE 1	25FT/1 Story
B	Water Treatment Facility	2,000	PHASE 2	25 FT/1 Story
C	Wastewater Treatment Facility	6,000	PHASE 2	25 FT/1 Story
D	Medical Office Building	60,000	PHASE 2	45 FT/2 Story
E	Hospital	140,000	PHASE 2	55 FT/3 Story
F	Helicopter Pad	20,000	PHASE 2	N/A
G	Physical Plant	4,000	PHASE 2	35 FT/1 Story

As shown, Phase 1 includes the Medical Center Building. Phase 1 would also include the construction of related access, parking, landscaping and utility improvements necessary to support the Medical Center Building. Phase 1 access would be via a 50-foot wide driveway entrance extending east-west through the approximate center of the site, and then turn north along the eastern Phase 1 site boundary. Pedestrian sidewalks would be located on each side of the entrance drive and northern segment. A patient/emergency drop off and vehicle roundabout would be located in front of the Medical Center Building main entrance with connection to the northern parking lot and entrance drive. A delivery receiving and trash enclosure area would be located north of the roundabout and main entrance. Phase 1 parking lots containing 282 parking spaces would be located east and south of the Medical Center Building. Along the southern site boundary adjacent the existing residential property lines, a solid seven-foot-tall concrete masonry unit (CMU) wall would be constructed and large trees planted. An onsite small public water system (SPWS), onsite septic, and onsite detention areas for stormwater management would be constructed to serve Phase 1. Specifically, a new well would be drilled and a 768,000-gallon water storage tank would be constructed as part of the SPWS. Additionally, a 5,000-gallon septic tank and 9,525 square feet of leach line is proposed to be installed in addition to a 9.5-acre stormwater detention pond.

Phase 2 would accommodate a new hospital, medical office building, a second well and water treatment facility, wastewater treatment facility, helicopter pad, physical plant building and related access, parking, landscape and utility improvements necessary to support the second phase of development. would be the focal point of Phase 2 development. The three-story, 140,000-square foot hospital would be the focal point of Phase 2 development, located in the central portion of the property. A two-story, 60,000-square foot office building would be located west of the hospital building and north of the entrance road extension. Additionally, 2,000-square foot water treatment facility would be installed adjacent the onsite well in the north portion of the site, a 6,000-square foot wastewater treatment facility is proposed at the north portion of property, and a 4,000-square foot, single-story physical plant building would be located on the east side of the Project site as part of Phase 2, west of the wastewater disposal pond. The proposed helicopter pad “helistop” would be located northeast of the hospital building. As a “helistop,” no fueling or maintenance facilities would be provided as the pad would only be used by helicopters for patient drop off or pick up.

Phase 2 improvements would be supported by two new site access points, extension of the Phase 1 West Lane primary access drive, and construction of new parking lots and pedestrian sidewalks and paths. Specifically, a new eastern access driveway would be constructed from Ham Lane beginning at a point approximately 600 feet north of Eight Mile Road, and a new 30-foot-wide southern access drive would also be constructed from Eight Mile Road, providing access to the mid-southern site boundary. A seven-foot-tall solid CMU wall would be constructed along the south side of the Ham Lane entrance drive and the Eight Mile Road entrance drive would be flanked by small trees and shrubs on each side backed by seven-foot-tall CMU walls. In addition to the above new access drives, the Phase 1 West Lane access drive would be extended westerly and two new roundabouts constructed linking the onsite driveway and service road to create a looped onsite circulation system. A 30-foot-wide service/perimeter road would also be constructed along the site's northern parking lot boundary. New parking lots providing 1,000 additional parking spaces (plus six "utility" spaces) would be constructed north, south and east of the hospital and medical office buildings. This would increase total combined onsite parking to 1,282 spaces.

A second new well would be drilled and a 1,266,000-gallon water storage tank would be constructed. Additionally, a 26,000-gallon septic tank and 58,000 square feet of leach line is proposed to be installed in addition to another 9.5-acre stormwater detention pond.

Once completed, the Medical Center and Hospital would operate 24 hours per day, seven days per week with 10 defined employee "shifts" and slightly reduced staffing levels during the overnight hours. The average number of employees over a 24-hour period is expected to be 50 at the Medical Center and 450 at the Hospital. The average number of customers over a 24-hour period is expected to be 72 at the Medical Center and 400 at the Hospital. The Phase 2 Medical Office Building would operate on a more traditional 8:00 a.m. to 5:00 p.m. Monday through Friday schedule and is expected to accommodate 100 office workers and attract approximately 384 customers Monday through Friday. The following routine daily material/supply deliveries are also expected:

- 2 at the Medical Center
- 12 at the Hospital
- 4 at the Medical Office Building.

The number of onsite staff, medical building occupants, customers, and deliveries are not expected to vary significantly throughout the year.

The "helistop" landing pad would be used by helicopters for transport or pick up of critically ill or injured patients. As a "helistop," no fueling or maintenance facilities would be provided. The anticipated number of daily flights would vary. Rescue events with multiple victims can result in multiple flights within relatively short periods. Flight plans could deviate depending on the urgency of the situation.

As previously described, Phase 1 construction is anticipated to begin in late 2021 and take approximately 12 months to complete. The Phase 1 Medical Center Building is expected to begin operations in 2023. Phase 2 construction is scheduled to begin in 2029 and take approximately 20 months to complete. The Phase 2 Hospital and other support uses are expected to begin operation in 2031.

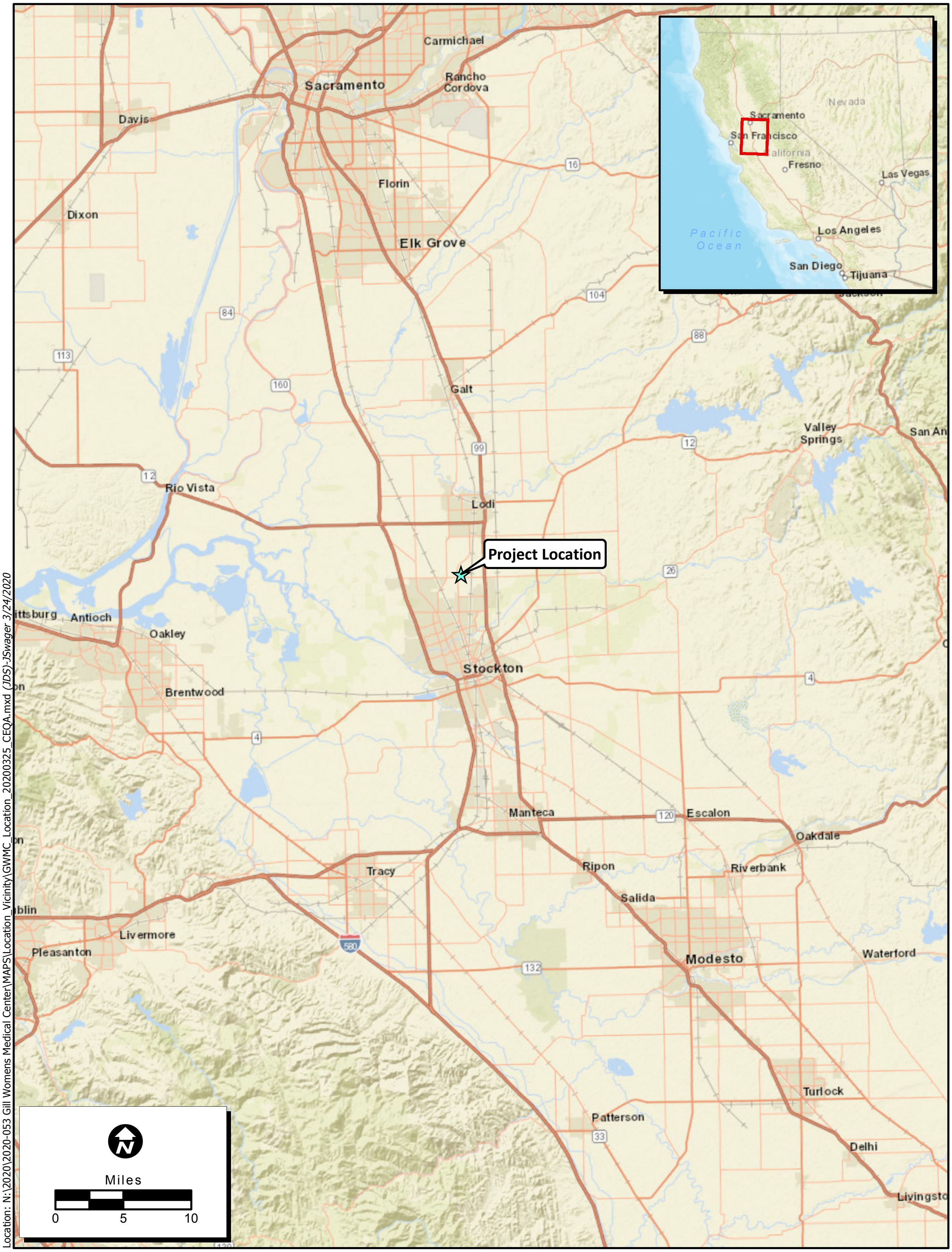
Construction activities would take place between 7:00 a.m. and 7:00 p.m. Monday through Friday and, if necessary, between 8:00 a.m. and 8:00 p.m. Saturday and Sunday.

Grading would consist of cuts and fills to build up development areas and ensure positive drainage. Project grading is expected to be balanced onsite. No import or export of soil is anticipated. It is expected that grading would be accomplished using conventional grading equipment listed in Table 1-3. Scrapers would cut and transport onsite soil within the Project site. Finish grading would be achieved by motor graders (blades) and skip loaders. Material excavation and compaction activities would be required primarily to install roads to meet fire and safety requirements. Consistent with Best Management Practices (BMPs), throughout grading operations, water trucks would provide water to the site to achieve the proper moisture content for compaction and dust suppression. Grading would be stopped to control dust generation during times of excessive wind.

Underground utilities would be installed using standard underground utility trenching methods. Trenches would be excavated by hand or by a backhoe or similar excavation equipment. Underground utility placement would begin immediately following trench excavation, followed by back fill and compaction.

Table 1-3. Construction Equipment Use

Grading, Underground and Road Construction Phase	Building Construction Phase
6 Rubber Tired Dozers	2 Cranes
8 Tractors/Loaders/Backhoes	6 Forklifts
2 Excavators	2 Generator Sets
2 Graders	6 Tractors/Loaders/Backhoes
4 Pavers	2 Welders
4 Paving Equipment	2 Air Compressors
4 Rollers	



Location: N:\2020\2020-053 Gill Womens Medical Center\MAPS\Location_Vicinity\GWMC_Location_20200325_CEQA.mxd (JDS)-JSwager 3/24/2020

Map Date: 3/24/2020

Sources: ESRI, San Joaquin County

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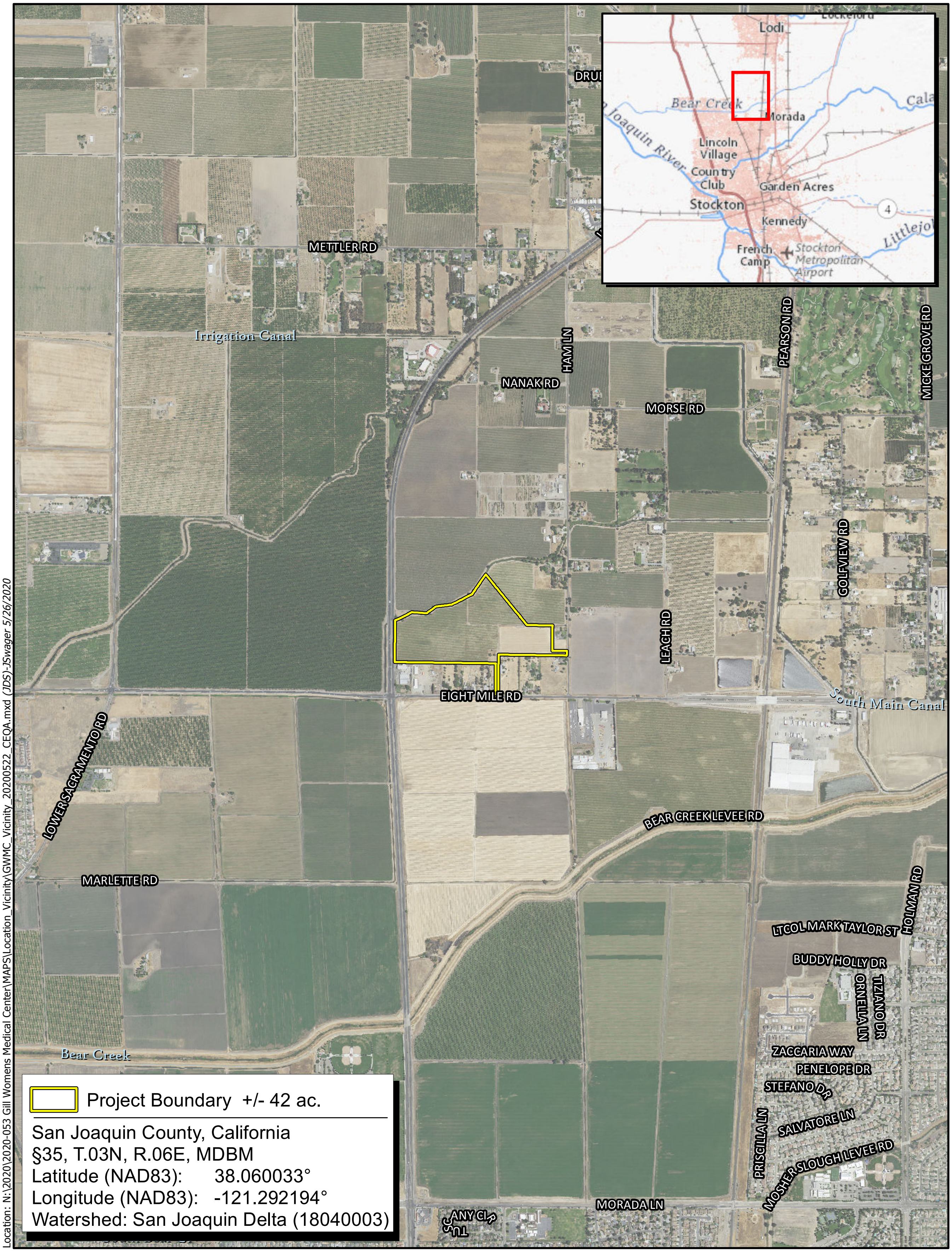
Figure 1. Regional Location Map

2020-053 Gill Medical Center



Location: N:\2020\2020-053 Gill Womens Medical Center\MAPS\Location_Vicinity\GWMC_Vicinity_20200522_CEQA.mxd (JDS)-JSwager 5/26/2020

Map Date: 5/26/2020

Sources: ESRI, NAIP (2018), San Joaquin County, NJA Architecture

Scale in Feet

0 1,000 2,000

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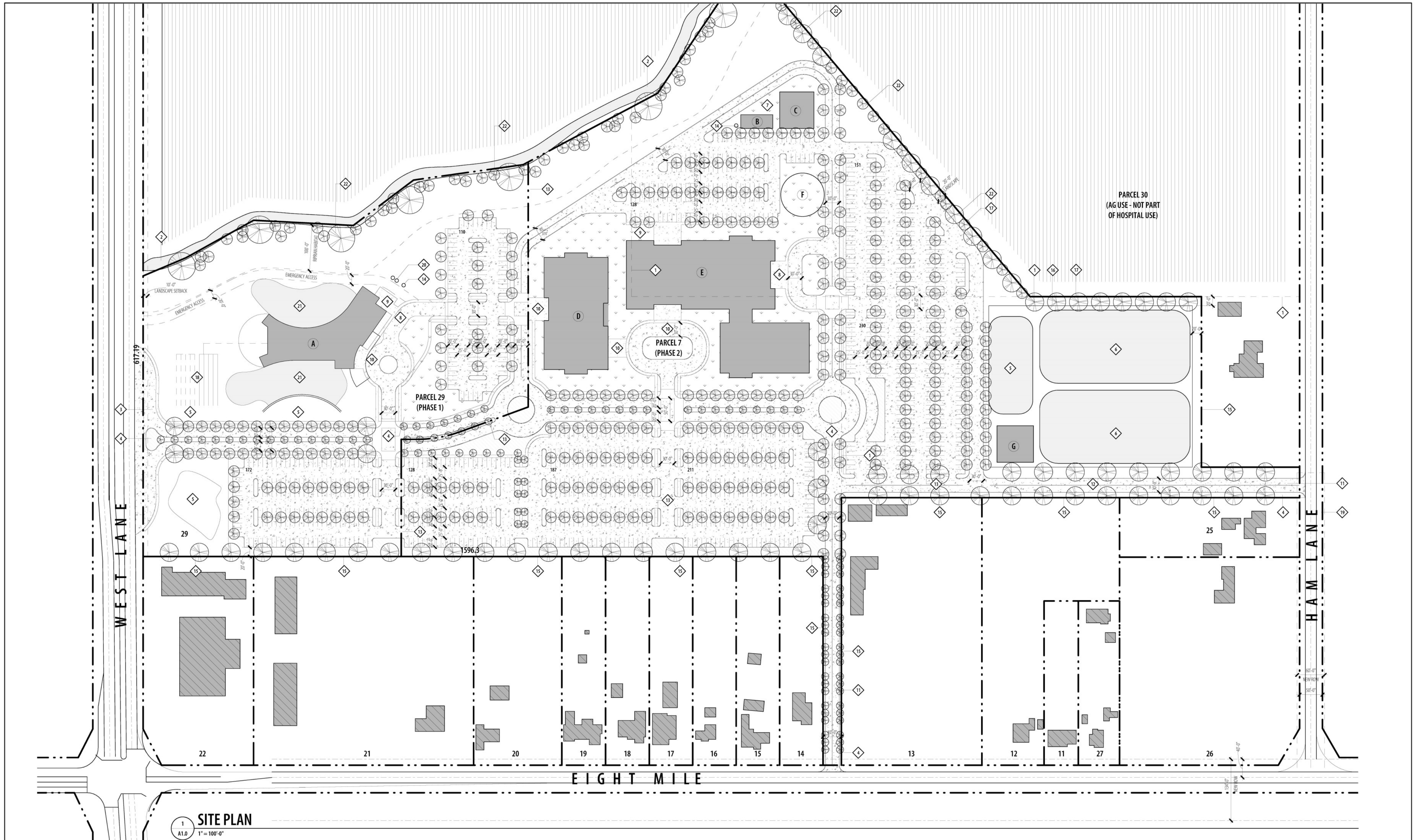
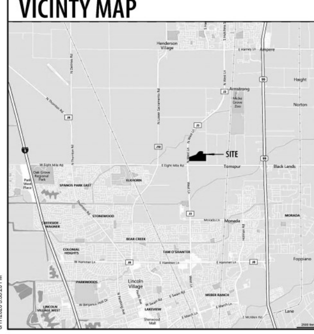
Figure 2. Local Vicinity Map

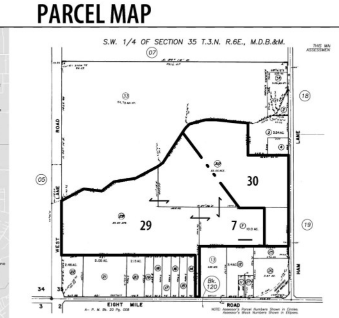
2020-053 Gill Medical Center



VICINITY MAP



PARCEL MAP



SITE INFO

APN	059-08-029	PHASE 1	12.5 ACRES
	059-08-007	PHASE 2	29.9 ACRES
	059-08-030	(LOT LINE ADJ)	18.4 ACRES
ZONING	AG-40		
GENERAL PLAN	A/G		

TOTAL BLDG SF			PARKING REQ.
PHASE 1:	36,000 SF	MEDICAL	180
PHASE 2:	174,000 SF	MEDICAL	870
	12,000 SF	UTL. SERVICE	6
TOTAL:	222,000 SF		1,056

PROPOSED PARKING:
PHASE 1: 282
PHASE 2: 1,000
TOTAL: 1,282 SPACES

PAVED SURFACES:
PHASE 1: SEE CIVIL
PHASE 2: SEE CIVIL

LEGEND

- PROPERTY LINE
- ASSUMED ACCESSIBLE PATH OF TRAVEL. FOR ADDITIONAL INFO. REFER TO SHEET G4.0 ACCESSIBILITY STANDARDS.
- PROPOSED STRUCTURES
- EXISTING BUILDING
- IMPERVIOUS SURFACE CONCRETE OR ASPHALT
- NEW LANDSCAPE AREA

GENERAL NOTES

1. **PHASE 1 PROPOSED IN ADJUSTED PARCEL 29**
2. PARALLEL TO ANY NATURAL BANK OF A WATERWAY, A NATURAL OPEN SPACE FOR RIPARIAN HABITAT AND WATERWAY PROTECTION SHALL BE MAINTAINED TO PROVIDE NESTING AND FORAGING HABITAT AND THE PROTECTION OF WATERWAY QUALITY. THE MINIMUM WIDTH OF SAID OPEN SPACE SHALL BE ONE HUNDRED (100) FEET, MEASURED FROM THE MEAN HIGH WATER LEVEL OF THE NATURAL BANK OR FIFTY (50) FEET BACK FROM THE EXISTING RIPARIAN HABITAT, WHICHEVER IS GREATER. WATER-DEPENDENT USES MAY BE PERMITTED IN THIS BUFFER.
3. DRIVEWAYS, PARKING, AND MANEUVERING AREAS PROPOSED TO BE CONCRETE OR ASPHALT.
4. PHASE 1: 12 MONTHS, PHASE 2: 120 MONTHS
5. TWO WAY DRIVEWAYS TO BE MIN. 25'-0" WIDE (TYP.)
6. PARKING SPACES TO BE MIN. 10'-0" WIDE BY 20'-0" DEEP (TYP.)
7. EACH PARKING FACILITY WHERE PARKING IS PROVIDED FOR THE PUBLIC, GUESTS OR EMPLOYEES SHALL PROVIDE ACCESSIBLE PARKING
8. CFC SECTION 503.2.7 FIRE APPARATUS ACCESS ROAD SHALL NOT ALLOW THE PONDING OF WATER. FIRE APPARATUS APPROACH AND DEPARTURE ANGLES SHALL BE WITHIN LIMIT BY THE FIRE CODE OFFICIAL BASED ON THE FIRE DEPARTMENT'S APPARATUS. CFC SECTION 503.2.8.
9. TRAFFIC CALM DEVICES SHALL BE PROHIBITED UNLESS APPROVED BY THE FIRE CODE OFF.
10. TYP. PARKING LOT LIGHTING TO PROVIDE THE FOLLOWING:
   - 1 FOOT CANDLE THROUGHOUT THE PARKING AREA
   - LIGHTING ON TIME CLOCK SYSTEM
   - LED W/ 90 DEGREE CUT OFF AND FLAT LENSES
   - DESIGNED TO DIRECT RAYS ONLY ON THE PARKING LOT PREMIS.

KEY NOTES

1. (E) BOUNDARY PROPERTY LINE 059-08-029, 059-08-030, 059-08-007
2. EXISTING WATER CANAL
3. MAIN ENTRANCE
4. ENTRANCE SIGNAGE
5. STORM RETENTION POND
6. WASTE DISPOSAL AREA
7. FIRE SUPPRESSION TANKS
8. EMERGENCY DROP OFF
9. DELIVERY/TRASH
10. DROP OFF & ENTRY
11. PRIMARY ENTRANCE/EXIT, PHASE 2
12. ACCESS TO HAM LANE
13. PHASE 1 BOUNDARY
14. (N) PRIVATE WELL, ON PUBLIC WATER SYSTEM
   - 5' from structures
   - 100' from septic tanks
   - 150' from leach lines
   - 200' from sumps or seepage pits
   - 25' from property lines.
15. SOLID CMU PRIVACY FENCE 7'-0" HIGH @ PROPERTY BOUNDARY
16. 8'-0" FENCE AROUND WATER TREATMENT
17. PROPOSED LOT LINE ADJUSTMENT FOR PARCELS #29, #30, & 7, SEE PARCEL MAP
18. LEACH FIELD (PHASE 1) W/ 100% REPLACEMENT
19. HAM LANE 60'-0" RIGHT OF WAY TO BE EXTENDED TO ENTRY, PHASE 2
20. WASTE WATER TANKS, PHASE 1
21. WATER FEATURE
22. LANDSCAPE TREE BUFFER ALONG AG

STRUCTURE LEGEND

KEYNOTE	USE	SF	PHASE	HT/STORIES
A	**WOMENS MEDICAL CENTER**	**36,000**	**PHASE 1**	**25FT, 1 STY**
B	**WATER TREATMENT FACILITY**	**2,000 SF**	**PHASE 2**	**25 FT, 1 STY**
C	**WASTE TREATMENT FACILITY**	**6,000 SF**	**PHASE 2**	**25 FT, 1 STY**
D	**MEDICAL OFFICE BUILDING**	**60,000 SF**	**PHASE 2**	**45 FT, 2 STY**
E	**HOSPITAL**	**140,000 SF**	**PHASE 2**	**55 FT, 3 STY**
F	**HELICOPTER PAD**	**20,000 SF**	**PHASE 2**	
G	**PHYSICAL PLANT**	**4,000 SF**	**PHASE 2**	**35 FT, 1 STY**

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Figure 3. Site Plan

2020-053 Gill Medical Center

2.0 ENVIRONMENTAL NOISE AND GROUNDBORNE VIBRATION ANALYSIS

2.1 Fundamentals of Noise and Environmental Sound

2.1.1 Addition of Decibels

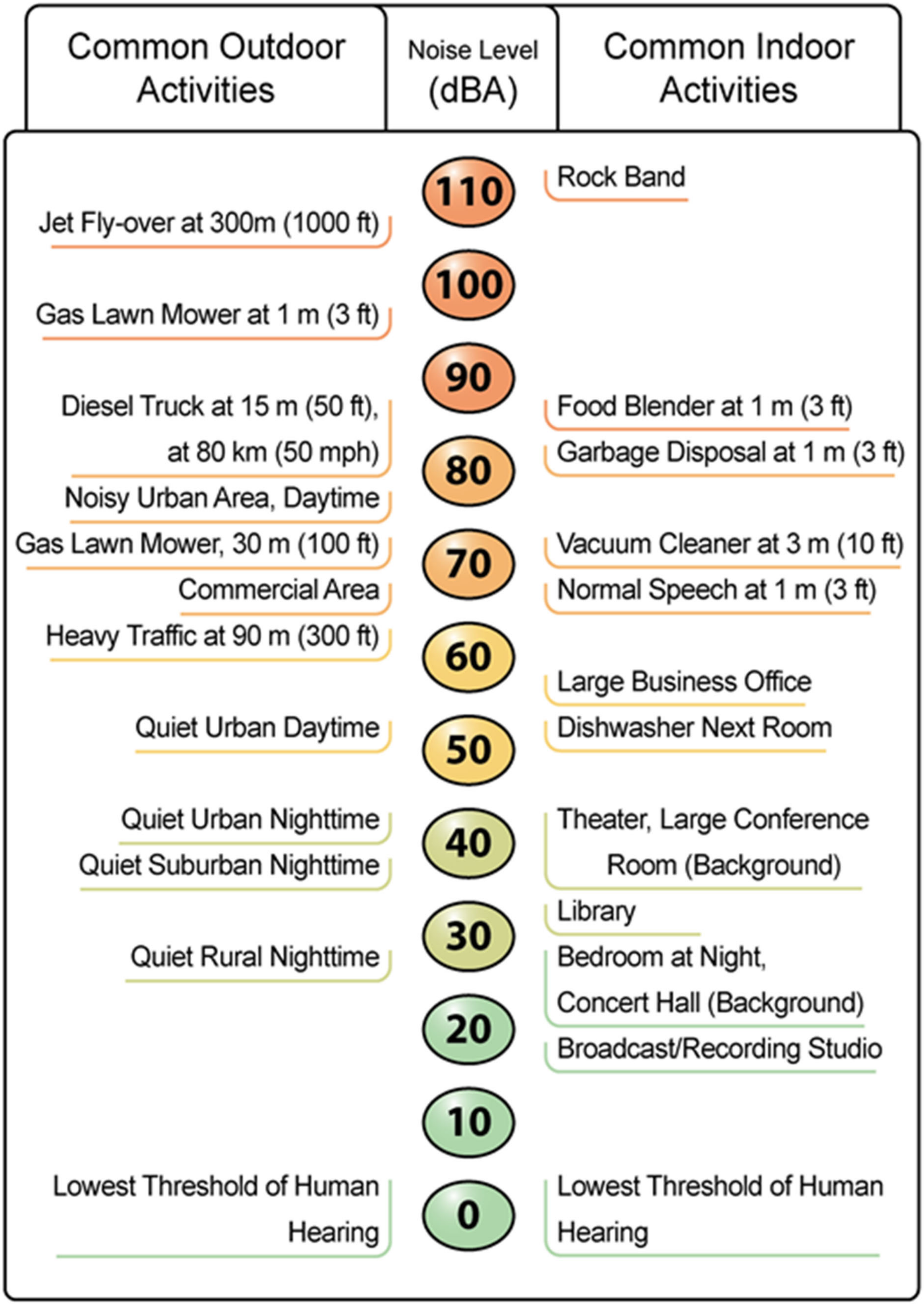
The decibel (dB) scale is logarithmic, not linear, and therefore sound levels cannot be added or subtracted through ordinary arithmetic. Two sound levels 10 dB apart differ in acoustic energy by a factor of 10. When the standard logarithmic decibel is A-weighted (dBA), an increase of 10 dBA is generally perceived as a doubling in loudness. For example, a 70-dBA sound is half as loud as an 80-dBA sound and twice as loud as a 60-dBA sound. When two identical sources are each producing sound of the same loudness, the resulting sound level at a given distance would be three dB higher than one source under the same conditions (Federal Transit Administration [FTA] 2018). For example, a 65-dB source of sound, such as a truck, when joined by another 65 dB source results in a sound amplitude of 68 dB, not 130 dB (i.e., doubling the source strength increases the sound pressure by three dB). Under the decibel scale, three sources of equal loudness together would produce an increase of five dB.

Typical noise levels associated with common noise sources are depicted in Figure 4. *Common Noise Levels*

2.1.2 Sound Propagation and Attenuation

Noise can be generated by a number of sources, including mobile sources such as automobiles, trucks and airplanes, and stationary sources such as construction sites, machinery, and industrial operations. Sound spreads (propagates) uniformly outward in a spherical pattern, and the sound level decreases (attenuates) at a rate of approximately six dB for each doubling of distance from a stationary or point source. Sound from a line source, such as a highway, propagates outward in a cylindrical pattern, often referred to as cylindrical spreading. Sound levels attenuate at a rate of approximately three dB for each doubling of distance from a line source, such as a roadway, depending on ground surface characteristics (Federal Highway Administration [FHWA] 2011). No excess attenuation is assumed for hard surfaces like a parking lot or a body of water. Soft surfaces, such as soft dirt or grass, can absorb sound, so an excess ground-attenuation value of 1.5 dB per doubling of distance is normally assumed. For line sources, an overall attenuation rate of three dB per doubling of distance is assumed (FHWA 2011).

Noise levels may also be reduced by intervening structures; generally, a single row of detached buildings between the receptor and the noise source reduces the noise level by about five dBA (FHWA 2006), while a solid wall or berm generally reduces noise levels by 10 to 20 dBA (FHWA 2011). However, noise barriers or enclosures specifically designed to reduce site-specific construction noise can provide a sound reduction 35 dBA or greater (Western Electro-Acoustic Laboratory, Inc. [WEAL] 2000). To achieve the most potent noise-reducing effect, a noise enclosure/barrier must physically fit in the available space, must completely break the “line of sight” between the noise source and the receptors, must be free of degrading holes or gaps, and must not be flanked by nearby reflective surfaces. Noise barriers must be sizable enough to cover the entire noise source and extend lengthwise and vertically as far as feasibly possible to be most effective.



Source: California Department of Transportation (Caltrans) 2012

Figure 4. Common Noise Levels

Gill Medical Center

The limiting factor for a noise barrier is not the component of noise transmitted through the material, but rather the amount of noise flanking around and over the barrier. In general, barriers contribute to decreasing noise levels only when the structure breaks the "line of sight" between the source and the receiver.

The manner in which older homes in California were constructed generally provides a reduction of exterior-to-interior noise levels of about 20 to 25 dBA with closed windows (Caltrans 2002). The exterior-to-interior reduction of newer residential units is generally 30 dBA or more (Harris Miller, Miller & Hanson Inc. [HMMH] 2006). Generally, in exterior noise environments ranging from 60 dBA Community Noise Equivalent Level (CNEL) to 65 dBA CNEL, interior noise levels can typically be maintained below 45 dBA, a typical residential interior noise standard, with the incorporation of an adequate forced air mechanical ventilation system in each residential building, and standard thermal-pane residential windows/doors with a minimum rating of Sound Transmission Class (STC) 28. (STC is an integer rating of how well a building partition attenuates airborne sound. In the U.S., it is widely used to rate interior partitions, ceilings, floors, doors, windows, and exterior wall configurations.) In exterior noise environments of 65 dBA CNEL or greater, a combination of forced-air mechanical ventilation and sound-rated construction methods is often required to meet the interior noise level limit. Attaining the necessary noise reduction from exterior to interior spaces is readily achievable in noise environments less than 75 dBA CNEL with proper wall construction techniques following California Building Code methods, the selections of proper windows and doors, and the incorporation of forced-air mechanical ventilation systems.

2.1.3 Noise Descriptors

The decibel scale alone does not adequately characterize how humans perceive noise. The dominant frequencies of a sound have a substantial effect on the human response to that sound. Several rating scales have been developed to analyze the adverse effect of community noise on people. Because environmental noise fluctuates over time, these scales consider that the effect of noise on people is largely dependent on the total acoustical energy content of the noise, as well as the time of day when the noise occurs. The L_{eq} is a measure of ambient noise, while the L_{dn} and CNEL (Community Noise Equivalent Level) are measures of community noise. Each is applicable to this analysis and defined in Table 2-1.

Table 2-1. Common Acoustical Descriptors

Descriptor	Definition
Decibel, dB	A unit describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure. The reference pressure for air is 20.
Sound Pressure Level	Sound pressure is the sound force per unit area, usually expressed in micropascals (or 20 micronewtons per square meter), where 1 pascal is the pressure resulting from a force of 1 newton exerted over an area of 1 square meter. The sound pressure level is expressed in decibels as 20 times the logarithm to the base 10 of the ratio between the pressures exerted by the sound to a reference sound pressure (e.g., 20 micropascals). Sound pressure level is the quantity that is directly measured by a sound level meter.

Table 2-1. Common Acoustical Descriptors

Descriptor	Definition
Frequency, Hz	The number of complete pressure fluctuations per second above and below atmospheric pressure. Normal human hearing is between 20 Hz and 20,000 Hz. Infrasonic sound are below 20 Hz and ultrasonic sounds are above 20,000 Hz.
A-Weighted Sound Level, dBA	The sound pressure level in decibels as measured on a sound level meter using the A weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise.
Equivalent Noise Level, L_{eq}	The average acoustic energy content of noise for a stated period of time. Thus, the Leq of a time-varying noise and that of a steady noise are the same if they deliver the same acoustic energy to the ear during exposure. For evaluating community impacts, this rating scale does not vary, regardless of whether the noise occurs during the day or the night.
L_{max}, L_{min}	The maximum and minimum A-weighted noise level during the measurement period.
L_{01}, L_{10}, L_{50}, L_{90}	The A-weighted noise levels that are exceeded 1%, 10%, 50%, and 90% of the time during the measurement period.
Day/Night Noise Level, L_{dn} or DNL	A 24-hour average Leq with a 10 dBA “weighting” added to noise during the hours of 10:00 p.m. to 7:00 a.m. to account for noise sensitivity in the nighttime. The logarithmic effect of these additions is that a 60 dBA 24-hour Leq would result in a measurement of 66.4 dBA Ldn.
Community Noise Equivalent Level, CNEL	A 24-hour average Leq with a 5 dBA “weighting” during the hours of 7:00 p.m. to 10:00 p.m. and a 10 dBA “weighting” added to noise during the hours of 10:00 p.m. to 7:00 a.m. to account for noise sensitivity in the evening and nighttime, respectively. The logarithmic effect of these additions is that a 60 dBA 24-hour Leq would result in a measurement of 66.7 dBA CNEL.
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.
Intrusive	That noise which intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends on its amplitude, duration, frequency, and time of occurrence and tonal or informational content as well as the prevailing ambient noise level.
Decibel, dB	A unit describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure. The reference pressure for air is 20.

The A weighted decibel sound level scale gives greater weight to the frequencies of sound to which the human ear is most sensitive. Because sound levels can vary markedly over a short period of time, a method for describing either the average character of the sound or the statistical behavior of the variations must be utilized. Most commonly, environmental sounds are described in terms of an average level that has the same acoustical energy as the summation of all the time-varying events.

The scientific instrument used to measure noise is the sound level meter. Sound level meters can accurately measure environmental noise levels to within about ±1 dBA. Various computer models are used to predict environmental noise levels from sources, such as roadways and airports. The accuracy of the predicted models depends on the distance between the receptor and the noise source. Close to the noise source, the models are accurate to within about ±1 to 2 dBA.

2.1.4 Human Response to Noise

The human response to environmental noise is subjective and varies considerably from individual to individual. Noise in the community has often been cited as a health problem, not in terms of actual physiological damage, such as hearing impairment, but in terms of inhibiting general well-being and contributing to undue stress and annoyance. The health effects of noise in the community arise from interference with human activities, including sleep, speech, recreation, and tasks that demand concentration or coordination. Hearing loss can occur at the highest noise intensity levels.

Noise environments and consequences of human activities are usually well represented by median noise levels during the day or night or over a 24-hour period. Environmental noise levels are generally considered low when the CNEL is below 60 dBA, moderate in the 60 to 70 dBA range, and high above 70 dBA. Examples of low daytime levels are isolated, natural settings with noise levels as low as 20 dBA and quiet, suburban, residential streets with noise levels around 40 dBA. Noise levels above 45 dBA at night can disrupt sleep. Examples of moderate-level noise environments are urban residential or semi-commercial areas (typically 55 to 60 dBA) and commercial locations (typically 60 dBA). People may consider louder environments adverse, but most will accept the higher levels associated with noisier urban residential or residential-commercial areas (60 to 75 dBA) or dense urban or industrial areas (65 to 80 dBA). Regarding increases in A-weighted noise levels (dBA), the following relationships should be noted in understanding this analysis:

- Except in carefully controlled laboratory experiments, a change of 1 dBA cannot be perceived by humans.
- Outside of the laboratory, a 3-dBA change is considered a just-perceivable difference.
- A change in level of at least 5 dBA is required before any noticeable change in community response would be expected. An increase of 5 dBA is typically considered substantial.
- A 10-dBA change is subjectively heard as an approximate doubling in loudness and would almost certainly cause an adverse change in community response.

2.1.5 Effects of Noise on People

Hearing Loss

While physical damage to the ear from an intense noise impulse is rare, a degradation of auditory acuity can occur even within a community noise environment. Hearing loss occurs mainly due to chronic exposure to excessive noise but may be due to a single event such as an explosion. Natural hearing loss associated with aging may also be accelerated from chronic exposure to loud noise.

The Occupational Safety and Health Administration (OSHA) has a noise exposure standard that is set at the noise threshold where hearing loss may occur from long-term exposures. The maximum allowable level is 90 dBA averaged over eight hours. If the noise is above 90 dBA, the allowable exposure time is correspondingly shorter.

Annoyance

Attitude surveys are used for measuring the annoyance felt in a community for noises intruding into homes or affecting outdoor activity areas. In these surveys, it was determined that causes for annoyance include interference with speech, radio and television, house vibrations, and interference with sleep and rest. The L_{dn} as a measure of noise has been found to provide a valid correlation of noise level and the percentage of people annoyed. People have been asked to judge the annoyance caused by aircraft noise and ground transportation noise. There continues to be disagreement about the relative annoyance of these different sources. For ground vehicles, a noise level of about 55 dBA L_{dn} is the threshold at which a substantial percentage of people begin to report annoyance.

2.2 Fundamentals of Environmental Groundborne Vibration

2.2.1 Vibration Sources and Characteristics

Sources of earthborne vibrations include natural phenomena (e.g., earthquakes, volcanic eruptions, sea waves, landslides) or manmade causes (explosions, machinery, traffic, trains, construction equipment, etc.). Vibration sources may be continuous (e.g., factory machinery) or transient (e.g., explosions).

Ground vibration consists of rapidly fluctuating motions or waves with an average motion of zero. Several different methods are typically used to quantify vibration amplitude. One is the peak particle velocity (PPV); another is the root mean square (RMS) velocity. The PPV is defined as the maximum instantaneous positive or negative peak of the vibration wave. The RMS velocity is defined as the average of the squared amplitude of the signal. The PPV and RMS vibration velocity amplitudes are used to evaluate human response to vibration.

PPV is generally accepted as the most appropriate descriptor for evaluating the potential for building damage. For human response, however, an average vibration amplitude is more appropriate because it takes time for the human body to respond to the excitation (the human body responds to an average vibration amplitude, not a peak amplitude). Because the average particle velocity over time is zero, the RMS amplitude is typically used to assess human response. The RMS value is the average of the amplitude squared over time, typically a 1- sec. period (FTA 2018).

Table 2-2 displays the reactions of people and the effects on buildings produced by continuous vibration levels. The annoyance levels shown in the table should be interpreted with care since vibration may be found to be annoying at much lower levels than those listed, depending on the level of activity or the sensitivity of the individual. To sensitive individuals, vibrations approaching the threshold of perception can be annoying. Low-level vibrations frequently cause irritating secondary vibration, such as a slight rattling of windows, doors, or stacked dishes. The rattling sound can give rise to exaggerated vibration complaints, even though there is very little risk of actual structural damage. In high-noise environments, which are more prevalent where groundborne vibration approaches perceptible levels, this rattling phenomenon may also be produced by loud airborne environmental noise causing induced vibration in exterior doors and windows.

Ground vibration can be a concern in instances where buildings shake, and substantial rumblings occur. However, it is unusual for vibration from typical urban sources such as buses and heavy trucks to be perceptible. For instance, heavy-duty trucks generally generate groundborne vibration velocity levels of 0.006 PPV at 50 feet under typical circumstances, which as identified in Table 2-2 is considered very unlikely to cause damage to buildings of any type. Common sources for groundborne vibration are planes, trains, and construction activities such as earth-moving which requires the use of heavy-duty earth moving equipment.

Table 2-2. Human Reaction and Damage to Buildings for Continuous or Frequent Intermittent Vibration Levels

Peak Particle Velocity (inches/second)	Approximate Vibration Velocity Level (VdB)	Human Reaction	Effect on Buildings
0.006–0.019	64–74	Range of threshold of perception	Vibrations unlikely to cause damage of any type
0.08	87	Vibrations readily perceptible	Recommended upper level to which ruins and ancient monuments should be subjected
0.1	92	Level at which continuous vibrations may begin to annoy people, particularly those involved in vibration sensitive activities	Virtually no risk of architectural damage to normal buildings
0.2	94	Vibrations may begin to annoy people in buildings	Threshold at which there is a risk of architectural damage to normal dwellings
0.4–0.6	98–104	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges	Architectural damage and possibly minor structural damage

Source: Caltrans 2020

3.0 EXISTING ENVIRONMENTAL NOISE SETTING

3.1 Noise-Sensitive Land Uses

Noise-sensitive land uses are generally considered to include those uses where noise exposure could result in health-related risks to individuals, as well as places where quiet is an essential element of their intended purpose. Residential dwellings are of primary concern because of the potential for increased and prolonged exposure of individuals to both interior and exterior noise levels. Additional land uses such as hospitals, historic sites, cemeteries, and certain recreation areas are considered sensitive to increases in exterior noise levels. Schools, churches, hotels, libraries, and other places where low interior noise levels are essential are also considered noise-sensitive land uses.

The Project is proposing the construction of two hospital buildings, and a related medical office building and associated features to be constructed in two phases. The nearest existing noise-sensitive land uses to the Project site are residences located directly adjacent to the proposed solid seven-foot-tall CMU wall along the southern site boundary and proposed driveway access from Eight Mile Road as well as residences located adjacent to the proposed driveway on North Ham Lane.

3.2 Existing Ambient Noise Environment

The most common and significant source of noise in San Joaquin County is mobile noise generated by transportation-related sources. Other sources of noise are the various land uses (i.e., residential, commercial, agricultural and institutional) that generate stationary-source noise. In addition, local agricultural operations include use of small planes and helicopters for aerial application of fertilizers and pesticides. The Project site is bound by the WID agricultural canal and agricultural land to the north, agricultural land and residents to the east, residents and East Eight Mile Road to the south, and West Land with agricultural land beyond to the west. As shown in Table 3-1 below, the ambient recorded noise level directly adjacent to the Project site is 44.5 dBA.

3.2.1 Existing Ambient Noise Measurements

The Project site is currently used for agricultural production of grapes. It is surrounded mainly by a mix of undeveloped/agricultural land with rural residents scattered about, including immediately adjacent the southern and eastern site boundaries. In order to quantify existing ambient noise levels on the Project site, ECORP Consulting, Inc. conducted a 24-hour noise measurement starting on September 9, 2020 and extending into September 10. Additionally, ECORP conducted five short-term noise measurements on the afternoon of September 9, 2020. The noise measurements are representative of the typical existing noise experienced within and immediately adjacent to the Project site and are depicted in Table 3-1. See Attachment A for Noise Measurement Locations.

Table 3-1. Existing (Baseline) Noise Measurements

Location Number	Location	L_{eq} dBA		L_{min} dBA	L_{max} dBA	Time
Short-Term Noise Measurements (September 9, 2020)						
1	Adjacent to West Lane between homes (located on Mettler Road) and The Home Church	**65.1**		38.5	77.9	10:20 a.m-10:35 a.m.
2	On West Eight Mile Road adjacent to mailbox 2001	**75.2**		40.4	100.9	9:20 a.m.-9:35 a.m.
3	On North Ham Road adjacent to house 11013	**62.0**		36.5	82.6	9:39 a.m-9:54 a.m.
4	On North Ham road adjacent to house 11243	**64.3**		36.9	82.8	9:57 a.m.-10:12 a.m.
5	In the residential community off Olive Grove Drive adjacent to house 199	**44.5**		34.9	61.8	10:44 a.m-10:59 a.m.
Long-Term Noise Measurements (September 9, 2020- September 10, 2020)						
Location Number	**Location**	**CNEL dBA**	**L_{eq} dBA**	**L_{min} dBA**	**L_{max} dBA**	**Time**
6	Adjacent to the agricultural canal and West Lane adjacent to the northern end of the Project site.	**67.7**	63.8	37.0	90.7	11:32 a.m. – 11:32 a.m.

Source: Measurements were taken by ECORP with a Larson Davis SoundExpert LxT precision sound level meter, which satisfies the American National Standards Institute for general environmental noise measurement instrumentation. Prior to the measurements, the SoundExpert LxT sound level meter was calibrated according to manufacturer specifications with a Larson Davis CAL200 Class I Calibrator. See Attachment A for noise measurement outputs.

As shown in Table 3-1, the short-term ambient recorded noise levels range from 44.5 to 75.2 dBA L_{eq} near the Project site. The long-term ambient recorded noise level was measured at 67.7 dBA CNEL. As previously described, environmental noise levels are generally considered low when the CNEL is below 60 dBA, moderate in the 60 to 70 dBA range, and high above 70 dBA. Therefore, the 24-hour noise measurement of 67.7 dBA CNEL suggests that the Project vicinity currently experiences moderate levels of noise. The most common noise in the Project vicinity is produced by automotive vehicles (e.g., cars, trucks, buses, motorcycles). Traffic moving along streets produces a sound level that remains relatively constant and is part of the minimum ambient noise level in the Project vicinity. Vehicular noise varies with the volume, speed and type of traffic. Slower traffic produces less noise than fast-moving traffic. Trucks typically generate more noise than cars. Infrequent or intermittent noise also is associated with vehicles, including sirens, vehicle alarms, slamming of doors, trains, garbage and construction vehicle activity and honking of horns. These noises add to urban noise and are regulated by a variety of agencies.

3.2.2 Existing Roadway Noise Levels

Existing roadway noise levels were calculated for the roadway segments in the Project vicinity. This task was accomplished using the FHWA Highway Traffic Noise Prediction Model (FHWA-RD-77-108) (see Attachment B) and traffic volumes from the Project's Traffic Impact Study (KD Anderson & Associates 2020). The model calculates the average noise level at specific locations based on traffic volumes, average speeds, roadway geometry, and site environmental conditions. The average vehicle noise rates (energy rates) used in the FHWA model have been modified to reflect average vehicle noise rates identified for California by Caltrans. The Caltrans data shows that California automobile noise is 0.8 to 1.0 dBA higher than national levels and that medium and heavy truck noise is 0.3 to 3.0 dBA lower than national levels. The average daily noise levels along these roadway segments are presented in Table 3-2. Vicinity roadways span two jurisdictions, which are noted in Table 3-2. Where no jurisdiction is noted, the roadway segment lies within unincorporated San Joaquin County.

Table 3-2. Existing (Baseline) Traffic Noise Levels

Roadway Segment	Surrounding Uses	CNEL at 100 feet from Centerline of Roadway
Eight Mile Road		
West of Interstate 5	Residential and Agricultural	64.6
Between Interstate 5 and Davis Road	Residential and Agricultural	63.3
Between Davis Road and Lower Sacramento Road	Residential and Agricultural	61.9
Between West Lane and Ham Lane	Residential and Agricultural	59.3
Between Ham Lane and Leach Road	Residential and Agricultural	60.7
Between Leach Road and Micke Grove Drive	Residential and Agricultural	60.3
Between Micke Grove Drive and State Route 99	Residential and Agricultural	60.6
East of State Route 99	Residential and Agricultural	58.1

Table 3-2. Existing (Baseline) Traffic Noise Levels

Roadway Segment	Surrounding Uses	CNEL at 100 feet from Centerline of Roadway
State Route 99		
South of Eight Mile Road (City of Stockton)	Residential and Agricultural	57.3
North of Eight Mile Road	Residential and Agricultural	61.0
State Route 99 East Frontage Road		
North of Eight Mile Road	Residential and Agricultural	47.9
South of Eight Mile Road	Residential and Agricultural	57.4
State Route 99 West Frontage Road		
North of Eight Mile Road	Residential and Agricultural	47.9
South of Eight Mile Road (City of Stockton)	Residential and Agricultural	57.6
Micke Grove Drive		
North of Eight Mile Road	Residential and Agricultural	43.8
Interstate 5		
Interstate 5 Southbound	Residential, Commercial and Agricultural	66.6
Leach Road		
North of Eight Mile Road	Residential and Agricultural	38.2
Morada Lane		
East of West Lane (City of Stockton)	Residential and Agricultural	57.7
West of West Lane (City of Stockton)	Residential and Agricultural	50.3
Ham Lane		
Between Eight Mile Road and West Lane	Residential and Agricultural	41.2
Between West Lane and Armstrong Road	Residential and Agricultural	55.5
North of Armstrong Road	Residential and Agricultural	56.7
North of West Lane	Residential and Agricultural	44.9
West Lane		
Between Eight Mile Road and Ham Lane	Residential and Agricultural	59.9
Lower Sacramento Road		
North of Eight Mile Road	Residential and Agricultural	60.6
South of Eight Mile Road	Residential and Agricultural	59.1
Davis Road		
North of Eight Mile Road	Residential and Agricultural	50.0
South of Eight Mile Road	Residential and Agricultural	56.3
Armstrong Road		
East of West Lane	Residential and Agricultural	55.7
West of West Lane	Residential and Agricultural	54.5

Source: Traffic noise levels were calculated by ECORP using the FHWA roadway noise prediction model in conjunction with the trip generation rate identified by KD Anderson & Associates (2020). Refer to Attachment B for traffic noise modeling assumptions and results.

Note: A total of 23 intersections were analyzed in the Traffic Impact Study; however, only roadway segments that impact sensitive receptors were included for the purposes of this analysis.

As shown, the existing traffic-generated noise level on Project-vicinity roadways currently ranges from 38.2 to 66.6 dBA CNEL at a distance of 100 feet from the centerline. As previously described, CNEL is 24-hour average noise level with a 5 dBA "weighting" during the hours of 7:00 p.m. to 10:00 p.m. and a 10 dBA "weighting" added to noise during the hours of 10:00 p.m. to 7:00 a.m. to account for noise sensitivity in the evening and nighttime, respectively. It should be noted that the modeled noise levels depicted in Table 3-2 may differ from measured levels in Table 3-1 because the measurements represent noise levels at different locations around the Project site and are also reported in different noise metrics (e.g., noise measurements are the L_{eq} values and traffic noise levels are reported in CNEL).

4.0 REGULATORY FRAMEWORK

4.1 Federal

4.1.1 Occupational Safety and Health Act of 1970

OSHA regulates onsite noise levels and protects workers from occupational noise exposure. To protect hearing, worker noise exposure is limited to 90 decibels with A-weighting (dBA) over an eight-hour work shift (29 Code of Regulations 1910.95). Employers are required to develop a hearing conservation program when employees are exposed to noise levels exceeding 85 dBA. These programs include provision of hearing protection devices and testing employees for hearing loss on a periodic basis.

4.2 State

4.2.1 State of California General Plan Guidelines

The State of California regulates vehicular and freeway noise affecting classrooms, sets standards for sound transmission and occupational noise control, and identifies noise insulation standards and airport noise/land-use compatibility criteria. The State of California General Plan Guidelines (State of California 2003), published by the Governor's Office of Planning and Research (OPR), also provides guidance for the acceptability of projects within specific CNEL/L_{dn} contours. The guidelines also present adjustment factors that may be used in order to arrive at noise acceptability standards that reflect the noise control goals of the community, the particular community's sensitivity to noise, and the community's assessment of the relative importance of noise pollution.

4.2.2 State Office of Planning and Research Noise Element Guidelines

The State OPR Noise Element Guidelines include recommended exterior and interior noise level standards for local jurisdictions to identify and prevent the creation of incompatible land uses due to noise. The Noise Element Guidelines contain a land use compatibility table that describes the compatibility of various land uses with a range of environmental noise levels in terms of the CNEL.

4.3 Local

4.3.1 San Joaquin County 2035 General Plan Public Health and Safety Element

The Project site is located in unincorporated San Joaquin County and therefore would potentially affect receptors within the County from onsite and offsite sources. The County Public Health and Safety Element of the San Joaquin County 2035 General Plan, specifically the *Noise Policy*, is a comprehensive program for including noise management in the planning process, providing a tool for planners to use in achieving and maintaining land uses that are compatible with existing and future environmental noise levels. The Noise Policy identifies noise-sensitive land uses and noise sources and defines areas of noise impact for the purpose of developing programs to ensure that residents in San Joaquin County, and other noise-sensitive land uses, will be protected from excessive noise intrusion.

As development proposals are submitted to the County, each is evaluated with respect to the provisions in the Noise Policy to ensure that noise impacts are reduced through planning and project design. Through implementation of the policies of the Public Health and Safety Element, San Joaquin County seeks to reduce or avoid adverse noise impacts for the purposes of protecting the general health, safety, and welfare of the community.

The most basic planning strategy to minimize adverse impacts on new land uses due to noise is to avoid designating certain land uses at locations within the County that would negatively affect noise-sensitive land uses. Uses such as schools, hospitals, child care, senior care, congregate care, churches, and all types of residential use should be located outside of any area anticipated to exceed acceptable noise levels as defined by noise and land use compatibility guidelines, or should be protected from noise through sound attenuation measures such as site and architectural design and sound walls. These guidelines, shown in Table 4-1 and Table 4-2, identify transportation and non-transportation related noise standards within the County.

Table 4-1. San Joaquin County Non-Transportation Noise Level Performance Standards for Noise Sensitive Uses at Outdoor Activity Areas1,2

Noise Level Descriptor	Daytime3 (7:00 a.m. – 10:00 p.m.)	Nighttime3 (10:00 p.m. – 7:00 a.m.)
Hourly L_{eq} dB	50	45
Maximum Level, dB	70	65

Source: County of San Joaquin 2016

Notes: These standards apply to new or existing residential areas affected by new or existing non-transportation sources.

[1]Where the location of outdoor activity areas is unknown or is not applicable, the noise standard shall be applied at the property line of the receiving land use. When determining the effectiveness of noise mitigation measures, the standards shall be applied on the receiving side of noise barriers or other property line noise mitigation measures.

[2] Each of the noise level standards specified shall be reduced by 5 dB for impulsive noise, single tone noise, or noise consisting primarily of speech or music.

Table 4-2. San Joaquin County Maximum Allowable Noise Exposure from Transportation Noise Source1

Noise-Sensitive Land Use Types	Outdoor Activity Areas2 (dB Ldn)	Interior Spaces (dB Ldn)
Residential	65	45
Administrative Office	-	45
Child Care Services- Child Care Centers	-	45
Community Assembly	65	45
Cultural & Library Services	-	45
Educational Services: General	-	45
Funeral, Interment Services – Undertaking	65	45
Lodging Services	65	45
Medical Services	65	45
Professional Services	-	45
Public Services (excluding hospitals)	-	45
Public Services (hospitals only)	65	45
Recreation – Indoor Spectator	-	45
Religious Assembly	65	45

Source: County of San Joaquin 2016

Notes: These standards apply to new or existing residential areas affected by new or existing non-transportation sources.

[1]Refer to Mountain House Master Plan, Chapter 11, Noise, for Mountain House Noise Standards.2 Where the location of outdoor activity areas is unknown or is not applicable, the noise standard shall be applied at the property line of the receiving land use. When determining the effectiveness of noise mitigation measures, the standards shall be applied on the receiving side of noise barriers or other property line noise mitigation measures.

The Public Health and Safety Element also contains goals that must be used to guide decisions concerning land uses that are common sources of excessive noise levels. The following relevant and applicable goals from the County's Noise Policy have been identified for the Project:

Goal PHS-9: *To protect County residents from the harmful and nuisance effects of exposure to excessive noise.*

PHS-9.1 Noise Standards for New Land Uses: The County shall require new development to comply with the noise standards shown in [Table 4-1 and Table 4-2] through proper site and building design, such as building orientation, setbacks, barriers, and building construction practices.

PHS- 9.4 Acceptable Vibration Levels: The County shall require construction projects anticipated to generate a significant amount of vibration to ensure acceptable interior vibration levels at nearby vibration-sensitive uses based on FTA criteria.

PHS- 9.5 Enforcement of State and Federal Noise Regulations: The County shall continue to enforce State and Federal noise laws regarding vehicle operation, equipment, and building insulation.

PHS- 9.9 Noise Exemptions: The County shall support the exemption of the following noise sources from the standards in this section:

- Emergency warning devices and equipment operated in conjunction with emergency situations, such as sirens and generators which are activated during power outages. The routine testing of such warning devices and equipment shall also be exempt provided such testing occurs during the hours of 7:00 am to 10:00 pm.
- Activities at schools, parks, or playgrounds, provided such activities occur during daytime hours.
- Activities associated with County-permitted temporary events and festivals.

4.3.2 San Joaquin County Municipal Code

The County's regulations with respect to noise are included in Chapter 9-1025 of the County Municipal Code, specifically Section 9-1025.9, *Noise*, of the County's Municipal Code. This section provides noise limits for sensitive land uses due to transportation and stationary noise sources. These standards are presented in Table 4-3 and 4-4.

Table 4-3. San Joaquin Noise Limits - Transportation Noise Sources

Noise-Sensitive Land Use (Use Types)	Outdoor Activity Area1 dB Ldn	Interior Spaces dB Ldn
Residential	65	45
Administrative office	-	45
Child Care Services-Child Care Centers	-	45
Community Assembly	65	45
Cultural & Library Services	-	45
Educational Services: General	-	45
Funeral & Interment Services—Undertaking	65	45
Lodging Services	65	45
Medical Services	65	45
Professional Services	-	45
Public Services (excluding Hospitals)	-	45
Public Services (hospitals only)	65	45
Recreation—Indoor Spectator	-	45
Religious Assembly	65	45

Source: County of San Joaquin 2020

Notes: 1Where the location of outdoor activity areas is unknown or is not applicable, the noise standard shall be applied at the property line of the receiving land use. When determining the effectiveness of noise mitigation measures, the standards shall be applied on the receiving side of noise barriers or other property line noise mitigation measures.

Table 4-4. San Joaquin County Noise Limits - Stationary Noise Sources		
	Outdoor Activity Areas1 Daytime2 (7:00 a.m. to 10:00 p.m.)	Outdoor Activity Areas1 Nighttime2 (10:00 p.m. to 7:00 a.m.)
Hourly Equivalent Sound level (L_{eq} dB)	50	45
Maximum Sound Level (L_{max} dB)	70	65

Source: County of San Joaquin 2020
Notes:
[1]Where the location of outdoor activity areas is unknown or is not applicable, the noise standard shall be applied at the property line of the receiving land use. When determining the effectiveness of noise mitigation measures, the standards shall be applied on the receiving side of noise barriers or other property line noise mitigation measures.
[2]Each of the noise level standards specified shall be reduced by 5 dB for impulsive noise, single tone noise, or noise consisting primarily of speech or music.

Section 9-1025.9, *Noise*, exempts noise sources associated with construction, provided such activities do not take place before 6:00 a.m. or after 9:00 p.m. on any day. Additionally, any mechanical device, apparatus or equipment used, related to, or connected with, emergency activities or emergency work shall be exempt from County noise standards. As discussed below, while this exemption applies to emergency helicopter operations at the proposed Phase 2 helistop, the County as CEQA Lead Agency has determined helicopter noise shall be evaluated as non-exempt noise and subject to the County's adopted transportation noise source standards.

4.3.3 City of Stockton Municipal Code

With the recent annexation of the Tra Vigne development project, the City of Stockton (City) boundary is now located at Eight-Mile Road approximately 500 feet from the Project site. Due to this distance, sensitive receptors will not be impacted by construction noise or stationary noise sources on the Project site but have the potential to be impacted by transportation noise sources, such as cars, trucks, and helicopters traveling to and from the Project site.

The City of Stockton regulations with respect to noise are included in Chapter 16.60, *Noise Standards*, of the City's Municipal Code. Section 16.60.040, *Standards*, establishes noise standards for transportation related noise sources. These standards are presented in Table 4-5.

Table 4-5. City of Stockton Maximum Allowable Noise Exposure for Noise-Sensitive Land Uses (Transportation Related Noise Standards)		
Noise-Sensitive Land Use Type	Maximum Allowable Noise Exposure (Ldn dB)	
	Outdoor Activity Areas	Indoor Spaces
Residential (all types)	65	45
Child Care	-	45
Education Facilities	-	45

Table 4-5. City of Stockton Maximum Allowable Noise Exposure for Noise-Sensitive Land Uses (Transportation Related Noise Standards)

Noise-Sensitive Land Use Type	Maximum Allowable Noise Exposure (Ldn dB)	
	Outdoor Activity Areas	Indoor Spaces
Libraries and Museums	-	45
Live-Work Facilities	65	45
Lodging	65	45
Medical Services	-	45
Multi-Use (with residential)	65	45

Source: City of Stockton 2020
Notes: [1]The noise standard shall be applied at the property line of the receiving land use. When determining the effectiveness of noise mitigation measures, the standards shall be applied on the receiving side of noise barriers or other property line noise mitigation measures.
[2]Each of the noise level standards specified shall be decreased by five (5) for impulse noise, simple tone noise, or noise consisting primarily of speech or music.

Additionally, Section 16.60.020, exempts the emission of sound for the purpose of alerting persons to the existence of an emergency, or the emission of sound in the performance of emergency work. Therefore, noise generated by heliport operations is exempt from City of Stockton transportation noise standards.

4.3.4 Federal Interagency Committee on Noise (FICON)

The FICON thresholds of significance assist in the evaluation of increased groundborne traffic noise. The 2000 FICON findings provide guidance as to the significance of changes in ambient noise levels due to transportation noise sources. FICON recommendations are based on studies that relate aircraft and traffic noise levels to the percentage of persons highly annoyed by the noise. FICON's measure of substantial increase for transportation noise exposure is as follows:

- If the existing ambient noise levels at existing and future noise-sensitive land uses (e.g. residential, etc.) are less than 60 dBA CNEL and the Project creates a readily perceptible 5 dBA CNEL or greater noise level increase and the resulting noise level would exceed acceptable exterior noise standards; or
- If the existing noise levels range from 60 to 65 dBA CNEL and the Project creates a barely perceptible 3 dBA CNEL or greater noise level increase and the resulting noise level would exceed acceptable exterior noise standards; or
- If the existing noise levels already exceed 65 dBA CNEL, and the Project creates a community noise level increase of greater than 1.5 dBA CNEL.

5.0 IMPACT ASSESSMENT

5.1 Thresholds of Significance

The impact analysis provided below is based on the following California Environmental Quality Act Guidelines Appendix G thresholds of significance. The Project would result in a significant noise-related impact if it would result in:

1) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

2) Generation of excessive groundborne vibration or groundborne noise levels.

3) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels.

For purposes of this analysis, Project construction noise is compared to the NIOSH standard of 85 dBA for more than 8 hours per day, since construction work is anticipated to span a typical workday of 8 hours daily. The increase in transportation-related noise is compared against the County or City noise standard, where appropriate as directed by the Lead Agency. For helicopter noise, while exempt by ordinance, the Lead Agency has directed that helicopter noise be analyzed as non-exempt and subject to adopted San Joaquin County noise standards for purposes of CEQA analysis. In the case that the existing transportation-related noise already exceeds the appropriate standard under current conditions, Project noise contribution is compared to the FICON recommendation for evaluating the impact of increased traffic noise. Noise generated onsite, including noise generated by use of the helistop, is compared against the County's non-transportation/ stationary noise standards identified in Table 4-1 and 4-4 above.

5.2 Methodology

This analysis of the existing and future noise environments is based on noise prediction modeling and empirical observations. Predicted construction noise levels were calculated utilizing the FHWA's Roadway Construction Model (2006). Transportation-source noise levels in the Project vicinity were calculated using the FHWA Highway Noise Prediction Model (FHWA-RD-77-108). Onsite stationary source noise levels have been calculated with the SoundPLAN 3D noise model, which predicts noise propagation from a noise source based on the location, noise level, and frequency spectra of the noise sources as well as the geometry and reflective properties of the local terrain, buildings and barriers. In the analysis below the size, location and noise producing level of each source is discussed in detail.

Groundborne vibration levels associated with construction-related activities for the Project were evaluated utilizing typical groundborne vibration levels associated with construction equipment. Potential groundborne vibration impacts related to structural damage and human annoyance were evaluated, taking into account the distance from construction activities to nearby structures and typically applied criteria for structural damage and human annoyance.

5.3 Impact Analysis

5.3.1 Project Construction Noise

Would the Project Result in Short-Term Construction-Generated Noise in Excess of Standards?

Construction noise associated with the Proposed Project would be temporary and would vary depending on the nature of the activities being performed. Noise generated would primarily be associated with the operation of off-road equipment for onsite construction activities as well as construction vehicle traffic on area roadways. Construction noise typically occurs intermittently and varies depending on the nature or phase of construction (e.g., land clearing, grading, excavation, paving). Noise generated by construction equipment, including earth movers, material handlers, and portable generators, can reach high levels. Typical operating cycles for these types of construction equipment may involve one or two minutes of full power operation followed by three to four minutes at lower power settings. Other primary sources of acoustical disturbance would be random incidents, which would last less than one minute (such as dropping large pieces of equipment or the hydraulic movement of machinery lifts). During construction, exterior noise levels could negatively affect sensitive land uses in the vicinity of the construction site

Nearby noise-sensitive land uses consist of rural residences located adjacent to the southern and eastern Project site boundary. As previously described, Section 9-1025.9 of the County's Municipal Code exempts noise sources associated with construction, provided such activities do not take place before 6:00 a.m. or after 9:00 p.m. on any day. The County does not promulgate a numeric threshold pertaining to the noise associated with construction. This is due to the fact that construction noise is temporary, short term, intermittent in nature, and would cease on completion of the Project. Additionally, construction would occur throughout the Project site and would not be concentrated at one point.

To estimate the worst-case onsite construction noise levels that may occur at the nearest noise-sensitive receptors in the Project vicinity, the construction equipment noise levels were calculated using the Roadway Noise Construction Model for the various construction phases for each roadway segment and compared against the construction-related noise level threshold established in the Criteria for a Recommended Standard: Occupational Noise Exposure prepared in 1998 by NIOSH. A division of the US Department of Health and Human Services, NIOSH identifies a noise level threshold based on the duration of exposure to the source. The NIOSH construction-related noise level threshold starts at 85 dBA for more than 8 hours per day; for every 3-dBA increase, the exposure time is cut in half. This reduction results in noise level thresholds of 88 dBA for more than 4 hours per day, 92 dBA for more than 1 hour per day, 96 dBA for more than 30 minutes per day, and up to 100 dBA for more than 15 minutes per day. For the purposes of this analysis, the lowest, more conservative threshold of 85 dBA L_{eq} is used as an acceptable threshold for construction noise at the nearby existing and future planned sensitive receptors.

The anticipated short-term construction noise levels generated for the necessary equipment for Phase 1 and Phase 2 of construction are presented in Table 5-1. Consistent with FTA recommendations for calculating construction noise, construction noise was measured from the center of the Project site (FTA 2018).

Table 5-1. Unmitigated Construction Average (dBA) Noise Levels at Nearest Receptor

Equipment	Estimated Exterior Construction Noise Level at Nearest Existing Residences	Construction Noise Standards (dBA L_{eq})	Exceeds Standards?
Phase 1			
Grading & Undergrounding			
Excavators (2)	60.3 (each)	85	**No**
Rubber Tired Dozers (6)	61.3 (each)	85	**No**
Graders (2)	64.6 (each)	85	**No**
Tractors/Loaders/Backhoes (8)	63.6 (each)	85	**No**
Combined Grading & Undergrounding Equipment	**75.4**	85	**No**
Building Construction			
Cranes (2)	56.2 (each)	85	**No**
Forklifts (6)	63.0 (each)	85	**No**
Generator Sets (6)	63.0 (each)	85	**No**
Tractors/Loaders/Backhoes (6)	63.6 (each)	85	**No**
Welders (2)	53.6 (each)	85	**No**
Combined Building Construction Equipment	**74.3**	85	**No**
Paving & Architectural Coating			
Pavers (4)	57.8 (each)	85	**No**
Rollers (4)	56.6 (each)	85	**No**
Paving Equipment (4)	66.1 (each)	85	**No**
Air Compressors (2)	57.3 (each)	85	**No**
Combined Paving & Architectural Coating Equipment	**73.4**	*85*	**No**
Phase 2			
Grading			
Excavators (2)	60.3 (each)	*85*	**No**
Rubber Tired Dozers (6)	61.3 (each)	*85*	**No**
Graders (2)	64.6 (each)	*85*	**No**
Tractors/Loaders/Backhoes (8)	63.6 (each)	*85*	**No**
Combined Grading Equipment	**75.4**	*85*	**No**
Paving			
Pavers (4)	57.8 (each)	*85*	**No**
Rollers (4)	56.6 (each)	*85*	**No**
Paving Equipment (4)	66.1 (each)	*85*	**No**
Combined Paving Equipment	**73.1**	*85*	**No**
Building Construction & Architectural Coating			
Air Compressor (2)	57.3 (each)	*85*	**No**
Cranes (2)	56.2 (each)	*85*	**No**
Forklift (6)	63.0 (each)	*85*	**No**
Generator Set (2)	61.2(each)	*85*	**No**
Tractors/Loaders/Backhoes (6)	63.6 (each)	*85*	**No**
Welders (2)	53.6 (each)	*85*	**No**
Combined Building Construction & Architectural Coating Equipment	**74.9**	*85*	**No**

Source: Construction noise levels were calculated by ECORP Consulting using the FHWA Roadway Noise Construction Model (FHWA 2006). Refer to Attachment C for Model Data Outputs.

Notes: Construction equipment used during construction derived from CalEEMod 2016.3.2. The nearest residence is located approximately 330 feet from the center of the construction site.

L_{eq} = The equivalent energy noise level, is the average acoustic energy content of noise for a stated period of time. Thus, the L_{eq} of a time-varying noise and that of a steady noise are the same if they deliver the same acoustic energy to the ear during exposure. For evaluating community impacts, this rating scale does not vary, regardless of whether the noise occurs during the day or the night.

As shown in Table 5-1, no individual or cumulative pieces of construction equipment would exceed the 85 dBA NIOSH construction noise standard during any phase of construction at the nearby noise-sensitive receptors.

5.3.2 Project Operational Noise

Would the Project Result in a Substantial Permanent Increase in Ambient Noise Levels in Excess of County or City Standards During Operations?

As previously described, noise-sensitive land uses are locations where people reside or where the presence of unwanted sound could adversely affect the use of the land. Residences, schools, hospitals, guest lodging, libraries, and some passive recreation areas would each be considered noise-sensitive and may warrant unique measures for protection from intruding noise. The existing nearest noise-sensitive land use to the Project site are residences located directly adjacent to the proposed solid seven-foot-tall CMU along the southern site boundary and proposed driveway access from Eight Mile Road, and a single Ham Lane residence located adjacent the site’s eastern boundary.

The operational noise sources associated with the various land use plans are discussed below. Operational noise sources associated with the Proposed Project include mobile and stationary (i.e., parking lot activity, helicopter takeoff and landing, sirens) sources.

Operational Offsite Traffic Noise

Future traffic noise levels throughout the Project vicinity (i.e., vicinity roadway segments that traverse noise-sensitive land uses) for the Proposed Project were modeled based on the traffic volumes identified by KD Anderson & Associates (2020) to determine the noise levels along Project vicinity roadways. Table 5-2 shows the calculated offsite roadway noise levels under existing traffic levels compared to future buildout of the Project. The calculated noise levels as a result of the Project at affected sensitive land uses are compared to the noise standards promulgated in the San Joaquin County 2035 General Plan and Municipal Code as well as the City of Stockton Municipal Code, where appropriate. Where no jurisdiction is noted, the roadway segment lies within unincorporated San Joaquin County. In the case that the existing ambient noise levels already exceed the applicable numeric noise thresholds without the Project, the FICON thresholds of significance described in Section 4.3.4 are applied.

Table 5-2. Proposed Project Predicted Traffic Noise Levels

Roadway Segment	Surrounding Uses	CNEL at 100 feet from Centerline of Roadway		Noise Standard (dBA CNEL)	Exceed Standard AND result in Noise Levels Exceeding Acceptable Exterior Noise Standards
		Existing Conditions	Existing + Project Conditions		
Eight Mile Road					
West of Interstate 5	Residential and Agricultural	64.6	64.6	*65*	**No**
Between Interstate 5 and Davis Road	Residential and Agricultural	63.3	63.4	*65*	**No**
Between Davis Road and Lower Sacramento Road	Residential and Agricultural	61.9	62.4	*65*	**No**
Between West Lane and Ham Lane	Residential and Agricultural	59.3	59.4	*65*	**No**
Between Ham Lane and Leach Road	Residential and Agricultural	60.7	61.0	*65*	**No**
Between Leach Road and Micke Grove Drive	Residential and Agricultural	60.3	60.7	*65*	**No**
Between Micke Grove Drive and State Route 99	Residential and Agricultural	60.6	61.0	*65*	**No**
East of State Route 99	Residential and Agricultural	58.1	58.2	*65*	**No**
State Route 99					
South of Eight Mile Road (City of Stockton)	Residential and Agricultural	57.3	57.3	*65*	**No**
North of Eight Mile Road	Residential and Agricultural	61.0	61.3	*65*	**No**
State Route 99 East Frontage Road					
North of Eight Mile Road	Residential and Agricultural	47.9	51.4	*65*	**No**
South of Eight Mile Road	Residential and Agricultural	57.4	57.5	*65*	**No**
State Route 99 West Frontage Road					
North of Eight Mile Road	Residential and Agricultural	47.9	47.9	*65*	**No**
South of Eight Mile Road (City of Stockton)	Residential and Agricultural	57.6	58.2	*65*	**No**
Micke Grove Drive					
North of Eight Mile Road	Residential and Agricultural	43.8	44.3	*65*	**No**

Table 5-2. Proposed Project Predicted Traffic Noise Levels

Roadway Segment	Surrounding Uses	CNEL at 100 feet from Centerline of Roadway		Noise Standard (dBA CNEL)	Exceed Standard AND result in Noise Levels Exceeding Acceptable Exterior Noise Standards
		Existing Conditions	Existing + Project Conditions		
Interstate 5					
Interstate 5 Southbound	Residential, Commercial and Agricultural	66.6	66.6	*>1.5*	**No**
Leach Road					
North of Eight Mile Road	Residential and Agricultural	38.2	38.2	*65*	**No**
Morada Lane					
East of West Lane (City of Stockton)	Residential and Agricultural	57.7	57.8	*65*	**No**
West of West Lane (City of Stockton)	Residential and Agricultural	50.3	50.3	*65*	**No**
Ham Lane					
Between Eight Mile Road and West Lane	Residential and Agricultural	41.2	43.1	*65*	**No**
Between West Lane and Armstrong Road	Residential and Agricultural	55.5	55.6	*65*	**No**
North of Armstrong Road	Residential and Agricultural	56.7	56.9	*65*	**No**
North of West Lane	Residential and Agricultural	44.9	45.1	*65*	**No**
West Lane					
Between Eight Mile Road and Ham Lane	Residential and Agricultural	59.9	59.9	*65*	**No**
Lower Sacramento Road					
North of Eight Mile Road	Residential and Agricultural	60.6	60.7	*65*	**No**
South of Eight Mile Road	Residential and Agricultural	59.1	59.3	*65*	**No**
Davis Road					
North of Eight Mile Road	Residential and Agricultural	50.0	50.3	*65*	**No**
South of Eight Mile Road	Residential and Agricultural	56.3	56.7	*65*	**No**

Table 5-2. Proposed Project Predicted Traffic Noise Levels

Roadway Segment	Surrounding Uses	CNEL at 100 feet from Centerline of Roadway		Noise Standard (dBA CNEL)	Exceed Standard AND result in Noise Levels Exceeding Acceptable Exterior Noise Standards
		Existing Conditions	Existing + Project Conditions		
Armstrong Road					
East of West Lane	Residential and Agricultural	55.7	55.8	*65*	**No**
West of West Lane	Residential and Agricultural	54.5	54.5	*65*	**No**

Source: Traffic noise levels were calculated by ECORP Consulting using the FHWA roadway noise prediction model in conjunction with the trip generation rate identified by KD Anderson & Associates 2020. Refer to Attachment B for traffic noise modeling assumptions and results.
Notes: A total of 23 intersections were analyzed in the Traffic Impact Analysis; however, only roadway segments that impact sensitive receptors were included for the purposes of this analysis.
Roadway segments that do not specify a specific city are located in unincorporated San Joaquin County.

As shown in Table 5-2, no roadway segment would exceed the applicable County or City noise standard and generate an increase of noise beyond the FICON significance standards.

Operational Onsite Stationary Noise

Upon full buildout, the main stationary operational noise associated with the Proposed Project would be parking lot activity (i.e., internal vehicle circulation, car doors opening and closing, people talking, stereo music), sirens from emergency vehicles, and helicopter landing and takeoff. As previously stated, Section 9-1025.9 of the San Joaquin County Municipal Code exempts from noise standards any mechanical device, apparatus or equipment used, related to, or connected with, emergency activities or emergency work. As such, the noise produced from emergency vehicles (sirens) are exempt from County noise standards. Therefore, the vast majority of noise produced by Project emergency vehicles (sirens) would be noise that is exempt from County noise standards and thus would be considered less than significant per the CEQA Guidelines Appendix G standards of significance: i.e., the generation of a permanent increase in ambient noise levels in the vicinity of the Project in excess of standards established in the local general plan or noise ordinance. However, for helicopter noise, while exempt by ordinance, the Lead Agency has directed that helicopter noise be analyzed as non-exempt and subject to adopted San Joaquin County noise standards for purposes of CEQA analysis.

The following discussion of Project onsite operational noise is discussed in terms of non-exempt and exempt noise. A full discussion of the predicted sound levels generated during emergency response situations that are exempt from County noise standards is included for full disclosure purposes.

Exempt Onsite Stationary Noise

The Project is proposing the construction of two hospital buildings, a medical office building and associated features. Due to the nature of this Project, it would be a source of noise due to emergency activities such as sirens from emergency vehicles. As previously mentioned, per Section 9-1025.9 of the San Joaquin County Municipal Code, this noise is exempt from noise standards as it is associated with medical emergencies. Thus, all noise generated during emergency response is considered less than significant per the CEQA Guidelines Appendix G standards of significance: i.e., the generation of a permanent increase in ambient noise levels in the vicinity of the Project in excess of standards established in the local general plan or noise ordinance. Nonetheless, a full discussion of medical emergency-related noise sources has been included for full disclosure purposes. It is noted that for helicopter noise, while exempt by ordinance due to its role in emergency response situations, the Lead Agency has directed that helicopter noise be analyzed as non-exempt and subject to adopted San Joaquin County noise standards for purposes of CEQA analysis. Emergency Sirens

Residential receptors in the immediate vicinity of the Project would experience periodic exposure to siren noise. The potential adverse effects of noise associated with the use of emergency vehicle sirens on the quality of life of nearby residents is often a concern in development of new hospitals and emergency facilities.

Federal regulation limits emergency siren noise at 123 dBA at 10 feet. Factoring an attenuation rate of approximately 6 dBA per doubling of distance from the source equates to a noise level of approximately 103.5 dBA at 100 feet. Since emergency vehicle response is by nature rapid, the duration of exposure to this peak noise level is estimated to last for a maximum of 10 to 20 seconds as emergency vehicles enter and exit the Project site. Thus, receptors would be exposed to very short-duration high noise levels for approximately 10 to 20 seconds for each emergency response event. Further, it is typical practice for ambulances to use sirens to break traffic at intersections or warn drivers of the emergency vehicle approach when traffic is congested. It is not unlikely in minor emergency scenarios that a siren is not used. Responses to nighttime emergency calls, when nuisance noise is most noticeable, routinely occur without the use of sirens. It is also noted that the manner in which older homes in California were constructed generally provides a reduction of exterior-to-interior noise levels of about 20 to 25 dBA with closed windows (Caltrans 2002). The exterior-to-interior reduction of newer residential units is generally 30 dBA or more (HMMS 2006).

A key focus of analysis with regard to noise is the potential for long-term exposure to higher noise levels (i.e., continuous, involuntary exposure for many hours per day over a long period of time) that may adversely affect human health. As a result of this emphasis, noise standards focus on increases in long-term exposure to ongoing average noise levels rather than infrequent short-duration peak effects. Siren noise from intermittent emergency vehicle trips sourced from the Project site would not substantially change the L_{dn} or CNEL for the Project vicinity as the intermittent siren use would not constitute a significant change in the existing noise environment. Additionally, per Section 9-1025.9, *Noise*, of the County's Municipal Code any mechanical device, apparatus or equipment used, related to, or connected with, emergency activities or emergency work shall be exempt from noise standards.

Non-exempt Onsite Stationary Noise

A primary non-exempt stationary noise associated with the Proposed Project would be parking lot activity such as internal vehicle circulation, car doors opening and closing, people taking, and stereo music. Onsite

Project operations have been calculated using the SoundPLAN 3D noise model. The results of this model can be found in Attachment D. Previous noise measurements taken by ECORP Consulting, Inc., using a Larson Davis SoundExpert LxT precision sound level meter, within a visitors parking lot adjacent to a 298 bed medical center, emergency care, and Level II trauma center equip with FlightCare air ambulance service recorded a noise level of 53.8 dBA when no emergency activity was occurring. This sound power level was used as a reference measurement in the SoundPLAN noise model to predict the propagation of onsite noise produced by the Project. The solid seven-foot-tall CMU wall proposed to be constructed along the southern site boundary adjacent the existing residential property lines is accounted for in the noise prediction modeling.

Table 5-3 shows the predicted Project noise levels at nearby sensitive receptors in the Project area and Figure 5 depicts the predicted noise levels from Project operations at the site locations listed in Table 5-3.

Table 5-3. Modeled Operational Noise Levels - Non-Exempt Noise

Site Location	Location	Existing Baseline Noise Measurements (L_{eq} dBA)	Modeled Operational Noise Attributable to Project (L_{eq} dBA)	County Exterior Standards (dBA) (Day/Night)	Exceed Standard? (Day /Night)
1	Northeast of Project site on Ham Lane	N/A	**31.4**	50 / 45	**No / No**
2	Residential property northeast of Project site	N/A	**34.1**	50 / 45	**No / No**
3	Residential property northeast of Project site	N/A	**35.5**	50 / 45	**No / No**
4	Residential property east of Project site	N/A	**40.0**	50 / 45	**No / No**
5	In front of residence on Ham Lane north of Project site	N/A	**34.3**	50 / 45	**No / No**
6	Residential property south of Project site	N/A	**36.9**	50 / 45	**No / No**
7	Residential property south of Project site	N/A	**40.9**	50 / 45	**No / No**
8	Residential property south of Project site	N/A	**42.0**	50 / 45	**No / No**
9	Adjacent to Eight Mile Road and proposed driveway	75.2	**36.3**	50 / 45	**No / No**
10	Residential property south of Project site	N/A	**40.8**	50 / 45	**No / No**
11	Residential property south of Project site	N/A	**41.4**	50 / 45	**No / No**
12	Residential property south of Project site	N/A	**39.4**	50 / 45	**No / No**

Source: Stationary source noise levels were modeled by ECORP using SoundPLAN 3D noise model. Refer to Attachment D for noise modeling assumptions and results.

Notes: Previous noise measurements taken by ECORP Consulting, Inc., using a Larson Davis SoundExpert LxT precision sound level meter, within a visitors parking lot adjacent to a 298 bed medical center, emergency care, and Level II trauma center equip with FlightCare air ambulance service recorded a noise level of 53.8 dBA.

As shown in Table 5-3 and Figure 5, Project onsite noise levels would reach between 31.4 and 42.0 dBA at the nearby noise-sensitive residences during Project operations. These numbers fall below the County's daytime (7:00 a.m. to 10:00 p.m.) and nighttime (10:00 p.m. to 7:00 a.m.) noise standards for residential land uses. Additionally, as previously stated the manner in which older homes in California were constructed generally provides a reduction of exterior-to-interior noise levels of about 20 to 25 dBA with closed windows (Caltrans 2002). This exterior-to-interior noise reduction would reduce the depicted noise levels further, as they are experienced within the vicinity residences. Furthermore, it is noted that Location 9 currently experiences noise levels of 75.2 dBA and the modeled operational noise level attributed to Project onsite non-exempt activities is 36.3 dBA. Thus, the noise environment in the Project area currently exceeds that which would be produced by the Project.

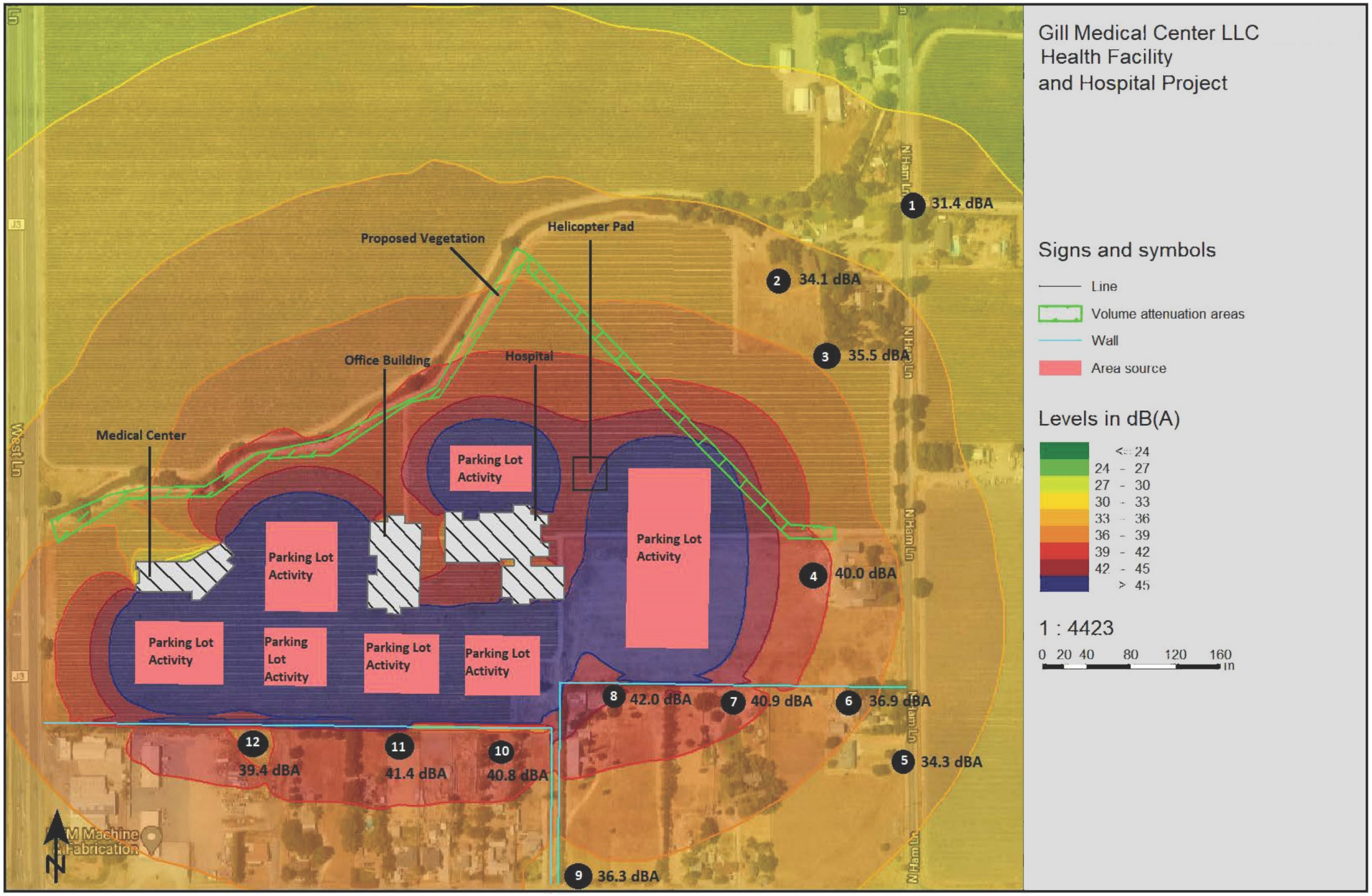
It is noted that SoundPLAN was used to calculate non-exempt operational noise from a worst-case scenario. All the non-exempt noise producing sources on the Project site were calculated as if operating at the same time and at the highest activity level to produce noise levels as high as those predicted. Further, the soft surfaces and vegetative screening innate to the strip of proposed landscaping that would surround the site, which can absorb sound, was not accounted for in the SoundPLAN model.

Helipad/Helicopter Noise

The most prominent noise source on the Project site would be that of helicopter activities. Most of the noise from a helicopter is generated by the main rotor located on the roof of the helicopter. The main rotor is comprised of rotary wings (rotor blades) and a control system that generates the aerodynamic lift force that supports the weight of the helicopter, and the thrust that counteracts aerodynamic drag in forward flight. There is also a significant amount of noise that is generated from the tail rotor located on the tail of the helicopter. The tail rotor provides a counteracting force to the helicopter’s main rotor and allows the pilot to steer the helicopter around its vertical axis by adjusting the pitch of the rotor blades. According to the Helicopter Association International (1983), smaller helicopters are generally quieter than larger ones and sound levels tend to increase approximately three decibels per doubling of helicopter weight.

Per information from the International Civil Aviation Organization, the approach case (landing) is normally the loudest flight condition for a helicopter due to the sound produced by the relatively slow-turning main rotor. This noise is more pronounced when the helicopter is on the ground and decreases as the aircraft ascends.

As such, helicopter operations when the helicopter is on the ground (landing and takeoff events), has been calculated using the SoundPLAN 3D noise model. The results of this model can be found in Attachment D. Previous noise measurements taken by ECORP Consulting, Inc., using a Larson Davis SoundExpert LxT precision sound level meter, of a single helicopter taking off generates a noise level of 87.0 dBA L_{max} at 330 feet distant, and 87.9 dBA L_{max} at the same distance while landing, with each event lasting less than five minutes in duration. (L_{max} is the maximum A-weighted noise level during the measurement period.) Thus, based on an attenuation rate of 6 dBA per doubling of distance, a noise level of 124.3 dBA L_{max} at a distance of 5 feet can be expected and was used in the modeling. Table 5-4 shows the predicted Project helicopter activity noise levels at nearby sensitive receptors in the Project area and Figure 6 depicts the predicted noise levels at the site locations listed in Table 5-4. As shown in Table 5-4, noise levels could reach up to 91.8 dBA at the nearby noise-sensitive receptors during helicopter landing and takeoff events.



Map Date: 10/2/2020
Photo (or Base) Source: SoundPLAN

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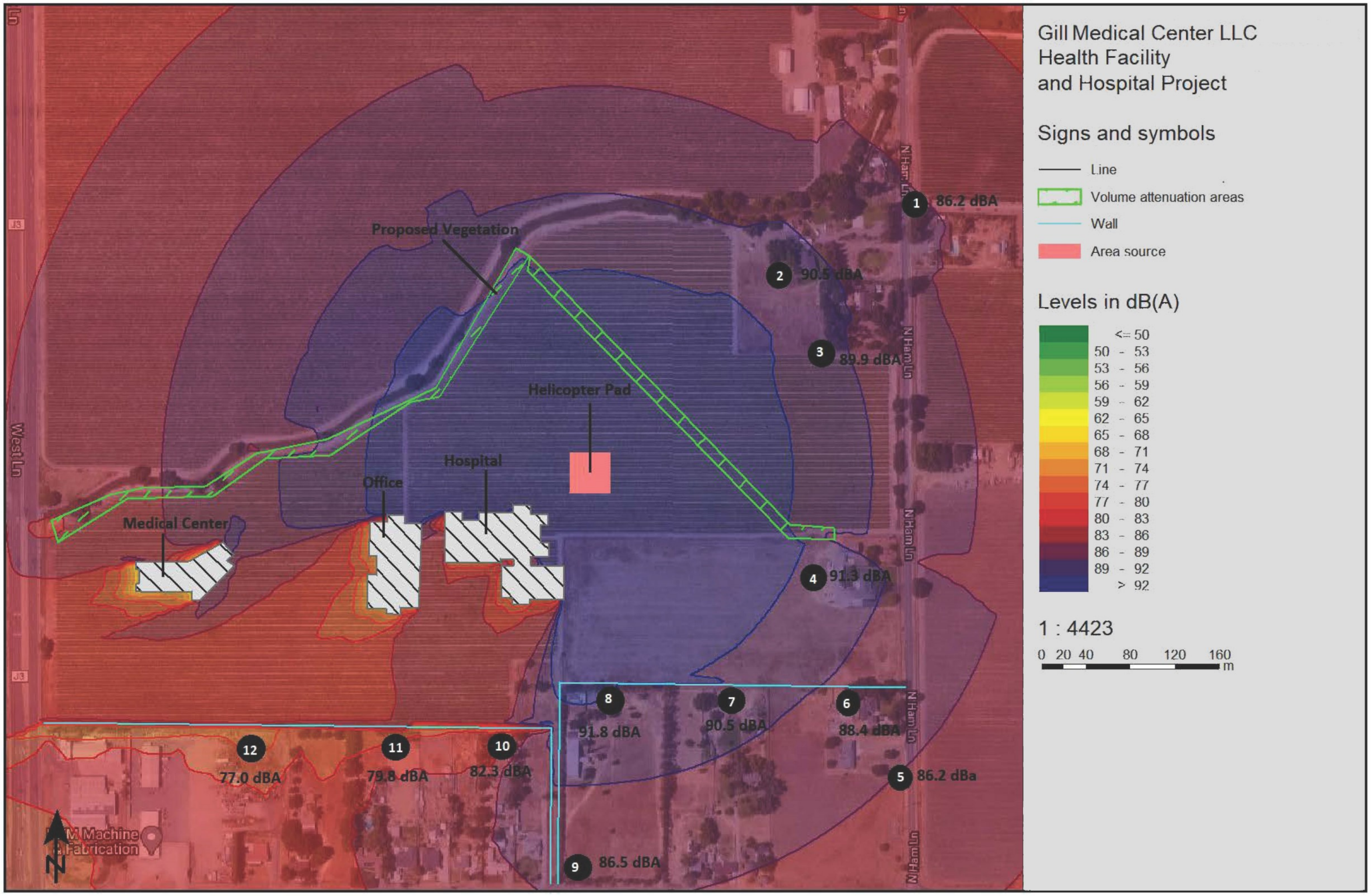
Figure 5. Project Onsite Non-Exempt Noise Generation



Map Date: 10/2/2020
Photo (or Base) Source: SoundPLAN

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Figure 6. Helipad Noise Propagation

These events, similar to an emergency siren, would be intermittent and temporary, occurring approximately once per week and enduring less than five minutes, and therefore would not constitute a substantial change in the existing ambient community noise environment, which is the cumulative average daytime noise level during a 24-hour day. Furthermore, as previously mentioned, the noise generated from a helicopter is more pronounced when the helicopter is on the ground and decreases as the aircraft ascends. An observation by ECORP Consulting, Inc. during the event of a helicopter takeoff, approximately 300 feet from where the helipad is located, found a noise level of approximately 70.2 dBA when the helicopter was approximately 85 feet above the ground. Thus, once in flight the helicopter would have a rapidly reducing noise effect on the surrounding noise environment. Additionally, per Section 9-1025.9, *Noise*, of the County's Municipal Code any mechanical device, apparatus or equipment used, related to, or connected with, emergency activities or emergency work shall be exempt from noise standards. However, while exempt by ordinance due to its role in emergency response situations, the Lead Agency has directed that helicopter noise be analyzed as non-exempt and subject to adopted San Joaquin County noise standards for purposes of CEQA analysis.

Table 5-4. Modeled Operational Noise Levels - Helipad Noise

Site Location	Location	Existing Baseline Noise Measurements (L_{eq} dBA)	Modeled Operational Noise Attributable to Helicopter Landing (L_{eq} dBA)
1	Northeast of Project site on Ham Lane	N/A	**86.2**
2	Residential property northeast of Project site	N/A	**90.5**
3	Residential property northeast of Project site	N/A	**89.9**
4	Residential property east of Project site	N/A	**91.3**
5	Infront of residence on Ham Lane north of Project site	N/A	**86.2**
6	Residential property south of Project site	N/A	**88.4**
7	Residential property south of Project site	N/A	**90.5**
8	Residential property south of Project site	N/A	**91.8**
9	Adjacent to Eight Mile Road and proposed driveway	75.2	**86.5**
10	Residential property south of Project site	N/A	**82.3**
11	Residential property south of Project site	N/A	**79.8**
12	Residential property south of Project site	N/A	**77.0**

Source: Stationary source noise levels were modeled by ECORP using SoundPLAN 3D noise model. Refer to Attachment D for noise modeling assumptions and results.

Notes: Previous noise measurements taken by ECORP Consulting, Inc., using a Larson Davis SoundExpert LxT precision sound level meter, of a single helicopter taking off generates a noise level of 87.0 dBA L_{max} at 330 feet distant and 87.9 dBA L_{max} while landing, with each event lasting less than five minutes in duration.

As shown in Table 5-4 above, noise levels could reach up to 91.8 dBA at the exterior of nearby noise-sensitive receptors during helicopter landing and takeoff events. These potential noise levels exceed the County daytime and nighttime noise level standards.

As previously stated, the manner in which older homes in California were constructed generally provides a reduction of exterior-to-interior noise levels of about 20 to 25 dBA with closed windows (Caltrans 2002). This exterior-to-interior noise reduction would reduce helicopter noise levels, as they are experienced within the vicinity residences, to 71.8 – 66.8 dBA.

It is noted that engine noise is mostly directed upward, and therefore away from the vicinity residences, because almost all helicopter engines are located above the aircraft and thus partly screened by the aircraft body. In addition, with the advent of the turbine engine, noise from helicopter engines are substantially diminished compared with helicopters without turbine engines. Noise from the main rotor is mostly directed downward, because it radiates off the underside of the blades. Main rotor noise is caused by two mechanisms: wind flowing over the blades and shock formation (both transonic shock formation and percussive interaction with the vortex coming off the blade in front of it). The tail rotor creates noise through the same mechanisms but on a smaller scale and directed toward the sides. Tail rotor noise is typically a lesser source of noise compared with the main rotor.

The evaluation of the state-of-the-art helicopter models confirms that available noise reduction technologies are being implemented in new helicopter models. Therefore, it can be assumed that noise associated with helicopters will decrease in the future. It is noted that the Project helipad is proposed as a component of Phase 2, which would not be completed until 10 years after Project approval. These technologies include unequal blade spacing on ducted fans and open tail rotors, new rotor designs and blade planforms, and reduced or even automatically-controlled rotor speeds. One possible technique for reducing helicopter rotor noise is "modulated blade spacing". Modulated blade spacing equates to standard rotor blades being evenly spaced, resulting in the production of greater noise at a particular frequency that attenuates more rapidly in the atmosphere. Using varying degrees of spacing between the blades spreads the noise or acoustic signature of the rotor over a greater range of frequencies allowing for greater noise attenuation in the atmosphere. Helicopter tail rotors can be recessed into the fairing of the tail (a fenestron), which reduces the noise level directly below the aircraft. In addition, this type of rotor typically has anywhere from 8 to 12 blades (as compared to 2 or 4 blades on a conventional tail rotor), increasing the frequency of the noise and thus its attenuation by the atmosphere. In addition, the placement of the tail rotor within a shroud can prevent the formation of tip vortices, circular patterns of rotating air and sound left behind a wing as it generates lift. This type of rotor is in general much quieter than its conventional counterpart.

The noise receptors that would be predominately affected by Project helicopter noise includes residential receptors located adjacent to the Project’s eastern and southern boundaries. Project helicopter noise, particularly during takeoff and landing events, can enter a structure through multiple points such as windows, doors, cracks, walls, roofs, ventilators, and chimneys. The Federal Aviation Administration (FAA) provides guidance on developing and managing sound insulation programs (SIP) that mitigate noise impacts to structures exposed to aircraft noise. According to the FAA, the retrofitting of windows and doors provided the greatest reduction in exterior-to-interior noise propagation (FAA undated).

Specifically, it is the type of materials used and quality of their installation (e.g., proper caulking and sealing) that ensures the greatest reduction of sound from entering a structure. According to the FAA, SIPs are designed to reduce interior noise due to aircraft noise in habitable residences and/or other noise-sensitive land uses by at least 5 dBA.

As previously discussed, Project helicopter operations at the Project Site would be intermittent and temporary, occurring approximately once per week and enduring less than five minutes, and therefore would not constitute a substantial change in the existing ambient community noise. Therefore, while it is acknowledged that Project helicopter noise levels could reach up to 91.8 dBA at the exterior of nearby noise- sensitive receptors during helicopter landing and takeoff events, and thus interior noise levels ranging from 71.8 to 66.8 dBA, retrofitting all of the windows and doors of the adjacent residences in order to possibly achieve a 5 dBA reduction over the course of a singular weekly event that lasts around 5 minutes is not feasible when coupled with the fact that such a reduction would not reduce Project helicopter noise to a level below the County significance threshold.

5.3.3 Project Construction Groundborne Vibration

Would the Project Expose Structures to Substantial Groundborne Vibration During Construction?

Excessive groundborne vibration impacts result from continuously occurring vibration levels. Increases in groundborne vibration levels attributable to the Project would be primarily associated with short-term construction-related activities. Construction on the Project site would have the potential to result in varying degrees of temporary groundborne vibration, depending on the specific construction equipment used and the operations involved. Ground vibration generated by construction equipment spreads through the ground and diminishes in magnitude with increases in distance.

Construction-related ground vibration is normally associated with impact equipment such as pile drivers, jackhammers, and the operation of some heavy-duty construction equipment, such as dozers and trucks. It is noted that pile drivers would not be necessary during Project construction. Vibration decreases rapidly with distance and it is acknowledged that construction activities would occur throughout the Project site and would not be concentrated at the point closest to sensitive receptors. Groundborne vibration levels associated with construction equipment are summarized in Table 5-5.

Table 5-5. Representative Vibration Source Levels for Construction Equipment

Equipment Type	Peak Particle Velocity at 25 Feet (inches per second)
Large Bulldozer	0.089
Caisson Drilling	0.089
Loaded Trucks	0.076
Hoe Ram	0.089
Jackhammer	0.035
Small Bulldozer/Tractor	0.003

Source: FTA 2018; Caltrans 2020

The County's Noise Policy of the General Plan, Goal PHS-9.4, states that the County shall require construction projects anticipated to generate a significant amount of vibration to ensure acceptable interior vibration levels at nearby vibration-sensitive uses based on FTA criteria. For the purpose of this analysis, the FTA's recommendation of 0.2 inches per second peak particle velocity with respect to the prevention of structural damage for non-engineered timber and masonry buildings is used as a threshold. This is also the level at which vibrations may begin to annoy people in buildings.

It is acknowledged that construction activities would occur throughout the Project site and would not be concentrated at the point closest to the nearest structure. Consistent with FTA recommendations for calculating construction vibration, construction vibration was measured from the center of the Project site (FTA 2018). The nearest structure of concern is located on the adjacent residential property approximately 330 feet distant.

Based on the representative vibration levels presented for various construction equipment types in Table 5-5 and the construction vibration assessment methodology published by the FTA (2018), it is possible to estimate the potential Project construction vibration levels. The FTA provides the following equation: [PPVequip = PPVref x (25/D)1.5]. Table 5-6 presents the expected Project related vibration levels at a distance of 330 feet.

Table 5-6. Construction Vibration Levels at 330 Feet

Receiver PPV Levels (in/sec)[1]					Peak Vibration	Threshold	Exceed Threshold
Small Bulldozer	Jackhammer	Loaded Trucks	Large Bulldozer	Drilling			
0.00006	0.0007	0.001	0.001	0.001	0.001	0.2	**No**

[1]Based on the Vibration Source Levels of Construction Equipment included on Table 14 (FTA 2018).

As shown in Table 5-6, vibration as a result of construction activities exceed would not exceed 0.2 PPV at the nearest structure. Thus, construction generated vibration levels would not exceed the recommended threshold.

5.3.4 Project Operational Groundborne Vibration

Would the Project Expose Structures to Substantial Groundborne Vibration During Operations?

Project operations would not include the use of any stationary equipment that would result in excessive vibration levels. Therefore, the Project would not result groundborne vibration impacts during operations.

5.3.5 Excess Airport Noise

Would the Project Expose People Residing or Working in the Project area to Excessive Airport Noise?

The Project site is located approximately 3.6 miles northwest of the Kingdon Airpark General Aviation Airport. The Proposed Project is not located within an airport land use plan or within two miles of a public airport or public use airport. Implementation of the Proposed Project would not affect airport operations nor result in increased exposure of people working at or visiting the project site to aircraft noise.

5.3.6 Cumulative Noise

Would the Project Contribute to Cumulatively Considerable Noise During Construction?

Construction activities associated with the Proposed Project and other construction projects in the area may overlap, resulting in construction noise in the area. However, construction noise impacts primarily affect the areas immediately adjacent to the construction site. Construction noise for the Proposed Project was determined to be less than significant following compliance with NIOSH noise standards. Cumulative development in the vicinity of the Project site could result in elevated construction noise levels at sensitive receptors in the Project area. However, each project would be required to comply with the applicable noise limitations on construction. Therefore, the Project would not contribute to cumulative impacts during construction.

Would the Project Contribute to Cumulatively Considerable Noise from Traffic?

Cumulative traffic noise levels throughout the Project vicinity (i.e., vicinity roadway segments that traverse noise-sensitive land uses) were modeled based on the traffic volumes identified by KD Anderson & Associates (2020) to determine the noise levels along Project vicinity roadways. Table 5-7 shows the calculated offsite roadway noise levels under cumulative conditions without the Project (Cumulative No Project) compared to cumulative conditions plus future buildout of the Project (Cumulative Plus Project). The calculated noise levels as a result of Cumulative Plus Project conditions at affected sensitive land uses are compared to the noise standards promulgated in the San Joaquin County General Plan and Municipal Code as well as the City of Stockton Municipal Code. Where no jurisdiction is noted, the roadway segment lies within unincorporated San Joaquin County. In the case that Cumulative No Project conditions exceed the applicable numeric noise thresholds, the FICON thresholds of significance are applied.

FICON’s measure of substantial increase for transportation noise exposure is as follows:

- If the existing ambient noise levels at existing and future noise-sensitive land uses (e.g. residential, etc.) are less than 60 dBA CNEL and the Project creates a readily perceptible 5 dBA CNEL or greater noise level increase and the resulting noise level would exceed acceptable exterior noise standards; or
- If the existing noise levels range from 60 to 65 dBA CNEL and the Project creates a barely perceptible 3 dBA CNEL or greater noise level increase and the resulting noise level would exceed acceptable exterior noise standards; or

- If the existing noise levels already exceed 65 dBA CNEL, and the Project creates a community noise level increase of greater than 1.5 dBA CNEL

Table 5-7. Cumulative Traffic Noise Scenario

Roadway Segment	Cumulative No Project CNEL @ 100 Feet from Roadway Centerline	Cumulative Plus Project CNEL @ 100 Feet from Roadway Centerline	Noise Standard (dBA CNEL)	Exceed Standard AND result in Noise Levels Exceeding Acceptable Exterior Noise Standards?
Eight Mile Road				
West of Interstate 5	64.8	64.8	*65*	**No**
Between Interstate 5 and Davis Road	63.6	63.7	*65*	**No**
Between Davis Road and Lower Sacramento Road	62.8	63.5	*65*	**No**
Between West Lane and Ham Lane	61.6	61.6	*65*	**No**
Between Ham Lane and Leach Road	62.5	62.5	*65*	**No**
Between Leach Road and Micke Grove Drive	61.7	61.9	*65*	**No**
Between Micke Grove Drive and State Route 99	62.9	63.9	*65*	**No**
East of State Route 99	60.4	63.2	*65*	**No**
State Route 99				
South of Eight Mile Road (City of Stockton)	N/A	N/A	N/A	N/A
North of Eight Mile Road	N/A	N/A	N/A	N/A
State Route 99 East Frontage Road				
North of Eight Mile Road	51.9	51.9	*65*	**No**
South of Eight Mile Road	58.2	58.2	*65*	**No**
State Route 99 West Frontage Road				
North of Eight Mile Road	47.9	48.2	*65*	**No**
South of Eight Mile Road (City of Stockton)	58.2	58.3	*65*	**No**
Micke Grove Drive				
North of Eight Mile Road	48.2	48.2	*65*	**No**
Interstate 5				
Interstate 5 Southbound	67.0	67.0	*>1.5*	**No**
Leach Road				
North of Eight Mile Road	50.8	51.0	*65*	**No**
Morada Lane				
East of West Lane (City of Stockton)	60.9	60.9	*65*	**No**
West of West Lane (City of Stockton)	51.6	53.0	*65*	**No**

Table 5-7. Cumulative Traffic Noise Scenario				
Ham Lane				
Between Eight Mile Road and West Lane	44.8	45.8	*65*	**No**
Between West Lane and Armstrong Road	55.6	55.6	*65*	**No**
North of Armstrong Road	57.7	57.7	*65*	**No**
North of West Lane	45.8	45.8	*65*	**No**
West Lane				
Between Eight Mile Road and Ham Lane	60.1	60.1	*65*	**No**
Lower Sacramento Road				
North of Eight Mile Road	61.2	61.2	*65*	**No**
South of Eight Mile Road	60.9	61.1	*65*	**No**
Davis Road				
North of Eight Mile Road	50.8	50.9	*65*	**No**
South of Eight Mile Road	57.2	57.2	*65*	**No**
Armstrong Road				
East of West Lane	56.0	56.0	*65*	**No**
West of West Lane	55.7	55.7	*65*	**No**

Source: Traffic noise levels were calculated by ECORP Consulting using the FHWA roadway noise prediction model in conjunction with the trip generation rate identified by KD Anderson & Associates 2020. Refer to Attachment B for traffic noise modeling assumptions and results.

Notes: A total of 23 intersections were analyzed in the Traffic Impact Analysis; however, only roadway segments that impact sensitive receptors were included for the purposes of this analysis.

Roadway segments that were not analyzed in the traffic report for the Cumulate No Project and Cumulative Plus Project are labeled as N/A.

As shown in Table 5-7, no roadway segment would exceed the applicable County or City noise standard or generate an increase of noise beyond the FICON significance standards in any scenario.

Cumulative Stationary Source Noise Impacts

Long-term stationary noise sources associated with the Project, combined with other cumulative projects, could cause local noise level increases. Noise levels associated with the Proposed Project and related cumulative projects together could result in higher noise levels than considered separately. As previously described, onsite noise sources associated with the Proposed Project was found to be acceptable as they do not exceed the County noise standards. Therefore, the Project would not contribute to cumulative impacts during operations.

6.0 REFERENCES

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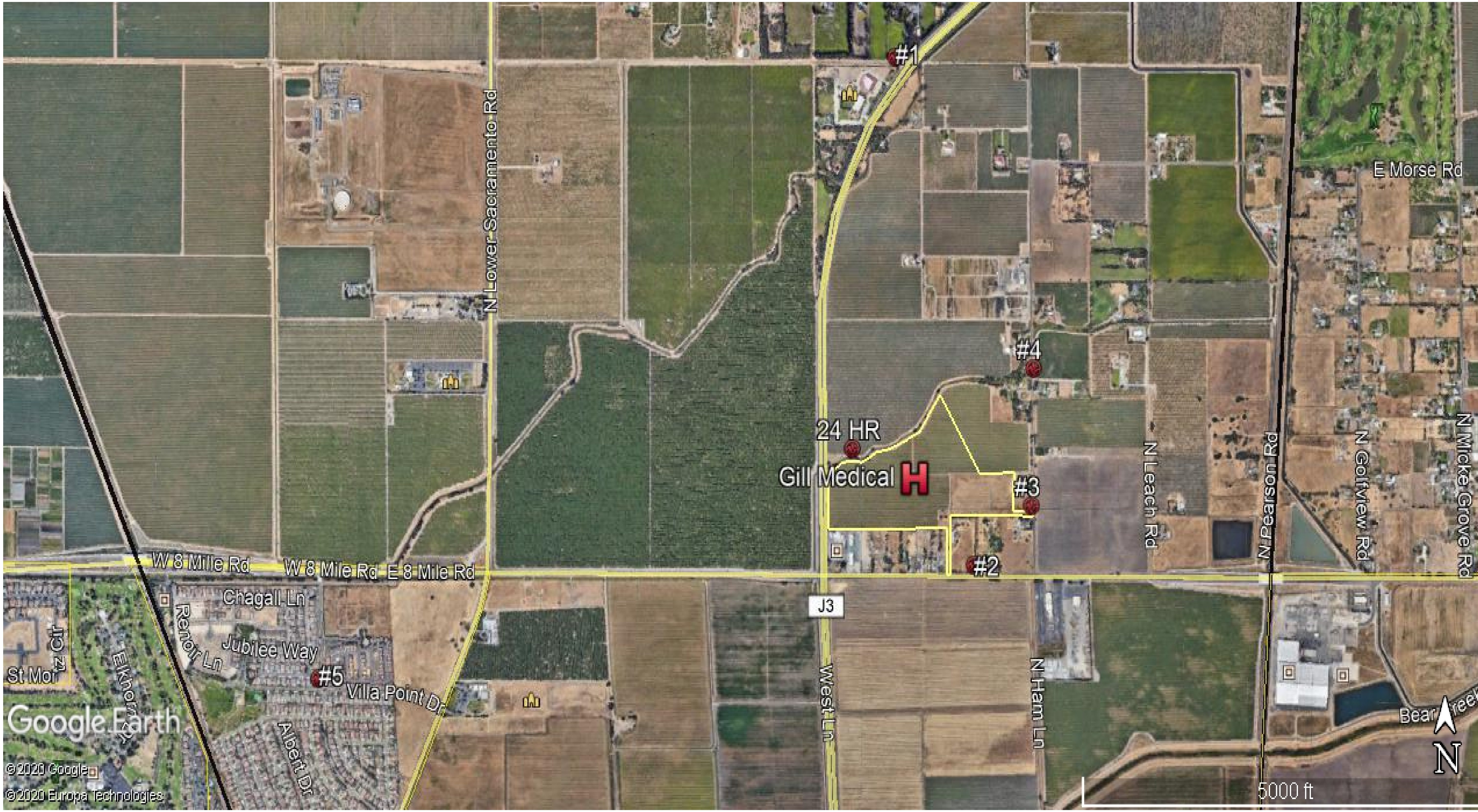
LIST OF ATTACHMENTS

ATTACHMENT A

Baseline (Existing) Noise Measurements – Project Site and Vicinity



Map Date: *10/12/2020*
Photo (or Base) Source: *Google Earth Pro 2020*

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Baseline Noise Measurement Locations

2020-053 Gill Medical

Site Number: 1
Recorded By: Rosey Worden
Job Number: 2020-053
Date: 9/9/2020
Time: 10:20 a.m.
Location: Adjacent to West Lane between homes (located on Mettler Road) and The Home Church
Source of Peak Noise: Vehicles on West Lane.

Noise Data			
L_{eq} (dB)	L_{min} (dB)	L_{max} (dB)	Peak (dB)
65.1	38.5	77.9	100.2

Equipment						
Category	**Type**	**Vendor**	**Model**	**Serial No.**	**Cert. Date**	**Note**
Sound	Sound Level Meter	**Larson Davis**	**LxT SE**	**0005120**	**8/05/2019**	
	Microphone	**Larson Davis**	**377B02**	**315201**	**9/23/2019**	
	Preamp	**Larson Davis**	**PRMLxT1L**	**099947**	**10/10/2019**	
	Calibrator	**Larson Davis**	**CAL200**	**17325**	**10/18/2019**	

Weather Data			
Est.	**Duration:** 15 minutes		**Sky:** Clear/hazy
	Note: dBA Offset = 0.01		**Sensor Height (ft): 4** ft
	Wind Ave Speed (mph)	**Temperature (degrees Fahrenheit)**	**Barometer Pressure (hPa)**
	1	64	29.83

Photo of Measurement Location

Measurement Report

Report Summary

Meter's File Name	LxT_Data.014	Computer's File Name	SLM_0006133_LxT_Data_014.00.ldbin
Meter	LxT1		
Firmware	2.402		
User		Location	
Description			
Note			

Start Time	2020-09-09 10:20:32	Duration	0:15:00.0		
End Time	2020-09-09 10:35:32	Run Time	0:15:00.0	Pause Time	0:00:00.0

Results

Overall Metrics

LA_{eq}	65.1 dB		
LAE	94.6 dB	SEA	--- dB
EA	321.0 µPa²h		
EA8	10.3 mPa²h		
EA40	51.4 mPa²h		
LZS_{peak}	100.2 dB	2020-09-09 10:29:18	
LAS_{max}	77.9 dB	2020-09-09 10:21:08	
LAS_{min}	38.5 dB	2020-09-09 10:22:01	
LA_{eq}	65.1 dB		
LC_{eq}	70.0 dB	LC_{eq} - LA_{eq}	5.0 dB
LAI_{eq}	66.8 dB	LAI_{eq} - LA_{eq}	1.7 dB

Exceedances

	Count	Duration
LAS > 85.0 dB	0	0:00:00.0
LAS > 115.0 dB	0	0:00:00.0
LZSpeak > 135.0 dB	0	0:00:00.0
LZSpeak > 137.0 dB	0	0:00:00.0
LZSpeak > 140.0 dB	0	0:00:00.0

Community Noise

LDN	LDay	LNight	
65.1 dB	65.1 dB	0.0 dB	
LDEN	**LDay**	**LEve**	**LNight**
65.1 dB	65.1 dB	--- dB	--- dB

Any Data

	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	65.1 dB		--- dB		--- dB	
$Ls_{(max)}$	77.9 dB	2020-09-09 10:21:08	--- dB		--- dB	
$LS_{(min)}$	38.5 dB	2020-09-09 10:22:01	--- dB		--- dB	
$L_{Peak(max)}$	--- dB		--- dB		100.2 dB	2020-09-09 10:29:18

Overloads

Count	Duration
0	0:00:00.0

Statistics

LAS 5.0	71.9 dB
LAS 10.0	70.0 dB
LAS 33.3	63.0 dB
LAS 50.0	59.4 dB
LAS 66.6	54.9 dB
LAS 90.0	45.4 dB

Site Number: 2
Recorded By: Rosey Worden
Job Number: 2020-053
Date: 9/9/2020
Time: 9:20 a.m.
Location: On West 8 Mile Road adjacent to mailbox 2001
Source of Peak Noise: Vehicles on West Mile Road and other adjacent roadways.

Noise Data			
L_{eq} **(dB)**	L_{min} **(dB)**	L_{max} **(dB)**	**Peak (dB)**
75.2	40.4	100.9	122.2

Equipment						
Category	**Type**	**Vendor**	**Model**	**Serial No.**	**Cert. Date**	**Note**
Sound	Sound Level Meter	**Larson Davis**	**LxT SE**	**0005120**	**8/05/2019**	
	Microphone	**Larson Davis**	**377B02**	**315201**	**9/23/2019**	
	Preamp	**Larson Davis**	**PRMLxT1L**	**099947**	**10/10/2019**	
	Calibrator	**Larson Davis**	**CAL200**	**17325**	**10/18/2019**	

Weather Data			
Est.	**Duration:** 15 minutes		**Sky:** Clear/hazy
	Note: dBA Offset = 0.01		**Sensor Height (ft): 4** ft
	Wind Ave Speed (mph)	**Temperature (degrees Fahrenheit)**	**Wind Ave Speed (mph)**
	1	64	1

Photo of Measurement Location

Measurement Report

Report Summary

Meter's File Name	LxT_Data.011	Computer's File Name	SLM_0006133_LxT_Data_011.00.ldbin
Meter	LxT1		
Firmware	2.402		
User		Location	
Description			
Note			

Start Time	2020-09-09 09:20:25	Duration	0:15:00.0		
End Time	2020-09-09 09:35:25	Run Time	0:15:00.0	Pause Time	0:00:00.0

Results

Overall Metrics

LA_{eq}	75.2 dB		
LAE	104.8 dB	SEA	132.1 dB
EA	3.3 mPa²h		
EA8	107.2 mPa²h		
EA40	535.9 mPa²h		
LZS_{peak}	122.1 dB	2020-09-09 09:27:56	
LAS_{max}	100.9 dB	2020-09-09 09:27:56	
LAS_{min}	40.4 dB	2020-09-09 09:23:01	
LA_{eq}	75.2 dB		
LC_{eq}	80.3 dB	LC_{eq} - LA_{eq}	5.1 dB
LAI_{eq}	80.8 dB	LAI_{eq} - LA_{eq}	5.6 dB

Exceedances

Exceedances	Count	Duration
LAS > 85.0 dB	3	0:00:09.8
LAS > 115.0 dB	0	0:00:00.0
LZSpeak > 135.0 dB	0	0:00:00.0
LZSpeak > 137.0 dB	0	0:00:00.0
LZSpeak > 140.0 dB	0	0:00:00.0

Community Noise

LDN	LDay	LNight	
75.3 dB	75.3 dB	0.0 dB	
LDEN	**LDay**	**LEve**	**LNight**
75.3 dB	75.3 dB	--- dB	--- dB

Any Data

	A Level	A Time Stamp	C Level	C Time Stamp	Z Level	Z Time Stamp
L_{eq}	75.3 dB		--- dB		--- dB	
$Ls_{(max)}$	100.9 dB	2020-09-09 09:27:56	--- dB		--- dB	
$LS_{(min)}$	40.4 dB	2020-09-09 09:23:01	--- dB		--- dB	
$L_{Peak(max)}$	--- dB		--- dB		122.1 dB	2020-09-09 09:27:56

Overloads

Count	Duration
1	0:00:02.0

Statistics

LAS 5.0	77.7 dB
LAS 10.0	75.3 dB
LAS 33.3	69.4 dB
LAS 50.0	64.2 dB
LAS 66.6	56.9 dB
LAS 90.0	46.3 dB

Site Number: 3
Recorded By: Rosey Worden
Job Number: 2020-053
Date: 9/9/2020
Time: 9:39 a.m.
Location: On North Ham Road adjacent to house 11013
Source of Peak Noise: Vehicles on Ham Road and adjacent roadways.

Noise Data			
L_{eq} (dB)	L_{min} (dB)	L_{max} (dB)	Peak (dB)
62.0	36.5	82.6	106.1

Equipment						
Category	Type	Vendor	Model	Serial No.	Cert. Date	Note
Sound	Sound Level Meter	**Larson Davis**	**LxT SE**	**0005120**	**8/05/2019**	
	Microphone	**Larson Davis**	**377B02**	**315201**	**9/23/2019**	
	Preamp	**Larson Davis**	**PRMLxT1L**	**099947**	**10/10/2019**	
	Calibrator	**Larson Davis**	**CAL200**	**17325**	**10/18/2019**	

Weather Data			
Est.	**Duration:** 15 minutes	**Sky:** Clear/hazy	
	Note: dBA Offset = 0.01	**Sensor Height (ft): 4** ft	
	Wind Ave Speed (mph)	**Temperature (degrees Fahrenheit)**	**Wind Ave Speed (mph)**
	1	64	1

Photo of Measurement Location

Measurement Report

Report Summary

Meter's File Name	LxT_Data.012	Computer's File Name	SLM_0006133_LxT_Data_012.00.ldbin
Meter	LxT1		
Firmware	2.402		
User		Location	
Description			
Note			

Start Time	2020-09-09 09:39:20	Duration	0:15:00.0		
End Time	2020-09-09 09:54:20	Run Time	0:15:00.0	Pause Time	0:00:00.0

Results

Overall Metrics

LA_{eq}	62.0 dB		
LAE	91.6 dB	SEA	--- dB
EA	158.8 µPa²h		
EA8	5.1 mPa²h		
EA40	25.4 mPa²h		
LZS_{peak}	106.1 dB	2020-09-09 09:41:51	
LAS_{max}	82.6 dB	2020-09-09 09:51:48	
LAS_{min}	36.5 dB	2020-09-09 09:43:46	
LA_{eq}	62.0 dB		
LC_{eq}	65.0 dB	LC_{eq} - LA_{eq}	3.0 dB
LAI_{eq}	66.7 dB	LAI_{eq} - LA_{eq}	4.7 dB

Exceedances		Count	Duration
LAS >	85.0 dB	0	0:00:00.0
LAS >	115.0 dB	0	0:00:00.0
LZSpeak >	135.0 dB	0	0:00:00.0
LZSpeak >	137.0 dB	0	0:00:00.0
LZSpeak >	140.0 dB	0	0:00:00.0

Community Noise	LDN	LDay	LNight	
	62.0 dB	62.0 dB	0.0 dB	
	LDEN	LDay	LEve	LNight
	62.0 dB	62.0 dB	--- dB	--- dB

Any Data	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	62.0 dB		--- dB		--- dB	
$Ls_{(max)}$	82.6 dB	2020-09-09 09:51:48	--- dB		--- dB	
$LS_{(min)}$	36.5 dB	2020-09-09 09:43:46	--- dB		--- dB	
$L_{Peak(max)}$	--- dB		--- dB		106.1 dB	2020-09-09 09:41:51

Overloads	Count	Duration
	0	0:00:00.0

Statistics

LAS 5.0	67.5 dB
LAS 10.0	57.7 dB
LAS 33.3	43.9 dB
LAS 50.0	42.1 dB
LAS 66.6	40.9 dB
LAS 90.0	39.4 dB

Site Number: 4
Recorded By: Rosey Worden
Job Number: 2020-053
Date: 9/9/2020
Time: 9:57 a.m.
Location: On North Ham road adjacent to house 11243
Source of Peak Noise: Vehicles on Ham Road and adjacent roadways.

Noise Data			
L_{eq} (dB)	L_{min} (dB)	L_{max} (dB)	Peak (dB)
64.3	36.9	82.8	107.8

Equipment						
Category	**Type**	**Vendor**	**Model**	**Serial No.**	**Cert. Date**	**Note**
Sound	Sound Level Meter	**Larson Davis**	**LxT SE**	**0005120**	**8/05/2019**	
	Microphone	**Larson Davis**	**377B02**	**315201**	**9/23/2019**	
	Preamp	**Larson Davis**	**PRMLxT1L**	**099947**	**10/10/2019**	
	Calibrator	**Larson Davis**	**CAL200**	**17325**	**10/18/2019**	

Weather Data			
Est.	**Duration:** 15 minutes		**Sky:** Clear/hazy
	Note: dBA Offset = 0.01		**Sensor Height (ft): 4** ft
	Wind Ave Speed (mph)	**Temperature (degrees Fahrenheit)**	**Wind Ave Speed (mph)**
	1	64	1

Photo of Measurement Location

Measurement Report

Report Summary

Meter's File Name	LxT_Data.013	Computer's File Name	SLM_0006133_LxT_Data_013.00.ldbin
Meter	LxT1		
Firmware	2.402		
User		Location	
Description			
Note			

Start Time	2020-09-09 09:57:24	Duration	0:15:00.0		
End Time	2020-09-09 10:12:24	Run Time	0:15:00.0	Pause Time	0:00:00.0

Results

Overall Metrics

LA_{eq}	64.3 dB		
LAE	93.8 dB	SEA	--- dB
EA	269.4 µPa²h		
EA8	8.6 mPa²h		
EA40	43.1 mPa²h		
LZS_{peak}	107.8 dB	2020-09-09 10:08:25	
LAS_{max}	82.8 dB	2020-09-09 10:00:03	
LAS_{min}	36.9 dB	2020-09-09 10:11:55	
LA_{eq}	64.3 dB		
LC_{eq}	66.8 dB	LC_{eq} - LA_{eq}	2.5 dB
LAI_{eq}	69.1 dB	LAI_{eq} - LA_{eq}	4.8 dB

Exceedances

Exceedances		Count	Duration
LAS >	85.0 dB	0	0:00:00.0
LAS >	115.0 dB	0	0:00:00.0
LZSpeak >	135.0 dB	0	0:00:00.0
LZSpeak >	137.0 dB	0	0:00:00.0
LZSpeak >	140.0 dB	0	0:00:00.0

Community Noise

LDN	LDay	LNight	
64.3 dB	64.3 dB	0.0 dB	

LDEN	LDay	LEve	LNight
64.3 dB	64.3 dB	--- dB	--- dB

Any Data

	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	64.3 dB		--- dB		--- dB	
$L_{S(max)}$	82.8 dB	2020-09-09 10:00:03	--- dB		--- dB	
$L_{S(min)}$	36.9 dB	2020-09-09 10:11:55	--- dB		--- dB	
$L_{Peak(max)}$	--- dB		--- dB		107.8 dB	2020-09-09 10:08:25

Overloads

Count	Duration
0	0:00:00.0

Statistics

LAS 5.0	70.1 dB
LAS 10.0	60.2 dB
LAS 33.3	44.3 dB
LAS 50.0	40.8 dB
LAS 66.6	39.2 dB
LAS 90.0	38.0 dB

Site Number: 5
Recorded By: Rosey Worden
Job Number: 2020-053
Date: 9/9/2020
Time: 10:44 a.m.
Location: In the residential community off Olive Grove Drive adjacent to house 199
Source of Peak Noise: Vehicles on adjacent roadways and normal residential noise.

Noise Data			
L_{eq} (dB)	L_{min} (dB)	L_{max} (dB)	Peak (dB)
44.5	34.9	61.8	101.5

Equipment						
Category	**Type**	**Vendor**	**Model**	**Serial No.**	**Cert. Date**	**Note**
Sound	Sound Level Meter	**Larson Davis**	**LxT SE**	**0005120**	**8/05/2019**	
	Microphone	**Larson Davis**	**377B02**	**315201**	**9/23/2019**	
	Preamp	**Larson Davis**	**PRMLxT1L**	**099947**	**10/10/2019**	
	Calibrator	**Larson Davis**	**CAL200**	**17325**	**10/18/2019**	

Weather Data			
Est.	**Duration:** 15 minutes		**Sky:** Clear/hazy
	Note: dBA Offset = 0.01		**Sensor Height (ft): 4** ft
	Wind Ave Speed (mph)	**Temperature (degrees Fahrenheit)**	**Wind Ave Speed (mph)**
	1	64	1

Photo of Measurement Location

Measurement Report

Report Summary

Meter's File Name	LxT_Data.015	Computer's File Name	SLM_0006133_LxT_Data_015.00.ldbin
Meter	LxT1		
Firmware	2.402		
User		Location	
Description			
Note			

Start Time	2020-09-09 10:44:00	Duration	0:15:00.0		
End Time	2020-09-09 10:59:00	Run Time	0:15:00.0	Pause Time	0:00:00.0

Results

Overall Metrics

LA_{eq}	44.5 dB		
LAE	74.0 dB	SEA	--- dB
EA	2.8 µPa²h		
EA8	89.3 µPa²h		
EA40	446.7 µPa²h		
LZS_{peak}	101.5 dB	2020-09-09 10:53:29	
LAS_{max}	61.8 dB	2020-09-09 10:47:42	
LAS_{min}	34.9 dB	2020-09-09 10:52:45	
LA_{eq}	44.5 dB		
LC_{eq}	61.5 dB	LC_{eq} - LA_{eq}	17.0 dB
LAI_{eq}	52.0 dB	LAI_{eq} - LA_{eq}	7.5 dB

Exceedances

Exceedances	Count	Duration
LAS > 85.0 dB	0	0:00:00.0
LAS > 115.0 dB	0	0:00:00.0
LZSpeak > 135.0 dB	0	0:00:00.0
LZSpeak > 137.0 dB	0	0:00:00.0
LZSpeak > 140.0 dB	0	0:00:00.0

Community Noise

LDN	LDay	LNight	
44.5 dB	44.5 dB	0.0 dB	

LDEN	LDay	LEve	LNight
44.5 dB	44.5 dB	--- dB	--- dB

Any Data

	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	44.4 dB		--- dB		--- dB	
$Ls_{(max)}$	61.8 dB	2020-09-09 10:47:42	--- dB		--- dB	
$LS_{(min)}$	34.9 dB	2020-09-09 10:52:45	--- dB		--- dB	
$L_{Peak(max)}$	--- dB		--- dB		101.5 dB	2020-09-09 10:53:29

Overloads

Count	Duration
0	0:00:00.0

Statistics

LAS 5.0	49.8 dB
LAS 10.0	46.8 dB
LAS 33.3	41.4 dB
LAS 50.0	40.0 dB
LAS 66.6	38.8 dB
LAS 90.0	37.0 dB

Site Number: 6			
Recorded By: Rosey Worden			
Job Number: 2020-053			
Date: 9/9/2020-9/10/2020			
Time: 10:44 a.m.			
Location: Adjacent to the agricultural canal and West Lane adjacent to the northern end of the Project site.			
Source of Peak Noise: Vehicles on West Lane and farming activity.			
Noise Data			
LA_{eq} (dB)	**L_{min} (dB)**	**L_{max} (dB)**	**CNEL**
63.8	37.0	90.7	67.7

Equipment						
Category	**Type**	**Vendor**	**Model**	**Serial No.**	**Cert. Date**	**Note**
Sound	Sound Level Meter	**Larson Davis**	**LxT SE**	**0005120**	**8/05/2019**	
	Microphone	**Larson Davis**	**377B02**	**315201**	**9/23/2019**	
	Preamp	**Larson Davis**	**PRMLxT1L**	**099947**	**10/10/2019**	
	Calibrator	**Larson Davis**	**CAL200**	**17325**	**10/18/2019**	

Weather Data			
Est.	**Duration:** 24 hour		**Sky:** Clear/hazy
	Note: dBA Offset = 0.01		**Sensor Height (ft): 4** ft
	Wind Ave Speed (mph)	**Temperature (degrees Fahrenheit)**	**Wind Ave Speed (mph)**
	1	64	1

Photo of Measurement Location

Measurement Report

Report Summary

Meter's File Name	LxT_Data.016	Computer's File Name	SLM_0006133_LxT_Data_016.00.ldbin
Meter	LxT1		
Firmware	2.402		
User		Location	
Description			
Note			

Start Time	2020-09-09 11:32:21	Duration	24:00:00.0		
End Time	2020-09-10 11:32:21	Run Time	24:00:00.0	Pause Time	0:00:00.0

Results

Overall Metrics

LA_{eq}	63.8 dB		
LAE	113.2 dB	SEA	--- dB
EA	23.1 mPa²h		
EA8	7.7 mPa²h		
EA40	38.5 mPa²h		
LZS_{peak}	113.8 dB	2020-09-09 13:16:33	
LAS_{max}	90.7 dB	2020-09-09 13:16:33	
LAS_{min}	37.0 dB	2020-09-10 02:04:04	
LA_{eq}	63.8 dB		
LC_{eq}	69.5 dB	LC_{eq} - LA_{eq}	5.7 dB
LAI_{eq}	65.9 dB	LAI_{eq} - LA_{eq}	2.1 dB

Exceedances		Count	Duration
LAS >	85.0 dB	6	0:00:12.3
LAS >	115.0 dB	0	0:00:00.0
LZSpeak >	135.0 dB	0	0:00:00.0
LZSpeak >	137.0 dB	0	0:00:00.0
LZSpeak >	140.0 dB	0	0:00:00.0

Community Noise	LDN	LDay	LNight	
	67.3 dB	65.2 dB	0.0 dB	
	LDEN	LDay	LEve	LNight
	67.7 dB	65.6 dB	62.9 dB	59.4 dB

Any Data	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	63.8 dB		--- dB		--- dB	
$Ls_{(max)}$	90.7 dB	2020-09-09 13:16:33	--- dB		--- dB	
$LS_{(min)}$	37.0 dB	2020-09-10 02:04:04	--- dB		--- dB	
$L_{Peak(max)}$	--- dB		--- dB		113.8 dB	2020-09-09 13:16:33

Overloads	Count	Duration
	0	0:00:00.0

Statistics

LAS 5.0	71.0 dB
LAS 10.0	68.8 dB
LAS 33.3	60.1 dB
LAS 50.0	55.0 dB
LAS 66.6	50.0 dB
LAS 90.0	43.9 dB

ATTACHMENT B

Federal Highway Administration Highway Noise Prediction Model (FHWA-RD-77-108) Outputs – Project Traffic Noise

TRAFFIC NOISE LEVELS AND NOISE CONTOURS

Project Number: 2020-053
Project Name: Gill Medical Center

Background Information

Model Description: FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels.
Source of Traffic Volumes: KD Anderson & Associates 2020
Community Noise Descriptor: L_{dn}: ____ CNEL: x

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

Analysis Condition Roadway, Segment	Lanes	Median Width	ADT Volume	Design Speed (mph)	Alpha Factor	Vehicle Mix Medium Trucks	Vehicle Mix Heavy Trucks	Distance from Centerline of Roadway: CNEL at 100 Feet	Distance to Contour: 70 CNEL	65 CNEL	60 CNEL	55 CNEL	Calc Dist	Traffic Volumes: Day	Eve	Night
Existing																
Eight Mile Road																
West of Interstate 5	2	0	13,140	55	0.5	1.8%	0.7%	**64.6**	44	94	202	435	100	10,210	1,669	1,261
Between Interstate 5 and Davis Road	2	0	9,810	55	0.5	1.8%	0.7%	**63.3**	36	77	166	358	100	7,622	1,246	942
Between Davis Road and Lower Sacramento Road	2	0	7,092	55	0.5	1.8%	0.7%	**61.9**	-	62	134	289	100	5,510	901	681
Between West Lane and Ham Lane	2	0	3,933	55	0.5	1.8%	0.7%	**59.3**	-	42	90	195	100	3,056	499	378
Between Ham Lane and Leach Road	2	0	5,400	55	0.5	1.8%	0.7%	**60.7**	-	52	112	241	100	4,196	686	518
Between Leach Road and Micke Grove Drive	2	0	4,882	55	0.5	1.8%	0.7%	**60.3**	-	48	104	225	100	3,793	620	469
Between Micke Grove Drive and State Route 99	2	0	5,260	55	0.5	1.8%	0.7%	**60.6**	-	51	110	236	100	4,087	668	505
East of State Route 99	2	0	2,970	55	0.5	1.8%	0.7%	**58.1**	-	35	75	161	100	2,308	377	285
State Route 99																
South of Eight Mile Road (City of Stockton)	3	20	1,548	65	0.5	1.8%	0.7%	**57.3**	-	-	66	143	100	1,203	197	149
North of Eight Mile Road	3	20	3,591	65	0.5	1.8%	0.7%	**61.0**	-	54	116	250	100	2,790	456	345
State Route 99 East Frontage Road																
North of Eight Mile Road	2	0	360	50	0.5	1.8%	0.7%	**47.9**	-	-	-	34	100	280	46	35
South of Eight Mile Road	2	0	3,204	50	0.5	1.8%	0.7%	**57.4**	-	-	67	145	100	2,490	407	308
State Route 99 West Frontage Road																
North of Eight Mile Road	2	0	360	50	0.5	1.8%	0.7%	**47.9**	-	-	-	34	100	280	46	35
South of Eight Mile Road (City of Stockton)	2	0	3,339	50	0.5	1.8%	0.7%	**57.6**	-	32	69	149	100	2,594	424	321
Micke Grove Drive																
North of Eight Mile Road	2	0	324	35	0.5	1.8%	0.7%	**43.8**	-	-	-	-	100	252	41	31
Interstate 5																
Interstate 5 Southbound	6	50	10,413	65	0.5	1.8%	0.7%	**66.6**	-	128	275	593	100	8,091	1,322	1,000

Existing Traffic Noise

Leach Road																	
North of Eight Mile Road	2	0	90	35	0.5	1.8%	0.7%	**38.2**	-	-	-	-	100	70	11	9
Morada Lane																	
East of West Lane (City of Stockton)	2	0	4,446	45	0.5	1.8%	0.7%	**57.7**	-	33	70	152	100	3,455	565	427
West of West Lane (City of Stockton)	2	0	801	45	0.5	1.8%	0.7%	**50.3**	-	-	-	48	100	622	102	77
Ham Lane																	
Between Eight Mile Road and West Lane	2	0	180	35	0.5	1.8%	0.7%	**41.2**	-	-	-	-	100	140	23	17
Between West Lane and Armstrong Road	2	0	4,860	35	0.5	1.8%	0.7%	**55.5**	-	-	50	108	100	3,776	617	467
North of Armstrong Road	2	0	6,318	35	0.5	1.8%	0.7%	**56.7**	-	-	60	129	100	4,909	802	607
North of West Lane	2	0	423	35	0.5	1.8%	0.7%	**44.9**	-	-	-	-	100	329	54	41
West Lane																	
Between Eight Mile Road and Ham Lane	4	0	4,419	55	0.5	1.8%	0.7%	**59.9**	-	46	99	214	100	3,434	561	424
Lower Sacramento Road																	
North of Eight Mile Road	2	0	8,730	45	0.5	1.8%	0.7%	**60.6**	-	51	110	238	100	6,783	1,109	838
South of Eight Mile Road	2	0	6,066	45	0.5	1.8%	0.7%	**59.1**	-	40	87	186	100	4,713	770	582
Davis Road																	
North of Eight Mile Road	2	0	756	45	0.5	1.8%	0.7%	**50.0**	-	-	-	47	100	587	96	73
South of Eight Mile Road	4	0	3,150	45	0.5	1.8%	0.7%	**56.3**	-	-	57	122	100	2,448	400	302
Armstrong Road																	
East of West Lane	2	0	2,799	45	0.5	1.8%	0.7%	**55.7**	-	-	52	111	100	2,175	355	269
West of West Lane	2	0	2,133	45	0.5	1.8%	0.7%	**54.5**	-	-	43	93	100	1,657	271	205

TRAFFIC NOISE LEVELS AND NOISE CONTOURS

Project Number: 2020-053
Project Name: Gill Medical Center

Background Information

Model Description: FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels.
Source of Traffic Volumes: KD Anderson & Associates 2020
Community Noise Descriptor: L_{dn}: ______ CNEL: x

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

Analysis Condition Roadway, Segment	Lanes	Median Width	ADT Volume	Design Speed (mph)	Alpha Factor	Vehicle Mix Medium Trucks	Vehicle Mix Heavy Trucks	Distance from Centerline of Roadway: CNEL at 100 Feet	Distance to Contour 70 CNEL	Distance to Contour 65 CNEL	Distance to Contour 60 CNEL	Distance to Contour 55 CNEL	Calc Dist	Traffic Volumes Day	Traffic Volumes Eve	Traffic Volumes Night
Existing + Project																
Eight Mile Road																
West of Interstate 5	2	0	13,239	55	0.5	1.8%	0.7%	**64.6**	44	94	203	437	100	10,287	1,681	1,271
Between Interstate 5 and Davis Road	2	0	9,954	55	0.5	1.8%	0.7%	**63.4**	36	78	168	362	100	7,734	1,264	956
Between Davis Road and Lower Sacramento Road	2	0	7,896	55	0.5	1.8%	0.7%	**62.4**	-	67	144	310	100	6,135	1,003	758
Between West Lane and Ham Lane	2	0	4,014	55	0.5	1.8%	0.7%	**59.4**	-	43	92	197	100	3,119	510	385
Between Ham Lane and Leach Road	2	0	5,697	55	0.5	1.8%	0.7%	**61.0**	-	54	116	249	100	4,427	724	547
Between Leach Road and Micke Grove Drive	2	0	5,386	55	0.5	1.8%	0.7%	**60.7**	-	52	111	240	100	4,185	684	517
Between Micke Grove Drive and State Route 99	2	0	5,733	55	0.5	1.8%	0.7%	**61.0**	-	54	116	250	100	4,455	728	550
East of State Route 99	2	0	3,024	55	0.5	1.8%	0.7%	**58.2**	-	35	76	163	100	2,350	384	290
State Route 99																
South of Eight Mile Road (City of Stockton)	3	20	1,548	65	0.5	1.8%	0.7%	**57.3**	-	-	66	143	100	1,203	197	149
North of Eight Mile Road	3	20	3,843	65	0.5	1.8%	0.7%	**61.3**	-	56	121	261	100	2,986	488	369
State Route 99 East Frontage Road																
North of Eight Mile Road	2	0	801	50	0.5	1.8%	0.7%	**51.4**	-	-	-	57	100	622	102	77
South of Eight Mile Road	2	0	3,267	50	0.5	1.8%	0.7%	**57.5**	-	-	68	147	100	2,538	415	314
State Route 99 West Frontage Road																
North of Eight Mile Road	2	0	360	50	0.5	1.8%	0.7%	**47.9**	-	-	-	34	100	280	46	35
South of Eight Mile Road (City of Stockton)	2	0	3,879	50	0.5	1.8%	0.7%	**58.2**	-	35	76	165	100	3,014	493	372
Micke Grove Drive																
North of Eight Mile Road	2	0	369	35	0.5	1.8%	0.7%	**44.3**	-	-	-	-	100	287	47	35
Interstate 5																
Interstate 5 Southbound	6	50	10,422	65	0.5	1.8%	0.7%	**66.6**	-	128	276	594	100	8,098	1,324	1,001

Existing Plus Project Traffic Noise

Leach Road																
North of Eight Mile Road	2	0	90	35	0.5	1.8%	0.7%	**38.2**	-	-	-	-	100	70	11	9
Morada Lane																
East of West Lane (City of Stockton)	2	0	4,518	45	0.5	1.8%	0.7%	**57.8**	-	33	71	153	100	3,510	574	434
West of West Lane (City of Stockton)	2	0	801	45	0.5	1.8%	0.7%	**50.3**	-	-	-	48	100	622	102	77
Ham Lane																
Between Eight Mile Road and West Lane	2	0	279	35	0.5	1.8%	0.7%	**43.1**	-	-	-	-	100	217	35	27
Between West Lane and Armstrong Road	2	0	4,936	35	0.5	1.8%	0.7%	**55.6**	-	-	51	110	100	3,835	627	474
North of Armstrong Road	2	0	6,690	35	0.5	1.8%	0.7%	**56.9**	-	-	62	134	100	5,198	850	642
North of West Lane	2	0	441	35	0.5	1.8%	0.7%	**45.1**	-	-	-	-	100	343	56	42
West Lane																
Between Eight Mile Road and Ham Lane	4	0	4,419	55	0.5	1.8%	0.7%	**59.9**	-	46	99	214	100	3,434	561	424
Lower Sacramento Road																
North of Eight Mile Road	2	0	8,788	45	0.5	1.8%	0.7%	**60.7**	-	51	111	239	100	6,828	1,116	844
South of Eight Mile Road	2	0	6,471	45	0.5	1.8%	0.7%	**59.3**	-	42	90	195	100	5,028	822	621
Davis Road																
North of Eight Mile Road	2	0	809	45	0.5	1.8%	0.7%	**50.3**	-	-	-	49	100	629	103	78
South of Eight Mile Road	4	0	3,411	45	0.5	1.8%	0.7%	**56.7**	-	-	60	129	100	2,650	433	327
Armstrong Road																
East of West Lane	2	0	2,854	45	0.5	1.8%	0.7%	**55.8**	-	-	52	113	100	2,218	362	274
West of West Lane	2	0	2,133	45	0.5	1.8%	0.7%	**54.5**	-	-	43	93	100	1,657	271	205

TRAFFIC NOISE LEVELS AND NOISE CONTOURS

Project Number: 2020-053
Project Name: Gill Medical Center

Background Information

Model Description: FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels.
Source of Traffic Volumes: KD Anderson & Associates 2020
Community Noise Descriptor: L_{dn}: ____ CNEL: x

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

Analysis Condition Roadway, Segment	Lanes	Median Width	ADT Volume	Design Speed (mph)	Alpha Factor	Vehicle Mix: Medium Trucks	Vehicle Mix: Heavy Trucks	CNEL at 100 Feet	Distance to Contour: 70 CNEL	65 CNEL	60 CNEL	55 CNEL	Calc Dist	Traffic Volumes: Day	Eve	Night
Cumulative No Project																
Eight Mile Road																
West of Interstate 5	2	0	13,743	55	0.5	1.8%	0.7%	64.8	45	97	208	448	100	10,678	1,745	1,319
Between Interstate 5 and Davis Road	2	0	10,579	55	0.5	1.8%	0.7%	63.6	38	81	175	377	100	8,220	1,344	1,016
Between Davis Road and Lower Sacramento Road	2	0	8,760	55	0.5	1.8%	0.7%	62.8	33	72	154	332	100	6,807	1,113	841
Between West Lane and Ham Lane	2	0	6,552	55	0.5	1.8%	0.7%	61.6	-	59	127	274	100	5,091	832	629
Between Ham Lane and Leach Road	2	0	8,181	55	0.5	1.8%	0.7%	62.5	-	68	147	317	100	6,357	1,039	785
Between Leach Road and Micke Grove Drive	2	0	6,736	55	0.5	1.8%	0.7%	61.7	-	60	129	279	100	5,234	855	647
Between Micke Grove Drive and State Route 99	2	0	8,836	55	0.5	1.8%	0.7%	62.9	33	72	155	334	100	6,866	1,122	848
East of State Route 99	2	0	4,988	55	0.5	1.8%	0.7%	60.4	-	49	106	228	100	3,876	633	479
State Route 99 East Frontage Road																
North of Eight Mile Road	2	0	907	50	0.5	1.8%	0.7%	51.9	-	-	-	62	100	705	115	87
South of Eight Mile Road	2	0	3,853	50	0.5	1.8%	0.7%	58.2	-	35	76	164	100	2,994	489	370
State Route 99 West Frontage Road																
North of Eight Mile Road	2	0	360	50	0.5	1.8%	0.7%	47.9	-	-	-	34	100	280	46	35
South of Eight Mile Road (City of Stockton)	2	0	3,879	50	0.5	1.8%	0.7%	58.2	-	35	76	165	100	3,014	493	372
Micke Grove Drive																
North of Eight Mile Road	2	0	909	35	0.5	1.8%	0.7%	48.2	-	-	-	35	100	706	115	87
Interstate 5																
Interstate 5 Southbound	6	50	11,529	65	0.5	1.8%	0.7%	67.0	-	137	295	635	100	8,958	1,464	1,107
Leach Road																
North of Eight Mile Road	2	0	1,629	35	0.5	1.8%	0.7%	50.8	-	-	-	52	100	1,266	207	156

Cumulative No Project Traffic Noise

Morada Lane																
East of West Lane (City of Stockton)	2	0	9,171	45	0.5	1.8%	0.7%	**60.9**	-	53	114	246	100	7,126	1,165	880
West of West Lane (City of Stockton)	2	0	1,078	45	0.5	1.8%	0.7%	**51.6**	-	-	-	59	100	838	137	103
Ham Lane																
Between Eight Mile Road and West Lane	2	0	409	35	0.5	1.8%	0.7%	**44.8**	-	-	-	-	100	318	52	39
Between West Lane and Armstrong Road	2	0	4,978	35	0.5	1.8%	0.7%	**55.6**	-	-	51	110	100	3,868	632	478
North of Armstrong Road	2	0	7,992	35	0.5	1.8%	0.7%	**57.7**	-	33	70	151	100	6,210	1,015	767
North of West Lane	2	0	516	35	0.5	1.8%	0.7%	**45.8**	-	-	-	-	100	401	66	50
West Lane																
Between Eight Mile Road and Ham Lane	4	0	4,532	55	0.5	1.8%	0.7%	**60.1**	-	47	101	217	100	3,521	576	435
Lower Sacramento Road																
North of Eight Mile Road	2	0	9,908	45	0.5	1.8%	0.7%	**61.2**	-	56	120	259	100	7,699	1,258	951
South of Eight Mile Road	2	0	9,243	45	0.5	1.8%	0.7%	**60.9**	-	53	115	247	100	7,182	1,174	887
Davis Road																
North of Eight Mile Road	2	0	908	45	0.5	1.8%	0.7%	**50.8**	-	-	-	53	100	706	115	87
South of Eight Mile Road	4	0	3,851	45	0.5	1.8%	0.7%	**57.2**	-	-	65	140	100	2,992	489	370
Armstrong Road																
East of West Lane	2	0	2,973	45	0.5	1.8%	0.7%	**56.0**	-	-	54	116	100	2,310	378	285
West of West Lane	2	0	2,781	45	0.5	1.8%	0.7%	**55.7**	-	-	51	111	100	2,161	353	267

TRAFFIC NOISE LEVELS AND NOISE CONTOURS

Project Number: 2020-053
Project Name: Gill Medical Center

Background Information

Model Description:	FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels.
Source of Traffic Volumes:	KD Anderson & Associates 2020
Community Noise Descriptor:	L_{dn}: ____ CNEL: x

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

Analysis Condition				Design		Vehicle Mix		Distance from Centerline of Roadway						Traffic Volumes		
		Median	ADT	Speed	Alpha	Medium	Heavy	CNEL at	Distance to Contour				Calc			
Roadway, Segment	Lanes	Width	Volume	(mph)	Factor	Trucks	Trucks	100 Feet	70 CNEL	65 CNEL	60 CNEL	55 CNEL	Dist	Day	Eve	Night
Cumulative With Project																
Eight Mile Road																
West of Interstate 5	2	0	13,770	55	0.5	1.8%	0.7%	**64.8**	45	97	208	449	100	10,699	1,749	1,322
Between Interstate 5 and Davis Road	2	0	10,642	55	0.5	1.8%	0.7%	**63.7**	38	81	176	378	100	8,269	1,352	1,022
Between Davis Road and Lower Sacramento Road	2	0	10,260	55	0.5	1.8%	0.7%	**63.5**	37	80	171	369	100	7,972	1,303	985
Between West Lane and Ham Lane	2	0	6,552	55	0.5	1.8%	0.7%	**61.6**	-	59	127	274	100	5,091	832	629
Between Ham Lane and Leach Road	2	0	8,199	55	0.5	1.8%	0.7%	**62.5**	-	68	148	318	100	6,371	1,041	787
Between Leach Road and Micke Grove Drive	2	0	7,116	55	0.5	1.8%	0.7%	**61.9**	-	62	134	289	100	5,529	904	683
Between Micke Grove Drive and State Route 99	2	0	11,346	55	0.5	1.8%	0.7%	**63.9**	39	85	183	395	100	8,816	1,441	1,089
East of State Route 99	2	0	9,610	55	0.5	1.8%	0.7%	**63.2**	35	76	164	353	100	7,467	1,220	923
State Route 99 East Frontage Road																
North of Eight Mile Road	2	0	907	50	0.5	1.8%	0.7%	**51.9**	-	-	-	62	100	705	115	87
South of Eight Mile Road	2	0	3,853	50	0.5	1.8%	0.7%	**58.2**	-	35	76	164	100	2,994	489	370
State Route 99 West Frontage Road																
North of Eight Mile Road	2	0	380	50	0.5	1.8%	0.7%	**48.2**	-	-	-	35	100	295	48	36
South of Eight Mile Road (City of Stockton)	2	0	3,899	50	0.5	1.8%	0.7%	**58.3**	-	36	77	165	100	3,030	495	374
Micke Grove Drive																
North of Eight Mile Road	2	0	909	35	0.5	1.8%	0.7%	**48.2**	-	-	-	35	100	706	115	87
Interstate 5																
Interstate 5 Southbound	6	50	11,529	65	0.5	1.8%	0.7%	**67.0**	-	137	295	635	100	8,958	1,464	1,107

Cumulative Plus Project Traffic Noise

Leach Road																
North of Eight Mile Road	2	0	1,729	35	0.5	1.8%	0.7%	**51.0**	-	-	-	54	100	1,343	220	166
Morada Lane																
East of West Lane (City of Stockton)	2	0	9,207	45	0.5	1.8%	0.7%	**60.9**	-	53	114	246	100	7,154	1,169	884
West of West Lane (City of Stockton)	2	0	1,499	45	0.5	1.8%	0.7%	**53.0**	-	-	34	73	100	1,165	190	144
Ham Lane																
Between Eight Mile Road and West Lane	2	0	522	35	0.5	1.8%	0.7%	**45.8**	-	-	-	-	100	406	66	50
Between West Lane and Armstrong Road	2	0	4,979	35	0.5	1.8%	0.7%	**55.6**	-	-	51	110	100	3,869	632	478
North of Armstrong Road	2	0	8,037	35	0.5	1.8%	0.7%	**57.7**	-	33	70	152	100	6,245	1,021	772
North of West Lane	2	0	516	35	0.5	1.8%	0.7%	**45.8**	-	-	-	-	100	401	66	50
West Lane																
Between Eight Mile Road and Ham Lane	4	0	4,532	55	0.5	1.8%	0.7%	**60.1**	-	47	101	217	100	3,521	576	435
Lower Sacramento Road																
North of Eight Mile Road	2	0	9,943	45	0.5	1.8%	0.7%	**61.2**	-	56	120	259	100	7,726	1,263	955
South of Eight Mile Road	2	0	9,621	45	0.5	1.8%	0.7%	**61.1**	-	55	118	254	100	7,476	1,222	924
Davis Road																
North of Eight Mile Road	2	0	918	45	0.5	1.8%	0.7%	**50.9**	-	-	-	53	100	713	117	88
South of Eight Mile Road	4	0	3,912	45	0.5	1.8%	0.7%	**57.2**	-	-	66	141	100	3,040	497	376
Armstrong Road																
East of West Lane	2	0	2,973	45	0.5	1.8%	0.7%	**56.0**	-	-	54	116	100	2,310	378	285
West of West Lane	2	0	2,781	45	0.5	1.8%	0.7%	**55.7**	-	-	51	111	100	2,161	353	267

ATTACHMENT C

Federal Highway Administration Highway Roadway Construction Noise Outputs – Project Construction Noise

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 9/14/2020
Case Description: Grading & Undergrounding Phase 1

Description	**Affected Land Use**
Grading & Undergrounding Phase 1	Residential

Description	**Impact Device**	**Usage(%)**	**Equipment Spec Lmax (dBA)**	**Actual Lmax (dBA)**	**Receptor Distance (feet)**
Excavator	No	40		80.7	330
Excavator	No	40		80.7	330
Dozer	No	40		81.7	330
Dozer	No	40		81.7	330
Dozer	No	40		81.7	330
Dozer	No	40		81.7	330
Dozer	No	40		81.7	330
Dozer	No	40		81.7	330
Grader	No	40	85		330
Grader	No	40	85		330
Tractor	No	40	84		330
Tractor	No	40	84		330
Tractor	No	40	84		330
Tractor	No	40	84		330
Tractor	No	40	84		330
Tractor	No	40	84		330
Tractor	No	40	84		330
Tractor	No	40	84		330

Calculated (dBA)

Equipment		***Lmax**	**Leq**
Excavator		64.3	60.3
Excavator		64.3	60.3
Dozer		65.3	61.3
Dozer		65.3	61.3
Dozer		65.3	61.3
Dozer		65.3	61.3
Dozer		65.3	61.3
Dozer		65.3	61.3
Grader		68.6	64.6
Grader		68.6	64.6
Tractor		67.6	63.6
Tractor		67.6	63.6
Tractor		67.6	63.6
Tractor		67.6	63.6
Tractor		67.6	63.6
Tractor		67.6	63.6
Tractor		67.6	63.6
Tractor		67.6	63.6
	Total	**68.6**	**75.4**

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 9/14/2020
Case Description: Building Construction Phase 1

Description	**Affected Land Use**
Building Construction Phase 1	Residential

Description	**Impact Device**	**Usage(%)**	**Equipment Spec Lmax (dBA)**	**Actual Lmax (dBA)**	**Receptor Distance (feet)**
Crane	No	16		80.6	330
Crane	No	16		80.6	330
Gradall	No	40		83.4	330
Gradall	No	40		83.4	330
Gradall	No	40		83.4	330
Gradall	No	40		83.4	330
Gradall	No	40		83.4	330
Gradall	No	40		83.4	330
Tractor	No	40	84		330
Tractor	No	40	84		330
Tractor	No	40	84		330
Tractor	No	40	84		330
Tractor	No	40	84		330
Tractor	No	40	84		330
Welder / Torch	No	40		74	330
Welder / Torch	No	40		74	330

Calculated (dBA)

Equipment		***Lmax**	**Leq**
Crane		64.2	56.2
Crane		64.2	56.2
Gradall		67	63
Gradall		67	63
Gradall		67	63
Gradall		67	63
Gradall		67	63
Gradall		67	63
Tractor		67.6	63.6
Tractor		67.6	63.6
Tractor		67.6	63.6
Tractor		67.6	63.6
Tractor		67.6	63.6
Tractor		67.6	63.6
Welder / Torch		57.6	53.6
Welder / Torch		57.6	53.6
	Total	**67.6**	**74.3**

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 9/14/2020
Case Description: Paving and Architectural Coating Phase 1

Description	**Affected Land Use**
Paving and Architectural Coating Phase 1	Residential

Description	**Impact Device**	**Usage(%)**	**Equipment Spec Lmax (dBA)**	**Actual Lmax (dBA)**	**Receptor Distance (feet)**
Compressor (air)	No	40		77.7	330
Compressor (air)	No	40		77.7	330
Paver	No	50		77.2	330
Paver	No	50		77.2	330
Paver	No	50		77.2	330
Paver	No	50		77.2	330
Roller	No	20		80	330
Roller	No	20		80	330
Roller	No	20		80	330
Roller	No	20		80	330
Pavement Scarafier	No	20		89.5	330
Pavement Scarafier	No	20		89.5	330
Pavement Scarafier	No	20		89.5	330
Pavement Scarafier	No	20		89.5	330

		Calculated (dBA)	
Equipment		***Lmax**	**Leq**
Compressor (air)		61.3	57.3
Compressor (air)		61.3	57.3
Paver		60.8	57.8
Paver		60.8	57.8
Paver		60.8	57.8
Paver		60.8	57.8
Roller		63.6	56.6
Roller		63.6	56.6
Roller		63.6	56.6
Roller		63.6	56.6
Pavement Scarafier		73.1	66.1
Pavement Scarafier		73.1	66.1
Pavement Scarafier		73.1	66.1
Pavement Scarafier		73.1	66.1
	Total	**73.1**	**73.4**

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 9/14/2020
Case Description: Grading Phase 2

Description	**Affected Land Use**
Grading Phase 2	Residential

Description	**Impact Device**	**Usage(%)**	**Equipment Spec Lmax (dBA)**	**Actual Lmax (dBA)**	**Receptor Distance (feet)**
Excavator	No	40		80.7	330
Excavator	No	40		80.7	330
Dozer	No	40		81.7	330
Dozer	No	40		81.7	330
Dozer	No	40		81.7	330
Dozer	No	40		81.7	330
Dozer	No	40		81.7	330
Dozer	No	40		81.7	330
Grader	No	40	85		330
Grader	No	40	85		330
Tractor	No	40	84		330
Tractor	No	40	84		330
Tractor	No	40	84		330
Tractor	No	40	84		330
Tractor	No	40	84		330
Tractor	No	40	84		330
Tractor	No	40	84		330
Tractor	No	40	84		330

Calculated (dBA)

Equipment		***Lmax**	**Leq**
Excavator		64.3	60.3
Excavator		64.3	60.3
Dozer		65.3	61.3
Dozer		65.3	61.3
Dozer		65.3	61.3
Dozer		65.3	61.3
Dozer		65.3	61.3
Dozer		65.3	61.3
Grader		68.6	64.6
Grader		68.6	64.6
Tractor		67.6	63.6
Tractor		67.6	63.6
Tractor		67.6	63.6
Tractor		67.6	63.6
Tractor		67.6	63.6
Tractor		67.6	63.6
Tractor		67.6	63.6
Tractor		67.6	63.6
	Total	**68.6**	**75.4**

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 9/14/2020
Case Description: Paving Phase 2

Description	Land Use
Paving Phase 2	Residential

Description	**Impact Device**	**Usage(%)**	**Equipment Spec Lmax (dBA)**	**Actual Lmax (dBA)**	**Receptor Distance (feet)**
Paver	No	50		77.2	330
Paver	No	50		77.2	330
Paver	No	50		77.2	330
Paver	No	50		77.2	330
Roller	No	20		80	330
Roller	No	20		80	330
Roller	No	20		80	330
Roller	No	20		80	330
Pavement Scarafier	No	20		89.5	330
Pavement Scarafier	No	20		89.5	330
Pavement Scarafier	No	20		89.5	330
Pavement Scarafier	No	20		89.5	330

Calculated (dBA)

Equipment		***Lmax**	**Leq**
Paver		60.8	57.8
Paver		60.8	57.8
Paver		60.8	57.8
Paver		60.8	57.8
Roller		63.6	56.6
Roller		63.6	56.6
Roller		63.6	56.6
Roller		63.6	56.6
Pavement Scarafier		73.1	66.1
Pavement Scarafier		73.1	66.1
Pavement Scarafier		73.1	66.1
Pavement Scarafier		73.1	66.1
	Total	**73.1**	**73.1**

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date:	9/14/2020
Case Description:	Architectural Coating & Building Construction Phase 2

Description	**Affected Land Use**
Architectural Coating & Building Construction Phase 2	Residential

Description	**Impact Device**	**Usage(%)**	**Equipment Spec Lmax (dBA)**	**Actual Lmax (dBA)**	**Receptor Distance (feet)**
Compressor (air)	No	40		77.7	330
Compressor (air)	No	40		77.7	330
Crane	No	16		80.6	330
Crane	No	16		80.6	330
Gradall	No	40		83.4	330
Gradall	No	40		83.4	330
Gradall	No	40		83.4	330
Gradall	No	40		83.4	330
Gradall	No	40		83.4	330
Gradall	No	40		83.4	330
Generator	No	50		80.6	330
Generator	No	50		80.6	330
Tractor	No	40	84		330
Tractor	No	40	84		330
Tractor	No	40	84		330
Tractor	No	40	84		330
Tractor	No	40	84		330
Tractor	No	40	84		330
Welder / Torch	No	40		74	330
Welder / Torch	No	40		74	330

		Calculated (dBA)	
Equipment		***Lmax**	**Leq**
Compressor (air)		61.3	57.3
Compressor (air)		61.3	57.3
Crane		64.2	56.2
Crane		64.2	56.2
Gradall		67	63
Gradall		67	63
Gradall		67	63
Gradall		67	63
Gradall		67	63
Gradall		67	63
Generator		64.2	61.2
Generator		64.2	61.2
Tractor		67.6	63.6
Tractor		67.6	63.6
Tractor		67.6	63.6
Tractor		67.6	63.6
Tractor		67.6	63.6
Tractor		67.6	63.6
Welder / Torch		57.6	53.6
Welder / Torch		57.6	53.6
	Total	**67.6**	**74.9**

*Calculated Lmax is the Loudest value.

ATTACHMENT D

SoundPLAN Outputs – Onsite Project Noise

SoundPLAN
Output Source Information
Nonexempt Sources

Number	Reciever Name	Floor	Level at Receiver
1	Northeast of Project site on Ham Lane	Ground Floor	31.4
2	Residential property northeast of Project site	Ground Floor	34.1
3	Residential property northeast of Project site	Ground Floor	35.5
4	Residential property east of Project site	Ground Floor	40.0
5	In front of residence on Ham Lane north of Project site	Ground Floor	34.3
6	Residential property south of Project site	Ground Floor	36.9
7	Residential property south of Project site	Ground Floor	40.0
8	Residential property south of Project site	Ground Floor	42.0
9	Adjacent to Eight Mile Road and proposed driveway	Ground Floor	36.3
10	Residential property south of Project site	Ground Floor	40.8
11	Residential property south of Project site	Ground Floor	41.4
12	Residential property south of Project site	Ground Floor	39.4
Number	**Noise Source Information**	**Citation**	**Level at Source**
1	Hospital Visitors Parking Lot	ECORP Consulting, Inc. Noise Measurment	53.8 dBA

SoundPLAN
Output Source Information
Exempt Noise

Number	Reciever Name	Floor	Level at Receiver
1	Northeast of Project site on Ham Lane	Ground Floor	86.2
2	Residential property northeast of Project site	Ground Floor	90.5
3	Residential property northeast of Project site	Ground Floor	89.9
4	Residential property east of Project site	Ground Floor	91.3
5	In front of residence on Ham Lane north of Project site	Ground Floor	86.2
6	Residential property south of Project site	Ground Floor	88.4
7	Residential property south of Project site	Ground Floor	90.5
8	Residential property south of Project site	Ground Floor	91.8
9	Adjacent to Eight Mile Road and proposed driveway	Ground Floor	86.5
10	Residential property south of Project site	Ground Floor	82.3
11	Residential property south of Project site	Ground Floor	79.8
12	Residential property south of Project site	Ground Floor	77.0
Number	**Noise Source Information**	**Citation**	**Level at Source**
1	Helicopter Landing	ECORP Consulting, Inc. Noise Measurment	124.3 dBA (L_{max})

APPENDIX I

Economic Assessment of Demand and Urban Decay in the Stockton Area for
Proposed Gill Medical Center, September 30, 2021
Philip G. King, PH.D.

ECONOMIC IMPACT AND URBAN DECAY ANALYSIS

PREPARED FOR GILL MEDICAL CENTER PROJECT

SAN JOAQUIN COUNTY, CA

SEPTEMBER 30, 2021

PREPARED BY:

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Contents

List of Abbreviations & Acronyms

RN	Registered Nurse
MOB	Medical Office Building
MSSA	Medical Service Study Areas
OSHPD	Office of Statewide Health Planning and Development

Executive Summary

The purpose of this report is to estimate the potential economic and tax contributions of the proposed Gill Medical Center in North Stockton, and to contextualize the Project within an analysis of the demand for additional medical care services in the region. This report summarizes our analysis of the potential contributions of the Gill Center to San Joaquin County and Stockton tax revenue, employment, labor income, and output using publicly available information, information provided by the Gill Project, and the IMPLAN model for San Joaquin County. All estimates of economic benefits and employment generated by the Gill Project are derived using the IMPLAN method, a widely used modeling software which integrates the interaction of over 500 industry sectors to fully capture the direct and indirect impacts of the project.

The first section of this report summarizes our findings, in particular the economic impacts of the proposed Medical Center. The second section contains a detailed description of the project and the role of economic impact assessment under CEQA guidelines. Following is an in-depth review of the state of medical care and projected demand for medical services in the San Joaquin Valley region overall, with a focus on Stockton and Lodi. Finally, we describe the IMPLAN methodology for deriving economic impact estimates in further detail.

Key Findings

Our analysis finds that:

- Currently, San Joaquin County faces a lack of hospital beds, with 176 beds per 100,000 residents compared to the State's average of 246 (and nearby Sacramento County's average of 259 beds per 100,000). The Proposed Gill Hospital will bring more than 100 addition beds to the county. Even with these additional beds, there is still sufficient demand to support further development of additional hospitals in the area.
- San Joaquin County, along with the entire San Joaquin Valley, lacks medical practitioners compared to the state and nearby regions. The proposed project will help alleviate this disparity
- Combined, both phases of the project are estimated to generate over $170 million in annual economic output
- Both phases are estimated to generate over 1,400 jobs. Employment in the medical sector typically pays at or above the median wage in the Stockton-Lodi MSSA (see Figure 1). Jobs at the Gill facility will attract highly educated workers in not only medical professions, but supplemental fields such as administrative, technical support, finance etc.
- The hospital project will bring additional residents, spending, and help alleviate "leakage" to Sacramento and the Bay Area, increasing spending in the Stockton-Lodi area

Gill Medical Center Project

The Gill Project is a two-phased hospital and health care campus project which will be constructed in unincorporated San Joaquin County just north of Stockton, situated between Interstate 5 and Highway 99 with direct access to West Lane, Ham Lane, and Eight Mile Road in close proximity to both Stockton and Lodi (Figure 1 below). The proposed Project would significantly increase the availability of healthcare and medical services in the Stockton, Lodi, and eastern San Joaquin County area, and to the San Joaquin Valley as a whole. Both of these areas are seriously underserved medically compared to California as a whole and to other geographic areas within the state.

- **Phase 1:** To be completed within 5 years of project approval, a 36,000 sq.ft. basic hospital with Emergency Room Services, and female-focused healthcare services, including a state-of-the-art labor and delivery center. This phase also includes infrastructure development at the site including 282 parking spaces and entrances from West Lane.

- **Phase II:** To be completed within 10 years from project approval, a 28,000 sq.ft. Medical Office Building (MOB), 140,000 sq.ft. Hospital Expansion (including helipad), and 6,000 sq.ft. supporting Physical Plant. The expanded hospital will offer full Emergency Room and medical services. This phase includes expanding the parking (to 1000± spaces) and infrastructure, including a possible shuttle from South Stockton.

- **Plans for charity care and community presence:** While the Project will be operated as a private business, the Project applicants, the Gill Family of Lodi, have a long and respected history in the San Joaquin County medical community, and, in addition to traditional patients, also intend to provide services to underserved and low-income populations in the community. This is especially relevant in the San Joaquin Valley, and specifically in the city of Stockton, which is home to some of the most medically underserved populations in California, with some of the worst health outcomes in the State.

Economic Contributions of Gill Medical Center

The proposed Project will generate significant economic activity, both in the construction phase(s) and at operational[1]. Construction will generate an estimated $402,466,680 in output, along with over 2,105 jobs between both phases. In terms of economic output, Phase I of the project is expected to generate $28,672,756 annually, with 50-75 employees, and $14,803,448 in direct economic impact. Phase II will generate $142,514,534 in direct impact, with over 700 jobs, including 250+ jobs at the hospital, 100 at the MOB. This phase is expected to generate $38,304,487 in annual indirect impacts, once the hospital is fully operational.

[1] All estimates derived from IMPLAN. See the end of this report for a detailed discussion of the methodology.

Table 1: Economic Benefits of the Gill Hospital Project

Phase	*Direct Economic Impact*	*Total Economic Impact*	*Total Jobs Created*	*Frequency*
Phase 1 Construction	$19,150,000	$28,672,756	150.0	One-time
Phase 1 Operation	$14,803,448	$25,231,373	143.2	Per year
Phase 2 construction	$249,650,000	$373,793,924	1,955.4	One-time
Phase 2 Operation	$142,514,534	$242,758,148	1,396.3	Per-year

Phase I- Women's Health Clinic

The first phase of the Project consists of an approximately 36,000 sq. ft. hospital that would be equipped with 12 beds and would provide labor and delivery focused services, including alternate birthing options, and hospital emergency room services. This phase of the project is expected to generate $28,672,756 in output annually, with 50-75 employees of the Women's Health Center, and $14,803,448 in direct economic impact.

The economic benefits of Phase I include one-time construction impacts as well as ongoing, annually operation impacts. Construction of Phase I will generate approximately 150 jobs, with over $10 million in labor income. Operation of Phase I will generate over 140 jobs and an additionally $10.6 million in labor income annually. The Women's Health Clinic/ ABC project is expected to generate over $25 million in total output.

Table 2: Economic Impact of Phase I construction

Impact Type	*Employment*	*Labor Income*	*Value Added*	*Output*
Direct Effect	88.4	$6,973,534	$8,480,245	$19,150,000
Indirect Effect	19.5	$1,162,380	$1,876,290	$3,412,691
Induced Effect	42.1	$1,972,038	$3,898,465	$6,110,065
Total Effect	**150.0**	**$10,107,952**	**$14,255,001**	**$28,672,756**

Table 3: Economic Impact of Phase I Operations

Impact Type	*Employment*	*Labor Income*	*Value Added*	*Output*
Direct Effect	75.3	$7,452,104	$8,169,458	$14,803,448
Indirect Effect	23.9	$1,134,646	$2,651,669	$4,024,443
Induced Effect	43.9	$2,064,753	$4,078,584	$6,403,482
Total Effect	**143.2**	**$10,651,502**	**$14,899,711**	**$25,231,373**

Phase II—Full-Service Hospital and Medical Office Building

In the second phase of the project, the applicant plans to partner with a lager regional hospital network to bring integrated care options to the Stockton-Lodi area and San Joaquin County. This will involve the construction of a 100-bed hospital, separate Medical Office Building (MOB) and detached physical plant. Construction of this phase is expected to be completed 10 years after project approval.

Construction alone will generate an expected 1,955 jobs, over $131 million in labor income, and over $373.3 million in total economic impact.

Table 4: Economic Impact of Phase II Construction

Impact Type	*Employment*	*Labor Income*	*Value Added*	*Output*
Direct Effect	1,152.3	$90,910,853	$110,553,172	$249,650,000
Indirect Effect	254.7	$15,153,429	$24,460,358	$44,489,735
Induced Effect	548.4	$25,708,578	$50,822,548	$79,654,189
Total Effect	**1,955.4**	**$131,772,860**	**$185,836,079**	**$373,793,924**

Operation of Phase II facilities generates substantial economic benefits for the community. The Hospital and MOB combined can be expected to generate over $242.7 million in annual output, nearly 1400 jobs, and over $100 million in combined labor income. These estimates include significant impacts on the surrounding industries, illustrating the broader benefits of the project to the surrounding community.

Table 5: Economic Impact of Phase II Operations

Impact Type	*Employment*	*Labor Income*	*Value Added*	*Output*
Direct Effect	741.9	$72,124,382	$78,695,728	$142,514,534
Indirect Effect	229.5	$10,910,722	$25,115,475	$38,304,487
Induced Effect	424.9	$19,972,522	$39,453,647	$61,939,127
Total Effect	**1,396.3**	**$103,007,626**	**$143,264,849**	**$242,758,148**

Employment Impacts

As mentioned, the Gill Hospital Project would generate significant numbers of good jobs at wages above the average in the Stockton-Lodi area. Construction of both facility phases generates over 1,200 jobs in the short term. In the long term, facility operations would generate an estimated 817 well-paying jobs at those facilities, and over 600 additional employment opportunities in the community. The project would likely benefit related industries such as real estate, retail, and food service. Economic impact analysis suggested that Phase I and II operations will contribute over 280 such “downstream” jobs to the local economy in addition to the jobs created at the facility.

Table 6: Employment opportunities generated by Gill Project operations in both phases[2]

Sector	*Description*	*Phase I Employment*	*Phase I Labor Income*	*Phase II Employment*	*Phase II Labor Income*
397	Private hospitals	77.6	$7,679,968	688.9	$68,142,718
360	Real estate establishments	8.7	$184,482	81.4	$1,716,490
413	Food services and drinking places	6.1	$140,623	60.3	$1,379,485
382	Employment services	5.5	$186,254	52.5	$1,778,220
394	Offices of physicians, dentists, and other health practitioners	2.3	$190,444	97.6	$8,019,287
356	Securities, commodity contracts, investments, and related activities	1.9	$6,248	18.5	$59,835
398	Nursing and residential care facilities	1.9	$78,339	18.6	$757,681
329	Retail Stores - General merchandise	1.8	$59,254	17.1	$572,968
324	Retail Stores - Food and beverage	1.6	$67,237	15.3	$650,155
Total	**All**	**109.1**	**$ 8,809,475.00**	**1,066.3**	**$ 85,144,330.00**

Many of these job opportunities, in particular those in the medical sector, offer well-paying jobs at or above the median income for the Stockton-Lodi area. Figure 1 below illustrates the wage opportunities in medical care. Hospitals represent the largest category, not surprisingly (77.6 employees estimated). However, it should also be noted that the Gill center will also generate jobs in non-medical services such as food services (6.1 jobs) and even retail (1.6). These additional impacts will generate more jobs in the greater Stockton area.

[3].

[2] Based on IMPLAN for San Joaquin County/Stockton-Lodi area

[3] **Please explain why Physicians not accounted for here**

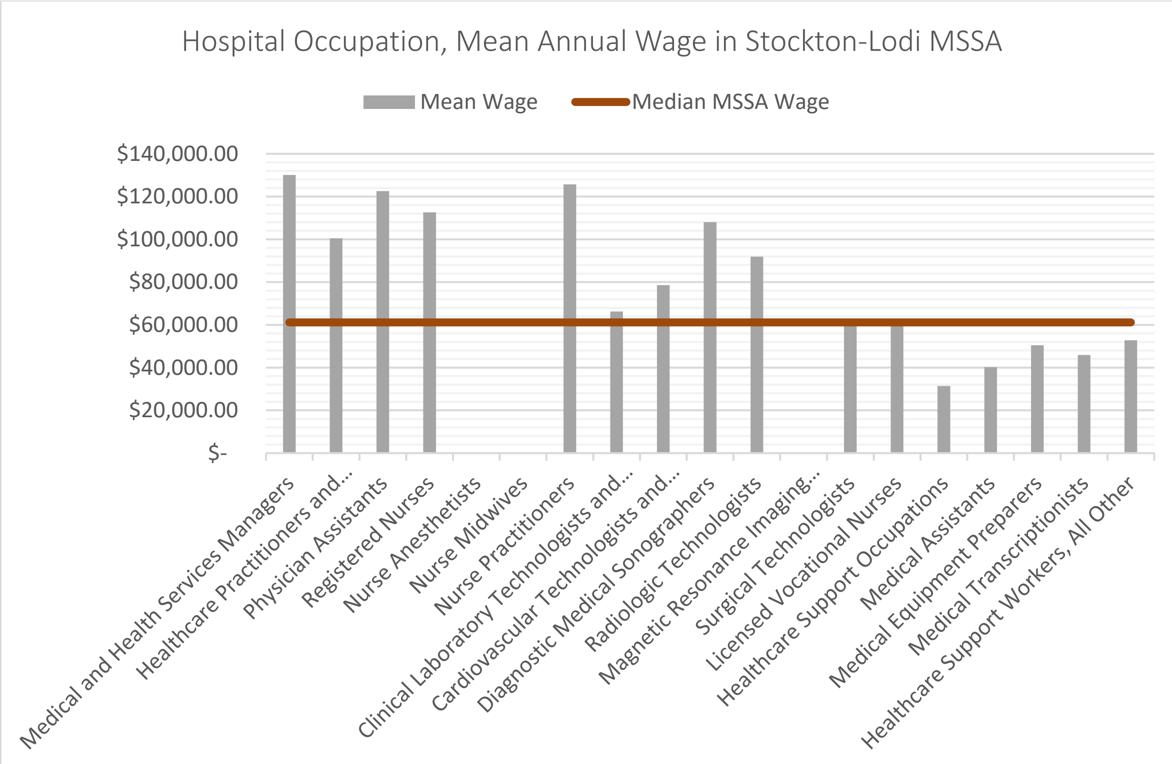


Figure 1: Wage comparison in Stockton-Lodi MSSA with medical profession

Source: California Employment Development Department Statistics[4]

Potential for Regional Growth and Development

Given the current undersupply of healthcare services in the San Joaquin County area—in particular in Stockton and Lodi— no evidence supports the possibility that adding additional medical and hospital services would lead to the closure or substantial reduction in services of any hospitals or other health care facilities in the primary service area, in particular St. Joseph's Hospital, Dameron Hospital, Lodi Memorial Hospital, or San Joaquin County General Hospital.

Accordingly, it is our professional opinion that there is no evidence that the Project would cause or contribute to urban decay or any other secondary physical effects flowing from economic impacts to which CEQA may apply. There is existing demand for more healthcare services, which the proposed hospital helps meet. Projected future demand also indicates need for increased medical providers, hospital beds, and healthcare in the service area. Additionally, the proposed hospital would contribute to economic growth in the area by bringing in "good jobs at good wages" and alleviating a portion of the charity care burden on existing hospitals.

The Gill Hospital Project will not only generate an estimated $157,317,982 in direct positive economic impact and $110,671,539 in indirect impact annually, but also create over 800 new jobs in the

[4] https://data.edd.ca.gov/Wages/Occupational-Employment-and-Wage-Statistics-OEWS-/pwxn-y2g5

healthcare sector—jobs which pay well and will help bring economic opportunity to the Stockton/Lodi Area. These jobs will, in turn, contribute consumer spending in the area, and to the tax base for the County. A new hospital brings in a variety of employment opportunities, many with salaries at or above the median wage in Stockton-Lodi, as shown below. Furthermore, the planned hospital—as mentioned—supports downstream industries in the area and would likely create over 268 jobs in these additional occupations, ranging from real estate to food service.

1. Gill Medical Project Components

1.1 Economic Impact Assessment Objectives

We were retained by project applicant GWMC, LLC to analyze the potential economic impacts and likelihood of urban decay resulting from the development of the Gill Medical Center Project (the "Project") located in unincorporated San Joaquin County north of the City of Stockton.

This analysis focuses on the current and projected supply of and demand for hospital and health care services in the region in order to evaluate the potential for the Project to oversaturate the hospital and health care market, leading to facility closures or "urban decay."

This Report analyzes the market potential for the hospital and health care campus as proposed at the time of our analysis, including the potential for the Project to directly or indirectly cause "urban decay," as that concept has been defined in recent judicial opinions interpreting the California Environmental Quality Act (CEQA). The proposed Project is described in detail above. Construction is planned to be completed on Phase 1 by 2027. Phase 2 is scheduled to be completed by 2032.

As explained below, substantial evidence demonstrates that the Project's market area is substantially underserved by both hospital services and related health services and that the Project will provide a positive economic impact to the primary market area in San Joaquin County. Due to the undersupply of these services, for which demand continues to increase, the Project is not expected to cause any business closures or otherwise cause or contribute to physical deterioration or urban decay.

1.2 CEQA Guidelines for consideration of socioeconomic impacts and urban decay

The State CEQA Guidelines define the parameters under which the consideration of socioeconomic impacts is included in an environmental evaluation. State CEQA Guidelines Section 15131 states that "[e]conomic or social information may be included in an EIR or may be presented in whatever form the agency desires." Further, Section 15131(a) of the Guidelines states:

> *"[e]conomic or social effects of a project shall not be treated as significant effects on the environment. An EIR may trace a chain of cause and effect from a proposed decision on a project through anticipated economic or social changes resulting from the project to physical changes caused in turn by the economic or social changes. The intermediate economic or social changes need not be analyzed in any detail greater than necessary to trace the chain of cause and effect. The focus of the analysis shall be on the physical changes."*

State CEQA Guidelines Section 15131(b) also provides that "[e]conomic or social effects of a project may be used to determine the significance of physical changes caused by the project."

The term most used to describe the physical effects that can result when new retail uses cause existing business closures and physical deterioration of the areas in which such businesses are located is "urban decay". In recent years, the California Courts have defined the term "urban decay" as the physical manifestation of a project's potential socioeconomic impacts and have specifically identified the need to address the potential for urban decay in environmental documents for large retail projects. The leading case is *Bakersfield Citizens for Local Control v. City of Bakersfield* (2004) 124 Cal.App.4th 1184, in which the court set aside two environmental impact reports for two proposed Wal-Mart projects that would have been located less than five miles from each other because those reports "do not fulfill their informational obligations because they failed to consider the projects' individual and cumulative potential to indirectly cause urban/suburban decay by precipitating a downward spiral of store closures and long-term vacancies in existing shopping centers," in other words, they fail to adequately access the potential for urban decay.[5] The court emphasized that "experts are now warning about land use decisions that cause a chain reaction of store closures and long-term vacancies, ultimately destroying existing neighborhoods and leaving decaying shells in their wake." (Id. at p. 1204.) The court also discussed prior case law that addressed the potential for large retail projects to cause "physical deterioration of [a] downtown area" or "a general deterioration of [a] downtown area." (*Id*. at pp. 1206, 1207).

The *Bakersfield* court also described the circumstances in which the duty to address urban decay issues arise. Accordingly, there are two pertinent questions to be asked regarding the effects of the proposed project in terms of this economic impact and urban decay analysis: 1) would the proposed new hospital campus result in revenue losses that are sufficiently large at existing hospitals to force some to close; and 2) would those closed hospitals remain unoccupied long enough to create physical changes that could be defined as urban decay?

The potential environmental impacts of shifts in patients from existing hospitals to the proposed Project may be deemed to be significant if the project:

- Is projected to result in economic or social changes from the project that would cause substantial and adverse physical changes; or

- Would cause urban decay.

Unless these criteria are met, economic effects of the Project would *not* be deemed to be significant. Our analysis has determined that this Project is *unlikely* to cause or contribute to the closure

[5] The co-author of this report, Philip G. King, Ph.D., along with his mentor, C. Daniel Vencill, Ph.D. professor of economics at San Francisco State University, co-authored the report referenced in the *Bakersfield* decision, upon which the court relied in adopting the term "urban decay" and in holding such an effect is physical, rather than merely social or economic, and therefore subject to consideration under CEQA.

of any hospital facilities in the market area, therefore there is little possibility of urban decay in the area as a result of the Project going forward/

2. The existing need for hospitals and medical services in Stockton/Lodi and San Joaquin County

San Joaquin County is Underserved

The proposed labor and delivery center and full-service hospital would expand the availability of high-quality medical facilities to an underserved population in San Joaquin County. The specific primary service area would include the cities of Stockton and Lodi alongside the surrounding rural communities, primarily to the east -- including Clements, Lockeford, Acampo, Woodbridge, and Linden. This population is medically underserved both in comparison to the State overall and national benchmarks for health. Furthermore, the service area also includes populations with extremely low community health markers, which may be improved by increased access to high-quality medical care.

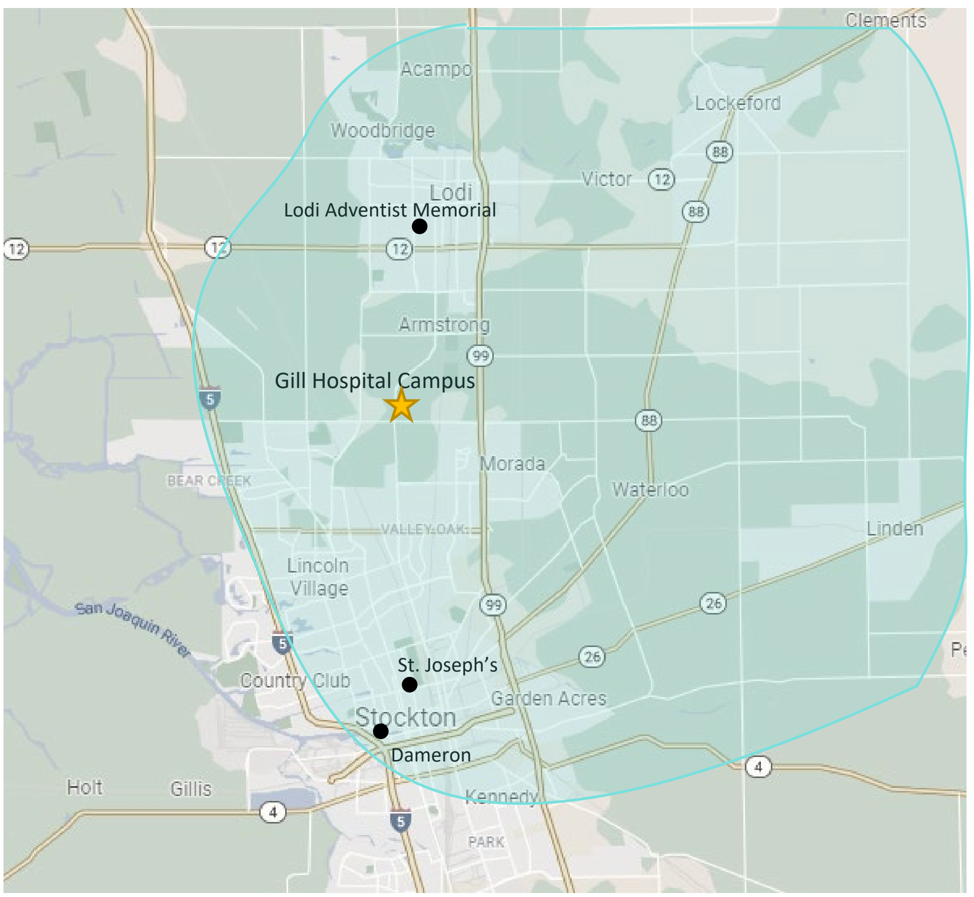
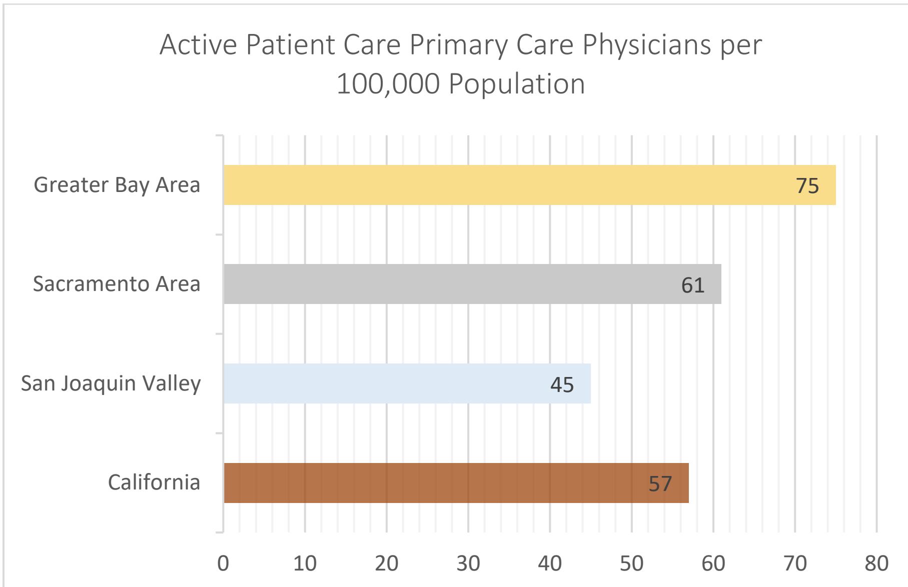


Figure 2: The primary service area of the proposed Gill Women's Medical Center and existing area hospitals

San Joaquin county has fewer medical services and service providers compared to the state of California, and especially compared to nearby metropolitan areas. In fact, **the San Joaquin Valley--of which San Joaquin County is the northernmost part--is the most underserved healthcare region in the**

state. Figure 3 below illustrates the lack of primary care physicians in San Joaquin compared to nearby regions.

Figure 3: Active Patient Care Primary Care Physicians per 100,000 Population, by Region of California, 2015



Source: Excerpt from 2017 UCSF Heathforce Center Report "California's Primary Care Workforce: Current Supply, Characteristics, and Pipeline of Trainees" pg. 23

The lack of medical care providers is not limited to physicians but extends to other healthcare personnel. As shown in Table 14 below, the San Joaquin Valley has *significantly* fewer clinicians, especially Nurse Practitioners, per 100,000 residents. Compared to the State average, the San Joaquin Valley region has only 231 clinicians per 100,000 residents, whereas California has 379. The Sacramento Area— centered approximately 45 miles to the north of Stockton —has more than double the number of clinicians at 613. The lack of clinicians in San Joaquin County reduces access to care and may result in residents travelling greater distances to access medical care in regions with more providers.

Table 7: Number of Licenses Physicians, Doctors of Osteopathy, Nurse Practitioners, and Physician's Assistants per 100,000 people by Region of California, 2016

Region	*Physicians*	*Doctors of Osteopathy*	*Nurse Practitioners*	*Physician's Assistants*	*All Clinicians*
Greater Bay Area	409	13	68	22	512
Sacramento Area	472	25	73	42	613
San Joaquin Valley	157	13	39	23	231
California	288	16	50	25	379

Source: *Excerpt from 2017 UCSF Heathforce Center Report* "California's Primary Care Workforce: Current Supply, Characteristics, and Pipeline of Trainees" pg. 19

Experts often measure the quality of health care in a region by applying a number of metrics, including the distribution of facilities, health professionals, the infant mortality rate, and local poverty rates. If one applies these measures to the San Joaquin Valley, it scores worst or second worst in the state on most of these metrics. The federal government designates areas of California as Health Professions Shortage Areas (HPSAs) if they have fewer than one primary care physician per 3,500 persons (28.5 primary care physicians per 100,000 population), and has designated San Joaquin County an HPSA in sections of the city of Stockton (Coffman, Geyn, and Himmerick (2017), p. 58). Furthermore, much of the San Joaquin Valley (encompassing the Fresno, Kern, Kings, Madera, Merced, San Joaquin, Stanislaus, and Tulare) is designated either an HPSA area or population (Spetz, Coffman, and Bates (2018), p. 3; OSHPD map).

The HPSA Population Designation mean that a specific population in that area faces significant healthcare shortages. In San Joaquin County, for example, in **the North/Central Stockton and South Stockton areas face severe shortages of primary care for low income, homeless, and migrant farm worker populations**. Additionally, the county faces shortages of federally qualified health centers, mental health care, and Native American focused care.

A broader measure of healthcare, the "Medically Underserved Area and Population Designations," includes factors such as poverty and mortality alongside the concentration of healthcare professionals. "The distribution of MUAs/MUPs and PCSAs across California is similar to the distribution of HPSAs," although these measures do not take into account Registered Nurses (RNs) and Physician's Assistants (PAs) who provide additional medical care, they agree on the comparative lack of care in the San Joaquin Valley (Coffman, Geyn, and Himmerick (2017), p.59). These designations are largely in regions of that state that have high rates of poverty. (*Ibid*.) These regions not only lack the resources to access care, but medical care itself.

The lack of medical care in the San Joaquin Valley not only applies to physicians, but also to Registered Nurses (RNs), who provide much of the basic care a patient receives. A statewide survey of employers found "difficulty recruiting RNs for specialized positions and that more than 90% of hospitals reported demand for RNs was greater than the available supply" (Spetz, Coffman, and Bates (2018), p. 3). In the San Joaquin Valley demand is high and supply (or "stock") is low, as there are fewer clinicians licensed and living in the San Joaquin Valley (Coffman, Bates and Geyn 2017, 11). Spetz, Coffman, and Bates surveyed the "stock" of licensed clinicians living in the San Joaquin valley and found the lowest ratio per capita of RNs in the state (12). The shortage they projected in the San Joaquin Valley "stands in contrast to statewide forecasts, which indicate that RN supply and demand are well-balanced in California as a whole" (Spetz, Coffman, and Bates (2018), p. 12). This shortage does not consider clinicians who may reside in the San Joaquin Valley but commute west to the larger metropolitan areas near the coast. As housing prices skyrocket in many coastal cities, this phenomenon has increased (Freeman & Schuetz 2016, 227; Marcus & Zuk 2017, 4).

Overall, the San Joaquin Valley is medically underserved primarily due to a lack of practitioners and lack of resources, including high rates of poverty. The lack of adequate medical care in these counties demonstrates the skewed distribution of healthcare in California. The current distribution heavily favors the larger metropolitan areas and the coastal region. In part, these areas have a greater supply of training programs and facilities, which is especially deterministic for nursing staff.

Distribution of Medical Care in California

While the San Joaquin Valley suffers from a chronic lack of healthcare supply, trends in the state of California *overall* suggest that the supply of healthcare practitioners (and their services) is not keeping up with growing demand. The expansion of coverage under the Affordable Care Act and Medi-Cal contributes to this problem (McConville and Cha, 2020), as it has increased the demand for medical care. Under the ACA Medi-Cal enrollment increased dramatically, by more than 60 percent by mid-2016 (Cha, Tan, and McConville (2020)). The program currently serves about 30 percent of the State's population. The supply of primary care MDs and other practitioners, however, has not kept up with rising demand and in fact appears to be declining. Despite certain regions of California having a relatively high concentration of providers, several regions in California face significant health care provider shortages, which skews the statewide averages below national benchmarks. The ratio of physicians to Medi-Cal enrollees alone is "below national and state recommendations for both primary care and specialty care" (Cha, Tan, and McConville (2020)).

Declining supply of primary care providers contributes to California's healthcare shortage as well. The provision of primary care accounts for 36% of all California physicians and includes OBGYNs, pediatricians, family, and general physicians. A 2015 survey found that the overall number of primary care physicians had decreased since 2008 by approximately 10% (Coffman, Geyn, and Himmerick (2017), p. 11). A 2017 study suggests that this decrease is due partly to fewer providers overall, aging medical populations, and also to increases in specialty doctors as opposed to primary care physicians (Coffman, Geyn, Himmerick, 12). In some areas, the lack of physicians is accounted for by PAs, DOs, and NPs. Only a small percentage of PAs practice primary care, while the majority of NPs and DOs do (*Id*. p. 16). However, these supplementary practitioners are not evenly distributed throughout California.

Demographics of San Joaquin County

Health care providers, and access to medical are, is not evenly distributed in California. Rather, certain areas have high ratios of medical providers to their population, relative to both the state and underserved regions. As discussed, the San Joaquin Valley includes some of the most underserved areas of the State. A part of this region, San Joaquin County faces its own particular set of concerns. San Joaquin County's shortage is due mainly to practitioners and poverty. The County is lacking compared to the State on most markers of healthcare, especially providers and hospital beds.

Table 8: Comparison of access to health care between San Joaquin County and California overall showing the lack of access to medical care in San Joaquin

Area	*Median Income*	*Percent in Poverty*	*Providers per 100,000*	*Hospital Beds per 100,000, 2018*
San Joaquin County	61,145	14.30%	60	176
California	71,228	12.80%	78	259

Source: 2018 Census, 2018 ACS, CHNA Survey, OSHPD Facility Listings

This comparative lack of care and services is demonstrated in a survey of Primary Care Shortage Areas (PCSA), which compared primary care physician counts to demographic data in census tracts. The designation also incorporated a weighted count of NPs and PAs, as well as percentage of the population in poverty. According to an OSHPD memorandum on healthcare shortages, based on the criteria there are 268 PCSAs (out of 541 Medical Service Study Areas (MSSAs))[6]. Six of the 10 MSSAs in San Joaquin are designated as PCSAs, covering 53% of the population (363,595 people).

These various measures quantify the need for improved access to medical care in the San Joaquin Valley, San Joaquin County, and in particular the urban metro area of Stockton. While a new hospital will not solve all of these issues**, it will bring an increased number of high-quality providers to the area, increasing the provider-to-population ratio there and increasing access to care**.

Health in San Joaquin County

Increased access to care will help improve the community health markers for San Joaquin, and in particular for Stockton. This is especially true for low-income urban populations in Stockton *and* Lodi. These statistics also illustrate discrepancies in county health outcomes along racial lines.

San Joaquin County performs worse than the State as a whole in several measures of community health. For example, the homicide rate in San Joaquin County is 10.3 (per 100,000), nearly double the statewide average (5.2) and the 2020 Healthy People National Objective of 5.5. Additionally, Infant Mortality in San Joaquin County is higher than the state, with a rate of 5.2 to the State's rate of 3.6. However, infant mortality in California is overall above the National Objective of 6.0. Infant health and mortality are not distributed across racial lines, however, as black infants have "significantly higher rates of being born at a low birthweight or preterm than other racial/ethnic groups. (California Health Care Foundation (2019), p. 27).

A more in-depth examination of health in San Joaquin County is the Community Health Needs Assessment (CHNA) conducted annually in coordination with all of the county hospitals. The 2019 CHNA explored disparities for populations residing in specific geographic areas referred to as "Priority

[6] As defined by OSHPD in their 2020 memo, "MSSAs are geographical units based on population, demographic, and physician data" recognized as the "Rational Service Area for medical service in California." Howard, Christopher J. et al. Memorandum to the California Healthcare Workforce Policy Commission, "*Primary Care Shortage Areas Report.*" January 30, 2020. pp. 1.

Neighborhoods", as well as disparities among the county's diverse ethnic populations (San Joaquin CHNA (2019), p. 6)." The worst preforming neighborhoods in the county are all in Stockton.

These neighborhoods score poorly on a number of components of health, not only in comparison to the county but to the state overall. Highlighted in Figure 2 in orange, these priority neighborhoods were identified on both medical and community health indicators. These high-need areas are primarily in Stockton *and* Lodi, within the service area of the proposed Gill Medical Center Project.

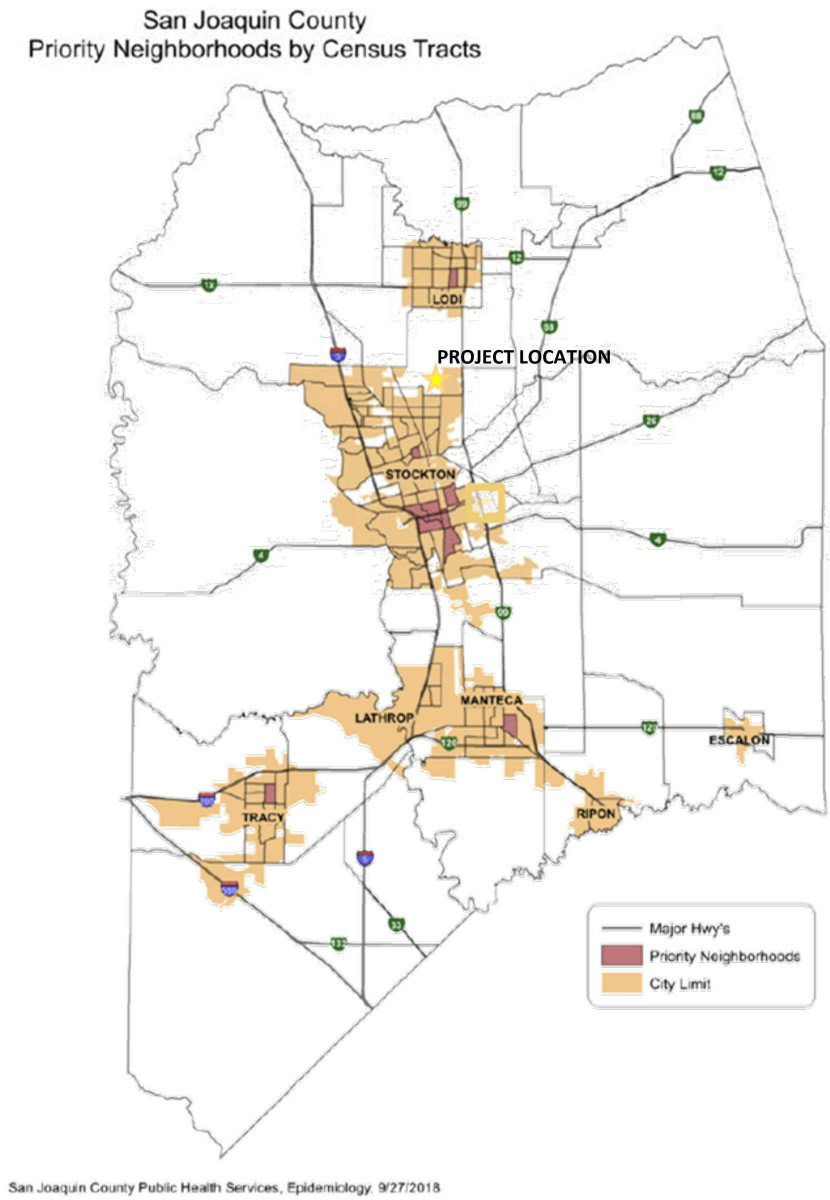


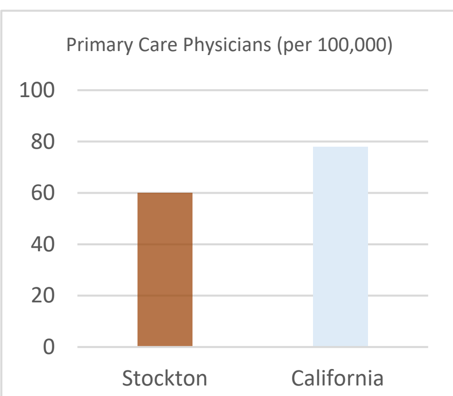
Figure 4: Priority Neighborhoods (shaded areas) in most need of improved heath outcomes and healthcare access, identified in the 2019 *Community Health Needs Assessment*

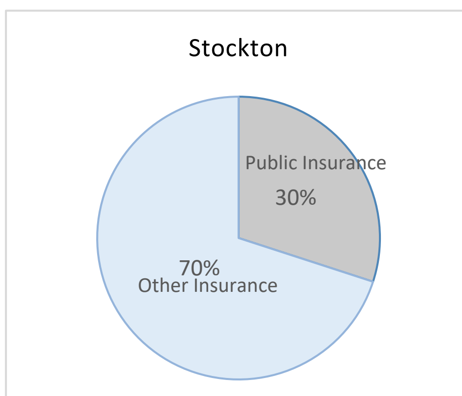
The Community Health Needs Assessment prioritized certain components of health which could be improved in the county to better care for the population. One top priority is "Access to Care," encompassing both the existence of care and "poor access to affordable health insurance and the lack of high-quality providers, including urgent care and mental health, impact access to care" (San Joaquin CHNA (2019), p.19 .). Increasing the number of high-quality providers, dedicated and locally based specialists, and hospital beds with an additional hospital will help alleviate this issue. It will also better distribute the provision of charity care and allow all area hospitals to better serve their patients. Access to Care is critical for community health. According to the CHNA, all of the 10 identified Priority Neighborhoods have extremely low rates of healthcare access; **the most striking disparities were found in Census Tract 44.03 in Lodi, which fares far worse than 99% of other jurisdictions across that state**, (San Joaquin CHNA (2019), p.51.) This is especially significant as Lodi has only one other hospital, and the proposed Gill Medical Center Project is ideally situated between Stockton and Lodi.

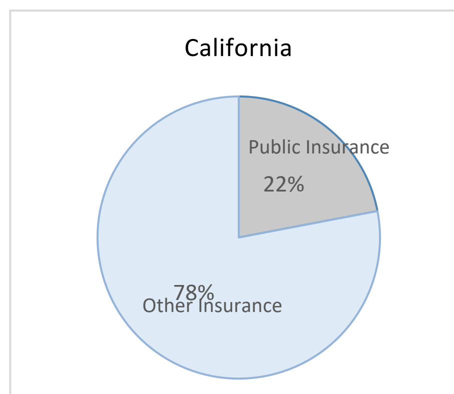
Table 9: CNHA Access to Care Related Health Outcomes and Contributing Factors

Indicator	*Stockton*	*California*
Primary Care Physicians (per 100,000)	60	78
Medicaid/Public Insurance Enrollment	30%	22%
Other Insurance	70%	78%

Source: 2019 Community Health Needs Assessment







Source: Data from the Community Health Needs Assessment for 2019

Reducing the Potential for "Leakage"

Increasingly the availability of high-quality medical care in San Joaquin County will reduce "leakage" to hospitals and other medical facilities outside of the service area. Essentially, San Joaquin County residents who currently travel to Sacramento and the Bay Area for medical care will seek care closer to home if their access to care is improved. This increased access will enable more working families with limited resources and travel time to consistently seek medical care. Furthermore, it reduces vehicle miles traveled and greenhouse gas emissions from trips, especially into the more congested areas of Sacramento and the Bay Area.

In economics, “leakage” describes the phenomena of seeking a good or service outside of one’s trade area (typically near one’s residence or possibly near one’s place of work). Our research shows that it is not uncommon for residents of San Joaquin County to seek or receive medical care services in the Sacramento Area and the Greater Bay Area, where there is a higher number of high-quality medical facilities and personnel as well as a greater number of specialists. **Finally, practitioners (especially nurses) who reside in San Joaquin County may not necessarily practice there, but rather work in these two alternative trade areas where there are more hospitals and Medical Office Buildings (MOBs).**

The relative lack of medical care and provider options in San Joaquin County results in both lack of care as well as leakage to neighboring regions. Both the Sacramento Area and Bay Area have higher concentrations of medical providers and clinicians, more hospitals, greater numbers of specialists. Furthermore, these areas boast regionally integrated networks of care including the UC system (Davis and SF), Sutter Health (based in Sacramento) , and Stanford Medical. Coffman, Geyn, and Himmerick (2017) conclude that there is “substantial variation in supply” of primary care across the state, which is masked in statistics for California overall. San Joaquin Valley has the lowest ratio of *clinician* capacity in the state, while the Greater Bay Area has the highest (*Id*. at, 11). It has the second lowest provider ratio as well, while once again the Greater Bay Area has the highest.

Figure 4 below compares the San Joaquin Valley region to nearby regions and the state overall. It shows the lack of overall clinicians in San Joaquin—echoed in San Joaquin County as well—and especially the comparative lack of NPs and PAs.

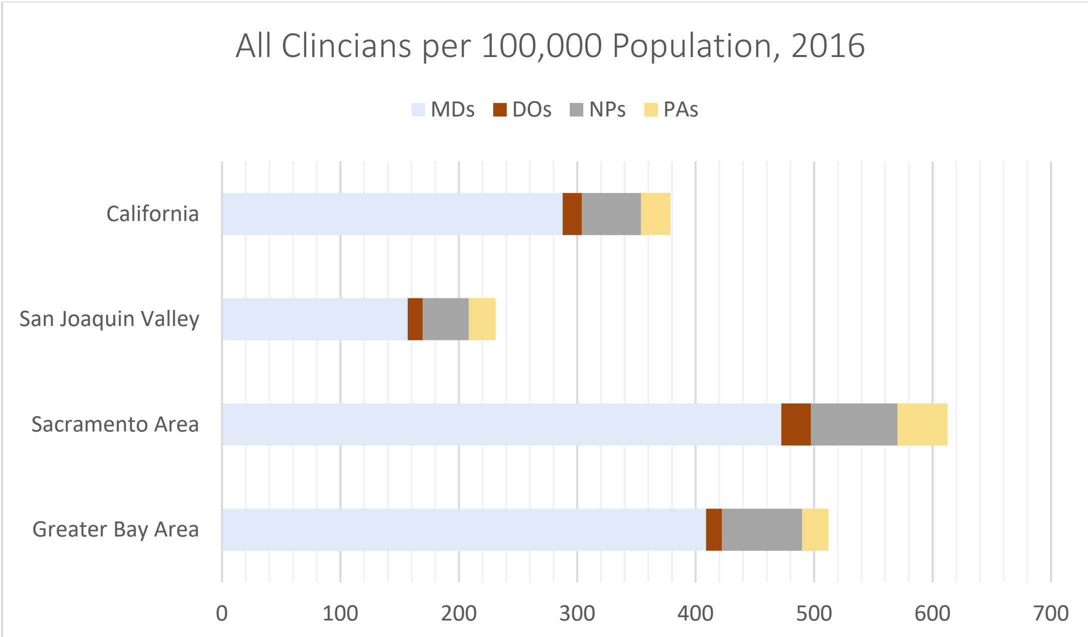


Figure 5: Comparison of Medical Practitioners in San Joaquin to Leakage Areas, Data from the 2017 Healthforce report

Low ratios of providers to population reduce access to primary care. "Council on Graduate Medical Education (COGME) recommends a ratio of primary care physicians per population of 60 to 80 primary care physicians per 100,000 population (1,250 to 1,667 patients per primary care physician). Other organizations call for primary care physicians to have a patient panel of no more than 2,000 patients per physician" (Coffman, Geyn, and Himmerick 2017, 56). San Joaquin Valley falls below this threshold, suggesting that providers area overburdened, due to disproportionate distribution of care. This could push patients to seek primary care doctors elsewhere, where there may be greater availability. Both Sacramento and the Greater Bay Areas have a much higher ration of providers, suggesting that more doctors would accept new patients. This increased access produces the leakage which takes place in San Joaquin County.

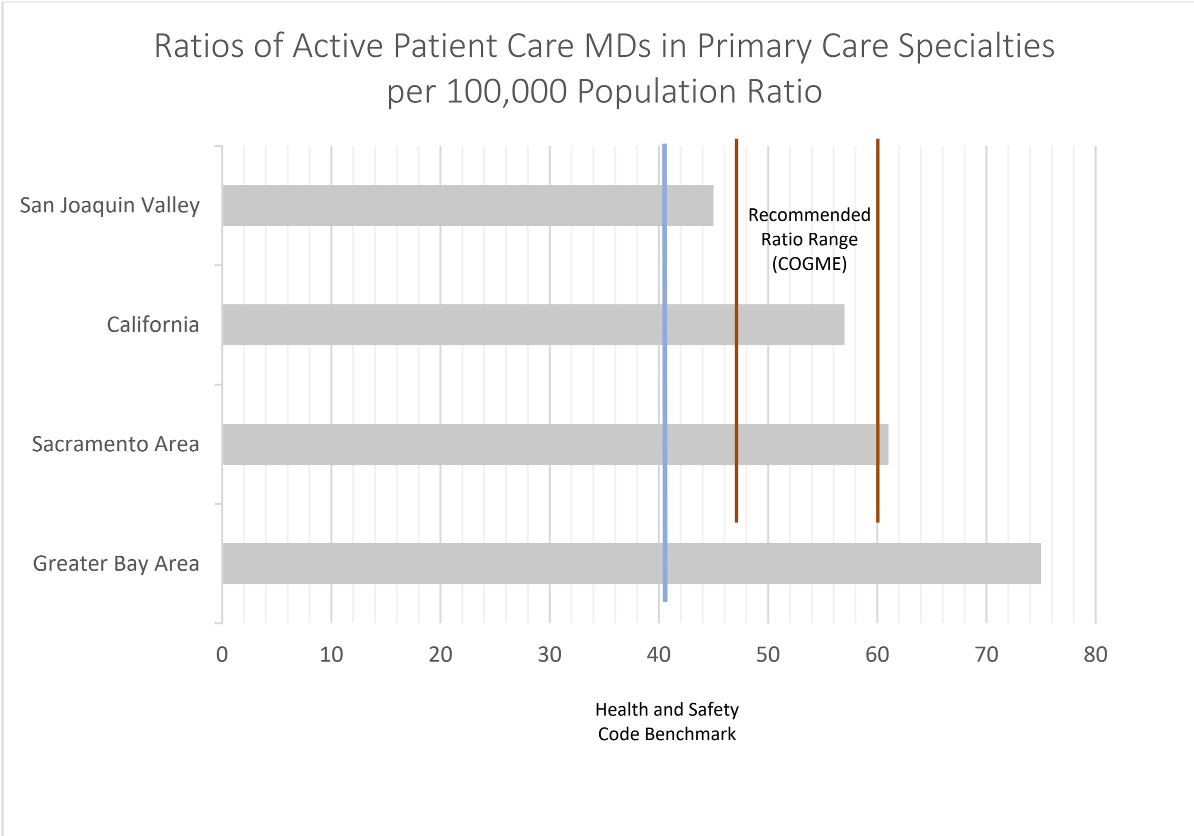


Figure 6: Ratios of Active Patient Care MDs in Primary Care Specialties per 100,000 Population, by Region of California Compared to Benchmarks of Adequacy of Supply, 2015 (Source: Healthforce 2017)

Leakage presents both a community health problem and an economic problem. Health wise, it deprives the local community of access to care, necessitates commutes, and decreases the likelihood of seeing a specialist quickly when necessary. Since health care is a high-value activity and health care providers are generally paid higher wages, locating medical facilities outside of an area reduces the economic activity and vitality of a community. As noted above, the Stockton/Lodi area, and the San Joaquin Valley, is significantly underserved. This lack of medical services not only harms individuals due to lack of access, but also reduces economic activity and vitality.

Increasing Demand for Healthcare over Time

The demand for healthcare in California is not only increasing due to greater Medi-Cal enrollment under the Affordable Care Act ("ACA"), but also to the unevenly distributed growth of the population. The inland population, already experiencing healthcare shortages, is growing much faster than the state overall and in particular the coastal region. "The inland areas of California have experienced faster growth rates than the coastal areas for many decades, but coastal counties are still home to most of the state's population. That pattern is projected to continue, with the Inland Empire, the Sacramento region, and the San Joaquin Valley projected to grow faster than other areas of the state. (Hans, Mejia, and Hill (2020), p.2.)"

Table 5 below shows projections of population growth by 2050, compared to 2017 Census data. The growth, projected by the California Department of Finance, is unevenly distributed, with San Joaquin County experiencing higher growth than the State overall and nearby Sacramento County. This is especially significant in the long-term, as by 2050 San Joaquin County's population is projected to increase by 37%, more than double the 13% increase in California's population.

Table 10: By 2050, the disparity in projected populations is more apparent, with San Joaquin County sustaining higher growth rates than Sacramento and California.

Percent Change in Population, 2017-2050

	California			**San Joaquin County**			**Sacramento County**		
Demographic	*2017 Population*	*2050 Population*	*Percentage Change*	*2017 Population*	*2050 Population*	*Percentage Change*	*2017 Population*	*2050 Population*	*Percentage Change*
White (Non-Hispanic)	14,872,102	11,824,610	-20%	246,864	278,084	13%	709,069	742,017	5%
Black	2,363,339	2,559,333	8%	50,953	66,796	31%	157,680	223,013	41%
American Indian or Alaska Native	195,297	256,589	31%	3,625	5,921	63%	9,144	12,083	32%
Asian	5,852,034	9,048,119	55%	111,247	186,018	67%	234,129	370,649	58%
Native Hawaiian or Pacific Islander	137,191	129,656	-5%	3,597	4,417	23%	14,605	10,999	-25%
Multiracial (Non-Hispanic)	876,699	1,181,258	35%	23,504	44,595	90%	43,718	15,527	-64%
Hispanic (any race)	15,293,951	19,856,896	30%	299,002	436,615	46%	336,594	495,480	47%
Total Population	39,590,613	44,856,461	13%	750,119	1,028,014	37%	1,520,121	1,876,422	23%

Source: California Department of Finance projections

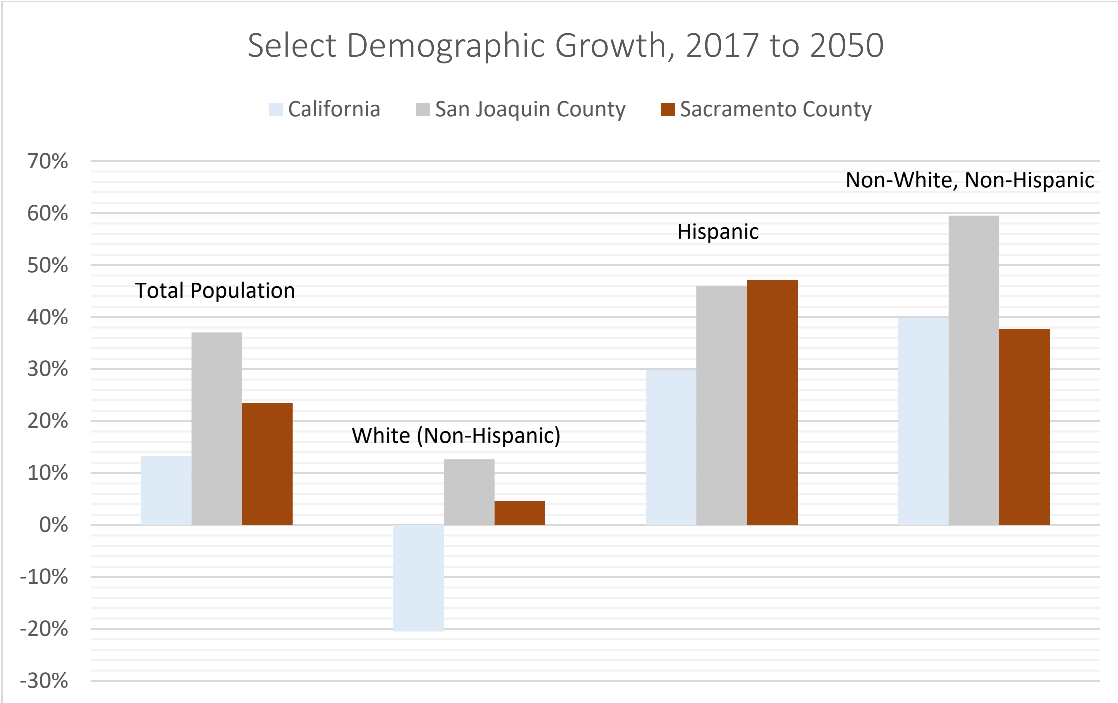


Figure 7: Comparison of demographic changes 2017 to 2050

With predicted population growth, the medical workforce in San Joaquin County cannot increase supply sufficiently to meet demand. Under one estimate, "The San Joaquin Valley would need 32,113 FTE RNs in 2030 to maintain the current ratio of 622 FTE RNs per 100,000. If current hospital utilization rates are used as a measure of demand, the region would need more than 35,000 full-time employees ("FTE",Spetz, Coffman, and Bates (2018), p. 9). Furthermore, "Attaining the national average of FTE RNs per population would require 51,868 FTE RNs by 2030 (Spetz, Coffman, and Bates 2018, 9). This total is approximately 30 percent larger than the number of FTE RNs forecast under the baseline supply scenario results in 9,944 too few FTE RNs in the San Joaquin Valley to meet demand in 2030 (Spetz, Coffman, and Bates 2018, 10)." The Gill Medical Center Project would help create a workplace for needed nurses and other medical personnel in the Stockton/Lodi are and in San Joaquin Valley.

Table 11: Predictions of the need for nursing staff in San Joaquin County

Scenario	*Necessary increase in RNs*
Maintain current ratio	32,113
Utilization rates	More than 35,000
Nationwide average	51,868

Source: Spetz, Coffman, and Bates 2018

These estimates do not fully capture the issue, including the need for more physicians as populations age and in areas where the birthrate is high, such as the San Joaquin Valley. Furthermore, they do not address the urgent need for expanded charity care for those publicly insured and large uninsured populations. The surrounding counties have much higher reliance on public insurance—up to twice that of the statewide average in some areas. This increased reliance on state and federal insurance programs creates an acute need for "charity care" in the Stockton-Lodi area and the wider San Joaquin County.

Charity care reduces potential revenue for area hospitals, placing a burden on that hospital's ability to offer medical services, hire staff, and improve quality of care (Bai, Yehia, Anderson, 2020). Increasing the number of hospitals helps offset this burden, by distributing charity care patients across more facilities. Thus, adding an addition hospital in the area could potentially improve the financials of established area hospitals by decreasing their charity care burden. Beyond charity care, an additional hospital will better distribute services through the area and reduce crowding with much needed additional beds and staff.

Table 12: Insurance Coverage for Service Area Urban Areas

City	*Percent Uninsured*	*Percent Public Insurance*
Lodi	**7.7%**	**45.10%**
Stockton	**7.0%**	**48.70%**
Manteca	5.1%	38.40%
Tracy	5.1%	29.00%
Lathrop	7.7%	36.70%
County	6.5%	43%
State of California	7.2%	24.80%

Source: Census Bureau ACS 2018

With projected increases in population, the existing need for medical care in San Joaquin County will only increase. The Gill Medical Center Project helps meet the current demonstrated demand for healthcare and will help to better prepare the area for increased population growth. Local growth may not be far off, given the plans for nearby development—including the approved annexation just south of the Project site at Eight Mile Road and West Lane for Tra Vigne, a mixed-use development including residential growth. According to the developer, this project "will yield approximately 700 residential home lots, an 11-acre neighborhood retail site, a 10-acre multi-family parcel that will accommodate of 300+ units and a 15-acre school site[7]." This creates additional medical care demand. In addition, the employment generated by the project would support growth and real estate in this area of North Stockton.

Existing Hospitals in San Joaquin County

The proposed site of the Gill Hospital Project, North of Stockton and situated between I-5 and highway 99 offers access for the surrounding cities of Lodi and Stockton, as well as many nearby rural communities throughout San Joaquin County. The primary service area of the hospital/medical complex

[7] https://theembarcaderogroup.com/tra-vigne

is this north and central portion of San Joaquin County, near the cities of Stockton and Lodi. The secondary service area extends further south to the whole of San Joaquin County.

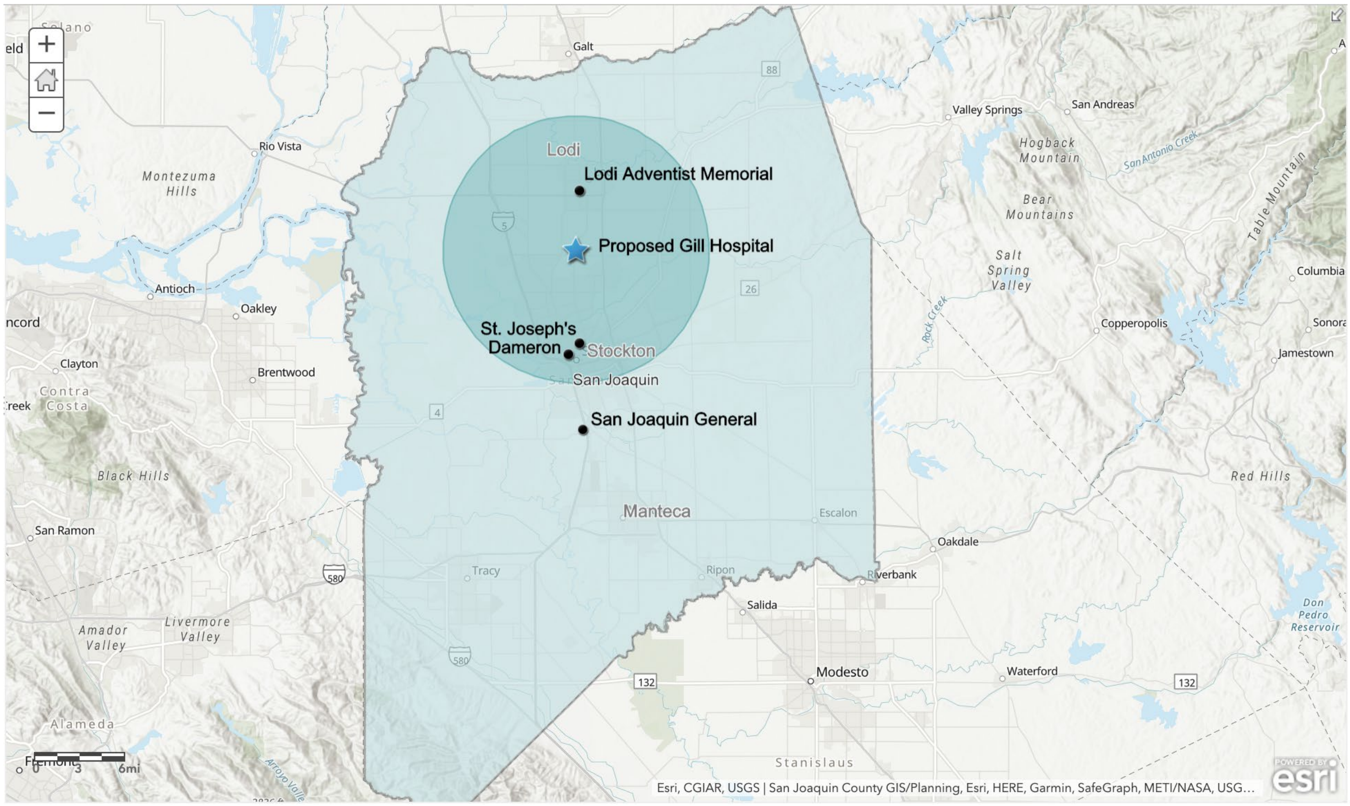


Figure 8: The primary service area radius is highlighted within the secondary service area of San Joaquin County[8]

The cities of Tracy and Manteca are considered as secondary service areas for several reasons. First, they are much further from the proposed site. Given that both communities have their own hospital facilities (Tracy has a Sutter Hospital, a branch of San Joaquin General, and a Stanford Children's Health branch while Manteca has Doctor's Hospital and is close to Modesto, with a large Kaiser hospital), travel as far as the Gill campus is unlikely. More importantly (especially for Tracy), these cities are much closer to the Bay Area. It is likely that residents would drive to the Bay Area, a form of service leakage, as that region has a much higher concentration of established hospitals and medical care providers. However, some residents will decide to travel north to Stockton instead, and could receive care at the Project.

The proposed Gill Medical Center Project will increase medical services to the rapidly growing San Joaquin County area, a much-needed response to the lack of medical care in the County. **Furthermore, the Gill Hospital hopes to partner with a larger care provider, and therefore connect San**

[8] The "primary service area" as indicated by this chart is a driving radius based on typical usage patterns. Due to the location of the Project in close proximity to Highway 99, the *actual* primary service area is concentrated in North Stockton and Lodi, extending to the East as well. This more accurate area is depicted in Figure 2

Joaquin residents to a wider care network and offer more options for medical care. This will help reduce leakage to Sacramento and the Bay Area, by offering a similar type of regionally integrated care closer to home. As we will show, the County has a severe need for medical staff—especially physicians and RNs—and specialists, including OBGYNs. The the first phase of the Project incorporates a birthing center and women's clinic, bringing dedicated female-focused care and specialists to the area.

The Stockton/Lodi primary trade area served by the Project is incredibly diverse, with a higher birthrate than the State—especially among women of color (66.9 births per 1,000 on average in San Joaquin County, 61.7 in California and Black mothers in San Joaquin have a birthrate almost 1.5 times the state rate). With these trends, Increasing the availability of dedicated women's health services is necessary in this area.

Broadly speaking, current medical services in the primary service area do no fully meet the need for medical care. There are four hospitals in the Stockton-Lodi area: San Joaquin General, Saint Joseph's, Dameron, And Lodi Memorial. These hospitals, however, do not provide adequate beds compared to the Statewide average, nor the average for nearby counties. OSHPD data also suggests an inadequate supply of dedicated obstetrics and birthing services.

Table 13: Types of Medical Care Facilities in San Joaquin Urban Areas

Distribution of Care in San Joaquin County

Location	*Number of Hospitals*	*Hospital Beds*	*Nursing Facilities*	*Clinic*	*Hospice*	*Home Health*
French Camp	1	152	0	0	0	0
Lodi	1	194	5	7	1	2
Stockton	3[9]	592	15	23	7	15
Manteca	2	172	2	6	1	2
Ripon	0	0	1	0	0	0
Lathrop	0	0	0	0	1	0
Tracy	1	77	2	7	0	1

Source: OSHPD 2018 Facilities reports

Table 14: Selected Data for Hospitals in the Primary Service Area

Hospital	*Location*	*Available Beds*	*Total Census Patient Care Days*	*Outpatient visits*
St Joseph's Medical Center of Stockton	Stockton	348	82,383	255,213
Dameron Hospital	Stockton	170	15,389	86,483
San Joaquin General Hospital	French Camp	181	38,015	216,064

[9] OSHPD includes the Behavior Health Center at St. Joseph's as a separate facility in their count of hospital facilities.

Lodi Memorial Hospital	Lodi	190	34,958	280,415

Source: OSHPD Hospital Financials, 2018

The four hospitals in the proposed trade area provide the majority of services to local residents, offering 889 total hospital beds. **However, Figure 8 below shows that compared to not only State and National benchmarks, but neighboring regions, they have insufficient capacity—as shown in Figure 6.** Hospital capacity is especially important—as illustrated by the ongoing COVID-19 pandemic. Furthermore, as mentioned previously, the San Joaquin valley's projected population growth will outpace nearby areas and further stress existing hospital capacity. Additionally, while there are four hospitals in the service area, only one (Lodi Memorial) is in close proximity to Lodi and the surrounding area. The proposed Gill Hospital would be situated between central Stockton and Lodi, bringing additional convenient services to this population.

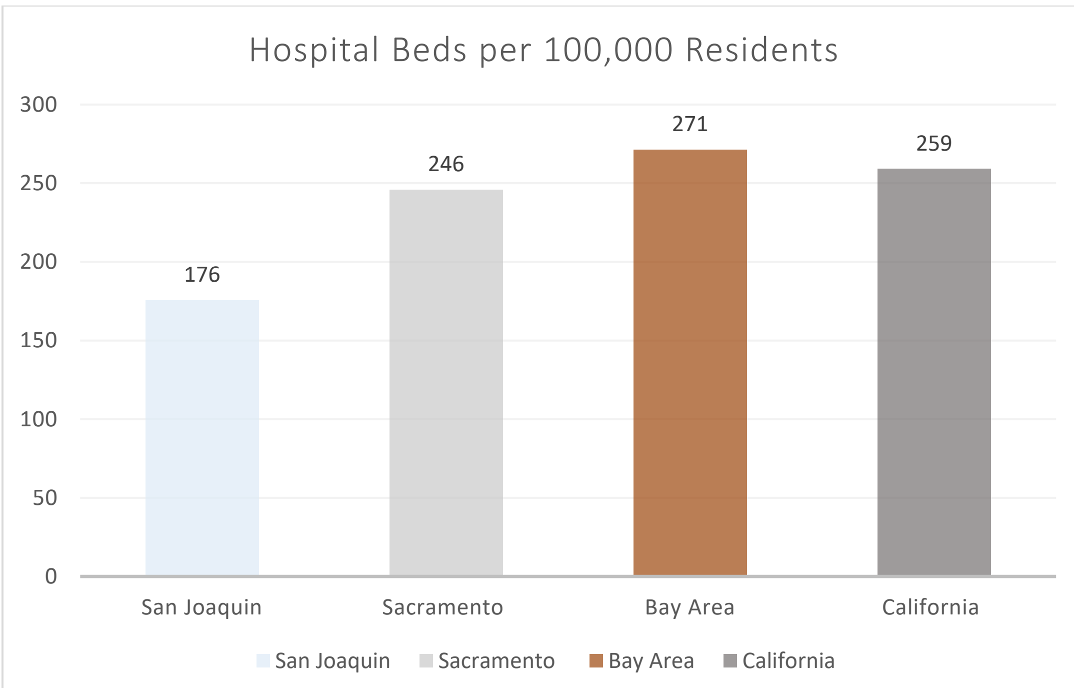


Figure 9: Comparison of hospital beds per capita in San Joaquin to nearby regions and the State of California shows comparative lack

The proposed Project will help increase the healthcare capacity in the Stockton-Lodi area and greater San Joaquin Valley. The project provides additional hospital beds in Phase I and Phase II, dedicated women's health and OBGYN services, and additional providers. The proposed Project would help reduce the shortage of both beds and providers but would not completely alleviate the lack. Even if *another* hospital of similar size were constructed in the primary service area, the existing need would likely not be met.

It is our understanding that the City of Stockton has identified a hospital as one of several potential uses of the 3,800-acre Spanos-owned site north of 8 Mile road west of I-5 discussion (not included in the 2018 General Plan, but part of the potential use for the "Sphere of Influence" and "Economic and Education Enterprise", according to a 2018 Sierra Club letter[10]) it is worth examining the demand for medical services. At full buildout, the Project provides approximately 110 beds, and the average hospital in the area is approximately 220 beds, therefore construction of *two* hospitals near north Stockton would potentially bring 330 beds to the area. Even with 330 additional beds, the number of beds per 100,000 residents in San Joaquin County would be 224, still lower than the state average and the ratio in neighboring areas (see Figure 8). Table 9 below illustrates the hypothetical impact of additional beds on the relative lack in San Joaquin County.

Table 15: Impact of Additional Beds on San Joaquin County Hospital Services

	Beds Per 100,000	*Relative Lack Compared to California Average*
Current	176	84
100 Additional Beds	190	69
200 Additional Beds	205	54
300 Additional Beds	219	40
400 Additional Beds	234	25

3. Economic Impact Estimation Methodology

The economic impact (employment, value added, and output) of the Project is determined using the IMPLAN [11]application. IMPLAN is an economic impact software that uses the Input-Output model to predict the effects of shocks to an economy[12]. The model relies on detailed databases of economic factors, multipliers, and demographic statistics. IMPLAN is the standard model used by government agencies. The models were originally developed by the U.S. Department of Agriculture, but today the IMPLAN model is used widely for all analyses of economic impacts.[13]

In the input-output model, direct effects are identified and classified by sector, and then induced and indirect effects are identified based on the direct effects. The relationships between different sectors of the economy determine the induced and indirect effects. The model draws on detailed data on 528 industries

For the purposes of this assessment, the initial direct effects rely on the projected (1) construction costs and (2) employment estimates (for both construction and operation). The model then

[10] https://www.sierraclub.org/sites/www.sierraclub.org/files/sce-authors/u14441/Planning%20Commission%20letter%20on%20GP%20%20and%20DEIR%207-23-18%20final.pdf
[11] https://implan.com/application/
[12] http://cier.umd.edu/RGGI/documents/IMPLAN.pdf.
[13]For examples of reports using IMPLAN, see:seehttps://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/technical/econ/tools/?cid=nrcs143_009732

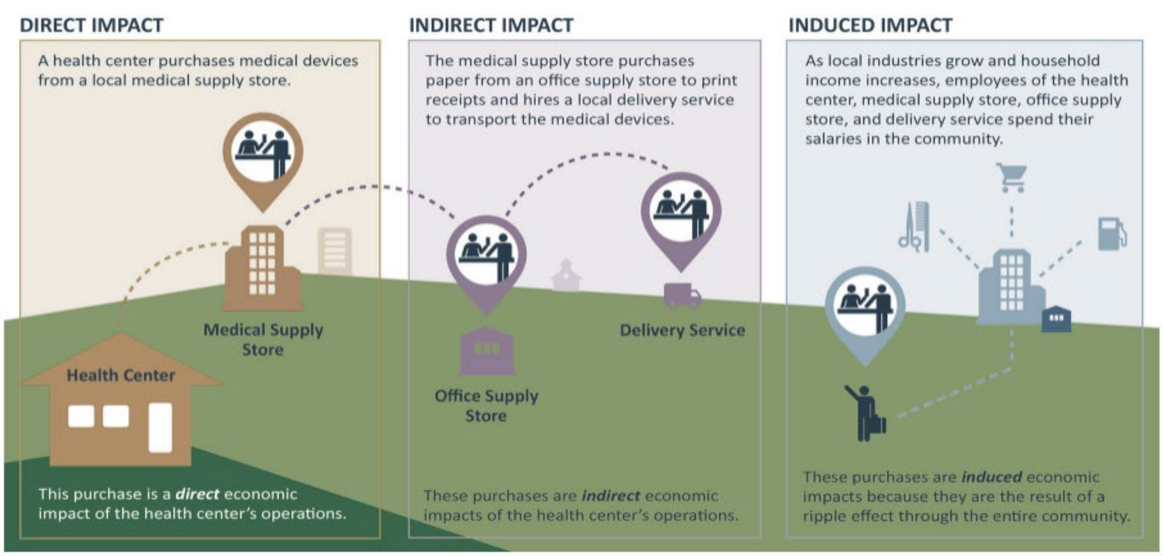
determines the value of that initial expenditure and economic activity, and how that activity will affect the local economy. For example, the direct effect is the employment of doctors, nurses, administration, and staff at the hospital. The induced and indirect effects are all of the downstream industries impacted—local restaurants, gas stations, parking services, shopping and other retail etc. that those employees might use. The Project generates economic activity throughout the region in this manner.

Input-Output Modelling

Input-output (I/O) was designed to analyze the transactions among the industries in an economy. The main purpose of I/O analysis is to estimate the impacts that a given development can have beyond the jobs and other economic activity generated by the project itself by including economic activity generated by the spending that this job creates.

To give a simple example: if a nurse works for the Gill center and spend her paycheck in the City of Stockton to buy groceries, she is generating additional economic impacts, generally called induced effects. IMPLAN also estimates the indirect effects, which occur when the Gill Center orders supplies locally (e.g., COVID testing in Stockton).

Detailed I/O analysis captures the indirect and induced interrelated circular behavior of the economy. For example, an increase in the demand for health services requires more equipment, more labor, and more supplies, which, in turn, requires more labor to produce the supplies, etc. By simultaneously accounting for structural interaction between sectors and industries, I/O analysis gives expression to the general economic equilibrium system. The analysis utilizes assumptions based on linear and fixed coefficients and limited substitutions among inputs and outputs. The analysis also assumes that average and marginal I/O coefficients are equal.



Source: https://www.caplink.org/how-economic-impact-is-measured

IMPLAN

IMPLAN is a computer program developed by the United States Forest Service to construct I/O accounts and models. Typically, the complexity of I/O modeling has hindered practitioners from constructing models specific the community requesting an analysis. IMPLAN provides this specificity.

Five different sets of multipliers are estimated by IMPLAN, corresponding to five measures of regional economic activity. These are: total industry output, personal income, total income, value added, and employment. Two types of multipliers are generated. Type I multipliers measure the impact in terms of direct and indirect effects. Direct impacts are the changes in the activities of the focus industry or firm, such as the closing of a hospital. The focus business changes its purchases of inputs as a result of the direct impacts. This produces indirect impacts in other business sectors. However, the total impact of a change in the economyA-3 consists of direct, indirect, and induced changes. Both the direct and indirect impacts change the flow of dollars to the state, region, or county's households. Subsequently, the households alter their consumption accordingly. The effect of the changes in household consumption on businesses in a community is referred to as an induced effect. To measure the total impact, a Type II multiplier is used. The Type II multiplier compares direct, indirect, and induced effects

Like other input-output models, IMPLAN calculates the flow of payments for goods and services across different industry sectors, and between households and industries. It can be envisioned simply as a table with hundreds of rows and columns, with all industries (plus households) listed down the side as producers; and the same industries (and households) listed across the top as consumers. Spending by any consumer industry – in this case, the University – is allocated across all of the producing industries and the household sector. Each of these producer industries in turn purchases its own distinct set of inputs from other industries and households in order to produce the output it sells.

Table A1: Economic Multipliers Applied to Hospitals

Type of Multiplier	*Direct*	*Induced*	*Indirect*
Employment	Hospital employees and those providing services directly to hospitals	Retail and Service jobs generated by employee spending	Jobs created by indirect supplies of services to hospitals (e.g., ambulance repair service
Income	Employee or service provider income	Retail and service income	Supplier income
Output	Hospital Expenditures	Retail and service expenditures	Supplier expenditures

However, in addition to this direct spending, there are indirect and induced impacts, often referred to as "multiplier effects." The *indirect impact* is a product of spending by the local, regional or State companies from which the hospital purchases goods and services. The *induced impact* represents the impact of routine household spending by hospital employees – for rent, food, clothing, transportation, etc. – and by the employees of its suppliers. Table 2 above provides an illustration of these multipliers.

Intuitively, if these hospitals shut down, the community would not only experience an economic contraction due to the loss of wages and services directly paid for by these hospitals but would also lose the spending by hospital employees and other members of the workforce who provide services to hospitals as well as the spending on other industries who provide inputs top these hospitals.

To estimate the interactions of the proposed Gill Medical Center hospital with the rest of the local economy, economists use input/output analysis, which estimates the interactions of different industries as well as additional consumer spending. These interactions vary from industry to industry and region to region. To analyze these impacts, we use *IMPLAN* software[14], which is based on the Bureau of Economic Analysis' Input Output

Conclusion

Based on our analysis of the proposed Gill Medical Center, we conclude that the Project would provide substantial economic benefits to the Stockton-Lodi community and help *better* meet the medical needs of a seriously underserved population. The facility would increase the community level access to care, reducing the demand for medical services in Sacramento and Bay Area. The need in San Joaquin County so severe that an additional hospital will not completely alleviate the lack of hospital beds and staff, but it will significantly improve access to care. The Gill Medical Center will also generate significant economic activity and generate close to 1,400 new jobs in the area, both at the center, and as a result of the increased economic activity. In short, the Project will not only increase the availability of needed medical care to a seriously underserved community, but it would also strengthen the economy of northern San Joaquin County including Stockton and Lodi.

[14] See www.implan.com.
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APPENDIX J

Traffic Impact Analysis and Updated Traffic Impact Analysis, September 27, 2021
KD Anderson & Associates, Inc.

TRAFFIC IMPACT STUDY

FOR

THE GILL MEDICAL CENTER PROJECT

San Joaquin County, California

Prepared For:

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September 27, 2021

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TRAFFIC IMPACT STUDY FOR
THE GILL MEDICAL CENTER PROJECT

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EXECUTIVE SUMMARY

This *Executive Summary* is a brief overview of the analysis presented in this traffic impact study. It is not intended to be a comprehensive description of the analysis. For more details, the reader is referred to the full description presented in the traffic impact study.

This traffic impact study presents an analysis of the traffic-related effects of the Gill Medical Center (GMC) project. The project site is located north of the City of Stockton, west of Ham Lane, east of West Lane, and north of Eight Mile Road. The proposed project includes a medical center, hospital, medical office building, and circulation system improvements.

This traffic impact study includes analysis of:

- 22 intersections,
- 10 roadway segments, and
- 8 freeway ramp junction areas.

These study facilities are analyzed under the following seven development scenarios:

- Existing Conditions,
- Existing Plus Phase 1 of the GMC project,
- Existing Plus Buildout of the GMC project,
- Near-Term Future Existing Plus Approved Projects (EPAP) No GMC Project Conditions,
- Near-Term Future EPAP Plus GMC Project Conditions,
- Long-Term Cumulative No GMC Project Conditions, and
- Long-Term Cumulative Plus GMC Project Conditions.

Under Existing conditions, five study facilities experience operating conditions which are considered unacceptable. This traffic impact study presents recommended improvements for these facilities.

Under Existing Plus Phase 1 conditions, five study facilities experience operating conditions which are considered unacceptable. None of the five is considered a significant inconsistency with General Plan policies.

Under Existing Plus Project conditions, five study facilities experience operating conditions which are considered unacceptable. Three are considered significant inconsistencies with General Plan policies. This traffic impact study presents recommended improvements for these facilities.

Under EPAP No GMC Project conditions, two study facilities would experience operating conditions which are considered unacceptable. This traffic impact study presents recommended improvements for these facilities.

Under EPAP Plus GMC Project conditions, three study facilities would experience operating conditions which are considered unacceptable. Two are considered significant inconsistencies with General Plan policies. This traffic impact study presents recommended improvements for these facilities, and also for a project site access location. This traffic impact study also presents a recommended improvement based on project site access conditions.

Under Cumulative No Project conditions, all study facilities would experience operating conditions which are considered acceptable.

Under Cumulative Plus Project conditions, all study facilities would experience operating conditions which are considered acceptable.

In addition to presenting analysis of traffic operating conditions, this traffic impact study also presents analysis of project-related vehicle miles traveled (VMT), and project-related impacts on:

- demand for public transit services, and
- demand for bicycle and pedestrian facilities.

The project impact on public transit service is considered potentially significant and a mitigation measure to reduce the impact to a less than significant level is identified.

The project impacts on bicycle and pedestrian facilities are considered significant and mitigation measures to reduce these impacts to a less than significant level are identified.

The project-related impact on VMT is considered significant. This traffic impact study presents mitigation measures to reduce the significance of the impact. However, the impact is considered significant and unavoidable.

INTRODUCTION

STUDY PURPOSE

This traffic impact study presents an analysis of the traffic-related effects of the proposed Gill Medical Center (GMC) project.

PROJECT DESCRIPTION

The proposed GMC project would include development of a full-service alternative birthing center (ABC) facility, hospital, and associated medical office building. The project is proposed in two phases over approximately 10 years.

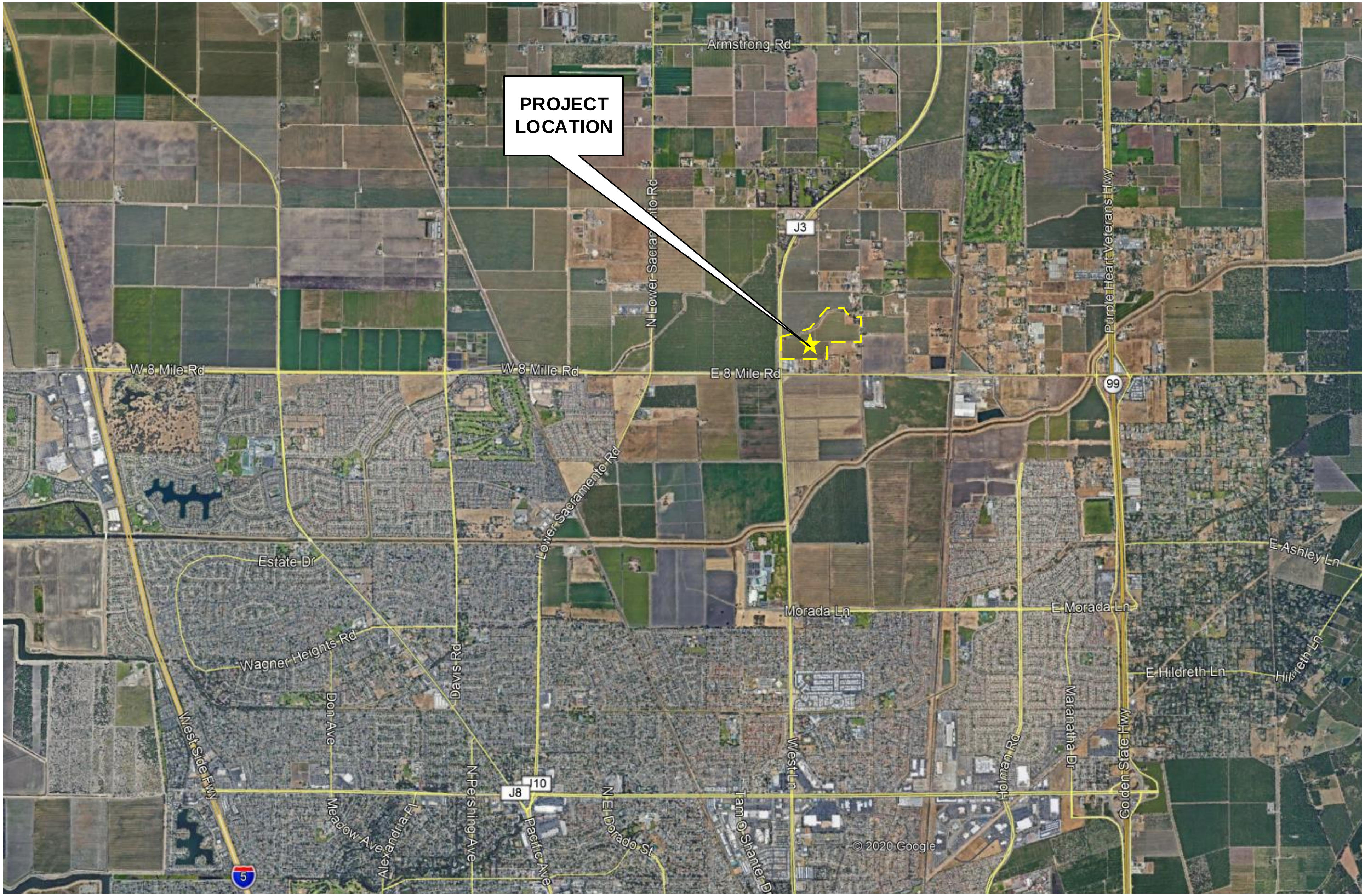
The project would be located on a ±42.4-acre site located approximately one mile north of the City of Stockton in unincorporated San Joaquin County, California. As shown in **Figure 1**, the site is located northeast of the intersection of Eight Mile Road & West Lane.

A project site plan is shown in **Figure 2**. **Figure 2** presents the latest version of the site plan available at the time the traffic analysis commenced. The site plan is expected to be updated in the future. The site plan shows the project components, access, circulation and parking. The following is a description of each of the two project phases.

Phase 1

Phase 1 development would include a 36,000+ square-foot (SF) single story medical center. The medical center would be designed to California Office of State Health Planning and Development (OSHPD) 1 Hospital standards, would be equipped with 12 beds, and would provide labor and delivery focused services, including alternate birthing options, and hospital emergency room services. The facility would be permitted and licensed by the OSHPD as a general acute-care hospital with a duly-constituted governing body with overall administrative and professional responsibility and a medical staff providing 24-hour inpatient care, including the basic services.

An average of approximately 50 employees would work at the project site under Phase 1. Phase 1 development would be completed within five years of project approval.



VICINITY MAP

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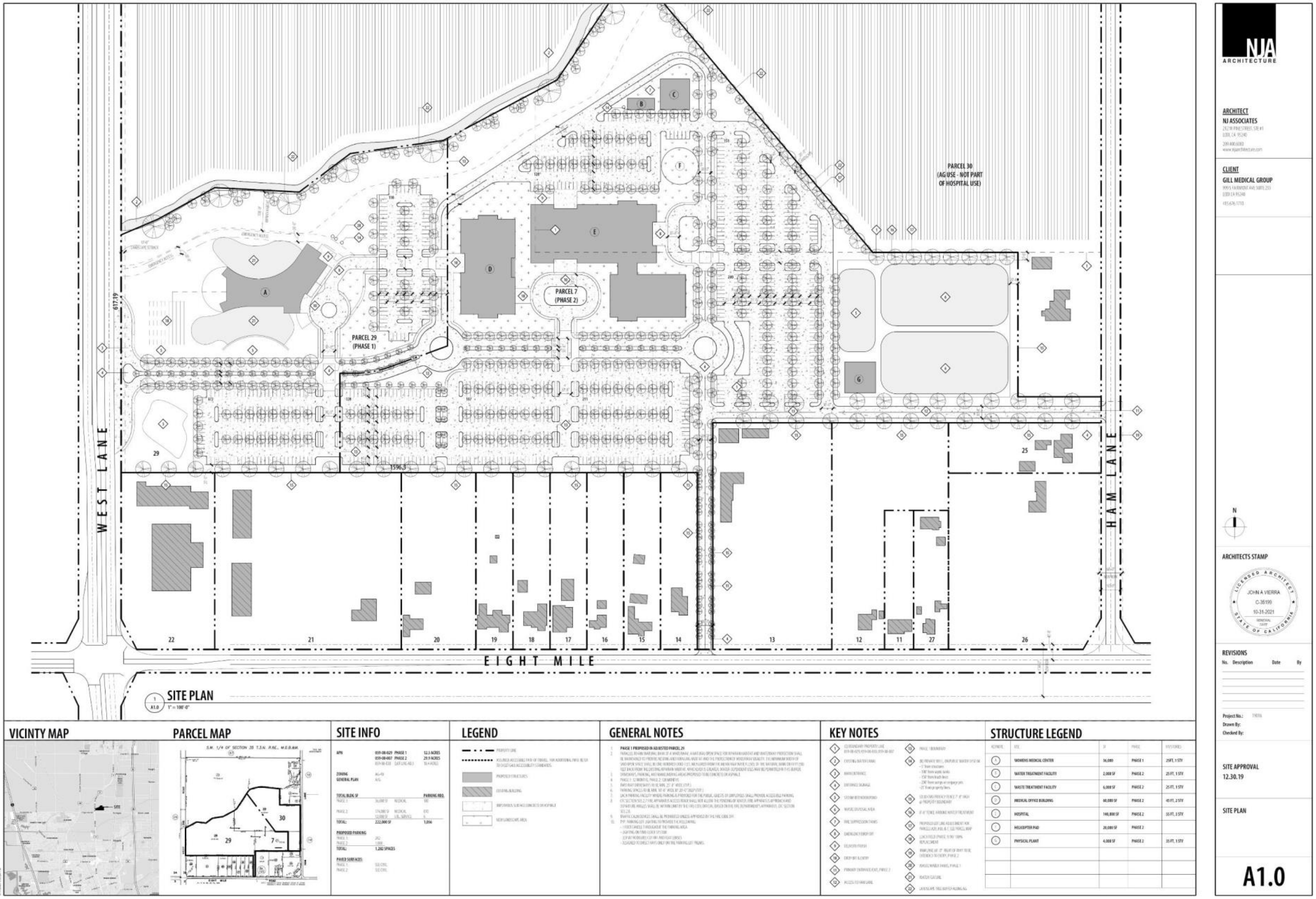
figure 1



Note: This site plan is the latest version available at the time the traffic analysis commenced.
The site plan is expected to be updated in the future.

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SITE PLAN

figure 2

Access, Circulation and Parking

Phase 1 Project access would be provided from West Lane via a new driveway at the approximate midpoint of the western site boundary. The new entrance drive would be a 50-foot wide driveway comprised of two 20-foot paved roads with two lanes in each direction and a 10-foot wide center landscape median. Entrance improvements would include signage and dedication of right-of-way to accommodate acceleration and deceleration lanes and full curb, gutter and sidewalk at the driveway entrance and along the project frontage with West Lane.

The entrance driveway would extend east-west through the approximate center of the site, and then turn north along the eastern Phase 1 site boundary. The entrance driveway would provide access to the southern and eastern parking lots and Medical Center Building front entrance. Pedestrian sidewalks would be located on each side of the entrance drive and northern segment. A patient/emergency drop-off and vehicle roundabout would be located in front of the Medical Center Building main entrance with connection to the northern parking lot and entrance drive. To ensure a safe path of travel, dedicated pedestrian pathways constructed to Americans with Disabilities Act of 1990 (ADA) standards would link all parking lots, the roundabout and the Medical Center Building entrance.

Phase 1 parking lots would be located east and south of the medical center building. A total of 282 parking spaces (10 feet wide by 20 feet deep) would be provided, including accessible parking near the medical center building entrance.

Phase 2

Phase 2 would include a 60,000+ SF medical office building, a 140,000+ SF 100-bed hospital expansion designed to OSHPD 1 Hospital standards, a full-service emergency helipad landing area, and 4,000+ SF physical plant building.

An average of approximately 550 employees would work at the project site under Phase 2. With the combination of Phase 1 and Phase 2, an average of approximately 600 employees would work at the project site under buildout of the overall GMC project. Phase 2 development would be completed within 10 years of project approval.

Access, Circulation and Parking

Phase 2 improvements would be supported by two new site access points, extension of the Phase 1 West Lane primary access drive, and construction of new parking lots and pedestrian sidewalks and paths.

A new eastern access driveway would be constructed from Ham Lane beginning at a point approximately 600 feet north of Eight Mile Road. The Ham Lane driveway would be the primary entrance/exit for the Phase 2 development area. This access drive would include a 30-foot-wide paved road section plus adjacent landscaping on each side. The Ham Lane access would allow left and right turns out of the project site and would be stop sign-controlled for departing vehicles. According to the Eight Mile Road Precise Road Plan, the intersection of Eight Mile Road & Ham Lane located south of this access point would be signalized under future cumulative conditions allowing for full turning movements at the Ham Lane southbound approach to Eight Mile Road.

A new 30-foot-wide southern access driveway would also be constructed connecting with Eight Mile Road, providing access to the mid-southern site boundary. This access would allow inbound and outbound right turns only and would be stop sign-controlled for departing vehicles.

In addition to the above new access drives, the Phase 1 West Lane access drive would be extended easterly and two new roundabouts constructed linking the onsite driveway and service road to create a looped onsite circulation system. A 30-foot-wide service/perimeter road would also be constructed along the site's northern parking lot boundary.

New parking lots providing 1,000 additional parking spaces (plus six "utility" spaces) would be constructed north, south and east of the hospital and medical office buildings. This would increase total combined onsite parking to 1,282 spaces.

Pedestrian sidewalks would be located on each side of the new Ham Lane and Eight Mile Road entrance drives. Patient drop-off and vehicle roundabouts would be located in front of the hospital emergency and medical office building main entrances. Dedicated pedestrian pathways constructed to ADA standards would provide appropriate linkages, and parking lot and pathway lighting would be installed consistent with Phase 1 development.

OVERALL ANALYSIS APPROACH

As noted above, this traffic impact study presents an analysis of the traffic-related effects of the GMC project. This analysis is conducted using existing background, near-term background conditions and long-term future background conditions. Future background conditions are based on the City of Stockton General Plan. Analysis of traffic operating conditions under the following seven scenarios is presented in this traffic impact study:

- Existing Conditions,
- Existing Plus Phase 1 of the GMC project,
- Existing Plus Buildout of the GMC project,
- EPAP No GMC Project Conditions,
- EPAP Plus GMC Project Conditions,
- Cumulative No Project Conditions, and
- Cumulative Plus Project Conditions.

Existing Plus Approved Projects (EPAP) conditions are a near-term background condition which includes existing traffic levels, and traffic associated with approved, but unconstructed, land use development projects in vicinity of the project site.

Cumulative conditions with the City of Stockton General Plan are a long-term background condition which includes future year forecasts of traffic volumes, based on development of surrounding land uses. This set of scenarios assumes 2040 conditions with future development consistent with the General Plan.

EXISTING SETTING

This section of this traffic impact study presents a description of existing conditions in the study area. Information presented in this section of the study is based on on-site field observations, traffic count data collected for this study, and other data available from local and state agencies.

This section of the traffic impact study also describes analysis methods applied for this study, and thresholds used to determine the significance of project-related effects.

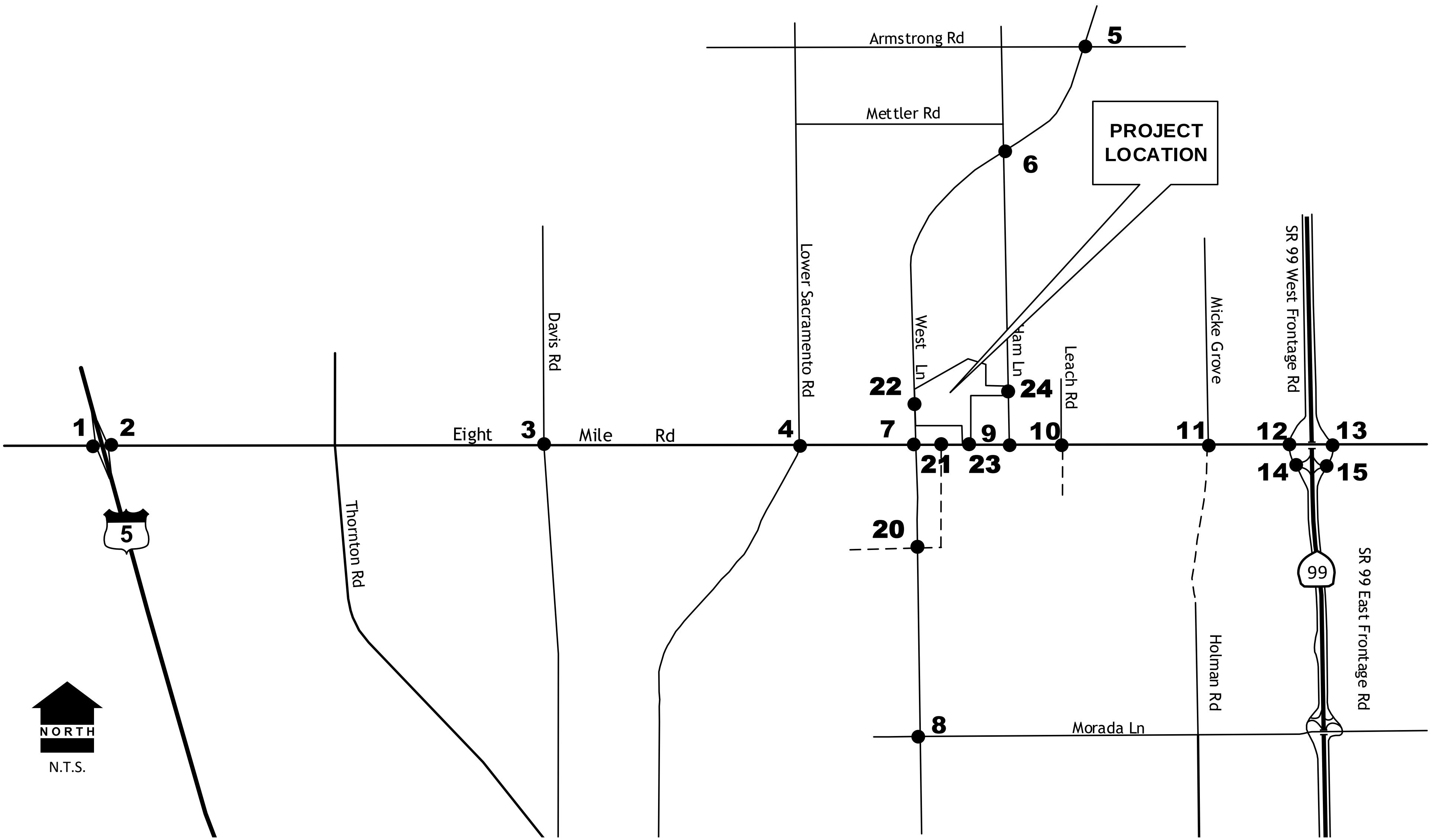
STUDY AREA ROADWAYS

This traffic impact study presents analyses of traffic operating conditions at intersections, on roadways, and at freeway ramp junctions, in the study area that may be affected by the proposed project. The limits of the study area were identified through discussions with County of San Joaquin staff (Levers pers. comm.).

The following describes the key roadways in the study area. The location and alignment of these roadways are graphically shown in **Figure 3** and **Figure 4**.

Interstate 5 (I-5) is a major north-south freeway that traverses the western U.S., originating in southern California and continuing north towards Sacramento and beyond. It is aligned through the western portion of the City, providing three travel lanes in each direction in the vicinity of the project site, and providing four travel lanes in each direction in other portions of the Stockton area. Twelve interchanges are provided along the 14-mile stretch of I-5 within and adjacent to the City limits. The portion of I-5 in the North Stockton area was recently improved. Current average daily traffic (ADT) volumes are between 63,000 and 74,000. The speed limit on I-5 in the vicinity of the project site is 70 miles per hour (mph).

State Route 99 (SR 99) traverses the Central Valley, connecting Sacramento and points north with numerous Central Valley cities, including Modesto, Merced, Fresno and Bakersfield. Three travel lanes are provided in each direction north of Wilson Way, while segments south of Wilson Way include two lanes per direction. Twelve interchanges are provided along the 12-mile length of SR 99 within and adjacent to the City limits. Average daily traffic volumes on SR 99 range between 79,000 and 80,000 in the vicinity of the project site. The speed limit on SR 99 is 65 mph in the vicinity of the proposed project site.



Note: Existing intersections are numbered 1 through 15. Future intersections, including project driveway intersections, are numbered 20 through 26. See the *Study Intersections* section of the traffic impact study for a detailed description.

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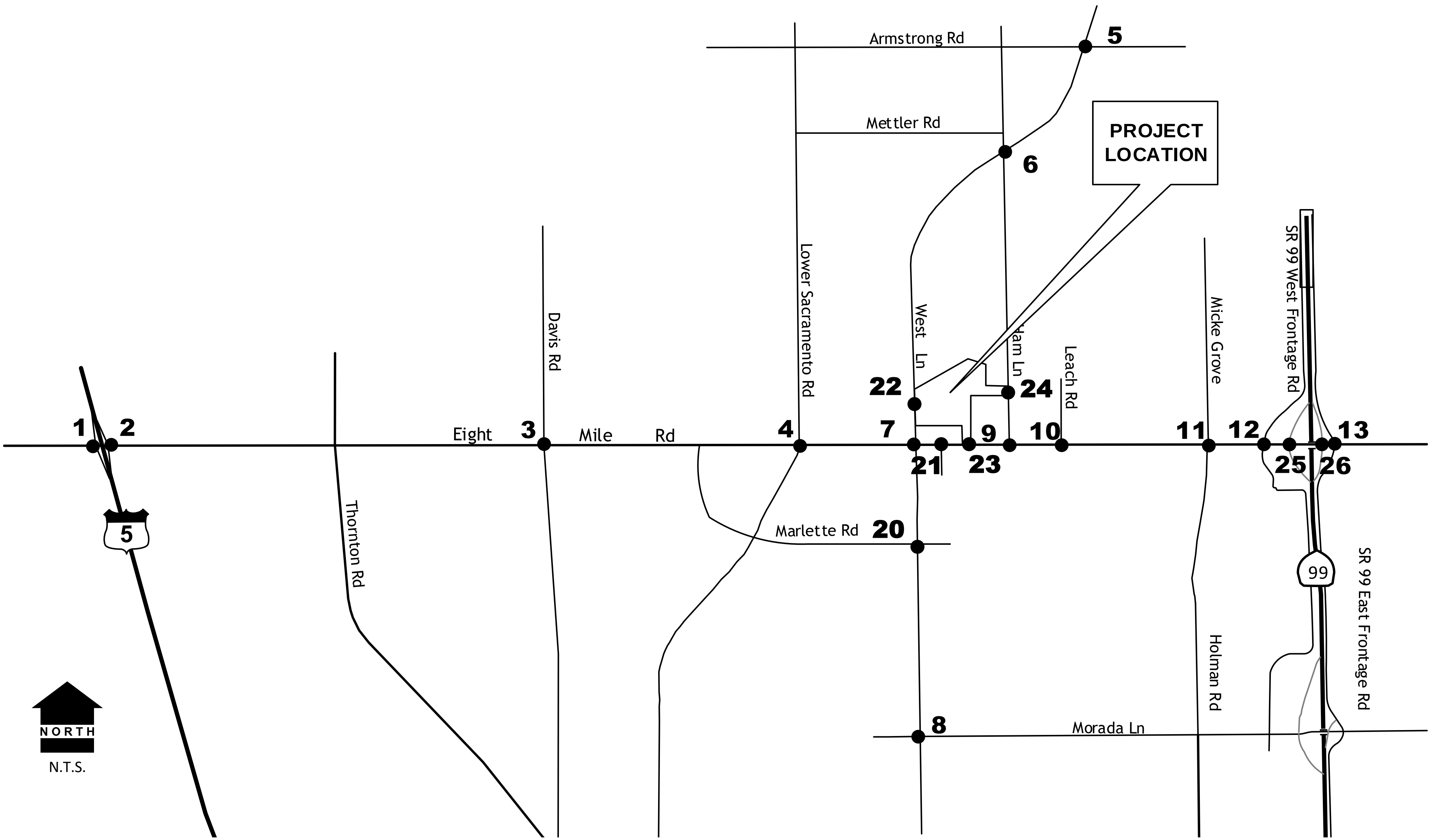
ROADWAY NETWORK AND STUDY INTERSECTIONS
EXISTING AND EXISTING PLUS APPROVED PROJECT CONDITIONS



Note: Existing intersections are numbered 1 through 15. Future intersections, including project driveway intersections, are numbered 20 through 26. See the *Study Intersections* section of the traffic impact study for a detailed description.

ROADWAY NETWORK AND STUDY INTERSECTIONS
LONG-TERM FUTURE CUMULATIVE CONDITIONS

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Eight Mile Road is an east-west roadway south of the project site. As shown in **Figure 2**, the project site is proposed to have access to Eight Mile Road via a project driveway. In the vicinity of the proposed project site, the majority of Eight Mile Road is two lanes wide (one lane in each direction). However, some portions of Eight Mile Road are four-lanes wide, and limited portions have three lanes in a single direction. In the vicinity of the project site, the posted speed limit along Eight Mile Road is 45 mph. Eight Mile Road has access to SR 99 at an interchange that includes a two-lane overcrossing of SR 99. A project study report (PSR) has been prepared for proposed improvements to this interchange. Eight Mile Road also has access to I-5 at an interchange that includes an undercrossing of I-5. Grade-separated crossings of railroad tracks are located at approximately one-half mile east of the project site, and approximately 1.6 miles west of the project site.

West Lane/Hutchins Street/Airport Way is a north-south arterial roadway along the western frontage of the project site. As shown in **Figure 2**, the project site is proposed to have access to West Lane via a project driveway. The northern terminus is in the City of Lodi as Hutchins Street and the southern terminus is south of Manteca as Airport Way. Portions of West Lane are divided by a raised median. In the vicinity of the project site, some portions of West Lane are four-lanes wide, other portions are six-lanes wide. West Lane is controlled by signalization at major intersections.

Ham Lane is a north-south two-lane roadway east of the project site. As shown in **Figure 2**, the project site is proposed to have access to Ham Lane via a project driveway. The northern terminus of the portion of Ham Lane adjacent to the project site is at Armstrong Road, and the southern terminus is at Eight Mile Road. Another discontinuous portion of Ham Lane is present in Lodi, north of Harney Lane. Ham Lane has a signalized intersection with West Lane, and an unsignalized intersection with Eight Mile Road.

SR 99 East Frontage Road and **SR 99 West Frontage Road** are undivided two-lane frontage roads located immediately east and west of SR 99. The northern termini of the frontage roads are north of Eight Mile Road. The southern termini are at an overcrossing of SR 99, approximately one-mile south of Hammer Lane. The frontage roadways are designed to intercept, collect, and distribute traffic crossing, entering, or leaving the freeway, and to furnish access to property that otherwise would be isolated as a result of the controlled access freeway. SR 99 East Frontage Road and SR 99 West Frontage Road provide direct access to light industrial, commercial, and residential development. SR 99 on-ramps and off-ramps form "hook ramp" intersections with the frontage roads at the SR 99 interchange at Eight Mile Road. As described in the PSR for the Eight Mile Road interchange on SR 99, the "hook ramp" intersections are planned to be replaced with a "diamond" interchange configuration, and the frontage roads would be re-aligned to locations further from SR 99. The speed limit on SR 99 East Frontage Road is 45 mph. The curved portions of SR 99 West Frontage Road are signed for 30 mph and 40 mph; the speed limit on other portions is unsigned.

Morada Lane is a discontinuous east-west roadway. A portion of Morada Lane has a western terminus at Lower Sacramento Road and an eastern terminus at the Union Pacific Railroad tracks southwest of the project site. This portion of Morada Lane has a 25 mph speed limit. Another portion of Morada Lane has a western terminus at a signalized intersection with McNair Lane, west of West Lane, and an eastern terminus approximately one mile east of SR 99. This portion of Morada Lane has 30 mph, 35 mph and 45 mph speed limits. Portions of Morada Lane are two-lanes wide while other portions are four to six-lanes wide. Morada Lane has access to SR 99 at an interchange that includes a two-lane overcrossing of SR 99. A PSR has been prepared for proposed improvements to this interchange.

Thornton Road is a roadway with a northern terminus at the Sacramento County line and, as Pacific Avenue, has a southern terminus in downtown Stockton. Thornton Road generally has a north-south alignment. However, a portion of Thornton Road south of Eight Mile Road has a northwest-southeast alignment. North of Eight Mile Road, Thornton Road is two lanes wide. In the vicinity of the project site, the majority of Thornton Road is four lanes wide. The speed limit on Thornton Road is 55 mph north of Eight Mile Road, 45 mph between Eight Mile Road and Davis Road, and 40 mph south of Davis Road.

Davis Road is a north-south roadway with a northern terminus at the Mokelumne River, northwest of Lodi, and a southern terminus at Thornton Road. The majority of Davis Road is two lanes wide, with portions north of Thornton Road being three lanes wide and four lanes wide. In the vicinity of the proposed project site, the speed limit is 45 mph south of Eight Mile Road and 55 mph north of Eight Mile Road.

Lower Sacramento Road is a roadway with a northern terminus at the Sacramento County line and a southern terminus at Rivara Road, south of Hammer Lane. Lower Sacramento Road generally has a north-south alignment. However, a portion immediately south of Eight Mile Road has a northeast-southwest alignment. North of Armor Drive, Lower Sacramento Road is two lanes wide. South of Armor Drive, it is four lanes wide. The speed limit on Lower Sacramento Road is 55 mph north of Armor Drive, 50 mph between Armor Drive and Katherine Way, and 40 mph south of Katherine Way.

Holman Road is a north-south arterial roadway with a northern terminus north of a signalized intersection at Morada Lane. Holman Road is planned to be extended north to the intersection of Eight Mile Road & Micke Grove Road. In the vicinity of the project site, Holman Road is four lanes to six lanes wide. However, portions of Holman Road south of Hammer Lane are two lanes wide. The speed limit on Holman Road is 40 mph.

Micke Grove Road is a two-lane north-south roadway with a northern terminus at Armstrong Road, and a current southern terminus at a "T" intersection at Eight Mile Road. Holman Road is planned to be extended north to Eight Mile Road and form the southern leg of the intersection of Eight Mile Road & Micke Grove Road. The speed limit on Micke Grove Road is 35 mph.

Marlette Road is a discontinuous roadway on both sides of Lower Sacramento Road. A short, two-lane substandard roadway is present east of Lower Sacramento Road. To the northwest of Lower Sacramento Road, Marlette Road is also known as Destination Drive and has an intersection with Eight Mile Road. The portion of the roadway to the northwest intersects Lower Sacramento Road approximately 200 feet north of the intersection with the portion of the roadway to the east. Marlette Road is planned to be extended to the east to intersect with West Lane. The Tra Vigne Development Project (City of Stockton 2018a), which is located southeast of the intersection of

Eight Mile Road & West Lane, includes a roadway connection with West Lane at the planned location of the intersection of West Lane & Marlette Road. The Tra Vigne roadway that would connect at this intersection is referred to as Tra Vigne Road B.

Armstrong Road is a two-lane east-west roadway. The western terminus of Armstrong Road is at DeVries Road, near Thornton Road. The eastern terminus is east of SR 99. The speed limit on Armstrong Road is unsigned west of West Lane, 55 mph east of West Lane, and 35 mph in the vicinity of SR 99.

PUBLIC TRANSPORTATION

The San Joaquin Regional Transit District (SJRTD) is the primary provider of public transportation service in San Joaquin County, providing services to the Stockton metropolitan area, as well as inter-city, inter-regional, and rural transit service. SJRTD provides fixed-route, flexible fixed-route, and dial-a-ride services in Stockton. Each service is described in more detail below. (San Joaquin Regional Transit District 2020)

- Stockton Metropolitan Area Fixed Route Service operates 33 fixed routes within the Stockton Metropolitan Area.

- Intercity Fixed Route Service is provided by a route between Stockton and the Lodi Station in downtown Lodi connecting with Lodi Grapeline, Calaveras Transit, Delta Breeze, Sacramento South County Transit (SCT)/LINK buses.

- Interregional Commuter Service is a subscription commuter bus service. A total of eight routes connect San Joaquin County to Sacramento, the San Francisco Bay Area, and the Bay Area Rapid Transit (BART) system.

- SJRTD operates a Dial-a-Ride service for those individuals who, due to their disability, are functionally unable to use fixed-route services. Stockton Metro Area Dial-A-Ride (SMA-ADA) is a curb-to-curb service operating within Stockton Metropolitan Area for passengers with an Americans with Disabilities Act (ADA) Certification.

- Hopper Service is a deviated fixed-route service connecting Stockton, Tracy, Lodi, Manteca, Ripon, and Lathrop. The Metro Hopper provides seven routes. The County Hopper provides five routes.

The only SJRTD route in the vicinity of the project site is Hopper Route 93 along West Lane, immediately west of the project site. This route provides service between Stockton and Lodi. The southern terminus of the route is at Sherwood Mall in Stockton. The northern terminus of the route is at the Lodi Transportation Station in downtown Lodi.

PARK AND RIDE FACILITIES

Park and Ride lots are free parking facilities for commuters to use as a convenient meeting place for carpools, transit, and vanpools. Park and Ride lots in the Stockton area are listed below.

- The **Calvary First Church on Kelley Drive north of Hammer Lane** lot provides a transit connection to the SJRTD Inter-Regional Bus. The lot provides 40 parking spaces and a bicycle locker.

- The **Lifesong Church, 3034 Michigan Avenue** lot provides a transit connection to the SJRTD Inter-Regional Bus. The lot provides 45 parking spaces.

- The **I-5 at Benjamin Holt Drive; Marina Shopping Center** lot provides a transit connection to the SJRTD Inter-Regional Bus. The lot provides 45 parking spaces.

- The **Super Walmart Center, Hammer Lane and Sampson Street** lot provides 50 parking spaces.

- The **Morada Ranch Shopping Center** lot is at SR 99 and Morada Lane. The lot provides 35 parking spaces.

BICYCLE AND PEDESTRIAN SYSTEMS

The generally level terrain and mild weather make bicycling and walking viable forms of transportation in Stockton. The City of Stockton has an extensive network of bicycle facilities, including off-street trails and paths, as well as on-street bicycle lanes and routes. Many of these facilities also support pedestrian travel. According to Caltrans guidelines, bicycle facilities are generally divided into four categories:

- **Class I Bikeway (Bike Path).** A completely separate facility designated for the exclusive use of bicycles and pedestrians with vehicle and pedestrian cross-flow minimized.

- **Class II Bikeway (Bike Lane).** A striped lane designated for the use of bicycles on a street or highway. Vehicle parking and vehicle/pedestrian cross-flow are permitted at designated locations.

- **Class III Bikeway (Bike Route).** A route designated by signs or pavement markings for bicyclists within the vehicular travel lane (i.e., shared use) of a roadway.

- **Class IV Bikeway (Separated Bikeway).** A bikeway for the exclusive use of bicycles and includes a separation required between the separated bikeway and the through vehicular traffic. The separation may include, but is not limited to, grade separation, flexible posts, inflexible posts, inflexible barriers, or on-street parking.

The project site is located in an area with currently sparse land use development. Neither sidewalks nor bicycle facilities are present along Eight Mile Road, West Lane, or Ham Lane in the immediate vicinity of the project site.

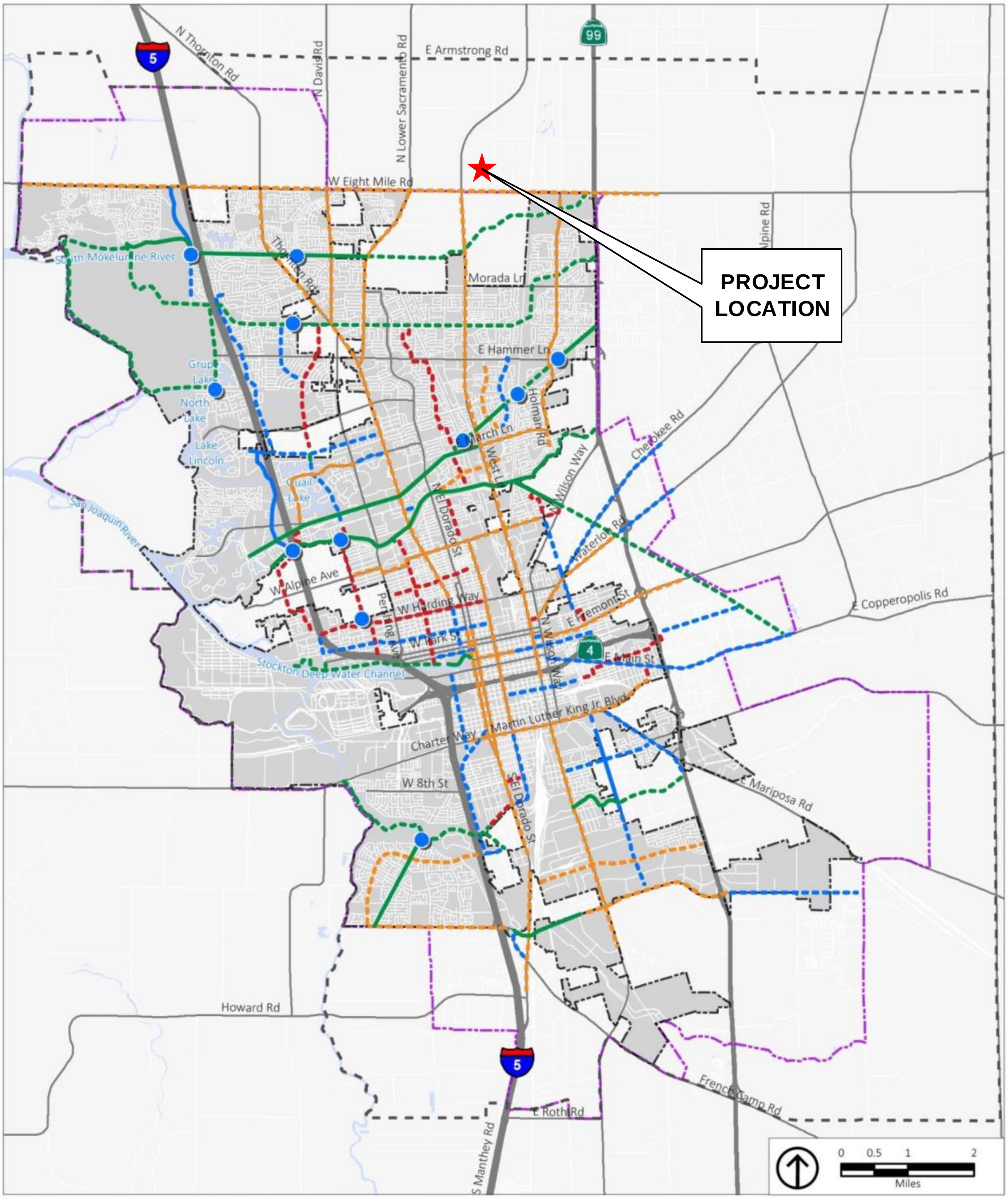
The City of Stockton General Plan (City of Stockton 2018b) presents a map showing existing and planned bicycle facilities in the Stockton area, shown on **Figure 5**. In the immediate vicinity of the project site, **Figure 5** shows:

- a planned Class IV (separated bikeway) on Eight Mile Road from west of I-5 to east of SR 99, and
- a planned Class IV (separated bikeway) on West Lane from Eight Mile Road to downtown Stockton.

The *San Joaquin County Bicycle Master Plan Update* (County of San Joaquin 2010) presents a countywide assessment of existing bicycle facilities and recommended improvements to develop a future bicycle system. **Figure 6** presents a map from the *San Joaquin County Bicycle Master Plan Update* showing the central San Joaquin County area. In the vicinity of the project site, the plan includes:

- a Class III County Proposed Bicycle Route on West Lane from Eight Mile Road to the Lodi city limits,
- A Class II City Proposed Bicycle Lane on Eight Mile Road from Lower Sacramento Road to the UPRR railroad crossing east of West Lane, and
- A Class II City Proposed Bicycle Lane on West Lane from Eight Mile Road to Bear Creek.

Existing and Planned Bicycle Network



Source: City of Stockton; Fehr & Peers, 2016; PlaceWorks, 2017.

Existing Bicycle Network	Planned Bicycle Network	
Class I (Bike Path)	Class I (Bike Path)	New Bridge
Class II (Bike Lane)	Class II (Bike Lane)	General Plan Planning Area
	Class III (Bike Route)	City Limit
	Class IV (Separated Bikeway)	Sphere of Influence

ENVISION STOCKTON 2040 GENERAL PLAN

CITY OF STOCKTON EXISTING AND PLANNED BICYCLE NETWORK

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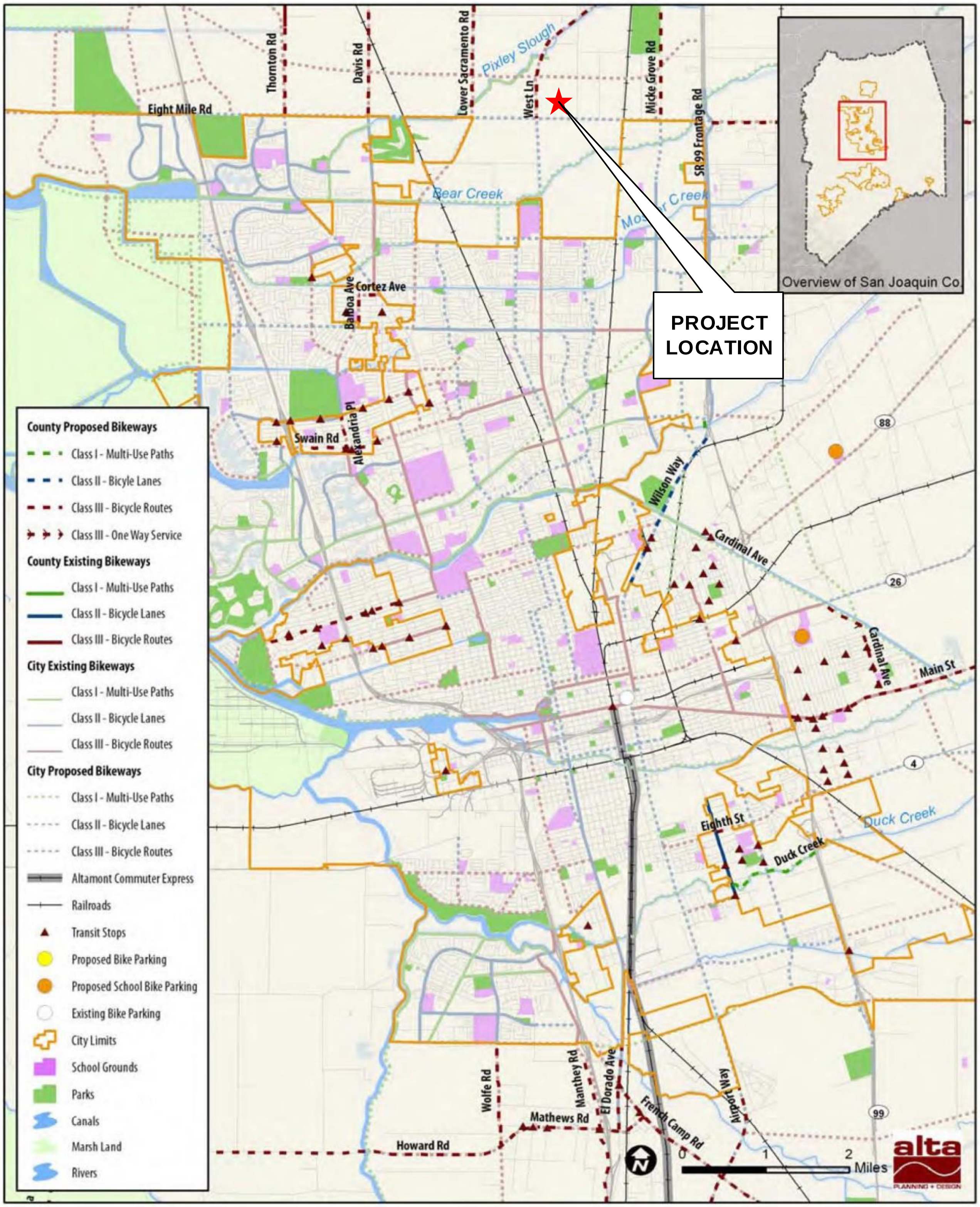


Central San Joaquin County Existing and Proposed Bikeways

CENTRAL SAN JOAQUIN COUNTY EXISTING
AND PROPOSED BIKEWAYS

STUDY AREA INTERSECTIONS

The traffic-related effects of the proposed project were assessed for this traffic impact study by analyzing traffic operations at intersections that would serve project-related travel. The following intersections were selected for analysis in consultation with County of San Joaquin staff (Levers pers. comm.). Existing intersections are numbered 1 through 15. Future intersections, including project driveway intersections, are numbered 20 through 26.

1. Eight Mile Road & I-5 Southbound Ramps
2. Eight Mile Road & I-5 Northbound Ramps
3. Eight Mile Road & Davis Road
4. Eight Mile Road & Lower Sacramento Road
5. West Lane & Armstrong Road
6. West Lane & Ham Lane
7. West Lane & Eight Mile Road
8. West Lane & Morada Lane
9. Eight Mile Road & Ham Lane
10. Eight Mile Road & Leach Road
11. Eight Mile Road & Micke Grove Road/Holman Road
12. Eight Mile Road & SR 99 West Frontage Road
13. Eight Mile Road & SR 99 East Frontage Road
14. SR 99 West Frontage Road & SR 99 Southbound Ramps (Eight Mile Road)
15. SR 99 East Frontage Road & SR 99 Northbound Ramps (Eight Mile Road)

The following two intersections would be constructed as part of the Tra Vigne Development Project (City of Stockton 2018a), which is located southeast of the intersection of Eight Mile Road & West Lane. The Tra Vigne Development Project is included as an approved project in the EPAP and Cumulative scenarios analyzed for this traffic impact study. As a result, these two intersections were only analyzed under the EPAP and Cumulative scenarios:

20. West Lane & Tra Vigne Road B
21. Eight Mile Road & Tra Vigne Road C

The following three intersections would only be present with construction of the GMC project. As a result, these intersections were only analyzed under development conditions that included the proposed project:

22. West Lane & West Project Driveway
23. Eight Mile Road & South Project Driveway
24. Ham Lane & East Project Driveway

The following two intersections would be constructed as part of the reconstruction of the Eight Mile Road interchange on SR 99. The reconstruction of the Eight Mile Road interchange on SR 99 is included in the Cumulative scenarios analyzed for this traffic impact study. As a result, these two intersections were only analyzed under the Cumulative scenarios:

25. Eight Mile Road & SR 99 Southbound Ramps
26. Eight Mile Road & SR 99 Northbound Ramps

The locations of study intersections analyzed under Existing and EPAP background scenarios are presented in **Figure 3**. The locations of study intersections analyzed under Cumulative background scenarios are presented in **Figure 4**. The numbers listed above correspond to the intersection numbers on these two figures.

STUDY AREA ROADWAY SEGMENTS

In addition to analyzing intersections, the traffic-related effects of the proposed project on roadway segments were assessed for this traffic impact study. Major roadways adjacent to the project site, and roadways that would serve as major access routes, were analyzed. The following roadway segments were selected for analysis in consultation with County of San Joaquin staff.

- Eight Mile Road west of Lower Sacramento Road
- Lower Sacramento Road south of Eight Mile Road
- Eight Mile Road between Lower Sacramento Road & West Lane
- West Lane north of Eight Mile Road
- West Lane south of Eight Mile Road
- Eight Mile Road between West Lane & Ham Lane
- Ham Lane between West Lane and Eight Mile Road
- Eight Mile Road west of Micke Grove Road/Holman Road
- SR 99 north of Eight Mile Road
- SR 99 between Eight Mile Road and Morada Lane

The study roadway segments are specific to certain locations on the roadway network. However, in some cases, a roadway segment represents larger portions of roadway segments. For example, analysis results for the West Lane south of Eight Mile Road roadway segment apply to West Lane from Eight Mile Road to Morada Lane. The descriptions of locations listed above and used in this traffic impact study are as specific as possible to minimize ambiguity.

STUDY AREA FREEWAY RAMP JUNCTIONS

In addition to analyzing intersections and roadway segments, the traffic-related effects of the proposed project on freeway ramp junctions were assessed for this traffic impact study. Ramp junctions that would serve as major access routes, and would be affected by project-related traffic, were analyzed. The following ramp junctions were selected for analysis in consultation with County of San Joaquin staff:

- SR 99 Southbound Diverge to Eight Mile Road Off-Ramp
- SR 99 Southbound Merge from Eight Mile Road On-Ramp
- SR 99 Northbound Merge from Eight Mile Road On-Ramp
- SR 99 Northbound Diverge to Eight Mile Road Off-Ramp

The analysis of the ramp junctions listed above under Existing and EPAP background scenarios was based on the current configuration of the Eight Mile Road interchange on SR 99. The analysis of the ramp junctions listed above under Cumulative background scenarios was based on the reconstructed configuration of the Eight Mile Road interchange on SR 99 as described in the PSR prepared for proposed improvements to this interchange.

METHODOLOGY

The following is a description of the analysis methods used in this traffic impact study.

Intersection Level of Service Analysis Procedures

Level of service (LOS) analysis provides a basis for describing existing traffic conditions and for evaluating the significance of project-related inconsistency with General Plan transportation policies. Level of service measures the quality of traffic flow and is represented by letter designations from A to F, with a grade of A referring to the best conditions, and F representing the worst conditions. The characteristics associated with the various LOS for intersections are presented in **Table 1**.

Level of service at both signalized and unsignalized intersections was analyzed using methods presented in the *Highway Capacity Manual*. Methods described in the *Highway Capacity Manual* were used to provide a basis for describing traffic conditions and for evaluating the significance of inconsistency with General Plan policies. As specified by City of Stockton staff, methods from the *Highway Capacity Manual 2000* (Transportation Research Board, 2000) were used to analyze local roadway intersections. As specified in the *City of Stockton Transportation Impact Analysis Guidelines* (City of Stockton, 2003), the Traffix software analysis package was used to analyze local roadway intersections.

Caltrans District 10 recommends use of the *Highway Capacity Manual 6th Edition* (Transportation Research Board, 2016) and the Synchro software package (Trafficware, 2020). Therefore, as specified by City of Stockton staff, freeway ramp intersections were analyzed using *Highway Capacity Manual 6th Edition* methods and the Synchro software package.

The lengths of vehicle queues were also analyzed for this traffic impact study. Methods presented in the *Highway Capacity Manual 2000* and *Highway Capacity Manual 6th Edition* were used to analyze queuing. 95th percentile queue length values are presented in this traffic impact study.

Worksheets and output reports for the calculation of LOS and vehicles queues for all scenarios analyzed for this traffic impact study are presented in the Technical Appendix.

Table 1. Intersection Level of Service Definitions

Level of Service	Signalized Intersections	Unsignalized Intersections
A	Vehicle progression is exceptionally favorable or the cycle length is very short. Delay ≤ 10.0 seconds/vehicle	Little or no delay. Delay ≤ 10 seconds/vehicle
B	Vehicle progression is highly favorable or the cycle length is short. Delay > 10 seconds/vehicle and ≤ 20 seconds/vehicle	Short traffic delays. Delay > 10 seconds/vehicle and ≤ 15 seconds/vehicle
C	Vehicle progression is favorable or the cycle length is moderate. Individual cycle failures may begin to appear at this level. Delay > 20 seconds/vehicle and ≤ 35 seconds/vehicle	Average traffic delays. Delay > 15 seconds/vehicle and ≤ 25 seconds/vehicle
D	Vehicle progression is ineffective or the cycle length is long. Many vehicles stop and the individual cycle failures are noticeable. Delay > 35 seconds/vehicle and ≤ 55 seconds/vehicle	Long traffic delays. Delay > 25 seconds/vehicle and ≤ 35 seconds/vehicle
E	Vehicle progression is unfavorable and the cycle length is long. Individual cycle failures are frequent. Delay > 55 seconds/vehicle and ≤ 80 seconds/vehicle	Very long traffic delays, failure, extreme congestion. Delay > 35 seconds/vehicle and ≤ 50 seconds/vehicle
F	Vehicle progression is very poor and the cycle length is long. Most cycles fail to clear the vehicle queue. Delay > 80 seconds/vehicle	Intersection blocked by external causes. Delay > 50 seconds/vehicle

Source: Transportation Research Board 2000 and Transportation Research Board 2010.

For two-way stop-sign controlled unsignalized intersections (or one-way stop-sign controlled "T" intersections), the *Highway Capacity Manual* method considers gap acceptance and average delay of motorists on minor streets and in turn lanes to establish LOS. Level of Service is based on the length of the delay experienced by motorists on the worst single approach, rather than the intersection as a whole. It should be noted that overall intersection average LOS at unsignalized intersections is better, often much better, than LOS on the worst single approach.

<u>Signal Warrants Procedures</u>

Traffic signal warrants are a series of standards which provide guidelines for determining if a traffic signal is appropriate. Signal warrant analyses are typically conducted at intersections of uncontrolled major streets and stop sign-controlled minor streets. If one or more signal warrants are met, signalization of the intersection may be appropriate. However, a signal should not be installed if none of the warrants are met, because installation of signals would increase delays on the previously-uncontrolled major street, resulting in an undesirable increase in overall vehicle delay at the intersection. Signalization may also increase the occurrence of certain types of accidents. Therefore, if signals are installed where signal warrants are not met, the detriment of increased accidents and overall delay may be greater than the benefit in traffic operating conditions on the single worst movement at the intersection. Signal warrants, then, provide an industry-standard basis for identifying when the adverse effect on the worst movement is substantial enough to warrant signalization.

For the analysis conducted for this traffic impact study, available data at unsignalized intersections are limited to a.m. and p.m. peak hour volumes. Thus, unsignalized intersections were evaluated using the Peak Hour Warrant (Warrant Number 3) from the California Department of Transportation document *California Manual on Uniform Traffic Control Devices* (California Department of Transportation 2014). This warrant was applied where the minor street experiences long delays in entering or crossing the major street for at least one hour of the day. The Peak Hour Warrant itself includes several components. Some of the components involve comparison of traffic volumes and vehicle delay to a series of standards. Another component involves comparison of traffic volumes to a nomograph.

Even if the peak hour warrant is met, a more detailed signal warrant study is recommended before a signal is installed. The more detailed study should consider volumes during the eight highest hours of the day, volumes during the four highest hours of the day, pedestrian traffic, and accident histories.

Signal warrant analysis worksheets for all stop sign-controlled intersections are presented in the Technical Appendix.

<u>Roadway Segment Level of Service Analysis Procedures</u>

Roadway segment LOS was analyzed for this traffic impact study based on methods used in the *Envision Stockton 2040 General Plan Update and Utility Master Plan Supplements Draft EIR* analysis (City of Stockton 2018c). These methods set maximum daily traffic volume thresholds for each LOS designation. The thresholds are shown in **Table 2**.

As shown in **Table 2**, the roadway segment LOS analysis method sets separate thresholds for:

- different types of facilities (i.e., freeways, arterials, and collectors);
- different number of lanes; and
- different area types (i.e., new versus existing).

As described in City of Stockton 2018c:

> "Thresholds for arterials and collectors were based on Highway Capacity Manual calculations and were developed in conjunction with City staff at the time the current General Plan analysis was prepared. The arterial thresholds distinguish between roads in the existing urbanized area and those in new development areas; because arterials in new development areas can be designed to higher standards, with medians, exclusive turn lanes, and controlled access from adjacent uses, the capacities are higher than those in previously-developed areas. Thresholds for freeways were based on Highway Capacity Manual procedures relating levels of service to vehicle density ranges."

As specified in City of Stockton 2018c, the "Existing" area is generally located between I-5 and SR 99, south of Eight Mile Road. Eight Mile Road itself is considered a "New" arterial due to the lack of existing development in the area.

Table 2. City of Stockton General Plan Roadway Segment Level of Service Thresholds

Facility Class	Number of Lanes	Area Type	Level of Service A	B	C	D	E
Freeway	4	All Areas	27,600	45,200	63,600	77,400	86,400
	6	All Areas	41,400	67,800	95,400	116,100	129,600
	8	All Areas	55,200	90,400	127,200	154,800	172,800
	10	All Areas	69,000	113,000	159,000	193,500	216,000
Arterial	2	Existing	8,400	9,300	11,800	14,700	17,300
	2	New	10,000	11,100	14,000	17,500	20,600
	4	Existing	18,600	20,600	26,000	32,500	38,200
	4	New	23,300	25,800	32,600	40,700	47,900
	6	Existing	28,800	32,000	40,300	50,400	59,300
	6	New	33,300	37,000	46,600	58,300	68,600
	8	Existing	38,100	42,300	53,300	66,600	78,400
	8	New	41,100	45,700	57,600	72,000	84,700
Collector	2	Existing	6,400	7,100	9,000	11,300	13,200
	2	New	6,400	7,100	9,000	11,300	13,200
	4	Existing	17,600	19,600	24,700	30,900	36,300
	4	New	21,100	23,500	29,600	37,000	43,500

Source: City of Stockton 2018c.

Notes: The Stockton General Plan does not provide thresholds for local roads.
The "Existing" Area is generally located between I-5 and SR 99, and between Eight Mile Road and French Camp Road. Eight Mile Road is considered a "New" arterial due to lack of existing development in the area.

Freeway Ramp Junction Level of Service Analysis Procedures

Freeway ramp junctions are areas where freeway on-ramps merge into freeways, and where freeway off-ramps diverge from freeways. Freeway ramp junctions which are considered to be potentially affected by project-related traffic were analyzed for this traffic impact study.

Freeway ramp junction areas were analyzed for this traffic impact study using methods described in Chapters 12 and 13 of the *Highway Capacity Manual 2010* (Transportation Research Board 2010). The *Synchro* software package does not analyze freeway ramp junction LOS. Therefore, the McTrans *HCS+ Highway Capacity Software* package was used to perform the ramp junction LOS calculations for this traffic impact study.

The *Highway Capacity Manual 2010* methods were used to analyze two types of freeway facilities: on-ramp junctions (merge) and off-ramp junctions (diverge). The analysis of both types of facilities involves calculating the density of vehicles on a freeway facility, expressed as passenger cars per mile per lane (pcpmpl). The LOS designation is based on the vehicle density. **Table 3** presents the relationship of vehicle density to LOS for ramp junctions.

Freeway ramp operating conditions are dependent on traffic volumes and the ramp characteristics. These characteristics include the length and type of acceleration and deceleration lanes, the free-flow speed of ramps, the number of lanes, grade, and the types of facilities connected to the ramps.

The *Highway Capacity Manual 2010* reports LOS A through E for ramps in terms of density. When the volume using the facility exceeds capacity, the V/C ratio is greater than 1, and the *Highway Capacity Manual 2010* identifies the facility as overcapacity. While a density is not stated when the facility is over capacity, the freeway and ramp volumes for the facility are documented. For this traffic study, the freeway and ramp volumes are identified for all facilities where capacity has been exceeded.

Table 3. Level of Service Criteria for Freeway Merge and Diverge Areas

Level of Service	Vehicle Density	Operating Characteristics
A	Less than or equal to 10.	LOS A represents unrestricted operations. Density is low enough to permit smooth merging and diverging, with very little turbulence in the traffic stream.
B	Greater than 10. Less than or equal to 20.	At LOS B, merging and diverging maneuvers become noticeable to through drivers, and minimal turbulence occurs.
C	Greater than 20. Less than or equal to 28.	At LOS C, speed within the influence area begins to decline as turbulence levels become much more noticeable. Both ramp and freeway vehicles begin to adjust their speeds to accomplish smooth transitions.
D	Greater than 28. Less than or equal to 35.	At LOS D, turbulence levels in the influence area become intrusive, and virtually all vehicles slow to accommodate merging and diverging. Some ramp queues may form at heavily used on-ramps, but freeway operation remains stable.
E	Greater than 35.	LOS E represents conditions approaching or at capacity. Small changes in demand or disruptions within the traffic stream can cause both ramp and freeway queues to form.
F	Demand exceeds capacity.	LOS F defines operating conditions within queues that form on both the ramp and the freeway mainline when capacity is exceeded by demand.

Note: Vehicle density is expressed as passenger car equivalents per mile per lane.
Source: Transportation Research Board 2010.

Travel Forecasting

As part of the General Plan update process, the City of Stockton developed a series of travel demand forecasting simulation models. In consultation with City of Stockton staff (McDowell, pers. comm.), travel forecasts for this traffic impact study are based on travel demand forecasting models developed for the City of Stockton (City of Stockton 2004a and City of Stockton 2018b).

Travel models of the following two conditions were used to develop forecasts of future year traffic volumes for this traffic impact study:

- Existing Plus Approved Projects (EPAP), and
- 2040 Conditions with the updated General Plan.

The City's travel demand models produce forecasts of daily traffic volumes. The forecasts of daily volumes generated by the City's travel model are adequate for use in the analysis of roadway segment LOS, and are used for daily volume forecasts in this traffic impact study. However, the daily volumes generated by the traffic model are not, by themselves, adequate for use in the peak hour LOS analysis of study intersections.

Daily traffic volumes from the travel models were used to generate growth factors. These growth factors were applied to existing peak hour intersection turning movement traffic volumes. The development of future year intersection turning movement traffic volumes requires that the turning movements at each intersection "balance". To achieve the balance, inbound traffic volumes must equal the outbound traffic volumes, and the volumes must be distributed among the various left-turn, through, and right-turn movements at each intersection. The "balancing" of future year intersection turning movement traffic volumes was conducted using methods described in the Transportation Research Board's (TRB's) National Cooperative Highway Research Program (NCHRP) Report 255, *Highway Traffic Data for Urbanized Area Project Planning and Design* (Transportation Research Board 1982). The NCHRP 255 method applies the desired peak hour directional volumes to the intersection turning movement volumes, using an iterative process to balance and adjust the resulting forecasts to match the desired peak hour directional volumes.

LEVEL OF SERVICE AND SIGNIFICANCE THRESHOLDS

Significance thresholds are used in California Environmental Quality Act (CEQA) environmental documents to identify when the impacts of a project should be considered significant. Significance thresholds are the criteria used to determine the significance of impacts.

City of Stockton Significance Thresholds

The County of San Joaquin is the CEQA lead agency for the GMC project. The County considers it appropriate to use a City's significance thresholds in a traffic impact study for a project within that City's sphere of influence (Levers pers. comm.). The County considers this approach to be consistent with the County General Plan. The GMC project site is shown in the

San Joaquin County Local Agency Formation Commission (LAFCO) *Stockton Sphere of Influence* map (San Joaquin County Local Agency Formation Commission 2020.) in an "Area of Interest". The project site is also shown in the *Envision Stockton 2040 General Plan* as being in the City "General Plan Planning Area" (City of Stockton 2018b). Because of the LAFCO and City of Stockton designations, it is considered appropriate to apply the City's significance threshold in this traffic impact study of the GMC project. While the project site is not strictly in the City sphere of influence, it would seem inappropriate to ignore the LAFCO designation as an Area of Interest and the City designation of the project site being in the General Plan Planning Area.

The *City of Stockton Traffic Impact Analysis Guidelines* (City of Stockton 2003) presents the methods, assumptions and significance thresholds specified by the City of Stockton for use in preparing traffic impact studies. In general, the methods, assumptions and significance threshold presented in the guidelines are applied in this traffic impact study. It is important to note the significance thresholds specified in the guidelines are based on policies presented in the City General Plan. More specifically, the General Plan policies define ranges of LOS considered to be acceptable and unacceptable. The guidelines then use the General Plan policy ranges of LOS to identify whether a project impact is less than significant or significant.

Level of Service and Vehicle Miles Traveled

In the *City of Stockton Traffic Impact Analysis Guidelines*, the impacts of a project on LOS is an important factor in determining whether a project has a significant impact. However, recent changes to CEQA have changed how lead agencies use LOS in determining whether a project has a significant impact on transportation. As noted in the California Governor's Office of Planning and Research (OPR) document *Technical Advisory on Evaluating Transportation Impacts in CEQA* (California Governor's Office of Planning and Research 2018),

> "Senate Bill 743 (Steinberg, 2013), which was codified in Public Resources Code section 21099, required changes to the guidelines implementing CEQA (CEQA Guidelines) (Cal. Code Regs., Title 14, Div. 6, Ch. 3, § 15000 et seq.) regarding the analysis of transportation impacts. . . OPR has proposed, and the California Natural Resources Agency (Agency) has certified and adopted, changes to the CEQA Guidelines that identify vehicle miles traveled (VMT) as the most appropriate metric to evaluate a project's transportation impacts. With the California Natural Resources Agency's certification and adoption of the changes to the CEQA Guidelines, automobile delay, as measured by "level of service" and other similar metrics, generally no longer constitutes a significant environmental effect under CEQA. (Pub. Resources Code, § 21099, subd. (b)(3).)"

Notably, the *City of Stockton Traffic Impact Analysis Guidelines* was prepared before the recent changes to CEQA due to Senate Bill 743 (Steinberg 2013). As a result, the City guidelines specify use of LOS in determining whether a project has a significant impact. Consistent with the approach described in the OPR *Technical Advisory on Evaluating Transportation Impacts in CEQA*, LOS will not be used in this traffic impact study as a basis for identifying significant impacts. Rather, the methods, assumptions and significance thresholds presented in the City guidelines will be used to determine whether the project is consistent or inconsistent with General Plan policies on LOS, and whether the magnitude of inconsistency should be considered significant or less than significant. In this traffic impact study then, LOS is not used to identify a significant impact under CEQA; LOS is used to identify consistency with General Plan policies.

General Plan Policy Consistency Criteria

As noted immediately above, in this traffic impact study the significance of the proposed project's inconsistency with General Plan policies is based on a determination of whether resulting LOS is considered acceptable. A project's inconsistency with General Plan policies is considered significant if implementation of the project would result in LOS changing from levels considered acceptable to levels considered unacceptable, or if the project would substantially worsen already unacceptable LOS.

The *City of Stockton Transportation Impact Analysis Guidelines* note that:

> "The City of Stockton's General Plan has a LOS 'D' standard for its roadway system. Intersections and roadway segments operating at LOS 'A', 'B', 'C', or 'D' conditions are considered acceptable, while those operating at LOS 'E' or 'F' conditions are considered unacceptable.
>
> "For a City intersection, a transportation impact for a project is considered significant if the addition of project traffic would cause an intersection that would function at LOS 'D' or better without the Project to function at LOS 'E' or 'F'.
>
> "For City intersections with a LOS 'E' or 'F' conditions without the project, a transportation impact for a project is considered significant if the addition of project traffic causes an increase of greater than 5 seconds in the average delay for the intersection."

Portions of the City's guidelines do not specifically address criteria used to quantify changes in operating conditions on roadway segments or freeway ramp junctions. For this traffic impact study, the City's significance thresholds described above are also applied to roadway segments and freeway ramp junctions. As shown in **Table 1**, **Table 2** and **Table 3**, LOS at intersections is measured in seconds of delay, LOS on roadway segments is measured in traffic volume, and LOS at ramp junctions is measured in vehicle density. Therefore, for roadway segments and ramp junctions already at LOS E or F, an increase of greater than five seconds of delay cannot be identified. Because roadway segment LOS is measured in traffic volumes, rather than seconds of delay, an increase in traffic volumes is used in this traffic impact study, in lieu of the threshold of five seconds of delay. At ramp junctions when the demand exceeds capacity, an increase in density is not identified; however, the densities of each area are based upon the volume. Therefore, for this traffic impact study, if a roadway segment or ramp junction operates at LOS E or F without the project, the inconsistency with General Plan policies is considered significant if the addition of project traffic causes an increase of greater than five percent in traffic volumes.

The *Envision Stockton 2040 General Plan* (City of Stockton 2018b) notes:

> "The City of Stockton strives to maintain LOS D or better for peak hour intersection and daily roadway segment operations. However, in the Downtown and other areas, exceptions to this standard are permissible to support other goals, such as encouraging safe travel by other modes of transportation than the car. The City can use VMT and LOS to support non-auto transportation modes, with the ultimate goal of maintaining and enhancing a complete roadway network that serves all travel modes in a balanced and equitable way."

This section of the City General Plan lists more than 14 facilities as exceptions to the LOS D policy standard, and lists the applicable standard. Among the facilities listed as exceptions is "Eight Mile Road, Lower Sacramento Road to West Lane – LOS E". Consistent with the City General Plan, a LOS E standard is applied in this traffic impact study to the following study facilities under long-term Cumulative conditions:

- the intersection of Eight Mile Road & Lower Sacramento Road,
- the intersection of West Lane & Eight Mile Road, and
- the roadway segment Eight Mile Road between Lower Sacramento Road & West Lane.

For the facilities listed above, LOS E or better is considered acceptable, and LOS F is considered unacceptable under long-term Cumulative conditions. Under near-term Existing or EPAP background conditions, a LOS E standard is applied to the facilities listed above only if the facility is considered built out to its ultimate size, or would be built out with implementation of expansion measures.

SR 99 is a facility under the jurisdiction of Caltrans. While the City General Plan identifies LOS E and LOS F as standards for portions of the SR 99 corridor, Caltrans has set a LOS D standard (Dumas, pers. comm.). At the direction of City staff, because SR 99 is under the jurisdiction of Caltrans, LOS D is used as the LOS standard for the SR 99 corridor in this traffic impact study; LOS E and F are considered unacceptable. In this traffic impact study, the Caltrans LOS D standard is applied to mainline freeway LOS, ramp junction LOS, and to LOS at freeway interchange intersections.

In this traffic impact study, a project's inconsistency with General Plan policies will be considered significant if:

- the project would result in traffic operating conditions changing from an acceptable LOS to an unacceptable LOS, or

- when LOS without the project is already unacceptable, the project would result in a substantial degradation of traffic operating conditions (e.g., an increase of more than five seconds of delay at an intersection, an increase of more than five percent in traffic volume on a roadway segment, or an increase of more than five percent in the freeway and ramp volumes for ramps).

Vehicle Miles Traveled Significance Threshold

The *Envision Stockton 2040 General Plan* (City of Stockton 2018b) Policy TR-4.3 addresses the topic of VMT as an impact in CEQA documents. The policy states,

> "Use the threshold recommended by the California Office of Planning and Research for determining whether VMT impacts associated with land uses are considered significant under State environmental analysis requirements."

The OPR *Technical Advisory on Evaluating Transportation Impacts in CEQA* (California Governor's Office of Planning and Research 2018) provides recommended thresholds for determining the significance of VMT impacts associated with land use development projects. Specific thresholds are provided for residential, office, and retail commercial types of development. While a portion of the GMC project includes office land uses, a specific threshold is not provided for the hospital land use and, therefore, does not provide adequate guidance for the overall project.

The City of Stockton General Plan Policy Action TR-4.3A states,

> "Establish a threshold of 15 percent below baseline VMT per capita to determine a significant transportation impact under the California Environmental Quality Act."

The 15 percent threshold in General Plan Action TR-4.3A is similar to thresholds for residential and office land use types recommended by OPR in the *Technical Advisory on Evaluating Transportation Impacts in CEQA,* and is used in this traffic impact study to determine the significance of VMT impacts associated with the GMC project.

Consistent with General Plan Action TR4.3A, if a project would result in a 15 percent or more reduction of vehicle travel, a project is considered to have a less-than-significant impact. A project that would not result in a reduction of 15 percent or more is considered to have a significant impact.

The percent change in vehicle travel is determined by comparing project-related travel to the Stockton area average. The unit of measure applied for this comparison in the *Envision Stockton 2040 General Plan Update and Utility Master Plan Supplements Draft EIR* (City of Stockton 2018c) is "VMT per Service Population". The General Plan Draft EIR defines service population as the "sum of population and employment".

The VMT per Service Population unit of measure applied in the General Plan Draft EIR is also applied in this traffic impact study. The General Plan Draft EIR notes the VMT per Service population in the General Plan Planning Area is 24.16 VMT per Service Population. A 15 percent reduction from this value would be 20.54 VMT per Service Population (24.16 x 0.85 = 20.54). Therefore, in this traffic impact study, if the GMC project would result in 20.54 VMT per Service Population or less, the project will be considered to have a less than significant impact on VMT. If the GMC project would result in more than 20.54 VMT per Service Population, the project will be considered to have a significant impact on VMT.

At the time the analysis presented in this traffic impact study commenced, neither the City of Stockton nor the County of San Joaquin had adopted guidelines for analyzing VMT or determining the significance of a project's impact on VMT. Both the City and County were in the process of developing and adopting guidelines, but neither process was completed. The VMT analysis presented in this traffic impact study is not intended to pre-empt either the City or County process of developing and adopting VMT guidelines. Rather, the analysis presented in this traffic impact study is intended to be a good-faith effort at disclosing and identifying the VMT impacts of the GMC project based on currently available data and guidance.

EXISTING INTERSECTION TRAFFIC VOLUMES AND LEVELS OF SERVICE

The following is a description of existing traffic operating conditions at the study intersections.

Traffic Volumes

Under normal circumstances, new traffic volume count data would have been collected when the analysis for this traffic impact study commenced. However, with the outbreak of the novel coronavirus, places of employment, schools, social and recreational gatherings, sports events, restaurants, and many other types of activities have been substantially reduced or prohibited. As a result, current traffic volumes are considered to be unrepresentative, and new traffic volume count data would not be considered valid for use in this traffic impact study.

Traffic volume count data were collected at study intersections and study roadway segment in 2015 for the Tra Vigne Development Project (City of Stockton 2018a). These data were updated to represent current conditions and supplemented using the following sources of data:

- The San Joaquin Council of Governments (SJCOG) collected a.m. peak period and p.m. peak period data at the following study intersection locations on the following dates (Yokoyama pers. comm.):

  1. Eight Mile Road & I-5 Southbound Ramps – Wednesday 9/19/18
  2. Eight Mile Road & I-5 Northbound Ramps – Wednesday 9/19/18
  4. Eight Mile Road & Lower Sacramento Road – Wednesday 9/26/18
  7. West Lane & Eight Mile Road – Tuesday 9/25/18
  14. SR 99 West Frontage Road & SR 99 Southbound Ramps – Tuesday 9/25/18
  15. SR 99 East Frontage Road & SR 99 Northbound Ramps – Tuesday 9/25/18

- SJCOG collected 24-hour roadway segment count data for two-day periods at the following study roadway segment locations on the following dates (Yokoyama pers. comm.):

  – Eight Mile Road west of Lower Sacramento Road – Wednesday 10/24/18 and Thursday 10/25/18

- Lower Sacramento Road south of Eight Mile Road – Wednesday 9/19/18 and Thursday 9/20/18

- Eight Mile Road between Lower Sacramento Road & West Lane – Wednesday 9/19/18 and Thursday 9/20/18

- West Lane north of Eight Mile Road – Wednesday 9/19/18 and Thursday 9/20/18

- West Lane south of Eight Mile Road – Wednesday 10/10/18 and Thursday 10/11/18

- Eight Mile Road between West Lane & Ham Lane – Wednesday 9/19/18 and Thursday 9/20/18

- Eight Mile Road west of Micke Grove Road/Holman Road – Wednesday 9/19/18 and Thursday 9/20/18

▪ Caltrans data from the Caltrans Traffic Volumes Internet Website (California Department of Transportation 2020) are available for the following study roadway segments for the years 2015 and 2018:

  - SR 99 north of Eight Mile Road
  - SR 99 between Eight Mile Road & Morada Lane

▪ City of Stockton Traffic Volume Flow Map provides data for the following locations for the years 2014 and 2018:

  - Davis Road south of Eight Mile Road
  - Morada Lane east of West Lane

▪ The Caltrans Performance Measurement System (PeMS) on-line database (http://pems.dot.ca.gov/) provides hourly traffic volume data at selected locations on state routes. Data for the a.m. peak hour and p.m. peak hour on Wednesday 2/26/20 for mainline SR 99 at the following locations were used for the ramp junction analysis:

  - Northbound SR 99 south of Eight Mile Road
  - Southbound SR 99 at Morada Lane

At locations where traffic volume count data have been collected during the last 24 months, these data are used directly in this traffic impact study. At locations where traffic volume count data have not been collected during the last 24 months, count data collected in 2015 were updated to current conditions using growth factors developed using the recent count data listed immediately above. The resulting volumes used for Existing Conditions in this traffic impact study, then, are either less then 24 months old, or older volumes updated to reflect growth to a time less than 24 months old. As a result, the volumes used in this traffic impact study for Existing Conditions are considered to be representative and adequate for use in this traffic impact study.

Intersection turning movement count data collected for the 2015 for the Tra Vigne Development Project (City of Stockton 2018a) and data collected by SJCOG (Yokoyama pers. comm.) were collected on a Tuesday, Wednesday, or Thursday during the 7:00 a.m. to 9:00 a.m. period, and the 4:00 p.m. to 6:00 p.m. period. Volumes during the highest one-hour period were used for this traffic impact study.

Traffic volume count data collected for the 2015 for the Tra Vigne Development Project and data collected by SJCOG are presented in the Technical Appendix.

Figure 7 presents the existing lane configurations and existing a.m. peak hour and p.m. peak hour traffic volumes at the existing study intersections.

Intersection Levels of Service

Table 4 presents a summary of existing a.m. peak hour and p.m. peak hour LOS at the 15 existing study intersections. The worksheets presenting the calculation of LOS are included in the Technical Appendix.

13 of the 15 existing study intersections operate at acceptable LOS D or better during both the a.m. peak hour and the p.m. peak hour. No improvements are needed at these 13 intersections to achieve acceptable LOS. The following two intersections operate at unacceptable LOS under Existing Conditions.

12. Eight Mile Road & SR 99 West Frontage Road

Under Existing Conditions, the intersection of Eight Mile Road & SR 99 West Frontage Road operates at LOS F with 65.7 seconds of delay during the a.m. peak hour and LOS F with 95.3 seconds of delay during the p.m. peak hour. LOS F is considered unacceptable. The following improvements are recommended to improve operating conditions to acceptable LOS:

- Signalize the intersection. This intersection meets peak hour signal warrants.
- Improve the eastbound approach to include an exclusive left-turn lane, an exclusive through lane, and an exclusive right-turn lane.
- Improve the westbound approach to include an exclusive left-turn lane, an exclusive through lane, and an exclusive right-turn lane.

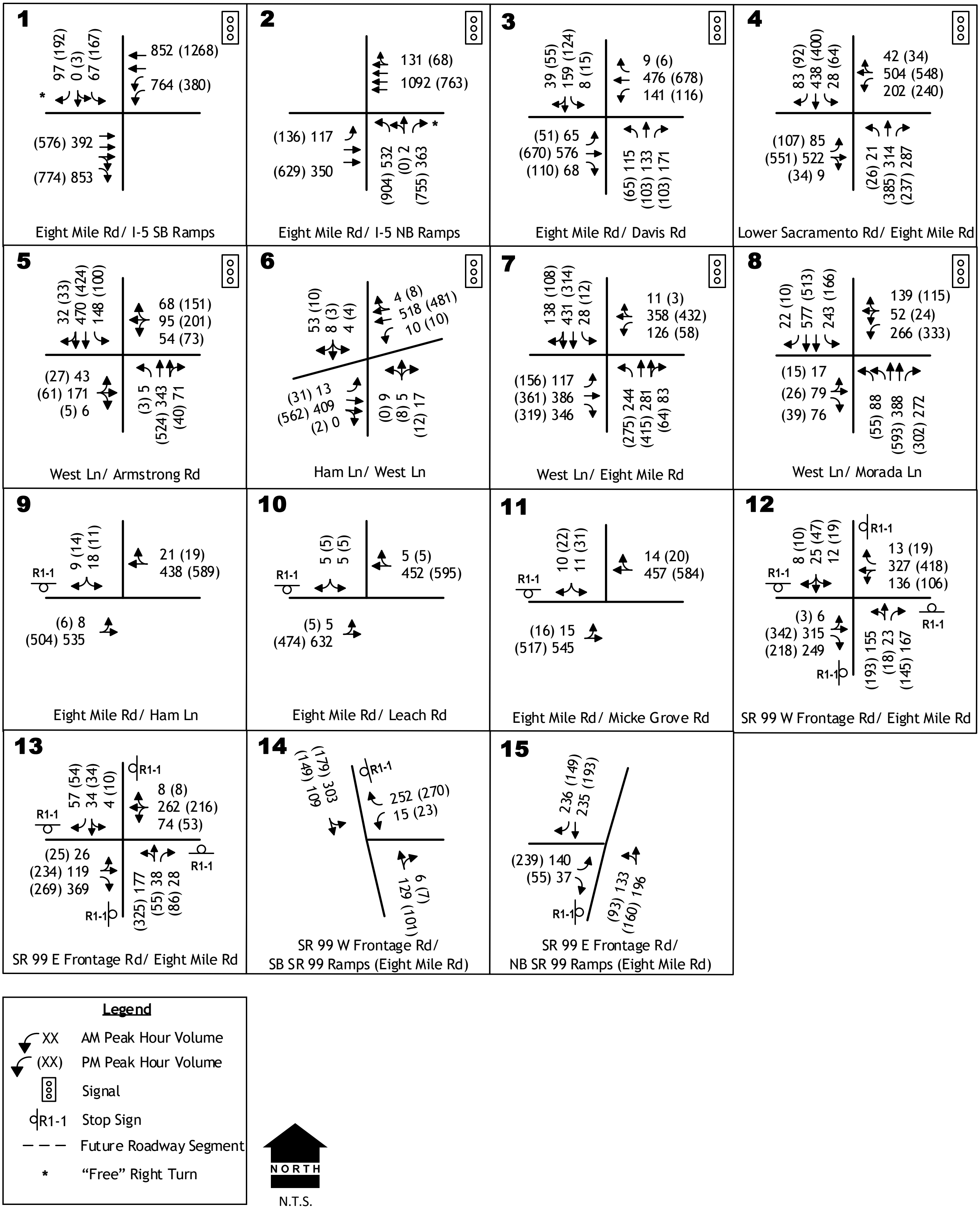
As shown in **Table 5**, implementation of the above recommended improvements would improve traffic operations to LOS B with 14.4 seconds of delay in the a.m. peak hour and LOS C with 27.8 seconds of delay in the p.m. peak hour. LOS B and C are considered acceptable.

13. Eight Mile Road & SR 99 East Frontage Road

Under Existing Conditions, the intersection of Eight Mile Road & SR 99 East Frontage Road operates at LOS D with 25.1 seconds of delay during the a.m. peak hour and LOS F with 65.7 seconds of delay during the p.m. peak hour. LOS F is considered unacceptable. The following improvements are recommended to improve operating conditions to acceptable LOS:

- Signalize the intersection. This intersection meets peak hour signal warrants.
- Improve the eastbound approach to include an exclusive left-turn lane, an exclusive through lane, and an exclusive right-turn lane.
- Improve the westbound approach to include an exclusive left-turn lane, an exclusive through lane, and an exclusive right-turn lane.
- Change the lanes on the northbound approach. Change the approach lanes from a northbound combined through/left-turn lane and an exclusive northbound-to-eastbound right-turn lane, to an exclusive northbound-to-westbound left-turn lane and a northbound combined through/right-turn lane.

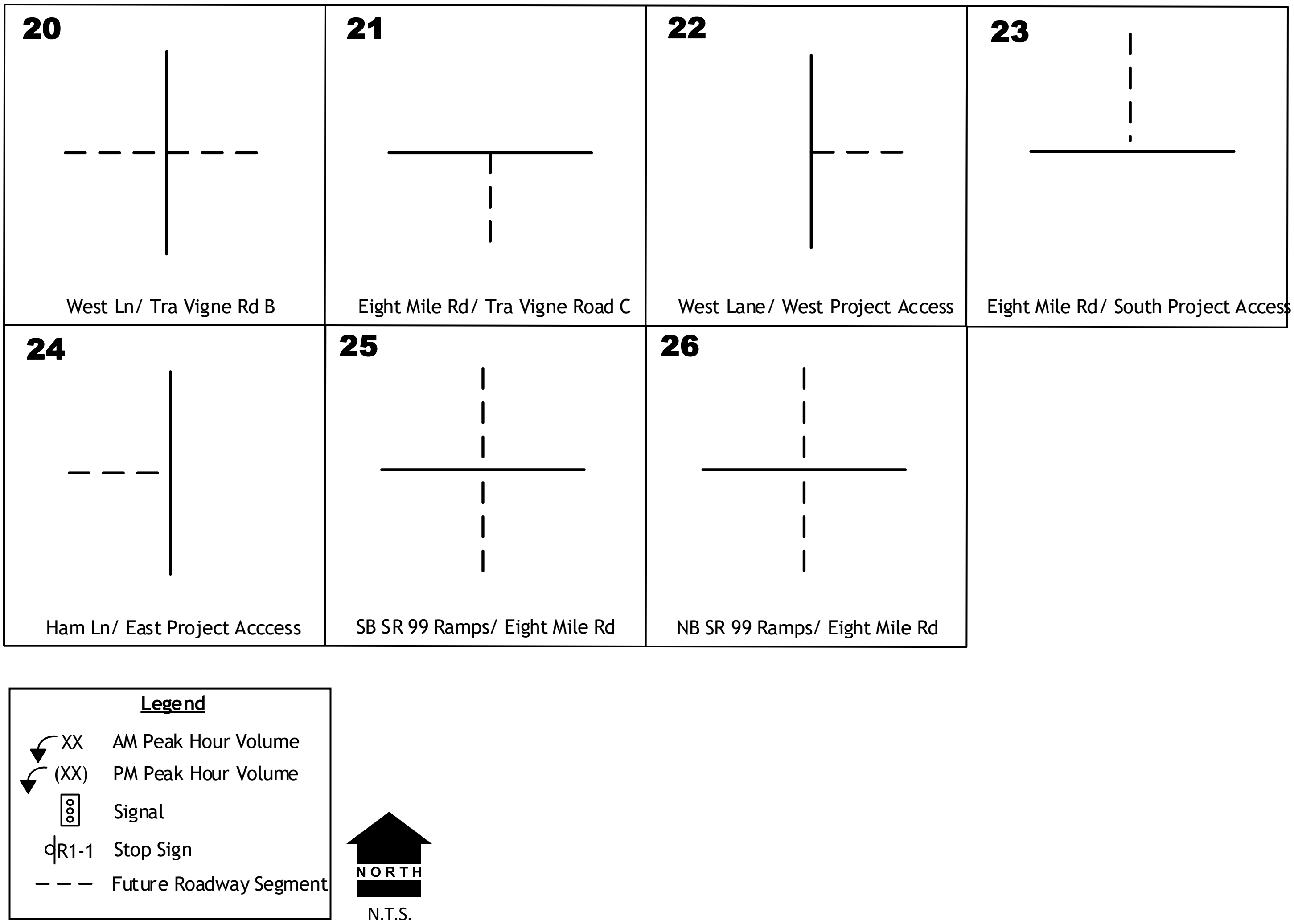
As shown in **Table 5**, implementation of the above recommended improvements would improve traffic operations to LOS C with 21.8 seconds of delay in the a.m. peak hour and LOS C with 34.0 seconds of delay in the p.m. peak hour. LOS C is considered acceptable.



EXISTING CONDITIONS

Intersection Traffic Volumes and Lane Configurations

KD Anderson & Associates, Inc.
Transportation Engineers



EXISTING CONDITIONS

Intersection Traffic Volumes and Lane Configurations

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2610-27 RA 9/23/2021

Table 4. Intersection Level of Service - Existing Conditions

Study Intersections		Inters. Control	Signal Warrant Met?	AM Peak LOS	AM Peak Delay	PM Peak LOS	PM Peak Delay
1	Eight Mile Road & I-5 Southbound Ramps	Signal		B	13.7	B	19.2
2	Eight Mile Road & I-5 Northbound Ramps	Signal		C	27.8	B	18.3
3	Eight Mile Road & Davis Road	Signal		C	29.2	C	25.1
4	Eight Mile Road & Lower Sacramento Road	Signal		C	32.5	D	41.5
5	West Lane & Armstrong Road	Signal		C	31.1	C	30.4
6	West Lane & Ham Lane	Signal		A	9.3	A	5.6
7	West Lane & Eight Mile Road	Signal		D	36.0	C	33.1
8	West Lane & Morada Lane	Signal		C	31.8	C	27.7
9	Eight Mile Road & Ham Lane	Unsig	No	A	0.6	A	0.5
10	Eight Mile Road & Leach Road	Unsig	No	A	0.2	A	0.2
11	Eight Mile Road & Micke Grove Road/Holman Road	Unsig	No	A	0.5	A	1.2
12	Eight Mile Road & SR 99 West Frontage Road	AWSC	Yes	F	65.7	F	95.3
13	Eight Mile Road & SR 99 East Frontage Road	AWSC	Yes	D	25.1	F	65.7
14	SR 99 West Frontage Road & SR 99 SB Ramps	Unsig	Yes	A	6.5	A	6.0
15	SR 99 East Frontage Road & SR 99 NB Ramps	Unsig	No	A	6.5	A	9.8
20	West Lane & Tra Vigne Road B	- -		- -	- -	- -	- -
21	Eight Mile Road & Tra Vigne Road C	- -		- -	- -	- -	- -
22	West Lane & West Project Driveway	- -		- -	- -	- -	- -
23	Eight Mile Road & South Project Driveway	- -		- -	- -	- -	- -
24	Ham Lane & East Project Driveway	- -		- -	- -	- -	- -
25	Eight Mile Road & SR 99 Southbound Ramps	- -		- -	- -	- -	- -
26	Eight Mile Road & SR 99 Northbound Ramps	- -		- -	- -	- -	- -

Notes: LOS = Level of Service. "Inters. Control" = Type of intersection control.
"Signal" = Signalized light control. "Unsig" = Unsignalized stop-sign control. "AWSC" = All-way stop-sign control.
"I-5" = Interstate-5. "SR" = State Route. "SB" = Southbound. "NB" = Northbound.
Dashes ("- -") indicate intersection is not present under this scenario. Delay is measured in seconds per vehicle.
Per City of Stockton guidelines, intersection average delay is reported for all intersections, including unsignalized intersections.

Table 5. Intersection Level of Service - Existing Conditions
With Recommended Improvements

Study Intersections	Inters. Control	AM Peak LOS	AM Peak Delay	PM Peak LOS	PM Peak Delay
12 Eight Mile Road & SR 99 West Frontage Road	Signal	B	14.4	C	27.8
13 Eight Mile Road & SR 99 East Frontage Road	Signal	C	21.8	C	34.0

Notes: "LOS" = Level of Service. "Inters. Control" = Type of intersection control.
"Sigal" = Signalized light control. "SR" = State Route.
Delay is measured in seconds per vehicle.

EXISTING ROADWAY SEGMENT TRAFFIC VOLUMES AND LEVELS OF SERVICE

The following is a description of existing traffic operating conditions on study roadway segments.

Roadway Segment Traffic Volumes

Table 6 presents the existing daily traffic volumes for study roadway segments.

Roadway Segment Levels of Service

Table 6 presents a summary of existing LOS on the 10 existing study roadway segments. Seven of the roadway segments operate at acceptable LOS C or better. No improvements are needed on these seven roadway segments to achieve acceptable LOS. The following describes the three study roadway segments that operate at unacceptable LOS under Existing Conditions.

Eight Mile Road West of Lower Sacramento Road

Under Existing Conditions, this roadway segment operates at LOS E. This LOS is considered unacceptable. The following improvement is recommended:

- Widen this roadway segment from two lanes to four lanes.

A summary of LOS with recommended improvements is presented in **Table 7**. With this recommended improvement, this roadway segment would operate at LOS A. This LOS is considered acceptable. This improvement is included in the City of Stockton Public Facilities Fee (PFF) program (City of Stockton 2004b), and the San Joaquin County Regional Transportation Impact Fee (RTIF) program (San Joaquin Council of Governments 2018).

Lower Sacramento Road South of Eight Mile Road

Under Existing Conditions, this roadway segment operates at LOS E. This LOS is considered unacceptable. The following improvement is recommended:

- Widen this roadway segment from two lanes to four lanes.

A summary of LOS with recommended improvements is presented in **Table 7**. With this recommended improvement, this roadway segment would operate at LOS A. This LOS is considered acceptable. This improvement is included in the City of Stockton PFF program, and the San Joaquin County RTIF program.

Eight Mile Road Between Lower Sacramento Road & West Lane

Under Existing Conditions, this roadway segment operates at LOS F. This LOS is considered unacceptable. The following improvement is recommended:

- Widen this roadway segment from two lanes to four lanes.

A summary of LOS with recommended improvements is presented in **Table 7**. With this recommended improvement, this roadway segment would operate at LOS A. This LOS is considered acceptable. This improvement is included in the City of Stockton PFF program.

**Table 6. Roadway Segment Level of Service -
Existing Conditions**

Roadway Segment	Number of Lanes	Daily Volume	Level of Service
Eight Mile Road West of Lower Sacramento Road	2	19,059	E
Lower Sacramento Road South of Eight Mile Road	2	16,125	E
Eight Mile Road Lower Sacramento Road to West Lane	2	22,102	F
West Lane North of Eight Mile Road	4	12,182	A
West Lane South of Eight Mile Road	4	16,172	A
Eight Mile Road West Lane to Ham Lane	2	12,689	C
Ham Lane West Lane to Eight Mile Road	2	540	A
Eight Mile Road West of Micke Grove Road/Holman Road	2	12,689	C
State Route 99 North of Eight Mile Road	6	79,000	C
State Route 99 Eight Mile Road to Morada Lane	6	80,000	C

**Table 7. Roadway Segment Level of Service -
Existing Conditions with Recommended Improvements**

Roadway Segment	Number of Lanes	Daily Volume	Level of Service
Eight Mile Road West of Lower Sacramento Road	4	19,059	A
Lower Sacramento Road South of Eight Mile Road	4	16,125	A
Eight Mile Road Lower Sacramento Road to West Lane	4	22,102	A

EXISTING RAMP JUNCTION TRAFFIC VOLUMES AND LEVELS OF SERVICE

The following is a description of existing traffic operating conditions at the study ramp junctions.

Ramp Junction Traffic Volumes

Ramp junction traffic volumes are composed of peak hour mainline freeway volumes and peak hour ramp volumes. **Table 8** presents the existing a.m. peak hour and p.m. peak hour traffic volumes at the existing ramp junctions.

Ramp Junction Levels of Service

Table 8 presents a summary of existing a.m. peak hour and p.m. peak hour LOS at the four existing ramp junctions. The worksheets presenting the calculation of LOS are included in the Technical Appendix.

All of the ramp junctions operate at acceptable LOS C or better. No improvements are needed at these ramp junctions to achieve acceptable LOS.

Table 8. State Route 99 Ramp Merge and Diverge Level of Service - Existing Conditions

Ramp Junction	AM Peak Hour Freeway Volume	AM Peak Hour Ramp Volume	AM Peak Hour Density	AM Peak Hour LOS	PM Peak Hour Freeway Volume	PM Peak Hour Ramp Volume	PM Peak Hour Density	PM Peak Hour LOS
SR 99 Southbound Diverge to Eight Mile Road Off-Ramp (Existing)	3,639	267	25.9	C	3,022	293	22.5	C
SR 99 Southbound Merge from Eight Mile Road On-Ramp (Existing)	3,639	309	25.0	C	3,022	186	20.7	C
SR 99 Northbound Merge from Eight Mile Road On-Ramp (Existing)	2,936	369	22.0	C	3,826	242	25.6	C
SR 99 Northbound Diverge to Eight Mile Road Off-Ramp (Existing)	2,936	177	21.3	C	3,826	294	26.5	C

Notes: LOS = Level of Service. SR = State Route. Density is expressed in passenger cars per mile per lane.

EXISTING PLUS PHASE 1
GILL MEDICAL CENTER PROJECT IMPACTS

The Existing Plus Phase 1 Gill Medical Center Project condition is for analysis of existing conditions with development of Phase 1 of the GMC project. This condition is also referred to in this traffic impact study as Existing Plus Phase 1 conditions. Development of land uses and roadway improvements associated with Phase 1 of the project are assumed. Phase 2 development is not assumed. The results of analysis of Existing Plus Phase 1 conditions can be compared to analysis of Existing Conditions to identify changes due to Phase 1 of the GMC project.

The development of Phase 1 of the GMC project would result in vehicle traffic to and from the project site. The amount of additional traffic on a particular section of the street network depends on three factors:

- Trip Generation, the number of new trips generated by the project,
- Trip Distribution, the direction of travel for the new traffic, and
- Trip Assignment, the specific routes used by the new traffic.

TRIP GENERATION

Development of the GMC project would generate new vehicle trips and potentially affect traffic operations on study facilities. The number of vehicle trips expected to be generated by the proposed project has been estimated using typical trip generation rates that have been developed based on the nature and size of project land uses. Data compiled by the Institute of Transportation Engineers (ITE) and presented in the publication *Trip Generation Manual, 10th Edition* (Institute of Transportation Engineers 2017) is the source of trip generation rates.

The trip generation rates used in this traffic impact study are presented in **Table 9**. The trip generation rates are applied to the amount of project-related land uses. The resulting trip generation estimates are presented in **Table 10**.

Table 10 presents an estimate of trips that would be generated by the GMC project. The amount of trips shown for the row titled "Medical Center" would be the amount of trips for Phase 1 of the project. The amount of trips shown for "Total" would be for the overall project.

As shown in **Table 10**, Phase 1 of the project would generate an estimated 386 vehicle trips per day, with 32 trips during the a.m. peak hour and 35 trips during the p.m. peak hour. The overall GMC project would generate 3,975 trips per day, with 324 trips during the a.m. peak hour and 379 trips during the p.m. peak hour.

Table 9. Gill Medical Center Project Trip Generation Rates

Land Use and ITE Land Use Code	Units	Trips per Unit						
			AM Peak Hour			PM Peak Hour		
		Daily	In	Out	Total	In	Out	Total
Hospital (ITE Code 610)	Thousand Square Feet	10.72	0.61	0.28	0.89	0.31	0.66	0.97
Medical-Dental Office Building (ITE Code 720)	Thousand Square Feet	34.80	2.17	0.61	2.78	0.97	2.49	3.46

Sources: Institute of Transportation Engineers 2017.
Note: Totals may not equal the sum of components due to rounding.

Table 10. Gill Medical Center Project Trip Generation Estimate

Land Use and ITE Land Use Code	Quantity	Trips Generated						
			AM Peak Hour			PM Peak Hour		
		Daily	In	Out	Total	In	Out	Total
Medical Center (Hospital - ITE Code 610)	36.00 Thousand Square Feet	386	22	10	32	11	24	35
Medical Office Building (Medical-Dental Office Building - ITE Code 720)	60.00 Thousand Square Feet	2,088	130	37	167	58	149	208
Hospital (Hospital - ITE Code 610)	140.00 Thousand Square Feet	1,501	85	39	125	43	92	136
	Total	**3,975**	**237**	**86**	**324**	**112**	**265**	**379**

Sources: Institute of Transportation Engineers 2017.
Note: Totals may not equal the sum of components due to rounding.

TRIP DISTRIBUTION

Project-related trips were geographically distributed over the study area roadway network. The geographical distribution of trips is based on the relative attractiveness or utility of possible destinations. Trip distribution percentages applied in this traffic impact study are presented in **Table 11**.

The City of Stockton travel demand models (City of Stockton 2004a and City of Stockton 2018b) were used to estimate trip distribution percentages. The travel demand models are considered to be a valid source for the trip distribution percentages because they directly address:

- the location of destinations of project-related trips,
- the magnitude of land uses that would attract project-related trips, and
- the quality of access to the destinations via the roadway network.

This traffic impact study includes analysis of scenarios based on three different background development conditions:

- Existing,
- Existing Plus Approved Projects (EPAP), and
- Cumulative Conditions.

The travel demand models were used to estimate trip distribution percentages for each of these background conditions. Background (non-project) land uses are different in each of the travel demand models. The different land uses result in different geographic distributions of travel. As a result, the trip distribution percentages are different for each of the three background development conditions. **Table 11** presents the trip distribution percentages for each of the three background development scenarios.

A "select link" analysis was conducted using each of the travel demand models to determine the geographic distribution of project-related travel. The select link analysis identifies vehicle trips associated with the proposed project site, and identifies the direction of travel to and from the project site.

Raw, pre-adjustment, traffic model results used in the development of trip distribution percentages are presented in the Technical Appendix. In consultation with County of San Joaquin staff, the raw traffic model select link analysis results were adjusted to improve the reasonableness and continuity of the trip distribution patterns (Levers pers. comm.).

Table 11. Gill Medical Center Project Trip Distribution Percentages

Direction of Travel	Existing Background	Near-Term EPAP Background	Cumulative Background
Ham Lane North of West Lane	0.7	0.7	0.1
West Lane North of Armstrong Road	2.9	2.9	1.9
Armstrong Road East of West Lane	1.7	1.7	- -
North on Micke Grove Road	1.7	1.7	- -
North on State Route 99	0.4	0.4	2.8
North on State Route 99 East Frontage Road	0.3	0.3	- -
Eight Mile Road East of State Route 99	2.3	2.3	1.3
South on State Route 99 East Frontage Road	2.2	0.2	- -
South on State Route 99	22.8	17.8	26.0
South on Holman Road	0.0	5.0	1.7
South on Leach Road	0.0	4.7	0.1
South on Tra Vigne Road C	0.0	4.5	8.1
East on Morada Lane	3.0	3.0	1.5
South on West Lane	22.3	15.1	23.7
West on Morada Lane	0.1	0.1	0.2
West on Marlette Road	0.0	0.0	0.2
South on Lower Sacramento Road	17.0	17.0	15.8
South on Davis Road	11.0	11.0	11.0
South on Thornton Road	3.0	3.0	0.1
South on Interstate 5	0.2	0.2	- -
Eight Mile Road West of Interstate 5	4.1	4.1	1.1
North on Interstate 5	1.4	1.4	2.4
North on Thornton Road	0.4	0.4	0.2
North on Davis Road	0.3	0.3	1.4
North on Lower Sacramento Road	2.2	2.2	0.4
TOTAL	100.0	100.0	100.0

Source: City of Stockton Travel Demand Model select link analysis, and Levers pers. comm.
Note: Dashes ("- -") indicate value is less than one-tenth percent. "EPAP" = Existing Plus Approved Projects.

TRIP ASSIGNMENT

Traffic that would be generated by the Phase 1 of the GMC project was added to Existing traffic volumes. **Figure 8** displays the Phase 1 project-related-only traffic volumes for each study intersection in the a.m. peak hour and p.m. peak hour. **Figure 9** displays the resulting Existing Plus Phase 1 traffic volumes anticipated for each study intersection in the peak hours.

ROADWAY IMPROVEMENTS

As noted in the *Project Description* section of this traffic impact study, Phase 1 of the GMC project would include a driveway connection with West Lane along the western boundary of the project site.

INTERSECTION LEVELS OF SERVICE

Table 12 presents the a.m. peak hour and p.m. peak hour LOS at each study intersection under Existing Plus Phase 1 conditions. The worksheets presenting the calculation of LOS are included in the Technical Appendix.

Traffic volumes under Existing Plus Phase 1 conditions would be generally higher than under Existing Conditions and, as a result, vehicle delay at study intersections under Existing Plus Phase 1 conditions would be higher than under Existing Conditions.

Under Existing Plus Phase 1 conditions, LOS at 14 of the 16 study intersections would be at acceptable LOS D or better during both the a.m. peak hour and the p.m. peak hour. No improvements are needed at these 14 intersections to achieve acceptable LOS. The following describes the two study intersections that would operate at unacceptable LOS under Existing Plus Phase 1 conditions.

12. Eight Mile Road & SR 99 West Frontage Road

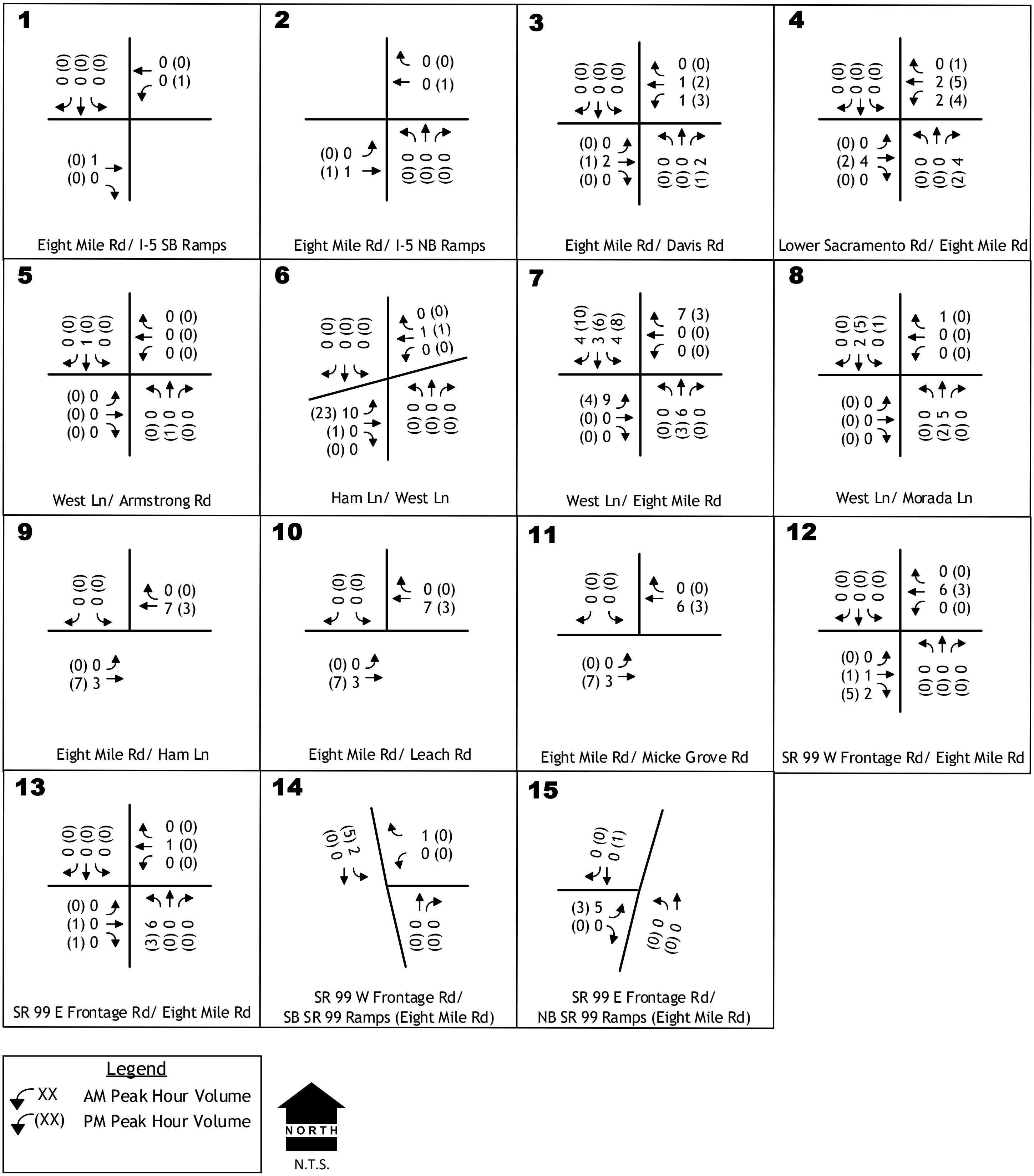
Under Existing Plus Phase 1 conditions, the intersection of Eight Mile Road & SR 99 West Frontage Road would operate at LOS F with 68.3 seconds of delay during the a.m. peak hour, and at LOS F with 98.0 seconds of delay during the p.m. peak hour. LOS F is considered unacceptable. Compared to Existing Conditions, the project-related increase in delay would not be greater than five seconds during either the a.m. peak hour or the p.m. peak hour. Therefore, based on criteria presented in the *General Plan Policy Consistency Criteria* section of this traffic impact study, the project-related inconsistency with General Plan policies is considered less than significant. No improvements are required.

While no project-related improvements are required at this intersection under Existing Plus Phase 1 conditions, **Table 13** shows implementation of recommended improvements for Existing Conditions would result in this intersection operating at LOS B with 14.4 seconds of delay during the a.m. peak hour and LOS C with 27.8 seconds of delay during the p.m. peak hour. LOS B and C are considered acceptable.

13. Eight Mile Road & SR 99 East Frontage Road

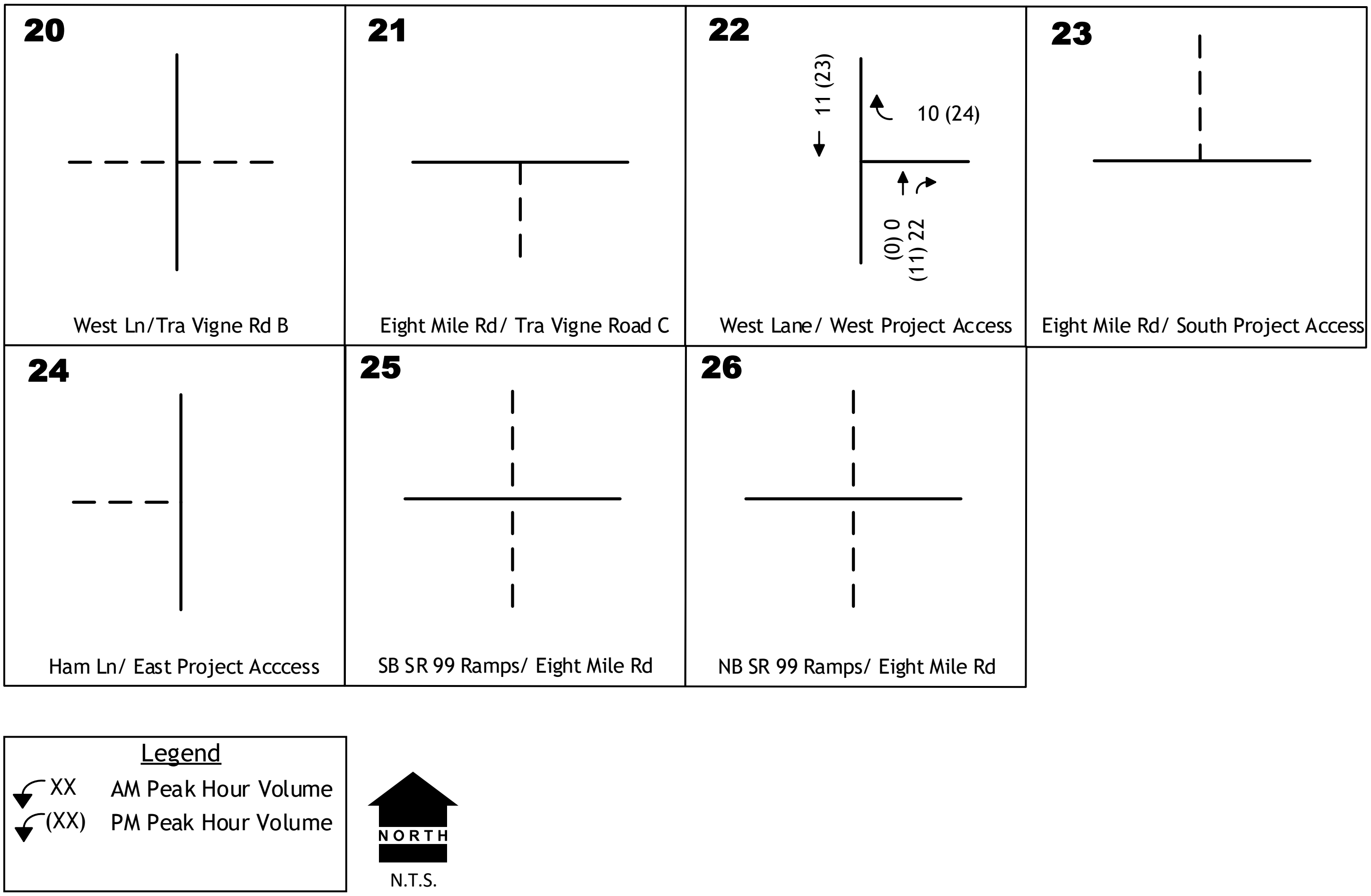
Under Existing Plus Phase 1 conditions, the intersection of Eight Mile Road & SR 99 East Frontage Road would operate at LOS D with 23.8 seconds of delay during the a.m. peak hour, and at LOS F with 67.4 seconds of delay during the p.m. peak hour. LOS F is considered unacceptable. Compared to Existing Conditions, the project-related increase in delay would not be greater than five seconds during either the a.m. peak hour or the p.m. peak hour. Therefore, based on criteria presented in the *General Plan Policy Consistency Criteria* section of this traffic impact study, the project-related inconsistency with General Plan policies is considered less than significant. No improvements are required.

While no project-related improvements are required at this intersection under Existing Plus Phase 1 conditions, **Table 13** shows implementation of recommended improvements for Existing Conditions would result in this intersection operating at LOS C with 22.0 seconds of delay during the a.m. peak hour and LOS C with 34.2 seconds of delay during the p.m. peak hour. LOS C is considered acceptable.



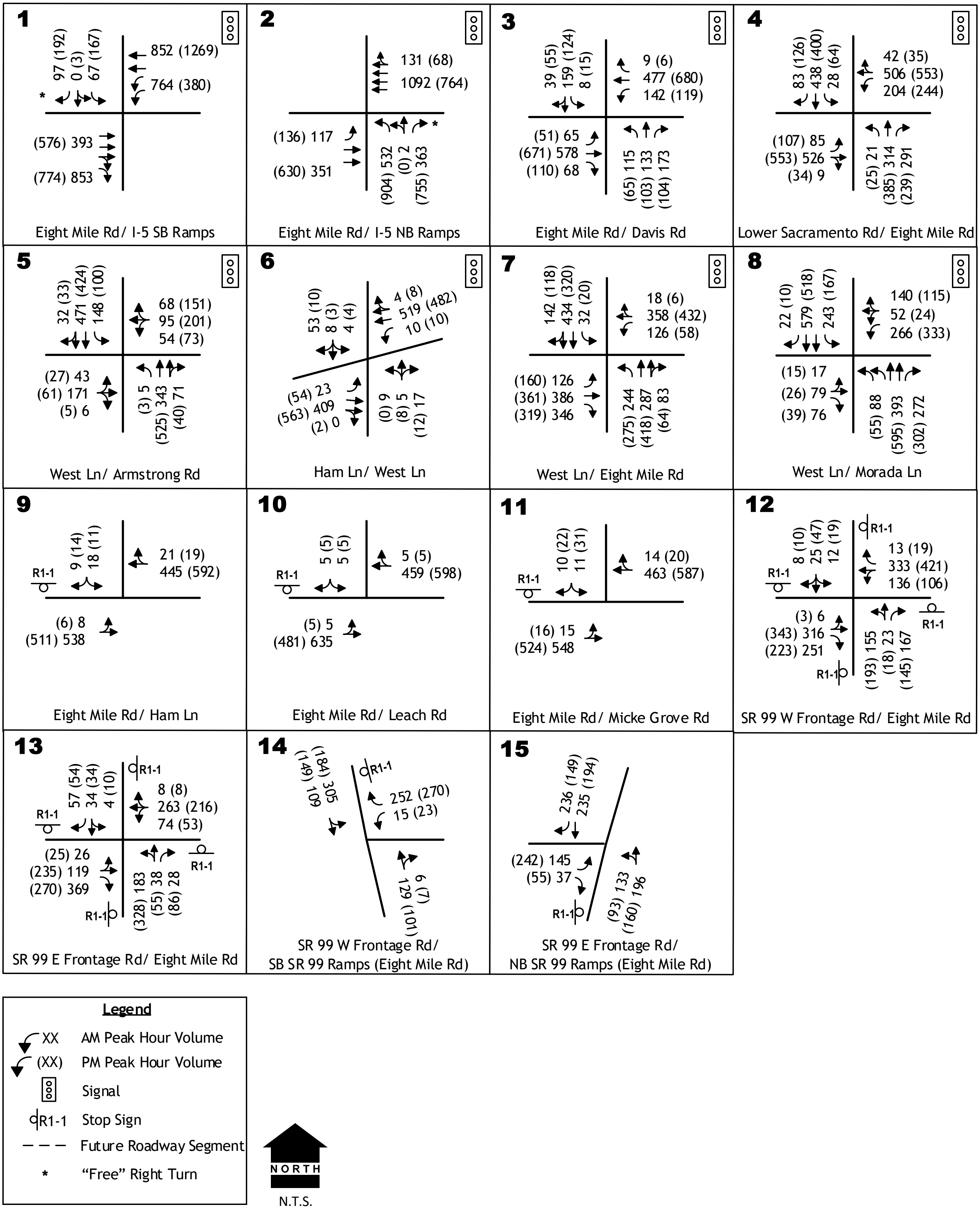
GILL MEDICAL CENTER
PROJECT-RELATED TRIPS
Phase I Only

KD Anderson & Associates, Inc.
Transportation Engineers



KD Anderson & Associates, Inc.
Transportation Engineers

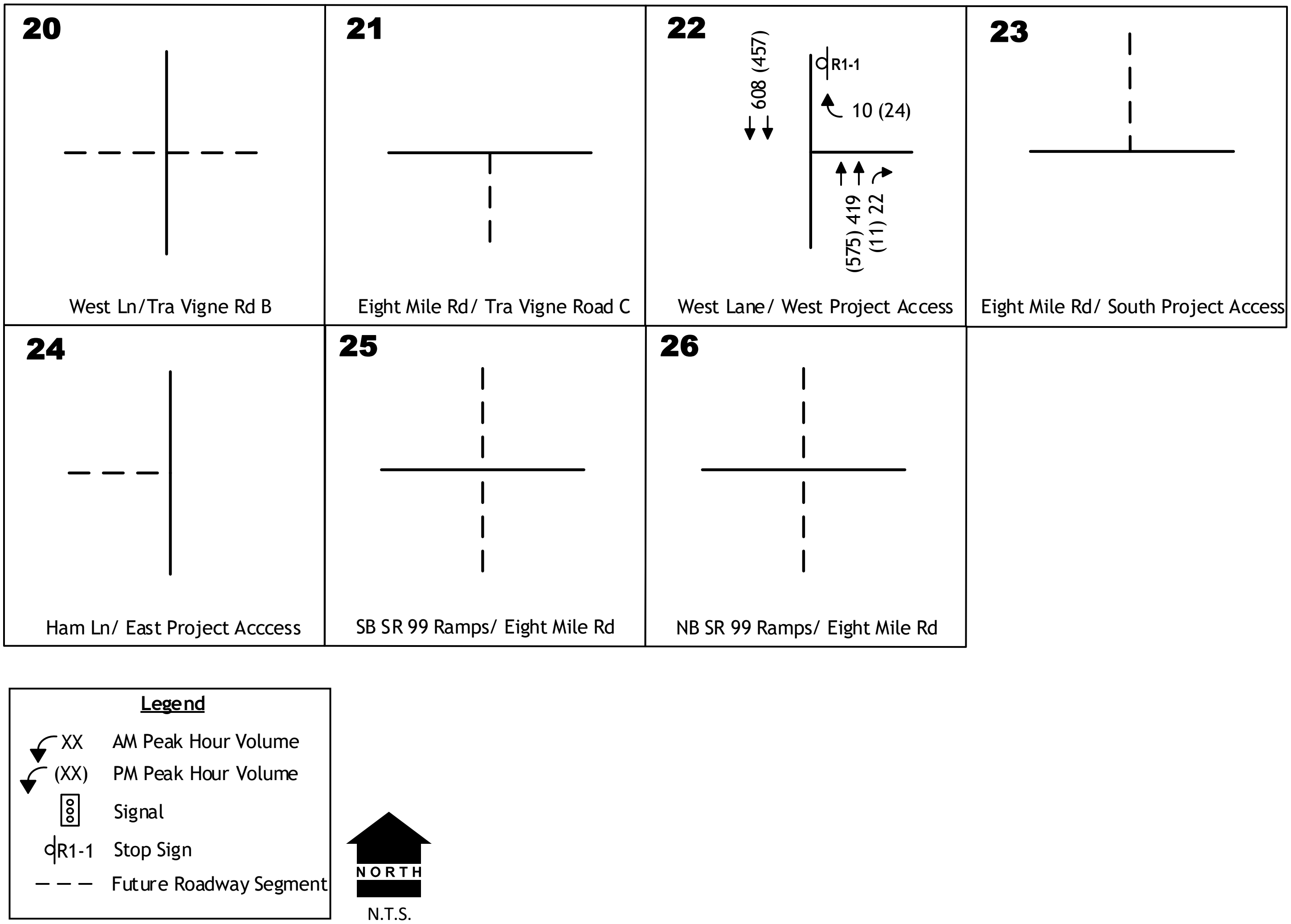
GILL MEDICAL CENTER
PROJECT-RELATED TRIPS
Phase I Only



EXISTING PLUS PHASE I

Intersection Traffic Volumes and Lane Configurations

KD Anderson & Associates, Inc.
Transportation Engineers



EXISTING PLUS PHASE I

Intersection Traffic Volumes and Lane Configurations

KD Anderson & Associates, Inc.
Transportation Engineers

Table 12. Intersection Level of Service - Existing Plus Phase 1 Conditions

	Study Intersections	Inters. Control	Signal Warrant Met?	AM Peak LOS	AM Peak Delay	PM Peak LOS	PM Peak Delay
1	Eight Mile Road & I-5 Southbound Ramps	Signal		B	13.7	B	19.2
2	Eight Mile Road & I-5 Northbound Ramps	Signal		C	27.8	B	18.3
3	Eight Mile Road & Davis Road	Signal		C	29.2	C	25.2
4	Eight Mile Road & Lower Sacramento Road	Signal		C	32.7	D	41.8
5	West Lane & Armstrong Road	Signal		C	31.1	C	30.4
6	West Lane & Ham Lane	Signal		A	9.9	A	6.9
7	West Lane & Eight Mile Road	Signal		D	36.5	C	33.8
8	West Lane & Morada Lane	Signal		C	31.9	C	27.7
9	Eight Mile Road & Ham Lane	Unsig	No	A	0.6	A	0.5
10	Eight Mile Road & Leach Road	Unsig	No	A	0.2	A	0.2
11	Eight Mile Road & Micke Grove Road/Holman Road	Unsig	No	A	0.5	A	1.2
12	Eight Mile Road & SR 99 West Frontage Road	AWSC	Yes	F	68.3	F	98.0
13	Eight Mile Road & SR 99 East Frontage Road	AWSC	Yes	D	25.8	F	67.4
14	SR 99 West Frontage Road & SR 99 SB Ramps	Unsig	Yes	A	6.5	A	6.0
15	SR 99 East Frontage Road & SR 99 NB Ramps	Unsig	No	A	6.8	A	10.0
20	West Lane & Tra Vigne Road B	- -		- -	- -	- -	- -
21	Eight Mile Road & Tra Vigne Road C	- -		- -	- -	- -	- -
22	West Lane & West Project Driveway	Unsig	No	A	0.1	A	0.2
23	Eight Mile Road & South Project Driveway	- -		- -	- -	- -	- -
24	Ham Lane & East Project Driveway	- -		- -	- -	- -	- -
25	Eight Mile Road & SR 99 Southbound Ramps	- -		- -	- -	- -	- -
26	Eight Mile Road & SR 99 Northbound Ramps	- -		- -	- -	- -	- -

Notes: LOS = Level of Service. "Inters. Control" = Type of intersection control.
"Signal" = Signalized light control. "Unsig" = Unsignalized stop-sign control. "AWSC" = All-way stop-sign control.
"I-5" = Interstate-5. "SR" = State Route. "SB" = Southbound. "NB" = Northbound.
Dashes ("- -") indicate intersection is not present under this scenario. Delay is measured in seconds per vehicle.
Per City of Stockton guidelines, intersection average delay is reported for all intersections, including unsignalized intersections.

Table 13. Intersection Level of Service - Existing Plus Phase 1 Conditions With Recommended Improvements

Study Intersections	Inters. Control	AM Peak LOS	AM Peak Delay	PM Peak LOS	PM Peak Delay
12 Eight Mile Road & SR 99 West Frontage Road	Signal	B	14.4	C	27.8
13 Eight Mile Road & SR 99 East Frontage Road	Signal	C	22.0	C	34.2

Notes: Improvements are those recommended for Existing Conditions, not for Existing Plus Phase 1 conditions, and are shown for information only. No improvement are required due to Phase 1 project-related changes.
"LOS" = Level of Service. "Inters. Control" = Type of intersection control.
"Signal" = Signalized light control. "SR" = State Route.
Delay is measured in seconds per vehicle.

ROADWAY SEGMENT LEVELS OF SERVICE

Table 14 presents LOS on each study roadway segment under Existing Plus Phase 1 conditions. Traffic volumes under Existing Plus Phase 1 conditions would be generally higher than under Existing Conditions.

Under Existing Plus Phase 1 conditions, LOS at seven of the 10 study roadway segments would be at acceptable LOS C or better. No improvements are needed at these seven roadway segments to achieve acceptable LOS. The following describes the three study roadway segments that would operate at unacceptable LOS under Existing Plus Phase 1 conditions.

Eight Mile Road West of Lower Sacramento Road

Under Existing Plus Phase 1 conditions, Eight Mile Road west of Lower Sacramento Road would operate at LOS E. LOS E is considered unacceptable. Compared to Existing Conditions, the project-related increase in volumes would not be greater than five percent. Therefore, based on criteria presented in the *General Plan Policy Consistency Criteria* section of this traffic impact study, the project-related inconsistency with General Plan policies is considered less than significant. No improvements are required.

While no project-related improvements are required on this roadway segment under Existing Plus Phase 1 conditions, **Table 15** shows implementation of recommended improvements for Existing

Conditions would result in this roadway segment operating at LOS A. LOS A is considered acceptable. This improvement is included in the City of Stockton PFF program (City of Stockton 2004b), and the San Joaquin County RTIF program (San Joaquin Council of Governments 2018).

Lower Sacramento Road South of Eight Mile Road

Under Existing Plus Phase 1 conditions, Lower Sacramento Road South of Eight Mile Road would operate at LOS E. LOS E is considered unacceptable. Compared to Existing Conditions, the project-related increase in volumes would not be greater than five percent. Therefore, based on criteria presented in the *General Plan Policy Consistency Criteria* section of this traffic impact study, the project-related inconsistency with General Plan policies is considered less than significant. No improvements are required.

While no project-related improvements are required on this roadway segment under Existing Plus Phase 1 conditions, **Table 15** shows implementation of recommended improvements for Existing Conditions would result in this roadway segment operating at LOS A. LOS A is considered acceptable. This improvement is included in the City of Stockton PFF program, and the San Joaquin County RTIF program.

Eight Mile Road Between Lower Sacramento Road and West Lane

Under Existing Plus Phase 1 conditions, Eight Mile Road Between Lower Sacramento Road and West Lane would operate at LOS F. LOS F is considered unacceptable. Compared to Existing Conditions, the project-related increase in volumes would not be greater than five percent. Therefore, based on criteria presented in the *General Plan Policy Consistency Criteria* section of this traffic impact study, the project-related inconsistency with General Plan policies is considered less than significant. No improvements are required.

While no project-related improvements are required on this roadway segment under Existing Plus Phase 1 conditions, **Table 15** shows implementation of recommended improvements for Existing Conditions would result in this roadway segment operating at LOS A. LOS A is considered acceptable. This improvement is included in the City of Stockton PFF program.

RAMP JUNCTION LEVELS OF SERVICE

Table 16 presents LOS on each study ramp junction under Existing Plus Phase 1 conditions. Traffic volumes under Existing Plus Phase 1 conditions would be generally higher than under Existing Conditions.

Under Existing Plus Phase 1 conditions, LOS at all four study ramp junctions would be at acceptable LOS C or better. No improvements are needed at these ramp junctions to achieve acceptable LOS.

Table 14. Roadway Segment Level of Service - Existing Plus Phase 1

Roadway Segment	Number of Lanes	Daily Volume	Level of Service
Eight Mile Road West of Lower Sacramento Road	2	19,137	E
Lower Sacramento Road South of Eight Mile Road	2	16,191	E
Eight Mile Road Lower Sacramento Road to West Lane	2	22,254	F
West Lane North of Eight Mile Road	4	12,568	A
West Lane South of Eight Mile Road	4	16,270	A
Eight Mile Road West Lane to Ham Lane	2	12,803	C
Ham Lane West Lane to Eight Mile Road	2	540	A
Eight Mile Road West of Micke Grove Road/Holman Road	2	12,803	C
State Route 99 North of Eight Mile Road	6	79,002	C
State Route 99 Eight Mile Road to Morada Lane	6	80,088	C

Table 15. Roadway Segment Level of Service -
Existing Plus Phase 1 With Recommended Improvements

Roadway Segment	Number of Lanes	Daily Volume	Level of Service
Eight Mile Road West of Lower Sacramento Road	4	19,137	A
Lower Sacramento Road South of Eight Mile Road	4	16,191	A
Eight Mile Road Lower Sacramento Road to West Lane	4	22,254	A

Notes: Improvements are those recommended for Existing Conditions, not for Existing Plus Phase 1 conditions, and are shown for information only. No improvement are required due to Phase 1 project-related changes.

Table 16. State Route 99 Ramp Merge and Diverge Level of Service - Existing Plus Phase 1

Ramp Junction	AM Peak Hour				PM Peak Hour			
	Freeway Volume	Ramp Volume	Density	LOS	Freeway Volume	Ramp Volume	Density	LOS
SR 99 Southbound Diverge to Eight Mile Road Off-Ramp (Existing)	3,639	267	25.9	C	3,022	293	22.5	C
SR 99 Southbound Merge from Eight Mile Road On-Ramp (Existing)	3,639	311	25.0	C	3,022	191	20.7	C
SR 99 Northbound Merge from Eight Mile Road On-Ramp (Existing)	2,936	369	22.0	C	3,826	242	25.6	C
SR 99 Northbound Diverge to Eight Mile Road Off-Ramp (Existing)	2,936	182	21.4	C	3,826	297	26.5	C

Notes: LOS = Level of Service. SR = State Route. Density is expressed in passenger cars per mile per lane.

EXISTING PLUS PROJECT IMPACTS

The Existing Plus Gill Medical Center Project condition is for analysis of existing conditions with development of the full GMC project (i.e., both Phase 1 and Phase 2). This condition is also referred to in this traffic impact study as Existing Plus Project conditions. Development of land uses and roadway improvements associated with the GMC project are assumed. The results of analysis of Existing Plus Project conditions can be compared to analysis of Existing Conditions to identify changes due to the GMC project.

The development of the GMC project would result in vehicle traffic to and from the project site. The amount of additional traffic on a particular section of the street network depends on three factors:

- Trip Generation, the number of new trips generated by the project,
- Trip Distribution, the direction of travel for the new traffic, and
- Trip Assignment, the specific routes used by the new traffic.

TRIP GENERATION

Development of the GMC project would generate new vehicle trips and potentially affect traffic operations on study facilities.

The trip generation rates used in this traffic impact study are presented in **Table 9**. The trip generation rates are applied to the amount of project-related land uses. The resulting trip generation estimates are presented in **Table 10**.

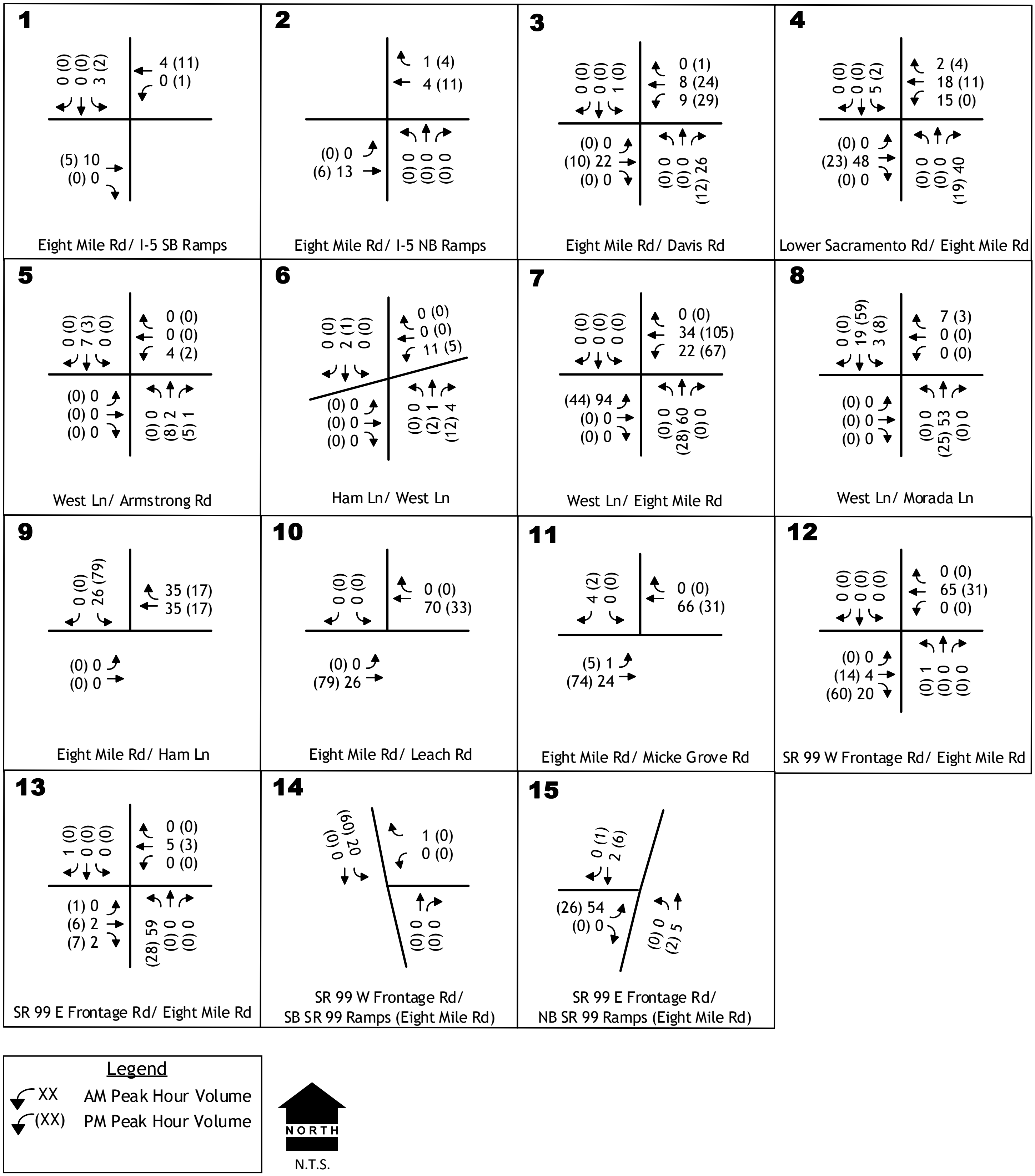
As shown in **Table 10**, the GMC project would generate 3,975 trips per day, with 324 trips during the a.m. peak hour and 379 trips during the p.m. peak hour.

TRIP DISTRIBUTION

Project-related trips were geographically distributed over the study area roadway network. The geographical distribution of trips is based on the relative attractiveness or utility of possible destinations. Trip distribution percentages applied in this traffic impact study are presented in **Table 11**.

TRIP ASSIGNMENT

Traffic that would be generated by the GMC project was added to Existing traffic volumes. **Figure 10** displays the project-related-only traffic volumes for each study intersection in the a.m. peak hour and p.m. peak hour. **Figure 11** displays the resulting Existing Plus Project traffic volumes anticipated for each study intersection in the peak hours.



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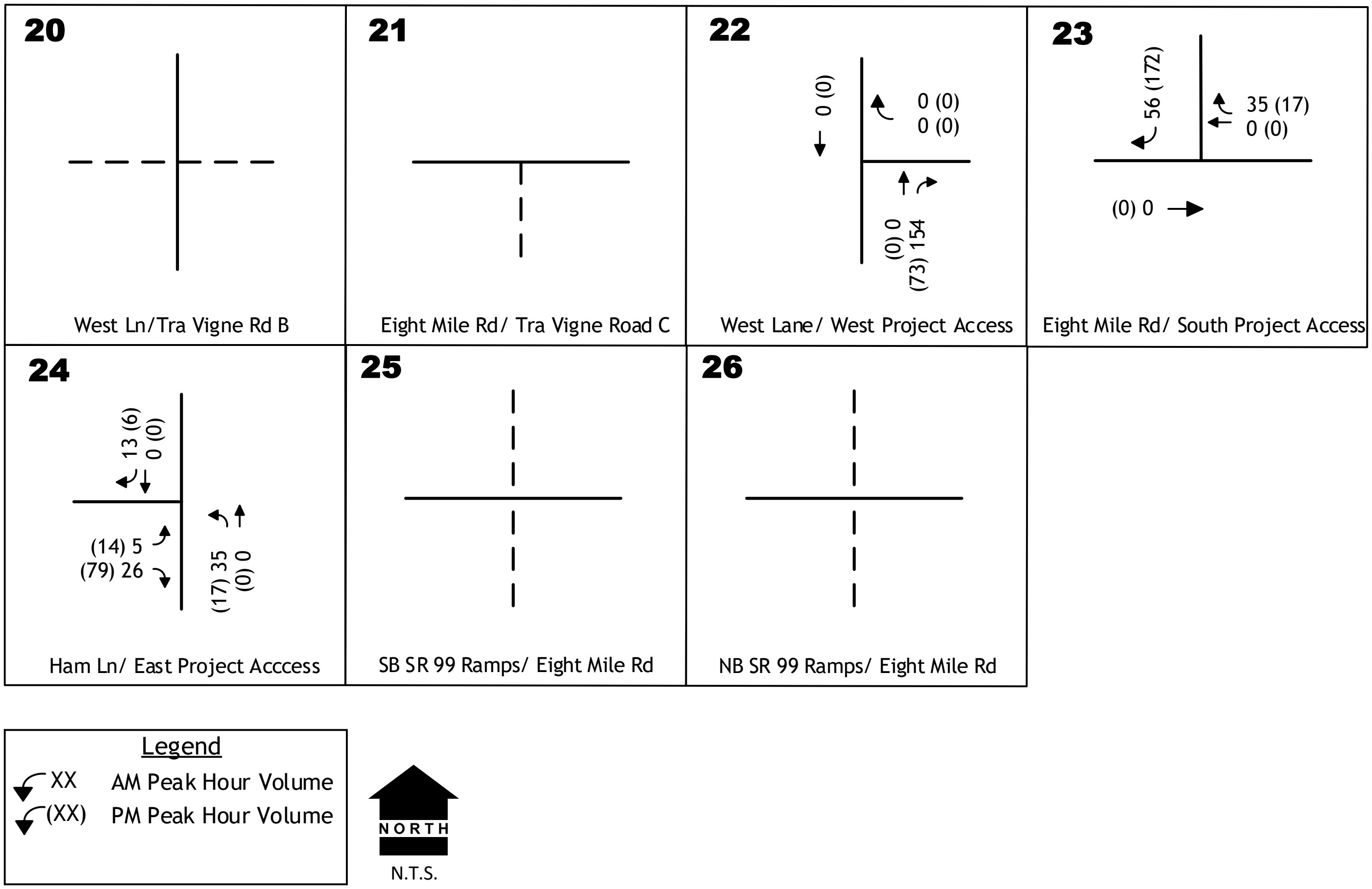
Transportation Engineers

GILL MEDICAL CENTER
PROJECT-RELATED TRIPS
Existing Conditions Background

2610-27 RA 9/23/2021

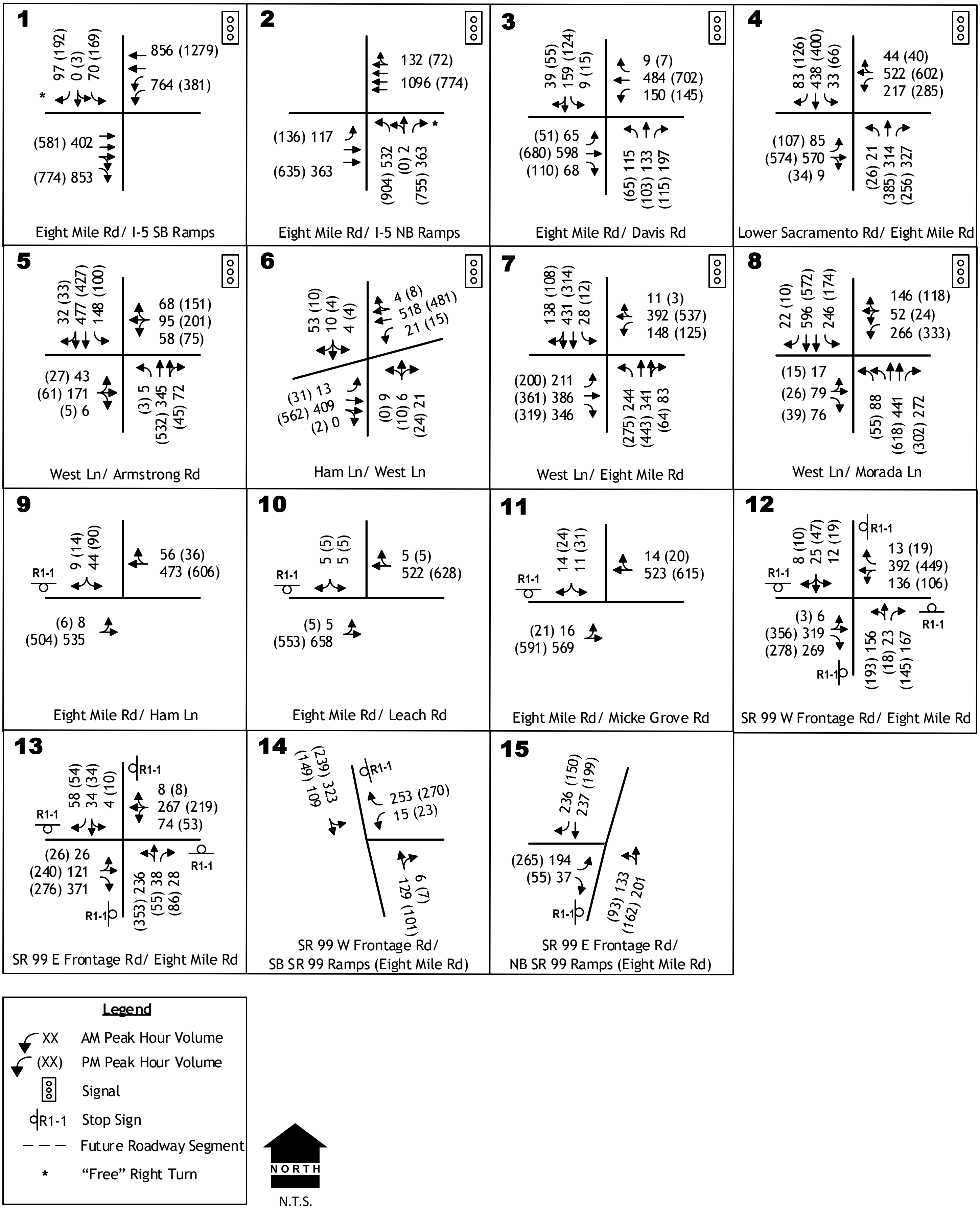
Gill Medical Center Project Traffic Impact Study

figure 10a



KD Anderson & Associates, Inc.
Transportation Engineers

GILL MEDICAL CENTER
PROJECT-RELATED TRIPS
Existing Conditions Background



EXISTING PLUS PROJECT

Intersection Traffic Volumes and Lane Configurations

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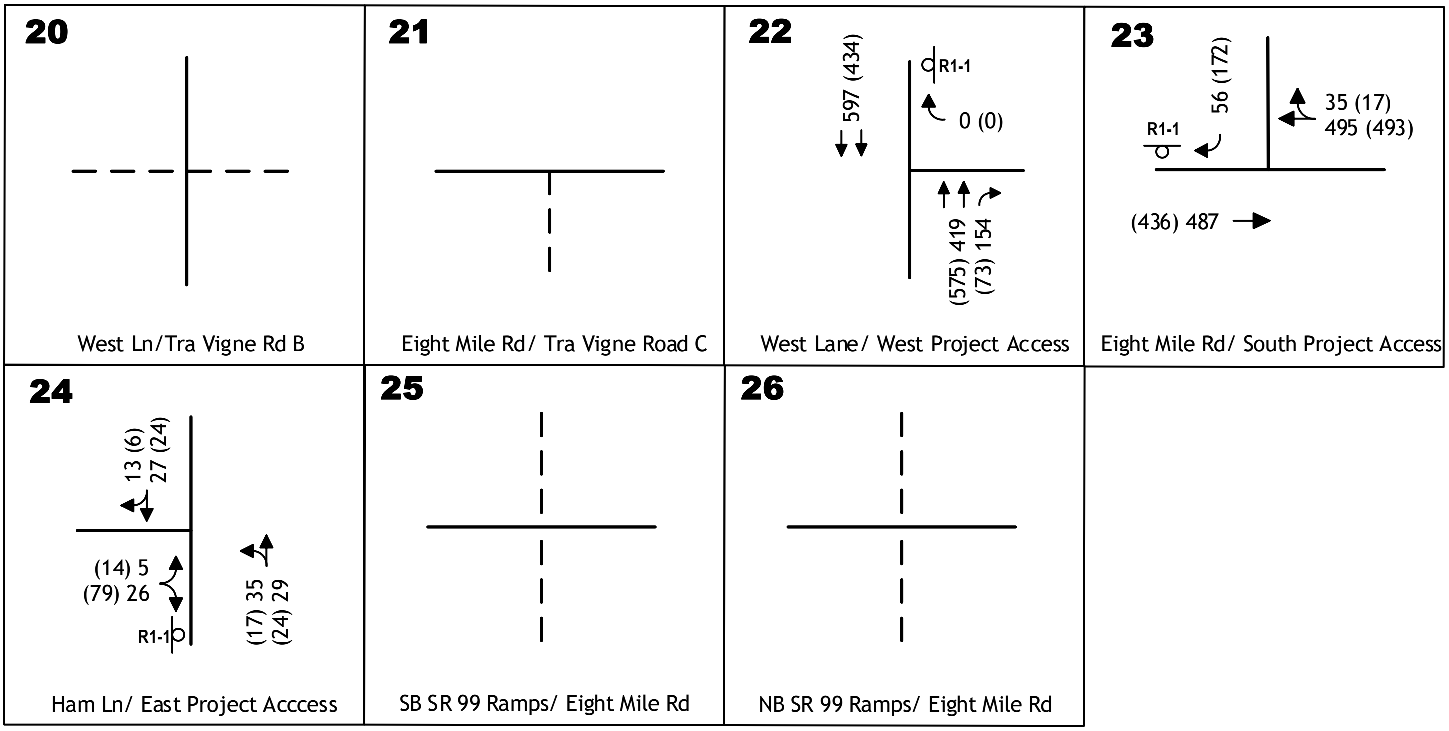
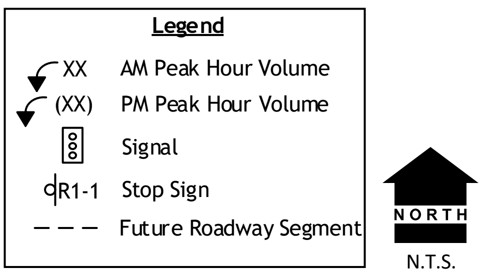




EXISTING PLUS PROJECT

Intersection Traffic Volumes and Lane Configurations

ROADWAY IMPROVEMENTS

As noted in the *Project Description* section of this traffic impact study, the GMC project would include:

- a driveway connection with West Lane along the western boundary of the project site,
- a driveway connection with Eight Mile Road on the southern boundary of the project site, and
- a driveway connection with Ham Lane on the eastern boundary of the project site.

INTERSECTION LEVELS OF SERVICE

Table 17 presents the a.m. peak hour and p.m. peak hour LOS at each study intersection under Existing Plus Project conditions. The worksheets presenting the calculation of LOS are included in the Technical Appendix.

Traffic volumes under Existing Plus Project conditions would be generally higher than under Existing Conditions and, as a result, vehicle delay at study intersections under Existing Plus Project conditions would be higher than under Existing Conditions.

Under Existing Plus Project conditions, LOS at 16 of the 18 study intersections would be at acceptable LOS D or better during both the a.m. peak hour and the p.m. peak hour. No improvements are needed at these 16 intersections to achieve acceptable LOS. The following describes the two study intersection that would operate at unacceptable LOS under Existing Plus Project conditions.

12. Eight Mile Road & SR 99 West Frontage Road

Under Existing Plus Project conditions, the intersection of Eight Mile Road & SR 99 West Frontage Road would operate at LOS F with 83.1 seconds of delay during the a.m. peak hour, and at LOS F with 126.0 seconds of delay during the p.m. peak hour. LOS F is considered unacceptable. Compared to Existing Conditions, the project-related increase in delay would be greater than five seconds during either the a.m. peak hour or the p.m. peak hour. Therefore, based on criteria presented in the *General Plan Policy Consistency Criteria* section of this traffic impact study, the project-related inconsistency with General Plan policies is considered significant. The following improvements are recommended to improve operating conditions to acceptable LOS and reduce the project-related inconsistency with General Plan policies to a less than significant level:

- Signalize the intersection. This intersection meets peak hour signal warrants.

- Improve the eastbound approach to include an exclusive left-turn lane, an exclusive through lane, and an exclusive right-turn lane.

- Improve the westbound approach to include an exclusive left-turn lane, an exclusive through lane, and an exclusive right-turn lane.

The improvements listed above are the same as those recommended for Existing Conditions.

As shown in **Table 18**, implementation of the above recommended improvements would improve traffic operations to LOS B with 14.5 seconds of delay in the a.m. peak hour and LOS B with 19.5 seconds of delay in the p.m. peak hour. LOS B is considered acceptable.

13. Eight Mile Road & SR 99 East Frontage Road

Under Existing Plus Project conditions, the intersection of Eight Mile Road & SR 99 East Frontage Road would operate at LOS E with 35.2 seconds of delay during the a.m. peak hour, and at LOS F with 73.7 seconds of delay during the p.m. peak hour. LOS E and F are considered unacceptable. Compared to Existing Conditions, the project-related increase in delay would be greater than five seconds during either the a.m. peak hour or the p.m. peak hour. Therefore, based on criteria presented in the *General Plan Policy Consistency Criteria* section of this traffic impact study, the project-related inconsistency with General Plan policies is considered significant. The following improvements are recommended to improve operating conditions to acceptable LOS and reduce the project-related inconsistency with General Plan policies to a less than significant level:

- Signalize the intersection. This intersection meets peak hour signal warrants.

- Improve the eastbound approach to include an exclusive left-turn lane, an exclusive through lane, and an exclusive right-turn lane.

- Improve the westbound approach to include an exclusive left-turn lane, an exclusive through lane, and an exclusive right-turn lane.

- Change the lanes on the northbound approach. Change the approach lanes from a northbound combined through/left-turn lane and an exclusive northbound-to-eastbound right-turn lane, to an exclusive northbound-to-westbound left-turn lane and a northbound combined through/right-turn lane.

The improvements listed above are the same as those recommended for Existing Conditions.

As shown in **Table 18**, implementation of the above recommended improvements would improve traffic operations to LOS C with 23.9 seconds of delay in the a.m. peak hour and LOS C with 21.0 seconds of delay in the p.m. peak hour. LOS C is considered acceptable.

Table 17. Intersection Level of Service - Existing Plus Project Conditions

	Study Intersections	Inters. Control	Signal Warrant Met?	AM Peak LOS	AM Peak Delay	PM Peak LOS	PM Peak Delay
1	Eight Mile Road & I-5 Southbound Ramps	Signal		B	13.7	B	19.2
2	Eight Mile Road & I-5 Northbound Ramps	Signal		C	27.8	B	18.3
3	Eight Mile Road & Davis Road	Signal		C	29.9	C	26.2
4	Eight Mile Road & Lower Sacramento Road	Signal		C	34.6	D	46.3
5	West Lane & Armstrong Road	Signal		C	31.2	C	30.4
6	West Lane & Ham Lane	Signal		B	10.3	A	7.2
7	West Lane & Eight Mile Road	Signal		D	38.5	D	38.6
8	West Lane & Morada Lane	Signal		C	32.1	C	27.8
9	Eight Mile Road & Ham Lane	Unsig	No	A	1.2	A	3.4
10	Eight Mile Road & Leach Road	Unsig	No	A	0.2	A	0.2
11	Eight Mile Road & Micke Grove Road/Holman Road	Unsig	No	A	0.5	A	1.3
12	Eight Mile Road & SR 99 West Frontage Road	AWSC	Yes	F	83.1	F	126.0
13	Eight Mile Road & SR 99 East Frontage Road	AWSC	Yes	E	35.2	F	73.7
14	SR 99 West Frontage Road & SR 99 SB Ramps	Unsig	Yes	A	6.5	A	6.2
15	SR 99 East Frontage Road & SR 99 NB Ramps	Unsig	Yes	B	10.2	B	11.7
20	West Lane & Tra Vigne Road B	- -		- -	- -	- -	- -
21	Eight Mile Road & Tra Vigne Road C	- -		- -	- -	- -	- -
22	West Lane & West Project Driveway	Unsig	No	A	0.0	A	0.0
23	Eight Mile Road & South Project Driveway	Unsig	No	A	0.7	A	2.8
24	Ham Lane & East Project Driveway	Unsig	No	A	3.9	A	5.8
25	Eight Mile Road & SR 99 Southbound Ramps	- -		- -	- -	- -	- -
26	Eight Mile Road & SR 99 Northbound Ramps	- -		- -	- -	- -	- -

Notes: LOS = Level of Service. "Inters. Control" = Type of intersection control.
"Signal" = Signalized light control. "Unsig" = Unsignalized stop-sign control. "AWSC" = All-way stop-sign control.
"I-5" = Interstate-5. "SR" = State Route. "SB" = Southbound. "NB" = Northbound.
Dashes ("- -") indicate intersection is not present under this scenario. Delay is measured in seconds per vehicle.
Per City of Stockton guidelines, intersection average delay is reported for all intersections, including unsignalized intersections.

Table 18. Intersection Level of Service - Existing Plus Project Conditions With Recommended Improvements

Study Intersections	Inters. Control	AM Peak LOS	AM Peak Delay	PM Peak LOS	PM Peak Delay
12 Eight Mile Road & SR 99 West Frontage Road	Signal	B	14.5	B	19.5
13 Eight Mile Road & SR 99 East Frontage Road	Signal	C	23.9	C	21.0

Notes: "LOS" = Level of Service. "Inters. Control" = Type of intersection control.
"Signal" = Signalized control. "SR" = State Route.
Delay is measured in seconds per vehicle.

ROADWAY SEGMENT LEVELS OF SERVICE

Table 19 presents LOS on each study roadway segment under Existing Plus Project conditions. Traffic volumes under Existing Plus Project conditions would be generally higher than under Existing Conditions.

Under Existing Plus Project conditions, LOS at seven of the 10 study roadway segments would be at acceptable LOS C or better. No improvements are needed at these seven roadway segments to achieve acceptable LOS. The following describes the three study roadway segments that would operate at unacceptable LOS under Existing Plus Project conditions.

Eight Mile Road West of Lower Sacramento Road

Under Existing Plus Project conditions, Eight Mile Road west of Lower Sacramento Road would operate at LOS E. LOS E is considered unacceptable. Compared to Existing Conditions, the project-related increase in volumes would not be greater than five percent. Therefore, based on criteria presented in the *General Plan Policy Consistency Criteria* section of this traffic impact study, the project-related inconsistency with General Plan policies is considered less than significant. No improvements are required.

While no project-related improvements are required on this roadway segment under Existing Plus Project conditions, **Table 20** shows implementation of recommended improvements for Existing Conditions would result in this roadway segment operating at LOS A. LOS A is considered acceptable. This improvement is included in the City of Stockton PFF program (City of Stockton 2004b), and the San Joaquin County RTIF program (San Joaquin Council of Governments 2018).

Lower Sacramento Road South of Eight Mile Road

Under Existing Plus Project conditions, Lower Sacramento Road South of Eight Mile Road would operate at LOS E. LOS E is considered unacceptable. Compared to Existing Conditions, the project-related increase in volumes would not be greater than five percent. Therefore, based on criteria presented in the *General Plan Policy Consistency Criteria* section of this traffic impact study, the project-related inconsistency with General Plan policies is considered less than significant. No improvements are required.

While no project-related improvements are required on this roadway segment under Existing Plus Project conditions, **Table 20** shows implementation of recommended improvements for Existing Conditions would result in this roadway segment operating at LOS A. LOS A is considered acceptable. This improvement is included in the City of Stockton PFF program, and the San Joaquin County RTIF program.

Eight Mile Road Between Lower Sacramento Road and West Lane

Under Existing Plus Project conditions, Eight Mile Road Between Lower Sacramento Road and West Lane would operate at LOS F. LOS F is considered unacceptable. Compared to Existing Conditions, the project-related increase in volumes would be greater than five percent. Therefore, based on criteria presented in the *General Plan Policy Consistency Criteria* section of this traffic impact study, the project-related inconsistency with General Plan policies is considered significant. The following improvement is recommended to improve operating conditions to acceptable LOS and reduce the project-related inconsistency with General Plan policies to a less than significant level:

- Widen this roadway segment from two lanes to four lanes.

The improvement listed above is the same as that recommended for Existing Conditions.

A summary of LOS with recommended improvements is presented in **Table 20.** With this recommended improvement, this roadway segment would operate at acceptable LOS A and reduce the project-related inconsistency with General Plan policies to a less than significant level. This improvement is included in the City of Stockton PFF program.

RAMP JUNCTION LEVELS OF SERVICE

Table 21 presents LOS on each study ramp junction under Existing Plus Project conditions. Traffic volumes under Existing Plus Project conditions would be generally higher than under Existing Conditions.

Under Existing Plus Project conditions, LOS at all four study ramp junctions would be at acceptable LOS C or better. No improvements are needed at these ramp junctions to achieve acceptable LOS.

Table 19. Roadway Segment Level of Service -
Existing Plus Project

Roadway Segment	Number of Lanes	Daily Volume	Level of Service
Eight Mile Road West of Lower Sacramento Road	2	19,869	E
Lower Sacramento Road South of Eight Mile Road	2	16,801	E
Eight Mile Road Lower Sacramento Road to West Lane	2	23,676	F
West Lane North of Eight Mile Road	4	13,474	A
West Lane South of Eight Mile Road	4	17,182	A
Eight Mile Road West Lane to Ham Lane	2	13,981	C
Ham Lane West Lane to Eight Mile Road	2	1,425	A
Eight Mile Road West of Micke Grove Road/Holman Road	2	13,869	C
State Route 99 North of Eight Mile Road	6	79,016	C
State Route 99 Eight Mile Road to Morada Lane	6	80,906	C

**Table 20. Roadway Segment Level of Service -
Existing Plus Project With Recommended Improvements**

Roadway Segment	Number of Lanes	Daily Volume	Level of Service
Eight Mile Road West of Lower Sacramento Road *	4	19,869	A
Lower Sacramento Road South of Eight Mile Road *	4	16,801	A
Eight Mile Road Lower Sacramento Road to West Lane **	4	23,676	B

Notes: Improvements with a single asterisk ("*") are those recommended for Existing Conditions, not for Existing Plus Project conditions, and are shown for information only. These improvement are required due to project-related changes.

Improvement with a double asterisk ("**") is recommended for Existing Plus Project conditions, and are required to reduce project-related inconsistency with General Plan policies to a less-than-significant level.

Table 21. State Route 99 Ramp Merge and Diverge Level of Service - Existing Plus Project

Ramp Junction	AM Peak Hour				PM Peak Hour			
	Freeway Volume	Ramp Volume	Density	LOS	Freeway Volume	Ramp Volume	Density	LOS
SR 99 Southbound Diverge to Eight Mile Road Off-Ramp (Existing)	3,639	268	25.9	C	3,022	293	22.5	C
SR 99 Southbound Merge from Eight Mile Road On-Ramp (Existing)	3,639	329	25.1	C	3,022	246	21.2	C
SR 99 Northbound Merge from Eight Mile Road On-Ramp (Existing)	2,936	369	22.0	C	3,826	243	25.6	C
SR 99 Northbound Diverge to Eight Mile Road Off-Ramp (Existing)	2,936	231	21.5	C	3,826	320	26.5	C

Notes: LOS = Level of Service. SR = State Route. Density is expressed in passenger cars per mile per lane.

INCREASE IN DEMAND FOR PUBLIC TRANSIT

As shown in **Table 10**, Phase 1 development of the medical center would generate 386 trips per day. This would be less than 10 percent of the overall project trip generation per day (386 ÷ 3,975 = 0.097). Phase 2 development of the medical office building and hospital would generate more than 90 percent of the overall project trips ((2,088 + 1,501) ÷ 3,975 = 0.903).

While development of the medical center would result in demand for public transit service, the amount of demand cannot be quantified and, because of the relatively low number of trips generated, Phase 1 development is not considered to have a significant impact on public transit service. No mitigation measures are required with Phase 1 development.

Phase 2 development of the medical office building and hospital would generate a relatively larger number of trips, and result in a relatively larger increase in demand for public transit. In May 2020, representative of the applicant participated in a video conference with Ms. Kimberly Gayle, Deputy Chief Executive Officer of SJTRD. During this conference, the potential for SJRTD to provide service to the project site via Hopper Route 93 was discussed (Jolley pers. comm.). Hopper Route 93 currently travels along West Lane adjacent to the project site.

However, access to the southbound portion of the Hopper route from the project site would require a transit stop along the west side of West Lane. Because of the following factors, access to Hopper Route 93 is considered not feasible:

- physical constraints (i.e., pedestrians would have to cross the four-lane divided West Lane);
- land ownership (i.e., neither the County nor the applicant own the land on the west side of West Lane, where the southbound transit stop would be located); and
- potential safety concerns (i.e., pedestrian travel across and along West Lane).

As noted earlier, the increase in demand for public transit cannot be quantified. As a result, this impact is considered potentially significant. This impact can be reduced to a less-than-significant with implementation of the following mitigation measure.

Mitigation Measure - Provide a Designated On-Site Public Transit Facility. The applicant shall provide a designated on-site public transit facility. The on-site public transit facility shall be designed to be accessible to public agency vehicles and vehicles operated by private or non-profit entities and social service providers. Because Phase 2 development would generate more than 90 percent of the overall project trips and, as shown in **Figure 2**, the medical office building would be located adjacent to the hospital, the on-site public transit facility shall be located near to the medical office building and hospital.

INCREASE IN DEMAND FOR BICYCLE AND PEDESTRIAN FACILITIES

Implementation of the GMC project would result in an increase in demand for bicycle and pedestrian facilities. With the current sparse land use development in the vicinity of the project site, bicycle and pedestrian facilities are not present. However, approved and planned land use development immediately to the south of Eight Mile Road would result in these types of facilities being constructed in the vicinity.

As described in the *Project Description* section of this traffic impact study, the proposed project would include facilities to provide pedestrian access to, and circulation within, the project site. Phase 1 of the GMC project would provide:

- full curb, gutter and sidewalk at the driveway entrance and along the project frontage with West Lane;
- pedestrian sidewalks located on each side of the entrance drive and northern segment; and
- dedicated pedestrian pathways constructed to ADA standards linking all parking lots, the roundabout and the medical center building entrance to ensure a safe path of travel.

Phase 2 of the GMC project would provide:

- pedestrian sidewalks located on each side of the new Ham Lane and Eight Mile Road entrance drives; and

- dedicated pedestrian pathways constructed to ADA standards with appropriate linkages, and parking lot and pathway lighting installed consistent with Phase 1 development.

As noted above, Phase 2 of the GMC project would include sidewalks along the Ham Lane driveway. Pedestrian facilities are expected to be provided along West Lane south of the project site before pedestrian facilities along Ham Lane south of the project site. Ham Lane is currently a narrow roadway with no shoulders and roadside ditches. As a result, directing pedestrian travel to Ham Lane could result in unsafe pedestrian travel along Ham Lane, and this is considered a significant impact. This impact will be reduced to a less-than-significant level with implementation of the following mitigation measure:

Mitigation Measure – Eliminate Sidewalks Along the Ham Lane Driveway. The applicant shall revise the project site plan to eliminate sidewalks along the Ham Lane driveway. Pedestrians should be encouraged to use the West Lane access route, rather than the Ham Lane access route.

As noted above, the GMC project would include curb, gutter and sidewalk along the project frontage with West Lane. The majority of pedestrian travel to and from the project site would be along the east side of West Lane between the project site and Eight Mile Road. The southern terminus of curb, gutter and sidewalk along the project frontage would be approximately 450 feet north of Eight Mile Road. Project-related pedestrians walking along the shoulder of West Lane between the project site and Eight Mile Road is considered a significant impact. This impact will be reduced to a less-than-significant level with implementation of the following mitigation measure:

Mitigation Measure – Provide Curb, Gutter and Sidewalk Between the Project Site and Eight Mile Road. The applicant shall construct curb, gutter and sidewalk along the east side of West Lane between the southern edge of the project site and Eight Mile Road. County of San Joaquin staff has determined that County-owned right-of-way is approximately 110 feet wide along this portion of West Lane. A preliminary assessment indicates this right-of-way width is adequate to construct curb, gutter and sidewalk.

As described in the *Bicycle and Pedestrian Systems* section of this traffic impact study, off-site bicycle facilities are planned and proposed on West Lane along the western frontage of the project site, and on Eight Mile Road to the south of the project site. On-site facilities supporting the use of bicycles are not explicitly noted in the project description or the project site plan. Implementation of the proposed project would result demand for demand in bicycle facilities. A lack on on-site bicycle facilities is considered a significant impact. This impact will be reduced to a less-than-significant level with implementation of the following mitigation measures:

Mitigation Measure – Provide Bicycle Facilities. The applicant shall implement mitigation measures to provide bicycle facilities.

On-Site Bicycle Facilities. The applicant shall provide on-site facilities supporting the use of bicycles. These facilities should include secure bicycle parking in close proximity to proposed structures, and on-site bicycle paths or bicycle lanes connecting to the proposed bicycle facilities on West Lane.

West Lane Driveway Connection. The connection of the project site driveway to West Lane shall be designed to facilitate and protect bicycle travel. Design features should include striping to guide bicycles across the driveway and signage to advise motorists of the bicycle crossing (similar to a typical Class II bicycle lane crossing a right turn lane at an intersection). The project site driveway shall be constructed to provide for future installation of planned bicycle facilities along the west side of West Lane. The project site driveway shall be designed to facilitate the future construction of a buffered Class 2 bicycle lane along the west side of West Lane.

Implementation of the mitigation measures described above will reduce the impact of the GMC project on bicycle and pedestrian facilities to a less-than-significant level.

INCREASE IN VEHICLE MILES TRAVELED

As noted earlier in the *Vehicle Miles Traveled Significance Threshold* section of this traffic impact study, at the time the analysis presented in this traffic impact study commenced, neither the City of Stockton nor the County of San Joaquin County had adopted guidelines for analyzing VMT for CEQA environmental documents. The following is an assessment of the GMC project impacts of VMT. However, it should be noted the VMT analysis presented in this traffic impact study is not intended to pre-empt either the City or County process of developing VMT guidelines. Rather, the following analysis is intended to be a good-faith effort at disclosing and identifying the VMT impacts of the GMC project.

As described in more detail in the *Vehicle Miles Traveled Significance Threshold* section of this traffic impact study, the impacts of the GMC project on VMT is evaluated by comparing project-related VMT to a citywide average, expressed as "VMT per Service Population. To achieve a 15 percent reduction in VMT, consistent with City of Stockton General Plan Policy Action TRT-4.3, a project is considered to have a significant impact on VMT if it would generate more than 20.54 VMT per Service Population.

VMT associated with the GMC project was calculated for this traffic impact study using the City of Stockton General Plan travel demand model (City of Stockton 2018b). Two estimates of VMT were calculated for this traffic impact study. The two estimates may be thought of as "gross" and "net". These two estimates are described below:

- The estimate of gross VMT associated with the GMC project was calculated by applying a “select link” procedure to the General Plan travel demand model. This procedure identified all vehicle trips to and from the project site. GMC project trips were then multiplied by the model-estimated length of these trips, in miles. The sum of the length of the vehicle trips associated with the GMC project was calculated to estimate direct project-related VMT.

- The estimate of net VMT associated with the GMC project was calculated by running the General Plan travel demand model both with and without the project. VMT for all travel in the model area was then calculated for both runs of the model. The net change in VMT was calculated by subtracting the model area VMT total for the run without the project from the model area VMT total with the project. In the model run without the project, vehicle trips that would otherwise travel to the project site instead travelled to locations offering similar services (i.e., hospital and medical office building).

Using the methods described immediately above, the GMC project is estimated to result in 51,587 gross VMT per day and 34,182 net VMT per day. As noted in the *Project Description* section of this traffic impact study, an estimated 600 employees would work at the proposed project site. As a result, the GMC project is expected to result in 85.98 gross VMT per Service Population (51,587 ÷ 600 = 85.98) and 56.97 net VMT per Service Population (34,182 ÷ 600 = 56.97).

The VMT per Service Population for both the gross and net values are relatively large because of differences in how VMT is estimated and how service population is defined. The differences primarily involve how project-related customer travel is applied. Customer travel is included in the VMT estimate. That is, travel by customers to and from the GMC project is included in the VMT estimate. Conversely, customers are not included as part of the project “service population”. The *Envision Stockton 2040 General Plan Update and Utility Master Plan Supplements Draft EIR* (City of Stockton 2018c) defines service population as the “sum of population and employment”. Customers are not considered population (i.e., residents) at the project site, and are not employed at the project site. Because customers are included in the VMT estimate, but not the service population, the ratio of VMT per Service Population is relatively large.

The estimate of gross VMT is larger than net VMT. In this traffic impact study, the conservatively larger gross VMT value is used to identify the significance of the project-related impact. The lower net VMT value is presented in this traffic impact study for information and disclosure.

Because the project-related 85.98 VMT per Service Population is greater than 20.54 VMT per Service Population, the proposed project is considered to have a significant impact on VMT. The impact of the proposed project on VMT could be reduced by implementing the following mitigation measures. However, because of the magnitude of difference between project-related VMT per Service Population and the VMT per Service Population significance threshold, implementation of these mitigation measures would not reduce this impact to a less-than-significant level, and this impact is considered significant and unavoidable.

<u>Mitigation Measure – Implement Measures to Reduce VMT.</u> The applicant shall implement mitigation measures to reduce project-related VMT. These measures shall include the following:

<u>Measures to Increase the Use of Public Transit.</u> This includes the measure described earlier in this traffic impact study, "Provide A Designated On-Site Public Transit Facility". It also includes coordinating with SJRTD, and private and non-profit organizations to encourage the use of public transit when traveling to the project site.

As noted earlier in the *Public Transportation* section of this traffic impact study, SJRTD operates Hopper Route 83 on West Lane along the western edge of the project site. As described in more detail in the *Increase in Demand for Public Transit* section of this traffic impact study, representatives of the project applicant met with Ms. Kimberly Gayle, Deputy Chief Executive Officer of SJRTD to discuss opportunities to provide SJRTD service at or near the project site.

SJRTD service of the site would require transit stops to be constructed both at the project site (on the east side of West Lane) for northbound service, and on the west side of West Lane for southbound service. Further, due to the project site's distance from the signalized intersection of West Lane & Eight Mile Road, additional infrastructure to accommodate pedestrians crossing West Lane between from the project site and the southbound transit stop would likely be required. Due to both the issues with pedestrians crossing West Lane and the applicant not having ownership or control over the property on the west side of West Lane, adding a transit stop at or near the project does not appear feasible.

In lieu of public transit service, the applicant shall provide a private shuttle service into the project. The facilities described in the "Provide a Designated On-Site Public Transit Facility" mitigation measure will provide service to the private shuttle service, in addition to providing future possible public transit service.

<u>Measures to Increase the Use of Ridesharing.</u> Ridesharing measures would increase the vehicle occupancy (i.e., the number of people in each vehicle). Increasing the vehicle occupancy by ridesharing will result in fewer cars driving the same number of person trips, and thus decrease project-related VMT. The following is a description of ridesharing measures from the California Air Pollution Control Officers Association document *2010 Quantifying Greenhouse Gas Mitigation Measures* (California Air Pollution Control Officers Association 2010) that should be implemented by the applicant. The sequence numbers listed below (e.g., TRT-3) are from California Air Pollution Control Officers Association 2010, and are provided to facilitate reference to that document.

> <u>TRT-3. Provide Ride-Sharing Programs.</u> This is a multi-faceted approach to promoting ridesharing programs, and can include
>
> - designating a certain percentage of parking spaces for ride sharing vehicles,
>
> - designating adequate passenger loading and unloading and waiting areas for ride-sharing vehicles, and

- providing a web site or message board for coordinating rides.

TRT-11. Provide Employer-Sponsored Vanpool/Shuttle. This measure involves an employer-sponsored vanpool or shuttle.

A vanpool will usually involve employees' commute to work while a shuttle will be oriented towards nearby transit stations and surrounding commercial centers. Employer-sponsored vanpool programs entail an employer purchasing or leasing vans for employee use, and often subsidizing the cost of at least program administration. The driver usually receives personal use of the van, often for a mileage fee. Scheduling is within the employer's purview, and rider charges are normally set on the basis of vehicle and operating cost.

A private shuttle service in included in the above description of *Measures to Increase the Use of Public Transit.*

Measures to Increase the Use of Tele-Commuting. These measures should include programs to encourage on-site employers to facilitate employees tele-commuting and working at home on a part-time or full-time basis. Encouraging telecommuting and alternative work schedules reduces the number of commute trips and therefore VMT traveled by employees. Alternative work schedules could take the form of staggered starting times, flexible schedules, or compressed work weeks. It is recognized that the ability of some GMC employees to telecommute or work remotely is constrained. Telecommuting or working remotely would not be feasible for some employees at the GMC project.

EXISTING PLUS APPROVED PROJECTS NO GILL MEDICAL CENTER PROJECT CONDITIONS

The EPAP No Gill Medical Center Project condition is a near-term future background condition. This condition is also referred to in this traffic impact study as EPAP No Project conditions. Development of land uses and roadway improvements associated with previously-approved projects are assumed in this condition. This scenario does not include development of the proposed GMC project. The EPAP No Project condition, therefore, serves as the baseline condition used to assess the significance of near-term project-related traffic effects.

TRAFFIC VOLUME FORECASTS

The City of Stockton Travel Demand Model (City of Stockton 2004a) was used to develop forecasts of background increases in traffic volumes under near-term EPAP conditions. The increases in traffic volumes reflect development of near-term previously-approved projects in Stockton. The model was modified in the vicinity of the project site to add detail to the model and more accurately represent how land uses are provided access to the roadway network. Minor changes were also made to land uses in the model to accurately represent land uses.

Methods used to apply the travel demand model to develop traffic volume forecasts are described in the *Travel Forecasting* section of this traffic impact study. Application of these methods results in the a.m. peak hour and p.m. peak hour intersection traffic volumes presented in **Figure 12**, the daily traffic volumes presented in **Table 22**, and the a.m. peak hour and p.m. peak hour ramp junction volumes shown in **Table 23**.

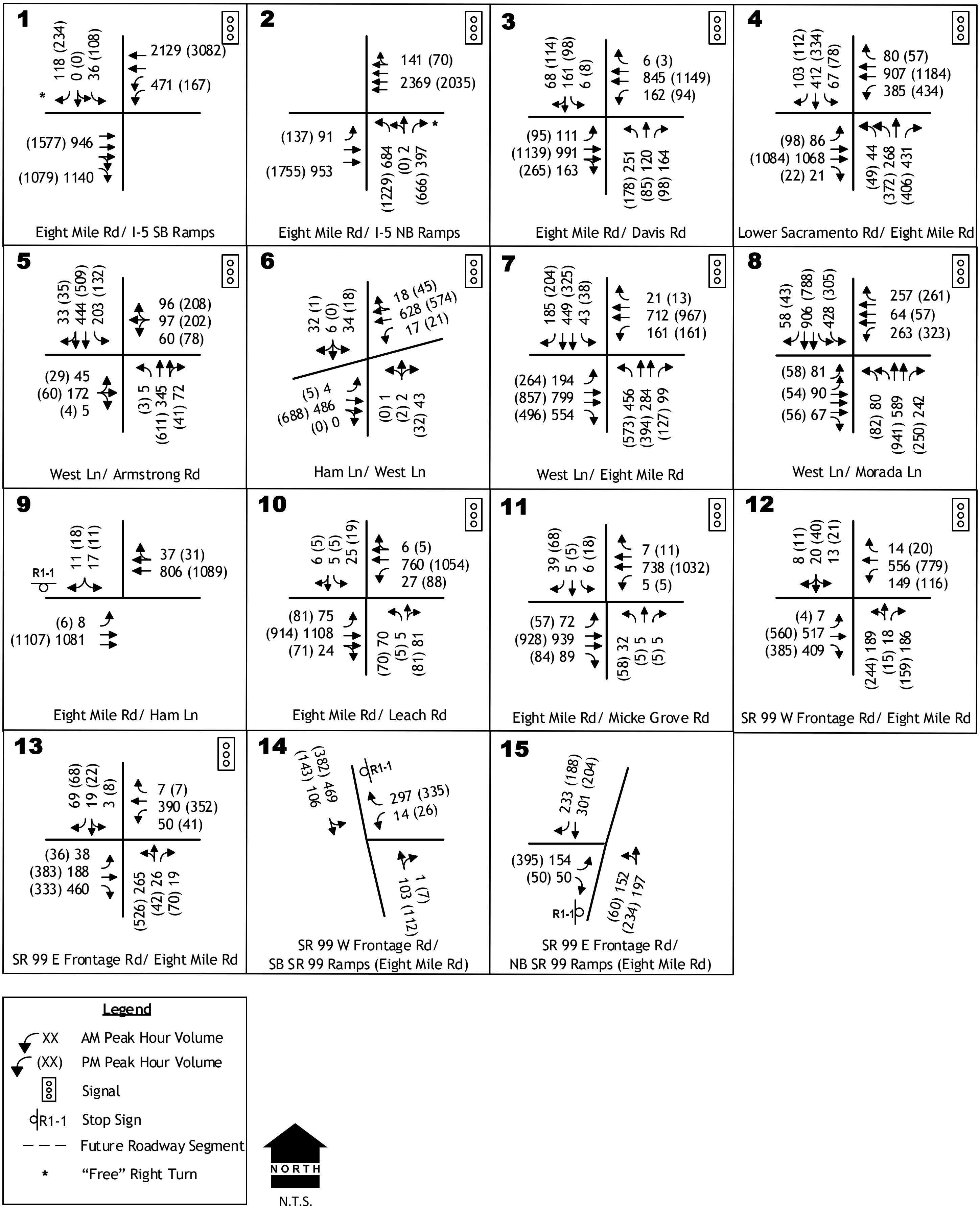
ROADWAY IMPROVEMENTS

The EPAP No Project condition assumes roadway improvements associated with previously-approved land use development projects, and approved roadway improvement projects have been made. These near-term roadway improvements were identified in consultation with City of Stockton staff (McDowell pers. comm.). Specific improvements assumed for EPAP No Project conditions include:

- Improvements to be constructed for the Cannery Park project, southwest of the Eight Mile Road interchange on SR 99.
- Improvements to be constructed for the Tra Vigne project, southeast of the intersection of Eight Mile Road & West Lane.
- Improvements to be constructed for the group of projects known collectively as the North Stockton Projects. The North Stockton Projects include Elkhorn Country Club, Waterford Estates West and East, Beck Ranch, Beck Estates,

Fairway Greens, Windmill Park, and Meadowlands. The City of Stockton's internet website provides more detailed information on previously-approved projects.

The resulting intersection lane geometrics assumed for EPAP No Project conditions are shown in **Figure 12**.



EXISTING PLUS APPROVED PROJECTS
NO PROPOSED PROJECT

Intersection Traffic Volumes and Lane Configurations

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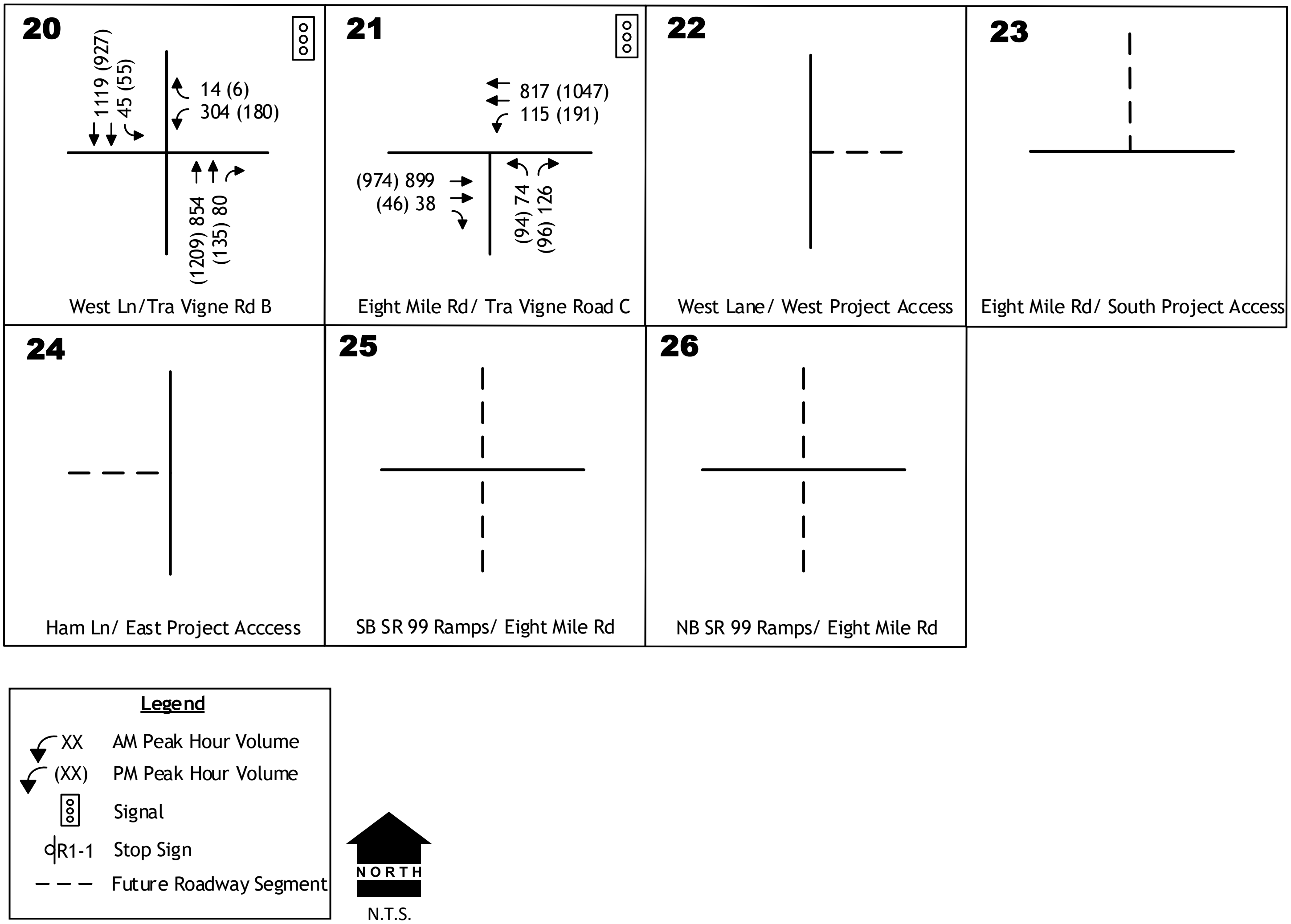

EXISTING PLUS APPROVED PROJECTS
NO PROPOSED PROJECT

Intersection Traffic Volumes and Lane Configurations

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Gill Medical Center Project Traffic Impact Study

figure 12b

Table 22. Roadway Segment Level of Service - Existing Plus Approved Projects No Gill Medical Center Project Conditions

Roadway Segment	Number of Lanes	Daily Volume	Level of Service
Eight Mile Road West of Lower Sacramento Road	4	27,336	C
Lower Sacramento Road South of Eight Mile Road	2	21,002	F
Eight Mile Road Lower Sacramento Road to West Lane	4	35,332	D
West Lane North of Eight Mile Road	4	14,108	A
West Lane South of Eight Mile Road	4	27,203	D
Eight Mile Road West Lane to Ham Lane	4	24,425	B
Ham Lane West Lane to Eight Mile Road	2	736	A
Eight Mile Road West of Micke Grove Road/Holman Road	4	24,425	B
State Route 99 North of Eight Mile Road	6	89,456	C
State Route 99 Eight Mile Road to Morada Lane	6	100,014	D

Table 23. State Route 99 Ramp Merge and Diverge Level of Service - Existing Plus Approved Projects No Proposed Project Conditions

	AM Peak Hour				PM Peak Hour			
Ramp Junction	**Freeway Volume**	**Ramp Volume**	**Density**	**LOS**	**Freeway Volume**	**Ramp Volume**	**Density**	**LOS**
SR 99 Southbound Diverge to Eight Mile Road Off-Ramp (Existing)	3,888	311	27.3	C	3,229	361	23.8	C
SR 99 Southbound Merge from Eight Mile Road On-Ramp (Existing)	3,888	471	27.6	C	3,229	389	23.5	C
SR 99 Northbound Merge from Eight Mile Road On-Ramp (Existing)	3,140	385	23.2	C	4,092	249	27.0	C
SR 99 Northbound Diverge to Eight Mile Road Off-Ramp (Existing)	3,140	204	22.6	C	4,092	446	28.1	D

Notes: LOS = Level of Service. SR = State Route. Density is expressed in passenger cars per mile per lane.

INTERSECTION LEVELS OF SERVICE

Table 24 presents the a.m. peak hour and p.m. peak hour LOS at each study intersection under EPAP No Project conditions. The values shown for the a.m. peak hour represent the one-hour period with the highest traffic volumes within the period from 7:00 a.m. to 9:00 a.m. The values shown for the p.m. peak hour represent the one-hour period with the highest traffic volumes within the period from 4:00 p.m. to 6:00 p.m. The worksheets presenting the calculation of LOS are included in the Technical Appendix.

Traffic volumes under EPAP No Project conditions would be generally higher than under Existing conditions and, as a result, vehicle delay at study intersections under EPAP No Project conditions would be higher than under Existing Conditions.

Under EPAP No Project conditions, LOS at 16 of the 17 study intersections would be at acceptable LOS D or better during both the a.m. peak hour and the p.m. peak hour. No improvements are needed at these 16 intersections to achieve acceptable LOS. The following describes the one study intersections that would operate at unacceptable LOS under EPAP No Project conditions.

The worksheets presenting the calculation of LOS with recommended improvements are included in the Technical Appendix.

#7. West Lane & Eight Mile Road

Under EPAP No Project conditions, this intersection would operate at LOS E with 55.1 seconds of delay during the a.m. peak hour, and LOS E with 70.1 seconds of delay during the p.m. peak hour. LOS E is considered unacceptable. The following improvement is recommended:

- Add a second northbound-to-westbound left-turn lane.

A summary of LOS with recommended improvements is presented in **Table 25**. With this recommended improvement, this intersection would operate at LOS D with 37.1 seconds of delay during the a.m. peak hour and LOS D with 39.8 seconds of delay during the p.m. peak hour. LOS D is considered acceptable.

Table 24. Intersection Level of Service - Existing Plus Approved Projects No Proposed Project Conditions

	Study Intersections	Inters. Control	Signal Warrant Met?	AM Peak LOS	AM Peak Delay	PM Peak LOS	PM Peak Delay
1	Eight Mile Road & I-5 Southbound Ramps	Signal		B	13.3	C	29.7
2	Eight Mile Road & I-5 Northbound Ramps	Signal		C	24.5	D	37.6
3	Eight Mile Road & Davis Road	Signal		D	36.0	C	30.5
4	Eight Mile Road & Lower Sacramento Road	Signal		D	37.5	D	42.4
5	West Lane & Armstrong Road	Signal		C	32.3	C	33.1
6	West Lane & Ham Lane	Signal		A	9.1	A	5.1
7	West Lane & Eight Mile Road	Signal		E	55.1	E	70.1
8	West Lane & Morada Lane	Signal		C	29.1	C	27.2
9	Eight Mile Road & Ham Lane	Unsig	No	A	0.5	A	0.5
10	Eight Mile Road & Leach Road	Signal		B	13.1	B	15.0
11	Eight Mile Road & Micke Grove Road/Holman Road	Signal		A	9.5	B	11.5
12	Eight Mile Road & SR 99 West Frontage Road	Signal		C	25.4	C	26.2
13	Eight Mile Road & SR 99 East Frontage Road	Signal		C	30.0	C	33.4
14	SR 99 West Frontage Road & SR 99 SB Ramps	Unsig	No	A	7.5	A	7.2
15	SR 99 East Frontage Road & SR 99 NB Ramps	Unsig	Yes	A	8.6	D	32.2
20	West Lane & Tra Vigne Road B	Signal		B	16.6	B	11.2
21	Eight Mile Road & Tra Vigne Road C	Signal		B	13.3	B	13.3
22	West Lane & West Project Driveway	- -		- -	- -	- -	- -
23	Eight Mile Road & South Project Driveway	- -		- -	- -	- -	- -
24	Ham Lane & East Project Driveway	- -		- -	- -	- -	- -
25	Eight Mile Road & SR 99 Southbound Ramps	- -		- -	- -	- -	- -
26	Eight Mile Road & SR 99 Northbound Ramps	- -		- -	- -	- -	- -

Notes: LOS = Level of Service. "Inters. Control" = Type of intersection control.
"Signal" = Signalized light control. "Unsig" = Unsignalized stop-sign control. "AWSC" = All-way stop-sign control.
"I-5" = Interstate-5. "SR" = State Route. "SB" = Southbound. "NB" = Northbound.
Dashes ("- -") indicate intersection is not present under this scenario. Delay is measured in seconds per vehicle.
Per City of Stockton guidelines, intersection average delay is reported for all intersections, including unsignalized intersections.

Table 25. Intersection Level of Service - Existing Plus Approved Projects No Proposed Project Conditions With Recommended Improvements

Study Intersections	Inters. Control	AM Peak LOS	AM Peak Delay	PM Peak LOS	PM Peak Delay
7 West Lane & Eight Mile Road	Signal	D	37.1	D	39.8

Notes: LOS = Level of Service. "Inters. Control" = Type of intersection control.
"Signal" = Signalized light control.
Delay is measured in seconds per vehicle.

ROADWAY SEGMENT LEVELS OF SERVICE

Table 22 presents a summary of LOS on the 10 study roadway segments under EPAP No Project conditions. Nine of the roadway segments would operate at acceptable LOS D or better. No improvements are needed on these nine roadway segments to achieve acceptable LOS. The following describes the one study roadway segment that would operate at unacceptable LOS under EPAP No Project conditions.

Lower Sacramento Road South of Eight Mile Road

Under EPAP No Project conditions, this roadway segment would operate at LOS F. This LOS is considered unacceptable. The following improvement is recommended:

- Widen this roadway segment from two lanes to four lanes.

A summary of LOS with recommended improvements is presented in **Table 26**. With this recommended improvement, this roadway segment would operate at LOS C. This LOS is considered acceptable.

This recommended improvement is the same as recommended under Existing conditions.

Table 26. Roadway Segment Level of Service -
Existing Plus Approved Projects
No Gill Medical Center Project Conditions
With Recommended Improvements

Roadway Segment	Number of Lanes	Daily Volume	Level of Service
Lower Sacramento Road South of Eight Mile Road	4	21,002	C

RAMP JUNCTION LEVELS OF SERVICE

Table 23 presents the a.m. peak hour and p.m. peak hour LOS at each study ramp junction under EPAP No Project conditions. The worksheets presenting the calculation of LOS are included in the Technical Appendix.

Traffic volumes under EPAP No Project conditions would be generally higher than under Existing Conditions and, as a result, vehicle density at study ramp junctions under EPAP No Project conditions would be higher than under Existing Conditions.

Under EPAP No Project conditions, LOS at all four of the study ramp junctions would be at acceptable LOS D or better during both the a.m. peak hour and the p.m. peak hour. No improvements are needed at these four ramp junctions to achieve acceptable LOS.

EXISTING PLUS APPROVED PROJECTS PLUS GILL MEDICAL CENTER PROJECT IMPACTS

EPAP Plus GMC Project conditions represent a near-term future condition with the proposed project. This condition is also referred to in this traffic impact study as EPAP Plus Project conditions.

The development of the GMC project would result in vehicle traffic to and from the project site. The amount of additional traffic on a particular section of the street network depends on three factors:

- Trip Generation, the number of new trips generated by the project,
- Trip Distribution, the direction of travel for the new traffic, and
- Trip Assignment, the specific routes used by the new traffic.

TRIP GENERATION

Development of the GMC project would generate new vehicle trips and potentially affect traffic operations on study facilities.

The trip generation rates used in this traffic impact study are presented in **Table 9**. The trip generation rates are applied to the amount of project-related land uses. The resulting trip generation estimates are presented in **Table 10**.

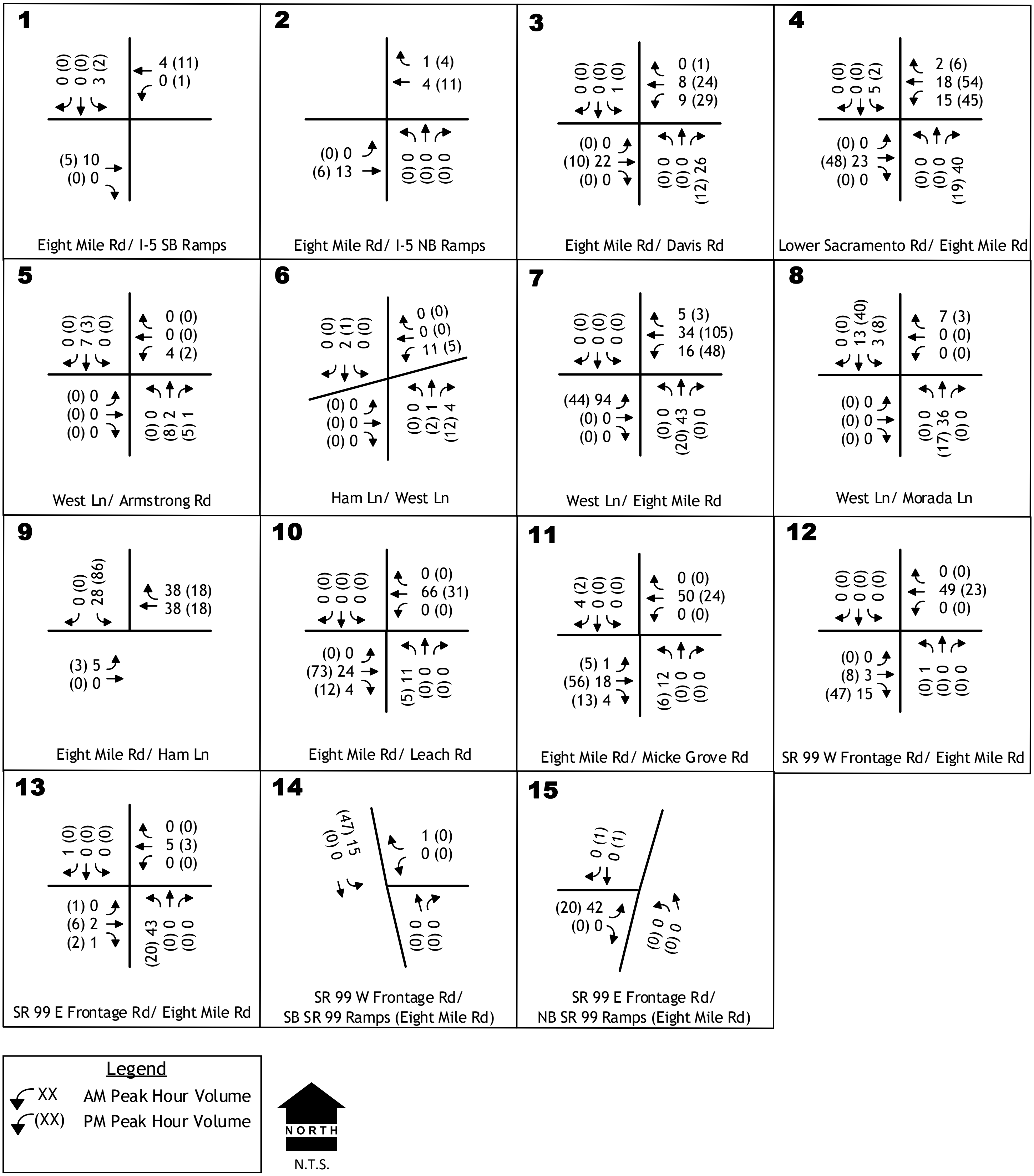
As shown in **Table 10**, the GMC project would generate 3,975 trips per day, with 324 trips during the a.m. peak hour and 379 trips during the p.m. peak hour.

TRIP DISTRIBUTION

Project-related trips were geographically distributed over the study area roadway network. The geographical distribution of trips is based on the relative attractiveness or utility of possible destinations. Trip distribution percentages applied in this traffic impact study are presented in **Table 11**.

TRIP ASSIGNMENT

Traffic that would be generated by the GMC project was added to EPAP No Project traffic volumes. **Figure 13** displays the project-related-only traffic volumes for each study intersection in the a.m. peak hour and p.m. peak hour. **Figure 14** displays the resulting EPAP Plus Project traffic volumes anticipated for each study intersection in the peak hours.



GILL MEDICAL CENTER
PROJECT-RELATED TRIPS

Existing Plus Approved Projects Background

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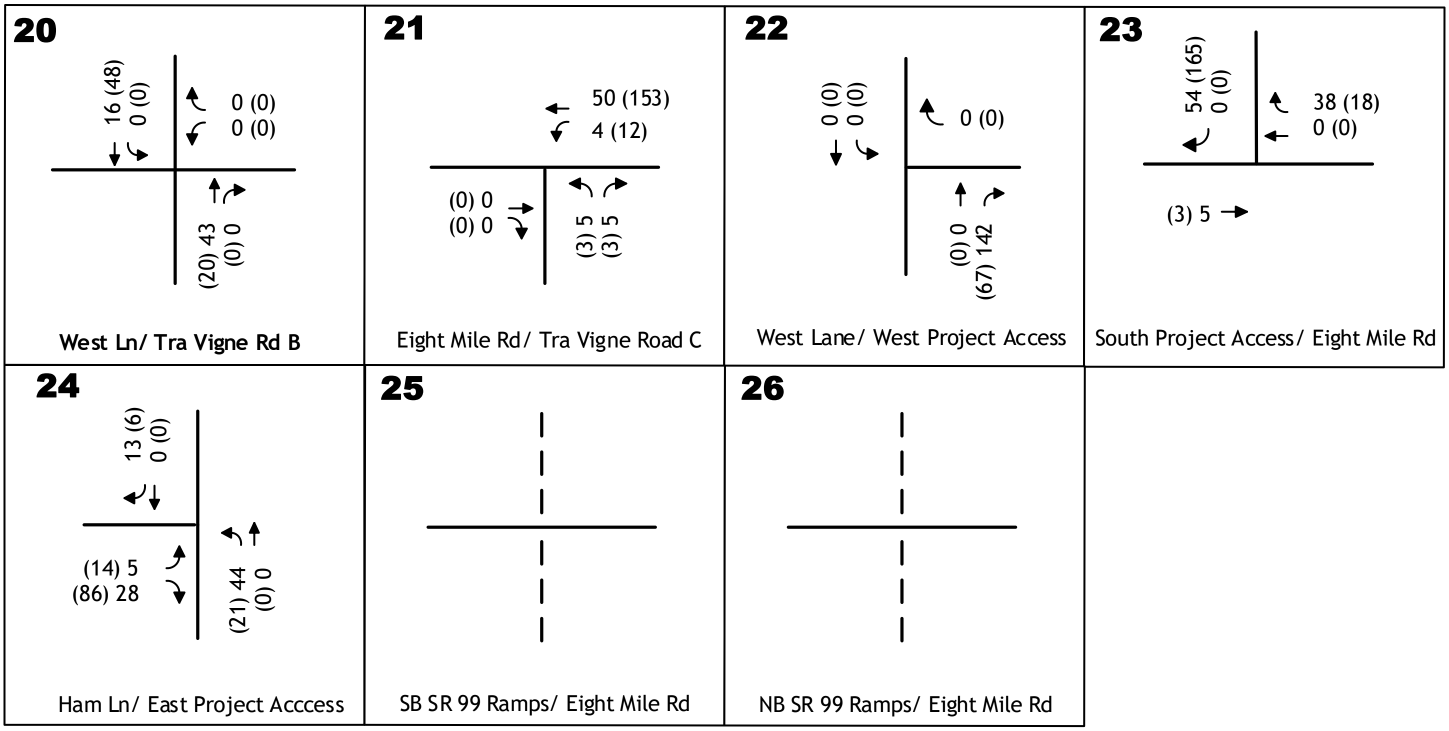

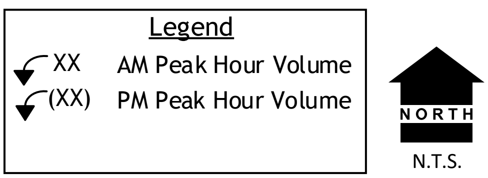

GILL MEDICAL CENTER
PROJECT-RELATED TRIPS
Existing Plus Approved Projects Background

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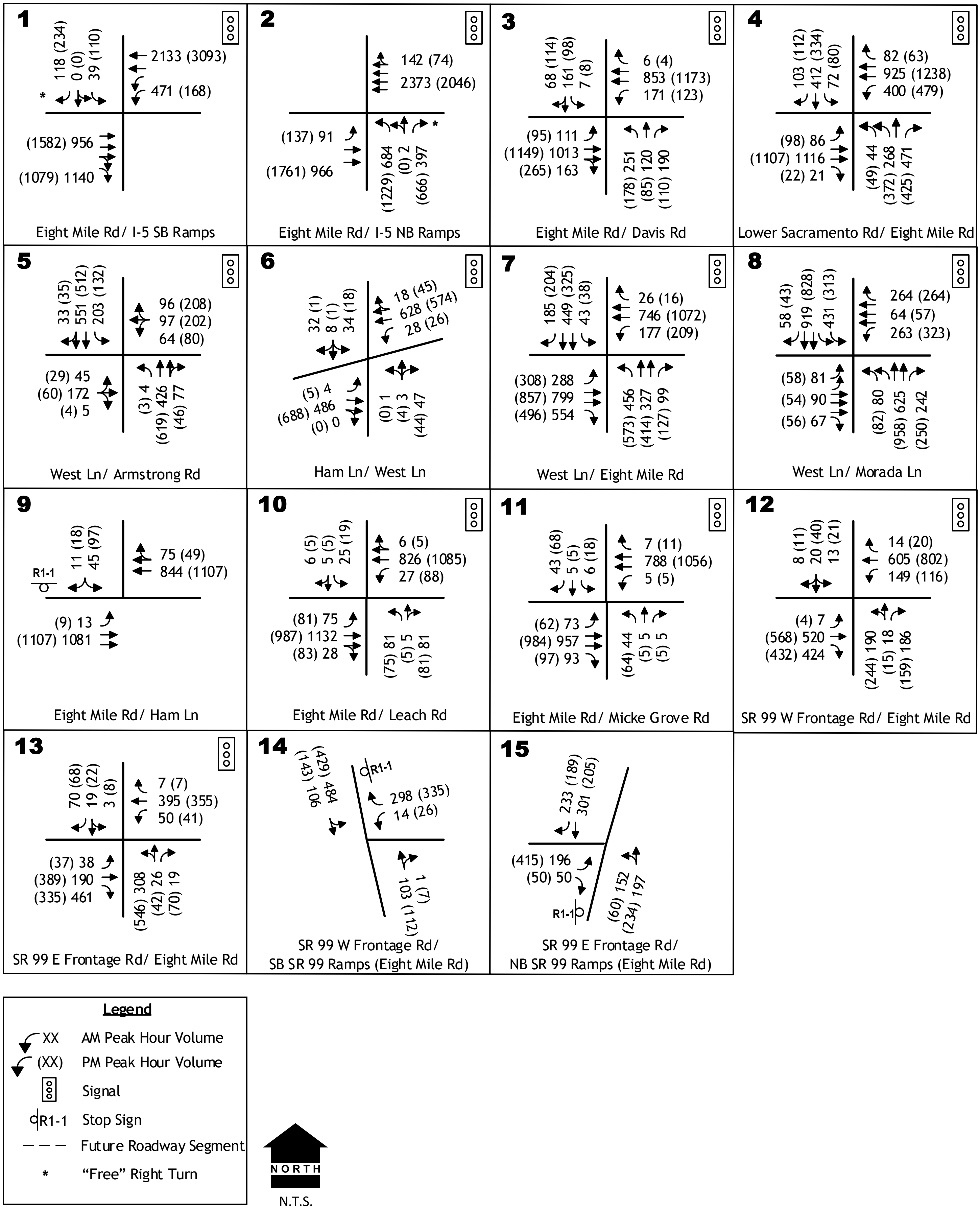
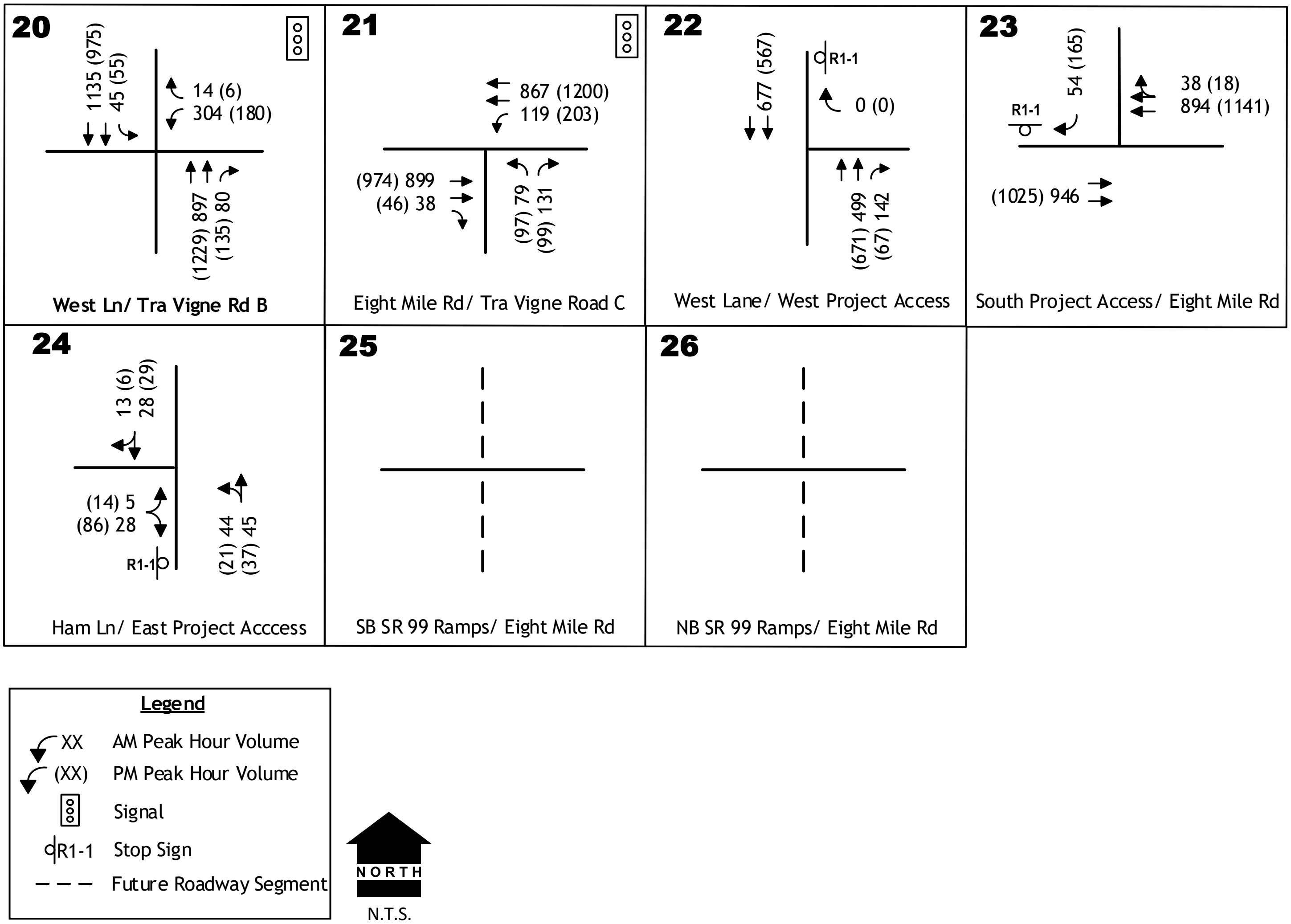


EXISTING PLUS APPROVED PROJECTS PLUS GILL MEDICAL CENTER

Intersection Traffic Volumes and Lane Configurations



EXISTING PLUS APPROVED PROJECTS
PLUS GILL MEDICAL CENTER

Intersection Traffic Volumes and Lane Configurations

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Gill Medical Center Project Traffic Impact Study

figure 14b

ROADWAY IMPROVEMENTS

The EPAP Plus Project condition assumes roadway improvements assumed for the EPAP No Project condition have been made. In addition, as noted in the *Project Description* section of this traffic impact study, the GMC project would include:

- a driveway connection with West Lane along the western boundary of the project site,
- a driveway connection with Eight Mile Road on the southern boundary of the project site, and
- a driveway connection with Ham Lane on the eastern boundary of the project site.

Figure 14 displays the resulting EPAP Plus Project intersection lane geometrics for each study intersection.

INTERSECTION LEVELS OF SERVICE

Table 27 presents the a.m. peak hour and p.m. peak hour LOS at each study intersection under EPAP Plus Project conditions. The worksheets presenting the calculation of LOS are included in the Technical Appendix.

Traffic volumes under EPAP Plus Project conditions would be generally higher than under EPAP No Project conditions and, as a result, vehicle delay at study intersections under EPAP Plus Project conditions would be higher than under EPAP No Project conditions.

Under EPAP Plus Project conditions, LOS at 18 of the 20 study intersections would be at acceptable LOS D or better during both the a.m. peak hour and the p.m. peak hour. No improvements are needed at these 18 intersections to achieve acceptable LOS. The following describes the two study intersections that would operate at unacceptable LOS under EPAP Plus Project conditions. In addition, a recommended improvement is presented below to improve project site access.

The worksheets presenting the calculation of LOS with recommended improvements are included in the Technical Appendix.

Table 27. Intersection Level of Service - Existing Plus Approved Projects Plus Proposed Project Conditions

	Study Intersections	Inters. Control	Signal Warrant Met?	AM Peak LOS	AM Peak Delay	PM Peak LOS	PM Peak Delay
1	Eight Mile Road & I-5 Southbound Ramps	Signal		B	13.3	C	30.9
2	Eight Mile Road & I-5 Northbound Ramps	Signal		C	24.5	D	38.1
3	Eight Mile Road & Davis Road	Signal		D	36.8	C	32.1
4	Eight Mile Road & Lower Sacramento Road	Signal		D	39.9	D	47.4
5	West Lane & Armstrong Road	Signal		C	32.4	C	33.2
6	West Lane & Ham Lane	Signal		A	10.0	A	6.4
7	West Lane & Eight Mile Road	Signal		E	57.8	F	82.0
8	West Lane & Morada Lane	Signal		C	29.1	C	27.2
9	Eight Mile Road & Ham Lane	Unsig	Yes	A	1.7	C	19.1
10	Eight Mile Road & Leach Road	Signal		B	13.1	B	14.8
11	Eight Mile Road & Micke Grove Road/Holman Road	Signal		B	10.5	B	11.9
12	Eight Mile Road & SR 99 West Frontage Road	Signal		C	25.7	C	27.0
13	Eight Mile Road & SR 99 East Frontage Road	Signal		C	33.6	D	35.6
14	SR 99 West Frontage Road & SR 99 SB Ramps	Unsig	No	A	7.5	A	7.3
15	SR 99 East Frontage Road & SR 99 NB Ramps	Unsig	Yes	B	13.7	E	39.2
20	West Lane & Tra Vigne Road B	Signal		B	16.6	B	11.1
21	Eight Mile Road & Tra Vigne Road C	Signal		B	13.6	B	13.3
22	West Lane & West Project Driveway	Unsig	No	A	0.0	A	0.0
23	Eight Mile Road & South Project Driveway	Unsig	Yes	A	0.5	C	17.0
24	Ham Lane & East Project Driveway	Unsig	No	A	3.8	A	5.5
25	Eight Mile Road & SR 99 Southbound Ramps	- -		- -	- -	- -	- -
26	Eight Mile Road & SR 99 Northbound Ramps	- -		- -	- -	- -	- -

Notes: LOS = Level of Service. "Inters. Control" = Type of intersection control.
"Signal" = Signalized light control. "Unsig" = Unsignalized stop-sign control. "AWSC" = All-way stop-sign control.
"I-5" = Interstate-5. "SR" = State Route. "SB" = Southbound. "NB" = Northbound.
Dashes ("- -") indicate intersection is not present under this scenario. Delay is measured in seconds per vehicle.
Per City of Stockton guidelines, intersection average delay is reported for all intersections, including unsignalized intersections.

#7. West Lane & Eight Mile Road

Under EPAP Plus Project conditions, this intersection would operate at LOS E with 57.8 seconds of delay during the a.m. peak hour, and LOS F with 82.0 seconds of delay during the p.m. peak hour. LOS E and F are considered unacceptable. Compared to EPAP No Project Conditions, the project-related increase in delay would be greater than five seconds during either the a.m. peak hour or the p.m. peak hour. Therefore, based on criteria presented in the *General Plan Policy Consistency Criteria* section of this traffic impact study, the project-related inconsistency with General Plan policies is considered significant. The following improvement is recommended to improve operating conditions to acceptable LOS and reduce the project-related inconsistency with General Plan policies to a less than significant level:

- Add a second northbound-to-westbound left-turn lane.

This recommended improvement is the same as the improvement recommended at this intersection for EPAP No Project conditions.

A summary of LOS with recommended improvements is presented in **Table 28**. With this recommended improvement, this intersection would operate at LOS D with 38.8 seconds of delay during the a.m. peak hour and LOS D with 44.6 seconds of delay during the p.m. peak hour. LOS D is considered acceptable.

#9. Eight Mile Road & Ham Lane

Under EPAP Plus Project conditions, this intersection would operate at LOS A with 1.7 seconds of delay during the a.m. peak hour, and LOS C with 19.1 seconds of delay during the p.m. peak hour. LOS A and C are considered acceptable. While the LOS at this intersection would be acceptable, with unsignalized stop-sign control on the southbound approach to this intersection, vehicles departing the project site would experience substantial delay accessing Eight Mile Road. Vehicles on the southbound approach would experience an average delay of 95.0 seconds during the a.m. peak hour and 395.0 seconds during the p.m. peak hour. The southbound approach to this intersection would be an important access route serving vehicles departing the project site. This route would be especially important for vehicles traveling from the project site to travel east on Eight Mile Road towards SR 99. Vehicles traveling this route would be required to make a southbound-to-eastbound left-turn movement at this intersection.

Peak hour signal warrants would be met at this intersection, and signalization of the intersection is recommended under EPAP Plus Project conditions. This improvement is consistent with long-term improvements planned for this intersection under the Eight Mile Road Precise Road Plan.

#15. SR 99 East Frontage Road & SR 99 Northbound Ramps

Under EPAP Plus Project conditions, this intersection would operate at LOS B with 13.7 seconds of delay during the a.m. peak hour, and LOS E with 39.2 seconds of delay during the p.m. peak hour. LOS E is considered unacceptable. Compared to EPAP No Project Conditions, the project-related increase in delay would be greater than five seconds during the p.m. peak hour. Therefore, based on criteria presented in the *General Plan Policy Consistency Criteria* section of this traffic impact study, the project-related inconsistency with General Plan policies is considered significant. The following improvement is recommended to improve operating conditions to acceptable LOS and reduce the project-related inconsistency with General Plan policies to a less than significant level:

- Install all-way stop-control at this intersection.

A summary of LOS with recommended improvement is presented in **Table 28**. With this recommended improvement, this intersection would operate at LOS C with 15.8 seconds of delay during the a.m. peak hour and LOS D with 28.1 seconds of delay during the p.m. peak hour. LOS C and D are considered acceptable.

Table 28. Intersection Level of Service - Existing Plus Approved Projects Plus Proposed Project Conditions With Recommended Improvements

	Study Intersections	Inters. Control	AM Peak LOS	AM Peak Delay	PM Peak LOS	PM Peak Delay
7	West Lane & Eight Mile Road	Signal	D	38.8	D	44.6
9	Eight Mile Road & Ham Lane	Unsig	A	2.8	A	5.5
15	SR 99 East Frontage Road & SR 99 NB Ramps	Unsig	C	15.8	D	28.1

Notes: LOS = Level of Service. "Inters. Control" = Type of intersection control.
"Signal" = Signalized light control. "Unsig" = Unsignalized stop-sign control.
"SR" = State Route. "NB" = Northbound.
Delay is measured in seconds per vehicle.
Per City of Stockton guidelines, intersection average delay is reported for all intersections, including unsignalized intersections.

ROADWAY SEGMENT LEVELS OF SERVICE

Table 29 presents a summary of LOS on the 10 study roadway segments under EPAP Plus Project conditions. Nine of the 10 roadway segments would operate at acceptable LOS D or better. No improvements are needed on these nine roadway segments to achieve acceptable LOS. The following one roadway segment would operate at unacceptable LOS.

Lower Sacramento Road South of Eight Mile Road

Under EPAP Plus Project conditions, Lower Sacramento Road South of Eight Mile Road would operate at LOS F. LOS F is considered unacceptable. Compared to EPAP No Project Conditions, the project-related increase in volumes would not be greater than five percent. Therefore, based on criteria presented in the *General Plan Policy Consistency Criteria* section of this traffic impact study, the project-related inconsistency with General Plan policies is considered less than significant. No improvements are required.

While no project-related improvements are required on this roadway segment under EPAP Plus Project conditions, **Table 30** shows implementation of recommended improvements for EPAP No Project conditions would result in this roadway segment operating at LOS C. LOS C is considered acceptable.

It should be noted the EPAP Plus Project conditions assumes the improvements described in the *Roadway Improvements* portion of the *Existing Plus Approved Projects No Gill Medical Center Project Conditions* have been made. However, the EPAP Plus Project conditions does not assume the recommended improvements described in the *Roadway Segment Level of Service* portion of the *Existing Plus Approved Projects No Gill Medical Center Project Conditions* have been made.

RAMP JUNCTION LEVELS OF SERVICE

Table 31 presents LOS on each study ramp junction under EPAP Plus Project conditions. Traffic volumes under EPAP Plus Project conditions would be generally higher than under EPAP No Project Conditions.

Under EPAP Plus Project conditions, LOS at all four study ramp junctions would be at acceptable LOS D or better. No improvements are needed at these ramp junctions to achieve acceptable LOS.

Table 29. Roadway Segment Level of Service - Existing Plus Approved Projects Plus Gill Medical Center Project Conditions

Roadway Segment	Number of Lanes	Daily Volume	Level of Service
Eight Mile Road West of Lower Sacramento Road	4	28,146	C
Lower Sacramento Road South of Eight Mile Road	2	21,678	F
Eight Mile Road Lower Sacramento Road to West Lane	4	36,906	D
West Lane North of Eight Mile Road	4	15,301	A
West Lane South of Eight Mile Road	4	27,927	D
Eight Mile Road West Lane to Ham Lane	4	25,618	B
Ham Lane West Lane to Eight Mile Road	2	1,747	A
Eight Mile Road West of Micke Grove Road/Holman Road	4	25,525	B
State Route 99 North of Eight Mile Road	6	89,472	C
State Route 99 Eight Mile Road to Morada Lane	6	100,722	D

Table 30. Roadway Segment Level of Service -
Existing Plus Approved Projects
Plus Gill Medical Center Project Conditions
With Recommended Improvements for EPAP No Project Condition

Roadway Segment	Number of Lanes	Daily Volume	Level of Service
Lower Sacramento Road South of Eight Mile Road	4	21,678	C

Notes: Improvements are those recommended for EPAP No Project Conditions, not for EPAP Plus Project conditions, and are shown for information only.
No improvement are required due to project-related changes.

Table 31. State Route 99 Ramp Merge and Diverge Level of Service - Existing Plus Approved Projects Plus Proposed Project Conditions

	AM Peak Hour				PM Peak Hour			
Ramp Junction	Freeway Volume	Ramp Volume	Density	LOS	Freeway Volume	Ramp Volume	Density	LOS
SR 99 Southbound Diverge to Eight Mile Road Off-Ramp (Existing)	3,888	312	27.3	C	3,229	361	23.8	C
SR 99 Southbound Merge from Eight Mile Road On-Ramp (Existing)	3,888	486	27.6	C	3,229	436	23.5	C
SR 99 Northbound Merge from Eight Mile Road On-Ramp (Existing)	3,140	385	23.2	C	4,092	250	27.0	C
SR 99 Northbound Diverge to Eight Mile Road Off-Ramp (Existing)	3,140	246	22.6	C	4,092	466	28.1	D

Notes: LOS = Level of Service. SR = State Route. Density is expressed in passenger cars per mile per lane.

CUMULATIVE NO PROJECT CONDITIONS

The Cumulative No Project condition represents a long-term future background condition. Development of approved and planned land uses and roadway improvements are assumed in this condition. The Cumulative No Project condition does not include development of the GMC project. The Cumulative No Project condition, therefore, serves as the baseline condition used to assess the significance of long-term project-related traffic effects.

TRAFFIC VOLUME FORECASTS

As previously described in the *Travel Forecasting* section of this traffic impact study, the City of Stockton Travel Demand Model (City of Stockton 2018b) was used to develop forecasts of background increases in traffic volumes under Cumulative No Project conditions. The increases in traffic volumes reflect development of land uses consistent with approved land use designations. The model was modified in the vicinity of the project site to add detail to the model and more accurately represent how land uses are provided access to the roadway network. Minor changes were also made to land uses in the model.

Application of the methods described in the *Travel Forecasting* section results in the a.m. peak hour and p.m. peak hour traffic intersection volumes presented in **Figure 15**, the daily traffic volumes presented in **Table 32**, and the a.m. peak hour and p.m. peak hour ramp junction volumes presented in **Table 33**.

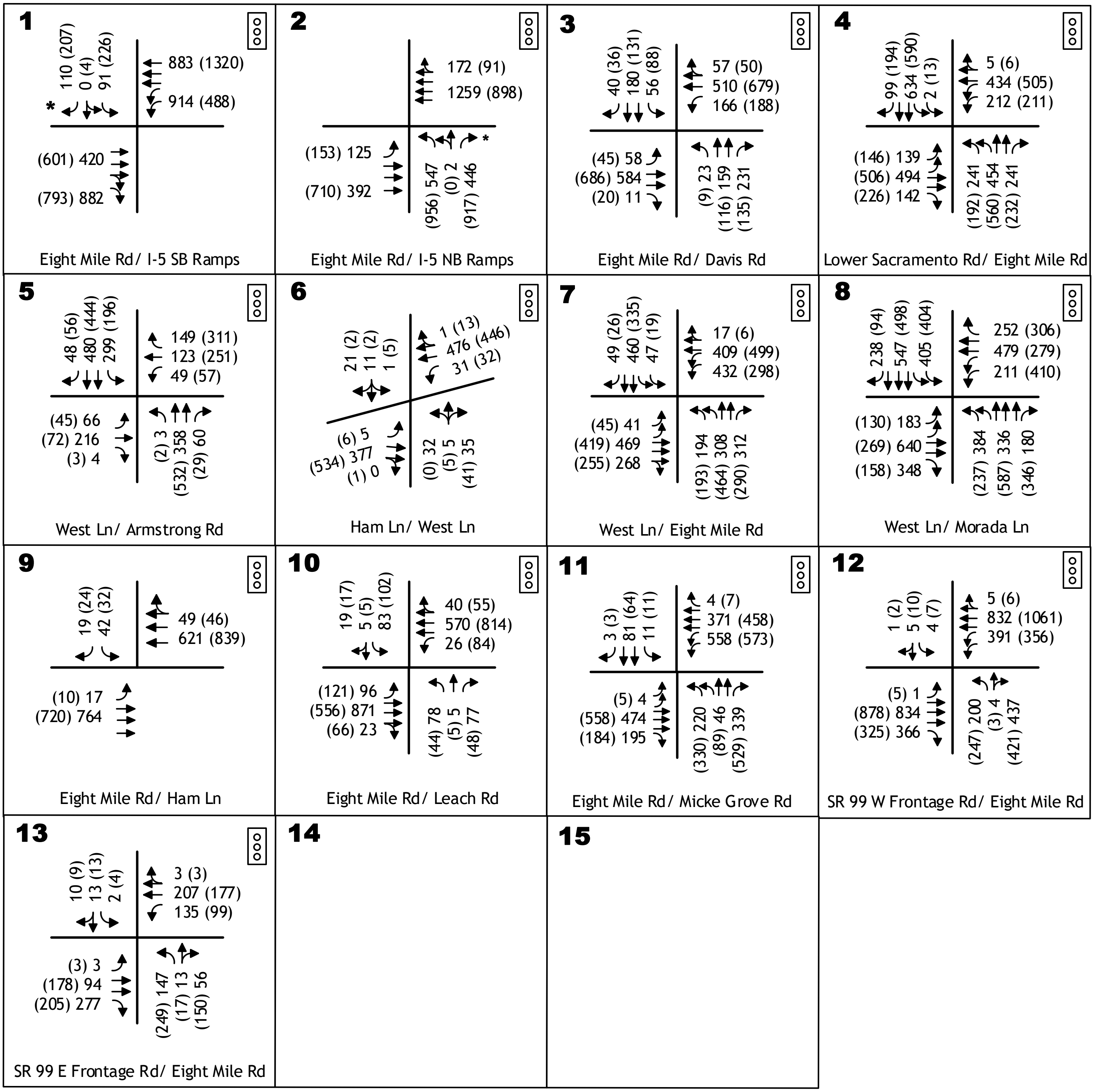
ROADWAY IMPROVEMENTS

The analysis of Cumulative No Project conditions assumes roadway improvements consistent with the City of Stockton General Plan (McDowell pers. comm.). These roadway improvements are needed to support the additional land use development assumed in the General Plan.

Improvements to the Eight Mile Road interchange on SR 99 are being considered by the City of Stockton and Caltrans. A Project Study Report (PSR) has been prepared for these improvements. Improvements to this interchange have been assumed in the analysis of Cumulative No Project conditions. The most recent available interchange configurations, including the ramp intersection lane geometrics, have been assumed.

At some locations, City of Stockton staff directed use of specific roadway improvement assumptions. In these cases, City staff direction was considered to be more up-to-date than the plans described above, and were applied in the traffic analysis.

In some cases, the roadway improvements described above include intersection improvements. The resulting intersection lane geometrics assumed for Cumulative No Project conditions are shown in **Figure 15**. The resulting number of travel lanes assumed for study roadway segments are shown in **Table 32**.



Legend

XX	AM Peak Hour Volume
(XX)	PM Peak Hour Volume
	Signal
R1-1	Stop Sign
— — —	Future Roadway Segment
*	"Free" Right Turn

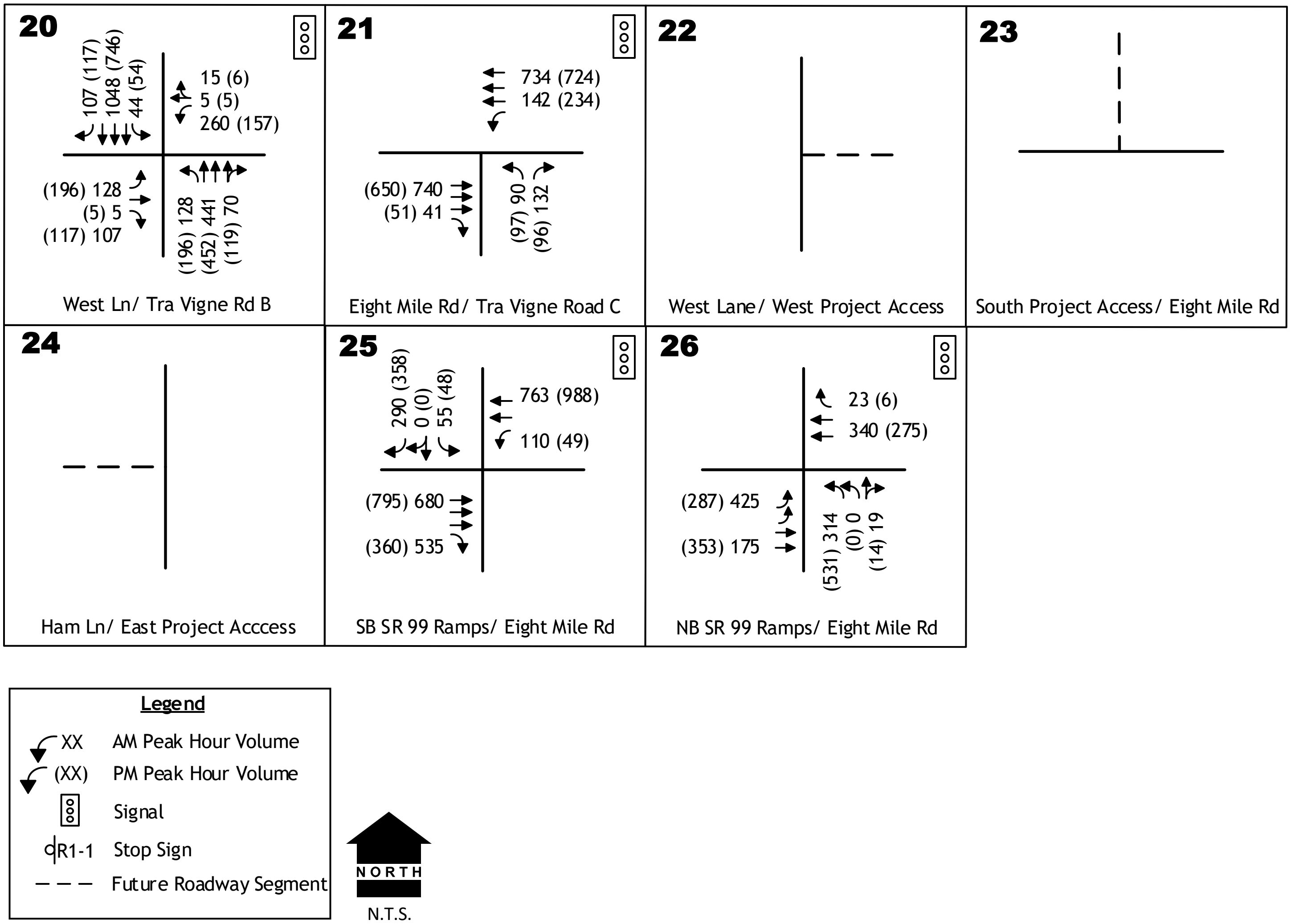
NORTH

N.T.S.

CUMULATIVE NO PROPOSED PROJECT

Intersection Traffic Volumes and Lane Configurations

KD Anderson & Associates, Inc.
Transportation Engineers



CUMULATIVE NO PROPOSED PROJECT

Intersection Traffic Volumes and Lane Configurations

KD Anderson & Associates, Inc.
Transportation Engineers

2610-27 RA 9/23/2021

Gill Medical Center Project Traffic Impact Study

Figure 15b

Table 32. Roadway Segment Level of Service - Cumulative No Gill Medical Center Project Conditions

Roadway Segment	Number of Lanes	Daily Volume	Level of Service
Eight Mile Road West of Lower Sacramento Road	4	24,253	B
Lower Sacramento Road South of Eight Mile Road	4	24,553	C
Eight Mile Road Lower Sacramento Road to West Lane	4	19,470	A
West Lane North of Eight Mile Road	4	10,907	A
West Lane South of Eight Mile Road	6	20,787	A
Eight Mile Road West Lane to Ham Lane	6	21,132	A
Ham Lane West Lane to Eight Mile Road	2	1,266	A
Eight Mile Road West of Micke Grove Road/Holman Road	6	20,668	A
State Route 99 North of Eight Mile Road	8	107,254	C
State Route 99 Eight Mile Road to Morada Lane	8	118,291	C

Table 33. State Route 99 Ramp Merge and Diverge Level of Service - Cumulative No Project Conditions

Ramp Junction	AM Peak Hour				PM Peak Hour			
	Freeway Volume	Ramp Volume	Density	LOS	Freeway Volume	Ramp Volume	Density	LOS
SR 99 Southbound Diverge to Eight Mile Road Off-Ramp (Future)	4,994	345	21.7	C	4,147	406	18.4	B
SR 99 Southbound Merge from Eight Mile Road On-Ramp (Future)	4,994	645	26.4	C	4,147	409	12.5	B
SR 99 Northbound Merge from Eight Mile Road On-Ramp (Future)	3,975	448	21.1	C	5,180	294	24.1	C
SR 99 Northbound Diverge to Eight Mile Road Off-Ramp (Future)	3,975	333	17.5	B	5,180	546	23.8	C

Notes: LOS = Level of Service. SR = State Route. Density is expressed in passenger cars per mile per lane.

INTERSECTION LEVELS OF SERVICE

Table 34 presents the a.m. peak hour and p.m. peak hour LOS at each study intersection under Cumulative No Project conditions. The worksheets presenting the calculation of LOS are included in the Technical Appendix.

Traffic volumes under Cumulative No Project conditions would be generally higher than under Existing Conditions and, as a result, vehicle delay at study intersections under Cumulative No Project conditions would be higher than under Existing Conditions.

Under Cumulative No Project conditions, LOS at all 17 study intersections would be at acceptable LOS D or better during both the a.m. peak hour and the p.m. peak hour. No improvements are needed at these 17 intersections to achieve acceptable LOS.

ROADWAY SEGMENT LEVELS OF SERVICE

Table 32 presents a summary of LOS on the 10 study roadway segments under Cumulative No Project conditions. All 10 of the roadway segments would operate at acceptable LOS C or better. No improvements are needed on these ten roadway segments to achieve acceptable LOS.

RAMP JUNCTION LEVELS OF SERVICE

Table 33 presents the a.m. peak hour and p.m. peak hour LOS at each study ramp junction under Cumulative No Project conditions. The worksheets presenting the calculation of LOS are included in the Technical Appendix.

Traffic volumes under Cumulative No Project conditions would be generally higher than under Existing Conditions and, as a result, vehicle density at study ramp junctions under Cumulative No Project conditions would be higher than under Existing Conditions.

Under Cumulative No Project conditions, LOS at all four of the study ramp junctions would be at acceptable LOS C or better during both the a.m. peak hour and the p.m. peak hour. No improvements are needed at these four ramp junctions to achieve acceptable LOS.

Table 34. Intersection Level of Service - Cumulative No Project Conditions

	Study Intersections	Inters. Control	Signal Warrant Met?	AM Peak LOS	AM Peak Delay	PM Peak LOS	PM Peak Delay
1	Eight Mile Road & I-5 Southbound Ramps	Signal		D	37.2	B	14.5
2	Eight Mile Road & I-5 Northbound Ramps	Signal		C	24.8	C	23.4
3	Eight Mile Road & Davis Road	Signal		C	27.7	C	25.1
4	Eight Mile Road & Lower Sacramento Road	Signal		C	28.5	C	28.3
5	West Lane & Armstrong Road	Signal		C	27.2	C	27.9
6	West Lane & Ham Lane	Signal		B	11.8	A	7.7
7	West Lane & Eight Mile Road	Signal		C	30.6	C	28.0
8	West Lane & Morada Lane	Signal		C	33.5	C	34.1
9	Eight Mile Road & Ham Lane	Signal		A	5.4	A	3.8
10	Eight Mile Road & Leach Road	Signal		C	20.6	C	22.1
11	Eight Mile Road & Micke Grove Road/Holman Road	Signal		C	29.9	C	33.2
12	Eight Mile Road & SR 99 West Frontage Road	Signal		C	29.1	C	28.2
13	Eight Mile Road & SR 99 East Frontage Road	Signal		C	23.1	C	24.7
14	SR 99 West Frontage Road & SR 99 SB Ramps	- -		- -	- -	- -	- -
15	SR 99 East Frontage Road & SR 99 NB Ramps	- -		- -	- -	- -	- -
20	West Lane & Tra Vigne Road B	Signal		C	28.2	C	28.2
21	Eight Mile Road & Tra Vigne Road C	Signal		B	16.8	B	17.3
22	West Lane & West Project Driveway	- -		- -	- -	- -	- -
23	Eight Mile Road & South Project Driveway	- -		- -	- -	- -	- -
24	Ham Lane & East Project Driveway	- -		- -	- -	- -	- -
25	Eight Mile Road & SR 99 Southbound Ramps	Signal		B	14.1	A	8.3
26	Eight Mile Road & SR 99 Northbound Ramps	Signal		C	27.0	C	31.3

Notes: LOS = Level of Service. "Inters. Control" = Type of intersection control.
"Signal" = Signalized light control. "Unsig" = Unsignalized stop-sign control. "AWSC" = All-way stop-sign control.
"I-5" = Interstate-5. "SR" = State Route. "SB" = Southbound. "NB" = Northbound.
Dashes ("- -") indicate intersection is not present under this scenario. Delay is measured in seconds per vehicle.
Per City of Stockton guidelines, intersection average delay is reported for all intersections, including unsignalized intersections.

CUMULATIVE PLUS PROJECT IMPACTS

The analysis of Cumulative Plus Project conditions describes long-term traffic operations in the year 2040 assuming both background land use development consistent with the City General Plan and the GMC project. Comparing traffic operation under this condition to traffic operations under Cumulative No Project conditions allows an identification of the long-term project-related effects of the proposed project.

The development of the GMC project would result in vehicle traffic to and from the project site. The amount of additional traffic on a particular section of the street network depends on three factors:

- Trip Generation, the number of new trips generated by the project,
- Trip Distribution, the direction of travel for the new traffic, and
- Trip Assignment, the specific routes used by the new traffic.

TRIP GENERATION

Development of the GMC project would generate new vehicle trips and potentially affect traffic operations on study facilities.

The trip generation rates used in this traffic impact study are presented in **Table 9**. The trip generation rates are applied to the amount of project-related land uses. The resulting trip generation estimates are presented in **Table 10**.

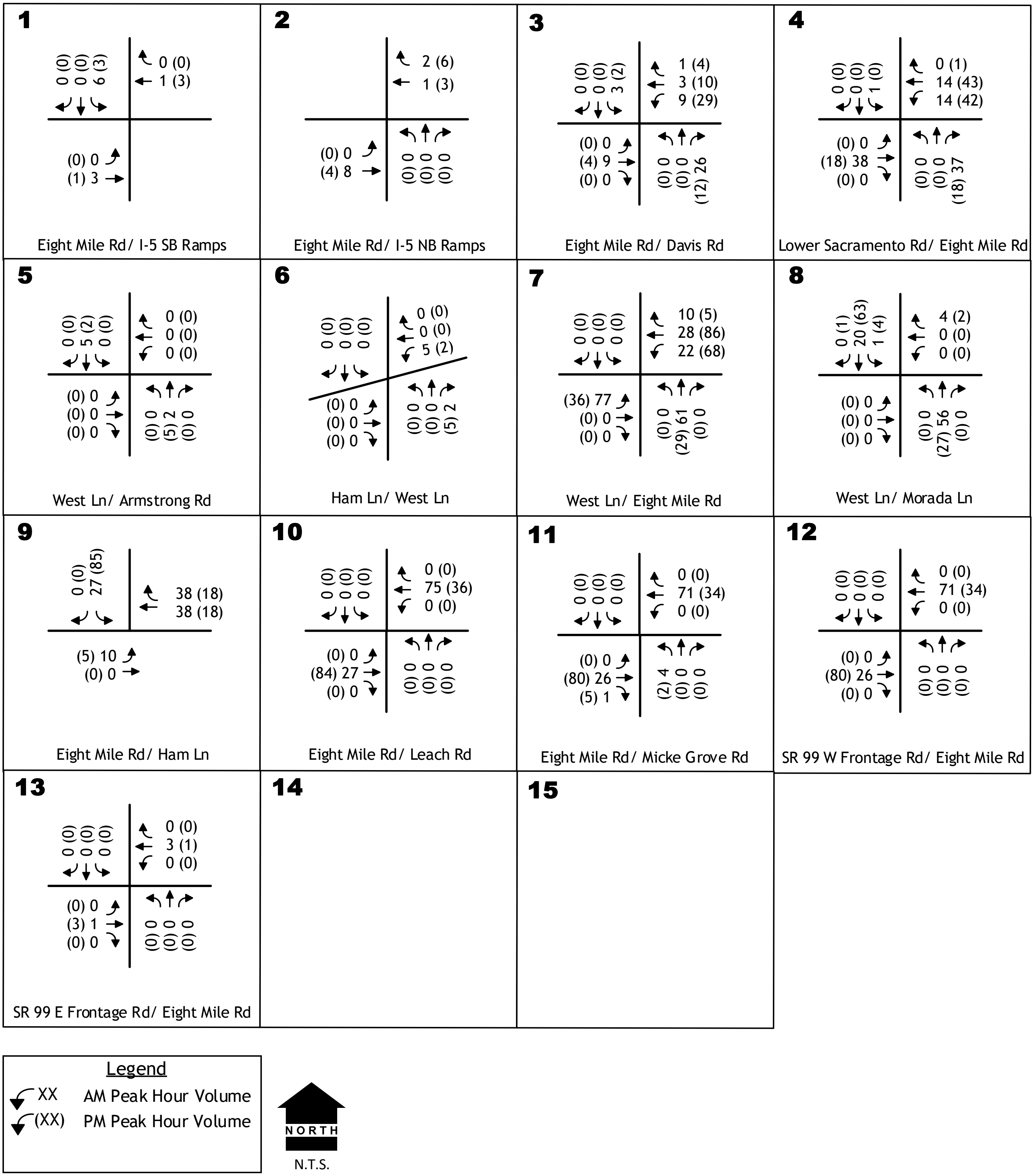
As shown in **Table 10**, the GMC project would generate 3,975 trips per day, with 324 trips during the a.m. peak hour and 379 trips during the p.m. peak hour.

TRIP DISTRIBUTION

Project-related trips were geographically distributed over the study area roadway network. The geographical distribution of trips is based on the relative attractiveness or utility of possible destinations. Trip distribution percentages applied in this traffic impact study are presented in **Table 11**.

TRIP ASSIGNMENT

Traffic that would be generated by the GMC project was added to Cumulative No Project traffic volumes. **Figure 16** displays the project-related-only traffic volumes for each study intersection in the a.m. peak hour and p.m. peak hour. **Figure 17** displays the resulting Cumulative Plus Project traffic volumes anticipated for each study intersection in the peak hours.



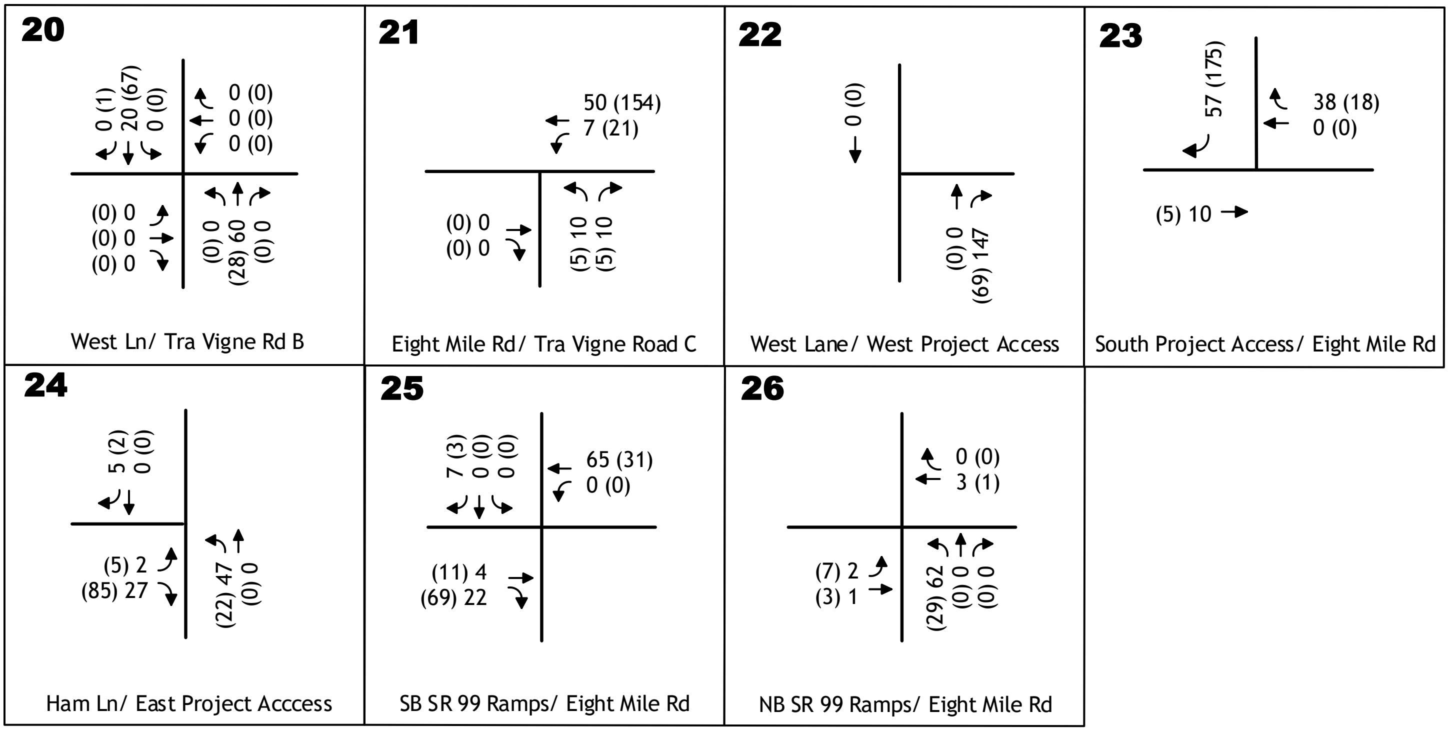
GILL MEDICAL CENTER
PROJECT-RELATED TRIPS
Cumulative Background

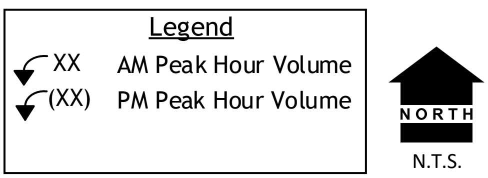
KD Anderson & Associates, Inc.
Transportation Engineers

2610-27 RA 9/23/2021

Gill Medical Center Project Traffic Impact Study

figure 16a

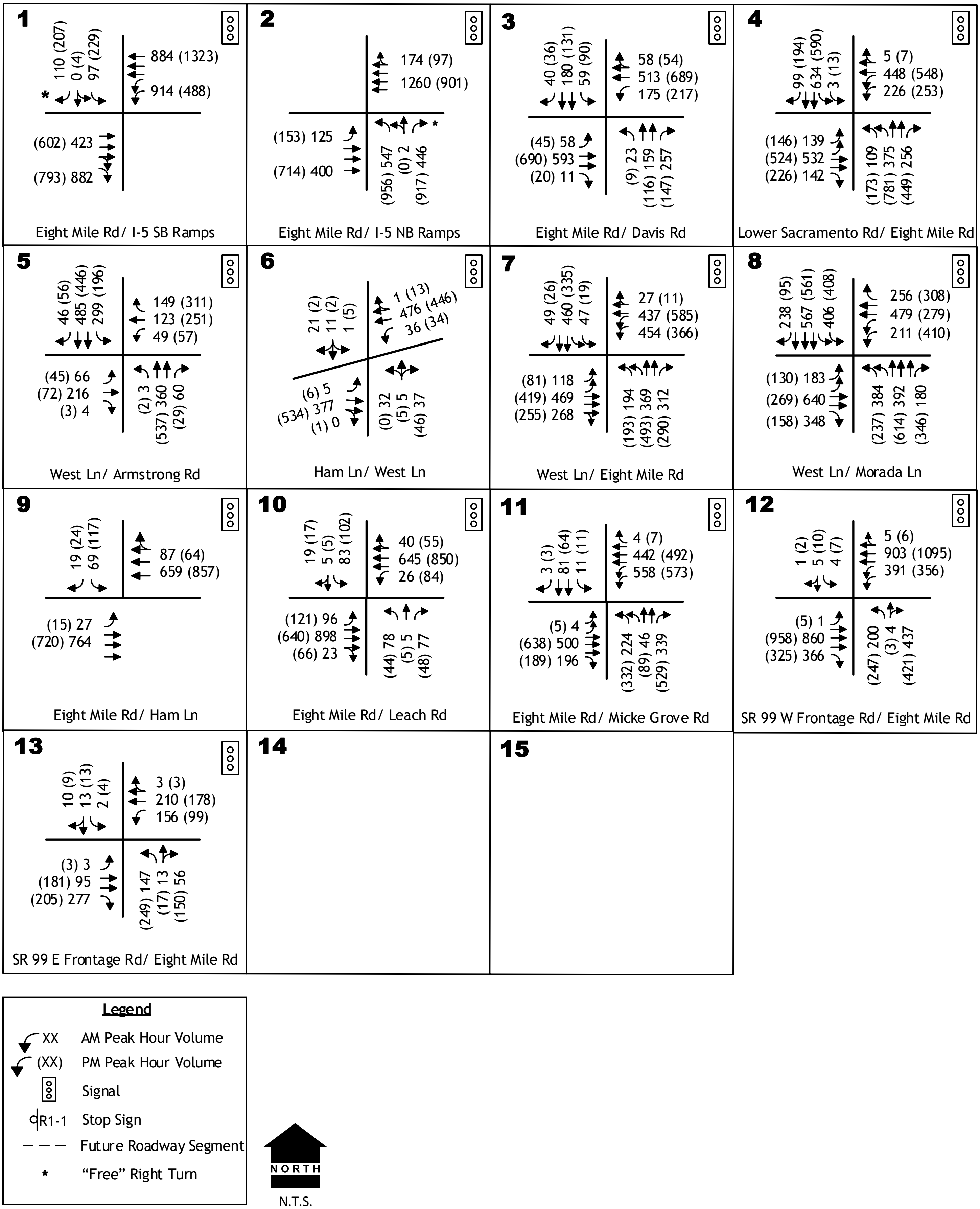




GILL MEDICAL CENTER
PROJECT-RELATED TRIPS

Cumulative Background

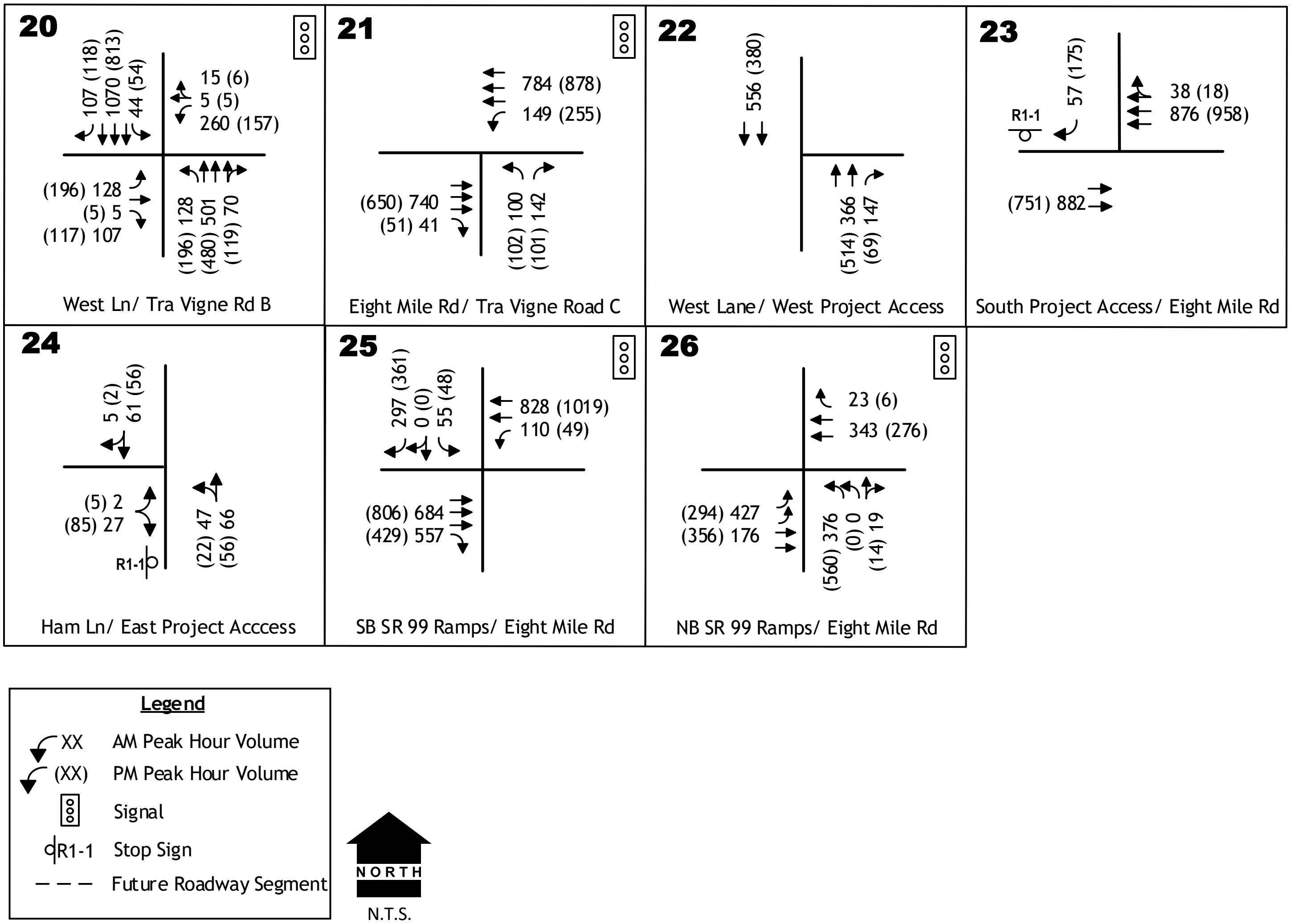
KD Anderson & Associates, Inc.
Transportation Engineers



CUMULATIVE PLUS GILL MEDICAL CENTER

Intersection Traffic Volumes and Lane Configurations

KD Anderson & Associates, Inc.
Transportation Engineers



CUMULATIVE PLUS GILL MEDICAL CENTER

Intersection Traffic Volumes and Lane Configurations

KD Anderson & Associates, Inc.
Transportation Engineers

ROADWAY IMPROVEMENTS

The Cumulative Plus Project conditions assumes roadway improvements assumed for the Cumulative No Project condition. In addition, as noted in the *Project Description* section of this traffic impact study, the GMC project would include:

- a driveway connection with West Lane along the western boundary of the project site,
- a driveway connection with Eight Mile Road on the southern boundary of the project site, and
- a driveway connection with Ham Lane on the eastern boundary of the project site.

Figure 17 displays the resulting Cumulative Plus Project intersection lane geometrics for each study intersection.

INTERSECTION LEVELS OF SERVICE

Table 35 presents the a.m. peak hour and p.m. peak hour LOS at each study intersection under Cumulative Plus Project conditions. The worksheets presenting the calculation of LOS are included in the Technical Appendix**.**

Traffic volumes under Cumulative Plus Project conditions would be generally higher than under Cumulative No Project conditions and, as a result, vehicle delay at study intersections under Cumulative Plus Project conditions would be higher than under Cumulative No Project conditions.

Under Cumulative Plus Project conditions, LOS at all 20 study intersections would be at acceptable LOS D or better during both the a.m. peak hour and the p.m. peak hour. No improvements are needed at these 20 intersections to achieve acceptable LOS.

Table 35. Intersection Level of Service - Cumulative Plus Project Conditions

	Study Intersections	Inters. Control	Signal Warrant Met?	AM Peak LOS	AM Peak Delay	PM Peak LOS	PM Peak Delay
1	Eight Mile Road & I-5 Southbound Ramps	Signal		D	37.2	B	14.6
2	Eight Mile Road & I-5 Northbound Ramps	Signal		C	24.8	C	23.4
3	Eight Mile Road & Davis Road	Signal		C	28.4	C	25.9
4	Eight Mile Road & Lower Sacramento Road	Signal		C	28.8	C	28.8
5	West Lane & Armstrong Road	Signal		C	27.1	C	27.9
6	West Lane & Ham Lane	Signal		B	12.3	A	8.3
7	West Lane & Eight Mile Road	Signal		C	31.4	C	28.9
8	West Lane & Morada Lane	Signal		C	33.5	C	33.9
9	Eight Mile Road & Ham Lane	Signal		A	7.7	A	9.4
10	Eight Mile Road & Leach Road	Signal		C	20.2	C	21.4
11	Eight Mile Road & Micke Grove Road/Holman Road	Signal		C	29.5	C	33.8
12	Eight Mile Road & SR 99 West Frontage Road	Signal		C	28.9	C	28.5
13	Eight Mile Road & SR 99 East Frontage Road	Signal		C	23.1	C	24.7
14	SR 99 West Frontage Road & SR 99 SB Ramps	- -		- -	- -	- -	- -
15	SR 99 East Frontage Road & SR 99 NB Ramps	- -		- -	- -	- -	- -
20	West Lane & Tra Vigne Road B	Signal		C	27.9	C	27.8
21	Eight Mile Road & Tra Vigne Road C	Signal		B	17.3	B	16.9
22	West Lane & West Project Driveway	Unsig	No	A	0.0	A	0.0
23	Eight Mile Road & South Project Driveway	Unsig	Yes	A	0.3	A	1.1
24	Ham Lane & East Project Driveway	Unsig	No	A	2.9	A	4.3
25	Eight Mile Road & SR 99 Southbound Ramps	Signal		B	15.9	A	8.1
26	Eight Mile Road & SR 99 Northbound Ramps	Signal		C	27.7	C	31.5

Notes: LOS = Level of Service. "Inters. Control" = Type of intersection control.
"Signal" = Signalized light control. "Unsig" = Unsignalized stop-sign control. "AWSC" = All-way stop-sign control.
"I-5" = Interstate-5. "SR" = State Route. "SB" = Southbound. "NB" = Northbound.
Dashes ("- -") indicate intersection is not present under this scenario. Delay is measured in seconds per vehicle.
Per City of Stockton guidelines, intersection average delay is reported for all intersections, including unsignalized intersections.

ROADWAY SEGMENT LEVELS OF SERVICE

Table 36 presents a summary of LOS on the 10 study roadway segments under Cumulative Plus Project conditions. All 10 of the roadway segments would operate at acceptable LOS C or better. No improvements are needed on these 10 roadway segments to achieve acceptable LOS.

RAMP JUNCTION LEVELS OF SERVICE

Table 37 presents the a.m. peak hour and p.m. peak hour LOS at each study ramp junction under Cumulative Plus Project conditions. The worksheets presenting the calculation of LOS are included in the Technical Appendix.

Traffic volumes under Cumulative Plus Project conditions would be generally higher than under Cumulative No Project conditions and, as a result, vehicle density at study ramp junctions under Cumulative Plus Project conditions would be higher than under Cumulative No Project conditions.

Under Cumulative Plus Project conditions, LOS at all four of the study ramp junctions would be at acceptable LOS C or better during both the a.m. peak hour and the p.m. peak hour. No improvements are needed at these ramp junctions to achieve acceptable LOS.

Table 36. Roadway Segment Level of Service -
Cumulative Plus Gill Medical Center Project Conditions

Roadway Segment	Number of Lanes	Daily Volume	Level of Service
Eight Mile Road West of Lower Sacramento Road	4	24,897	B
Lower Sacramento Road South of Eight Mile Road	4	25,181	C
Eight Mile Road Lower Sacramento Road to West Lane	4	20,758	A
West Lane North of Eight Mile Road	4	12,140	A
West Lane South of Eight Mile Road	6	21,805	A
Eight Mile Road West Lane to Ham Lane	6	22,365	A
Ham Lane West Lane to Eight Mile Road	2	2,297	A
Eight Mile Road West of Micke Grove Road/Holman Road	6	21,932	A
State Route 99 North of Eight Mile Road	8	107,366	C
State Route 99 Eight Mile Road to Morada Lane	8	119,325	C

Table 37. State Route 99 Ramp Merge and Diverge Level of Service - Cumulative Plus Project Conditions

Ramp Junction	AM Peak Hour				PM Peak Hour			
	Freeway Volume	Ramp Volume	Density	LOS	Freeway Volume	Ramp Volume	Density	LOS
SR 99 Southbound Diverge to Eight Mile Road Off-Ramp (Future)	4,994	352	21.7	C	4,147	409	18.4	B
SR 99 Southbound Merge from Eight Mile Road On-Ramp (Future)	4,994	667	26.6	C	4,147	478	22.0	C
SR 99 Northbound Merge from Eight Mile Road On-Ramp (Future)	3,975	450	21.1	C	5,180	301	24.2	C
SR 99 Northbound Diverge to Eight Mile Road Off-Ramp (Future)	3,975	395	17.8	B	5,180	575	24.0	C

Notes: LOS = Level of Service. SR = State Route. Density is expressed in passenger cars per mile per lane.

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Yokoyama, Travis. Associate Regional Planner. San Joaquin Council of Governments. April 29, 2020 E-mail message to Wayne Shijo, KD Anderson & Associates.

TECHNICAL APPENDICES

IN ELECTRONIC FILES

APPENDIX K

Request for Sanitary Sewer, Storm Sewer and Water Service - City of Stockton

F COPY

CITY OF STOCKTON

DEPARTMENT OF MUNICIPAL UTILITIES
2500 Navy Drive • Stockton, CA 95206-1147 • 209 / 937-8750 • Fax 209 / 937-8708
www.stocktongov.com

August 24, 2020

ENTERED

McKinley, Conger, Jolley, Galarneau LLP
Attn: Brett Jolley
3031 W. March Lane, Suite 230
Stockton, CA 95219

REQUEST FOR SANITARY SEWER, STORM SEWER AND WATER SERVICE FOR 11000 N. WEST LANE APN (059-080-07, 29, and 30)

In response to your letter received August 12, 2020, copy attached, City staff from the Community Development and Municipal Utilities Departments have reviewed your request for sanitary sewer, storm sewer and water service to the subject properties, which are located outside the City limits of the City of Stockton. Review by the Community Development Department is limited to General Plan conformity and participation in Areas of Benefit and Community Facilities District 90-1. The following information is provided as result of that review:

Community Development Department

The Community Development Department has determined the proposed use does not conform to the City of Stockton's General Plan.

Municipal Utilities Department

Pursuant to the Stockton Council Policy No.900-1, the City is unable to provide the requested utility services.

JOHN ABREW
DIRECTOR OF MUNICIPAL UTILITIES

STEPHEN KENNING
ASSISTANT DIRECTOR OF MUNICIPAL UTILITIES

JA:SK:JW:cmt

Attachment: Request for Utility Service Application 08/12/2020

cc: William Crew, Director of Community Development
Michael McDowell, Deputy Director, Planning & Engineering
John Wotila, Associate Engineer, Municipal Utilities Department

Stockton All-America City 2004 1999

MCKINLEY | CONGER | JOLLEY | GALARNEAU LLP

August 7, 2020

Director of Municipal Utilities
Attn: John Wotila
City of Stockton
Municipal Utilities Department
2500 Navy Drive
Stockton, California 95206

REQUEST FOR UTILITY SERVICE - GILL WOMEN'S MEDICAL CENTER PROJECT (APNs 059-080-07, -29, and -30): SANITARY SEWER, STORM DRAIN, AND WATER SERVICE

Mr. Wotila:

My clients, the Jasbir S. Gill Family Limited Partnership and Gill Women's Medical Center, LLC., propose developing a 12-bed women's birthing center and hospital (phase 1 – 36,000 sf) and fully operational 100-bed hospital and medical office building (phase 2 – 200,00 sf), located at 11000 North West Lane and encompassing three parcels; Assessor's Parcel Numbers (APNs): 059-080-07, -29, & -30 ("Project"). This site is currently not served by a sanitary sewer, storm drain, and water service system. My clients, therefore, request permission to convey sanitary sewer and stormwater discharge from the project into the existing public system, and water service to the project located at 11000 North West Lane. (Please see enclosed site plan).

Please provide a "Request for Utility Service Letter" with the terms and conditions under which the City of Stockton will grant approval to (property owner) to connect their proposed (project) to the City sanitary sewer, storm drain and water system (specify services). Included with the request for utility service is a check for the processing fee in the amount of **$269.00** payable to the City of Stockton.

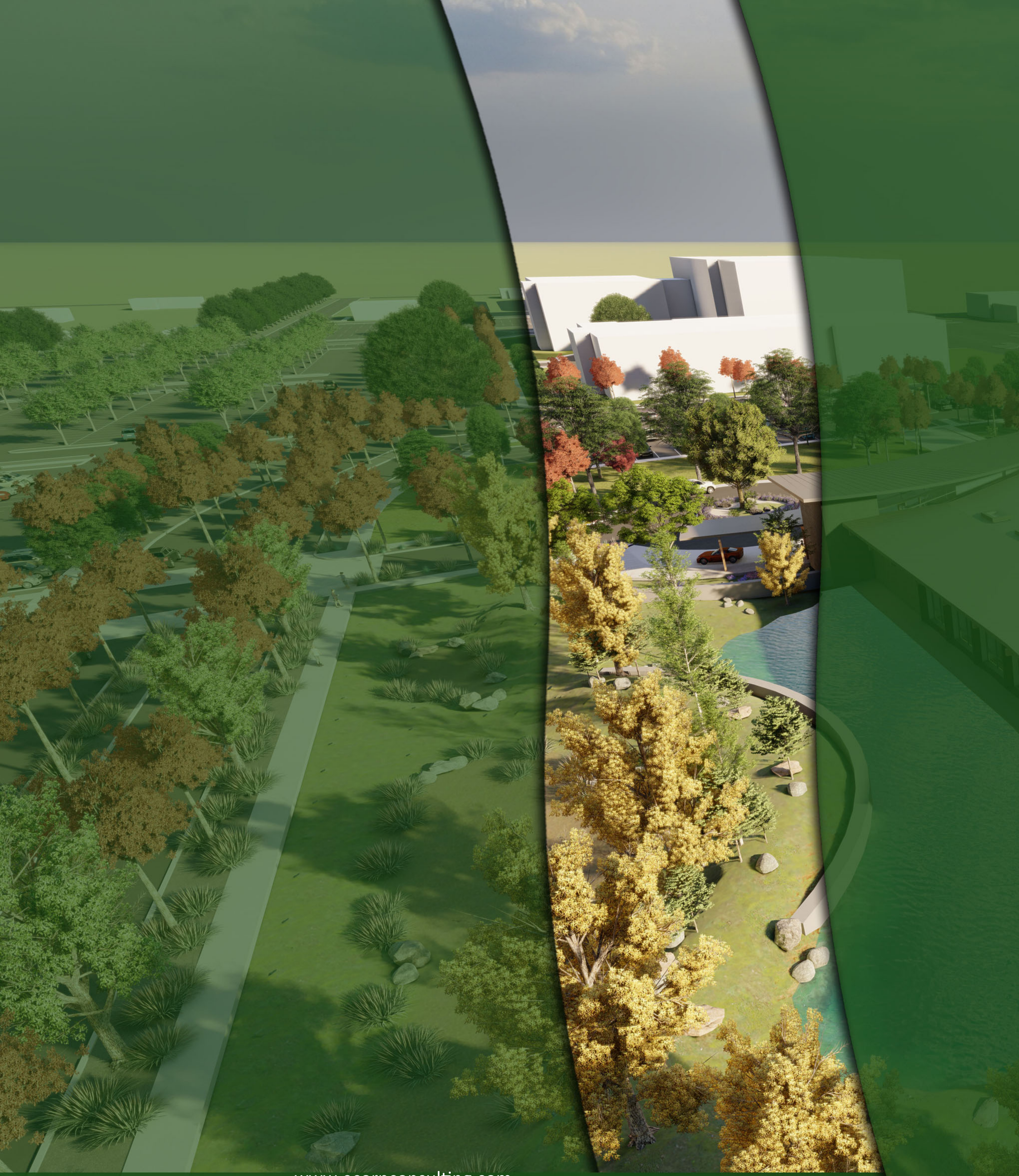
We appreciate your consideration of this request and look forward to timely approval. If you have any questions, please call me at 209-477-8171

Respectfully,

McKINLEY, CONGER, JOLLEY & GALARNEAU, LLP

BRETT S. JOLLEY
Attorney-at-Law

Enclosure
cc: clients



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