APPENDICES

APPENDIX A

Agricultural Land Conversion Study

144-490 Quintal Road Project

March 27, 2023

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APPENDIX A LESA MODEL WORKSHEETS

Acronyms and Abbreviations

APN	Assessor's Parcel Number
CEQA	California Environmental Quality Act
City	City of Manteca
CMU	Commercial Mixed Use/Mixed Use Commercial
County	San Joaquin County
DOC	California Department of Conservation
EIR	Environmental Impact Report
FMMP	Farmland Mapping and Monitoring Program
HWY	Highway
LAFCO	Local Agency Formation Commission
LCC	Land Capability Classification
LE	Land Evaluation
LESA	Land Evaluation Site Assessment
MDR	Medium Density Residential
NRCS	Natural Resources Conservation Service
proposed project	144-490 Quintal Road Project
R-2	Limited Multi-Family Dwelling
SA	Site Assessment
USDA	U.S. Department of Agriculture
UWMP	Urban Water Management Plan
Williamson Act	California Land Conservation Act of 1965
WSS	Web Soil Survey
ZOI	Zone of Influence

1.0 INTRODUCTION

The purpose of this Agricultural Conversion Study is to quantifiably evaluate the potential impacts of the 144-490 Quintal Road Project (proposed project) on agricultural resources located on and adjacent to the project site.

Several factors are evaluated when determining whether implementation of a particular project would have a significant impact on agricultural resources. One factor is the existing land uses on the project site. Another consideration is the project site's designation under the California Department of Conservation's (DOC) Farmland Mapping and Monitoring Program (FMMP), which produces maps and statistical data used for analyzing impacts on California's agricultural resources. Yet another factor is whether the project site is under a Williamson Act (California Land Conservation Act of 1965) Contract, which enables local governments to enter into contracts with private landowners to restrict specific parcels to agricultural or compatible open space uses.

An Agricultural Conversion Study is a resource that may be used to determine whether a project would result in a significant impact on agricultural resources under the California Environmental Quality Act (CEQA). The Agricultural Conversion Study uses a points-based approach for rating the relative importance of agricultural lands based upon specific quantifiable elements.

2.0 PROJECT DESCRIPTION

The proposed project would involve the development of 818 residential units in the City of Manteca (City) on an undeveloped site comprised of four parcels. The proposed project would construct 672 multi-family for-rent apartments, 48 for-sale two-family units, and 98 single-family for-sale homes and would include amenities such as public open space, dog park, game lawn, and club house. The project site is located at the juncture of Quintal Road, S. Main Street, and E. Atherton Drive and is located within a highly urbanized area of the City. The City's General Plan designates the entire project site as Commercial Mixed Use (CMU); however, the City's General Plan is currently being updated and is anticipated to be adopted in early 2023. The City's General Plan Update will redesignate the parcels located south of E. Atherton Drive to Medium Density Residential (MDR). Project specific amendments would request similar land use designation modifications if the General Plan Update is not adopted at the time of the project entitlements. The City's Zoning Ordinance currently designates the entire project site as Mixed Use Commercial (CMU). As discussed, the General Plan Update is anticipated in early 2023, and with this adoption, a portion of one of the project site parcels south of E. Atherton Drive will subsequently be re-designated from CMU to MDR. To maintain consistency with the General Plan Update, the Applicant is seeking to change the zoning on the portion south of E. Atherton Drive from CMU to Limited Multi-Family Dwelling (R-2) Zoning District as the City's comprehensive Zoning Ordinance update is not expected to be processed until later in time.

2.1 PROJECT SITE LOCATION AND EXISTING SETTING

The project site is located at the juncture of Quintal Road, S. Main Street, and E. Atherton Drive in the City of Manteca, in San Joaquin County (County). The project site primarily consists of four parcels identified as Assessor's Parcel Numbers (APNs): 224-040-52 (144 Quintal Road), 224-040-07 (292 Quintal Road), 224-040-06 (301 Quintal Road), and 224-040-11 (490 Quintal Road). The project site is bordered by S. Main Street, vacant land, and commercial uses to the west and Highway (HWY) 120 and commercial uses to the north. Existing residential development border the project site to the south and the east. This portion of the City is highly urbanized with residential and commercial uses.

The project site is currently vacant, undeveloped, and does not have any structures or buildings that exist within the site; however, there is a paved roadway and several unpaved roadways that extend throughout the site. The site is covered by vegetation consisting of weeds and the property primarily extends over generally flat terrain. The project site is surrounded by urban development and is located in close proximity to services and major employers, including healthcare and medical services, retail, restaurant, and market/grocery. There is a Chevron gas station located adjacent to the southwest corner of the project site, north of E. Atherton Drive.

3.0 REGULATORY SETTING

3.1 STATE

3.1.1 Farmland Mapping and Monitoring Program

The California Department of Conservation established the FMMP in 1982. The FMMP is a non-regulatory program and provides a consistent and impartial evaluation of agricultural land use and land use changes throughout California. The FMMP produces maps and statistical data used for analyzing impacts on California's agricultural resources. Agricultural lands are rated according to soil quality and irrigation status. The FMMP's Important Farmland map categories include Prime Farmland, Farmland of Statewide Importance, Unique Farmland, Farmland of Local Importance, Grazing Land, Urban and Built-Up Land, and Other Land. FMMP maps are updated every two years with the use of aerial photographs, a computer mapping system, public review, and field reconnaissance.

The FMMP Important Farmland categories are defined as:

- **Prime Farmland** is defined by the FMMP as farmland with the best combination of physical and chemical features able to sustain long-term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agricultural production at some time in the four years prior to the mapping date.
- **Farmland of Statewide Importance** is defined by the FMMP as farmland similar to Prime Farmland, but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.
- **Unique Farmland** is defined by the FMMP as farmland of lesser quality soils used for the production of the state's leading agricultural crops. This land is usually irrigated, but may include non-irrigated orchards or vineyards as found in some climatic zones in California. Land must have been cropped at some time during the four years prior to the mapping date.
- **Farmland of Local Importance** is defined by the FMMP as land of importance to the local agricultural economy as determined by each county's board of supervisors and a local advisory committee.
- **Grazing Land** is defined by the FMMP as land on which the existing vegetation is suited to the grazing of livestock. This category was developed in cooperation with the California Cattlemen's Association, University of California Cooperative Extension, and other groups interested in the extent of grazing activities.

- **Other Land** is defined by the FMMP as land not included in any other mapping category. Common examples include low-density rural developments, brush, timber, wetland, and riparian areas not suitable for livestock grazing; confined livestock, poultry, or aquaculture facilities; strip mines and borrow pits; and water bodies smaller than 40 acres. Vacant land and nonagricultural land surrounded on all sides by urban development and greater than 40 acres is also mapped as other land.

3.1.2 California Land Conversion Act of 1965 (Williamson Act)

The California Land Conservation Act of 1965, also known as the Williamson Act, was adopted in 1965 to encourage the preservation of the state's agricultural lands and to prevent their premature conversion to urban uses. In order to preserve these uses, the Act established an agricultural preserve contract procedure by which any county or city taxes landowners at a lower rate, using a scale based on the actual use of the land for agricultural purposes, as opposed to its unrestricted market value. In return, the owners guarantee that these properties remain under agricultural production for a 10-year period. The contract is self-renewing; however, the landowner may notify the county or city at any time of the intent to withdraw the land from its preserve status. There are two means by which the landowner may withdraw the land from its contract preserve status. First, the landowner may seek to cancel the contract. This takes the land out of the contract quickly with a minimal waiting period but the landowner pays a statutory penalty to the State. Second, the landowner may notice a non-renewal or seek a partial non-renewal of the contract. Land withdrawal through the non-renewal process involves a 9- or 10-year period (depending on the timing of the notice) of tax adjustment to full market value before protected open space can be converted to urban uses.

Williamson Act subvention payments to local governments have been suspended since the fiscal year 2009-10 due to the State's fiscal constraints. The Williamson Act contracts between landowners and local governments remain in force, regardless of the availability of subvention payments.

3.1.3 California Environmental Quality Act

CEQA was adopted in 1970 by the California State Legislature to identify, protect, and minimize impacts to the State's environmental resources, and codified as Section 21000 of the State's Public Resources Code. CEQA vests the primary responsibility of carrying out its objectives to local municipalities. In determining whether a proposed project may have a significant effect on agricultural resources, City of Manteca uses the thresholds provided in Appendix G of the CEQA Guidelines.

3.1.4 Public Resources Code 21095 – California Agricultural Land Evaluation and Site Assessment Model

Land Evaluation and Site Assessment (LESA) is a term used to define an approach for rating the relative quality of agricultural land based upon specific measurable features. The formulation of a California LESA Model is the result of Senate Bill 850 (Chapter 812/1993), which charges the Resource Agency (in consultation with the Governor's Office of Planning and Research) with developing an amendment to Appendix G of the 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).

A LESA analysis is based on the following definition of agricultural land contained in CEQA, Public Resources Code Section 21060.1:

> *21060.1 (a) "Agricultural land" means prime farmland, farmland of statewide importance, or unique farmlands, as defined by the United States Department of Agriculture land inventory and monitoring criteria as modified for California.*
>
> *21060.1 (b) In those areas of the state where lands have not been surveyed for the classifications specific in subdivision (a), "agricultural land" means land that meets the requirement of "prime agricultural land" as defined in paragraph (1), (2), (3), or (4) of subdivision (c) of Section 51201 of the Government Code [the Williamson Act].*

3.2 LOCAL

3.2.1 City of Manteca General Plan

The City's General Plan includes the following goals and policies related to agriculture.

Goal LU-11: Preserve Manteca's agricultural heritage by protecting and maintaining significant areas of agricultural lands around the city.

- **Policy LU-11.1:** Protect agricultural land from urban development except where the General Plan Land Use Map has designated the land for urban uses.
- **Policy LU-11.2:** Encourage the continuation of agricultural uses on lands within and adjacent to the SOI and Planning Area, where appropriate.
- **Policy LU-11.3:** Encourage the continuation of small, specialty agricultural operations, demonstration or education agricultural operations, and agricultural tourism operations that are compatible with the Land Use Map.
- **Policy LU-11.4:** Encourage buffering for new urban uses along the SOI boundary adjacent to commercial agricultural uses.

Goal RC-7: Encourage the continuation of agricultural uses and discourage the premature conversion of agricultural land to nonagricultural uses.

- **Policy RC-7.1:** Support the continuation of agricultural uses on lands designated for urban use, until urban development is imminent.

- **Policy RC-7.2:** Provide an orderly phased development pattern, encouraging the development of vacant lands within City boundaries prior to conversion of agricultural lands, so that farmland is not subjected to premature development pressure.
- **Policy RC-7.3:** Encourage permanent agricultural lands surrounding the Planning Area to serve as community separators and continue the agricultural heritage of Manteca.
- **Policy RC-7.4:** Support and encourage the preservation of designated Agriculture lands, without placing an undue burden on agricultural landowners.
- **Policy RC-7.5:** Minimize conflicts between agricultural and urban land uses.
- **Policy RC-7.6:** Ensure that urban development near existing agricultural lands will not unnecessarily constrain agricultural practices or adversely affect the economic viability of nearby agricultural operations.
- **Policy RC-7.7:** Prohibit the fragmentation of agricultural parcels into small rural residential parcels except in areas designated for urban development in the Land Use Diagram.
- **Policy RC-7.8:** Encourage agricultural landowners in Manteca's Planning Area to participate in Williamson Act contracts and other programs that provide long-term protection of agricultural lands. Discourage the cancelation of Williamson Act contracts outside the Primary Urban Service Boundary line.
- **Policy RC-7.9:** Work with the Local Agency Formation Commission (LAFCO) on issues of mutual concern including the conservation of agricultural land through consistent use of LAFCO policies, particularly those related to conversion of agricultural lands and establishment of adequate buffers between agricultural and non-agricultural uses, and the designation of a reasonable and logical Sphere of Influence boundary for the City
- **Policy RC-7.10:** Prohibit re-designation of Agricultural lands to other land use designations unless all of the following findings can be made:

    a. There is a public need or net community benefit derived from the conversion of the land that outweighs the need to protect the land for long-term agricultural use.

    b. There are no feasible alternative locations for the proposed project that are either designated for non-agricultural land uses or are less productive agricultural lands.

    c. The use would not have a significant adverse effect on existing or potential agricultural activities on surrounding lands designated Agriculture.

- **Policy RC-7.11:** Require the development projects to reduce impacts on agricultural lands through the use of buffers, such as greenbelts, drainage features, parks, or other improved and maintained features, in order to separate residential and other sensitive land uses, such as schools and hospitals, from agricultural operations and from lands designated Agriculture.

- **Policy RC-7.12:** Work with agricultural landowners to improve practices that have resulted in adverse impacts to adjacent properties. Such practices include site drainage and flood control measures
- **Policy RC-7.13:** Support the procurement of expanded and additional water rights which provide for contractual supply reliability for agricultural use.
- **Policy RC-7.14:** Do not extend water and sewer lines to noncontiguous urban development that would adversely affect agricultural operations.
- **Policy RC-7.15:** Encourage small-scale food production, such as community gardens and cooperative neighborhood growing efforts, on parcels within the City limits, provided that the operations do not conflict with existing adjacent urban uses.
- **Policy RC-7.16:** Encourage Manteca Unified School District and the Delta Community College District to maintain school farm facilities and associated education programs.
- **Policy RC-7.17:** Encourage and support the development of new agricultural related industries featuring alternative energy, utilization of agricultural waste, biofuels, and solar or wind farms.

3.2.2 City of Manteca Agricultural Mitigation Fee Program

Manteca Municipal Code Chapter 13.42 established the City's Agricultural Mitigation Fee Program, which authorizes the collection of development impact fees to offset costs associated with the loss of productive agricultural lands converted for urban uses within the City. Agricultural mitigation fees are required to be paid prior to issuance of any building permit. Fees are used to protect agricultural lands planned for agricultural use. Fees collected under Chapter 13.42 may be used as fair compensation for farmland conservation easements or farmland deed restrictions that conserve existing agricultural land. For example, fees collected by the City are distributed to the California Farmland Trust on a quarterly basis. The Trust then acquires conservation easements from the funds collected.

3.2.3 City of Manteca Right to Farm Ordinance

Chapter 8.24 of the Manteca Municipal Code establishes the City's "Right to Farm" ordinance, which is intended to protect agricultural uses in the City. The ordinance establishes the City's policy to preserve, protect and encourage the use of viable agricultural land for the production of food and other agricultural products. Chapter 8.24 identifies that when nonagricultural land uses extend into or approach agricultural areas, conflicts may arise between such land uses and agricultural operations that often result in the involuntary curtailment or cessation of agricultural operations and discourage investment in such operations.

Chapter 8.24 of the City's Municipal Code is intended to reduce the occurrence of such conflicts between nonagricultural and agricultural land uses within the City through requiring the transferor of any property in the City to provide a disclosure statement describing that the City permits agricultural operations, including those that utilize chemical fertilizers and pesticides. The disclosure statement notifies the

purchaser that the property being purchased may be located close to agricultural lands and operations and that the purchaser may be subject to inconvenience or discomfort arising from the lawful and proper use of agricultural chemical and pesticides and from other agricultural activities, including without limitation, cultivation, plowing, spraying, irrigation, pruning, harvesting, burning of agricultural waste products, protection of crops and animals from depredation, and other activities which occasionally generate dust, smoke, noise and odor. In addition, prior to issuance of a city building permit for construction of a residential building, the owner of the property upon which the building is to be constructed is required to file a disclosure statement acknowledging the proximity of agricultural operations and the potential for inconvenience or nuisance associated with those uses.

4.0 AGRICULTURAL PRODUCTIVITY

4.1 CROP PRODUCTION

San Joaquin County is one of the nation's top ten agricultural areas in productivity and market value, and agriculture in the County is a $2 billion annual industry (San Joaquin County 2014). San Joaquin County agricultural crops and commodities vary annually on their individual rankings based on the amount of acreage dedicated to each commodity. The top 10 crops for 2021, listed in descending order of gross value, were as follows (San Joaquin County 2022):

1. Almonds: $453,764,000
2. Milk, All: $445,621,000
3. Grapes: $428,359,000
4. Walnuts: $367,825,000
5. Cherries: $319,989,000
6. Eggs: $207,583,000
7. Cattle, Calves: $111,616,000
8. Tomatoes: $70,980,000
9. Hay, All: $68,617,000
10. Potatoes: $64,280,000

The 2021 gross value of San Joaquin County's agricultural production is $3,193,234,000 which represents a 5.34 percent increase in value of $161,955,000 over 2020. In 2021, the fruit and nut crops continued to be the largest category with an overall increase in total value by 7.68 percent over 2020. Other commodity groups that showed gains include livestock and poultry products due to an increase in milk production, egg pricing, and turkeys, sheep, and lamb pricing; nursery products; and apiary products due to an increase in honey production and pricing. The vegetable commodity group showed a decrease in 2021 from the previous year due to a significant drop in acreage for the commodity (San Joaquin County 2022).

4.2 COUNTY AGRICULTURAL LAND CONVERSION

4.2.1 Important Farmland

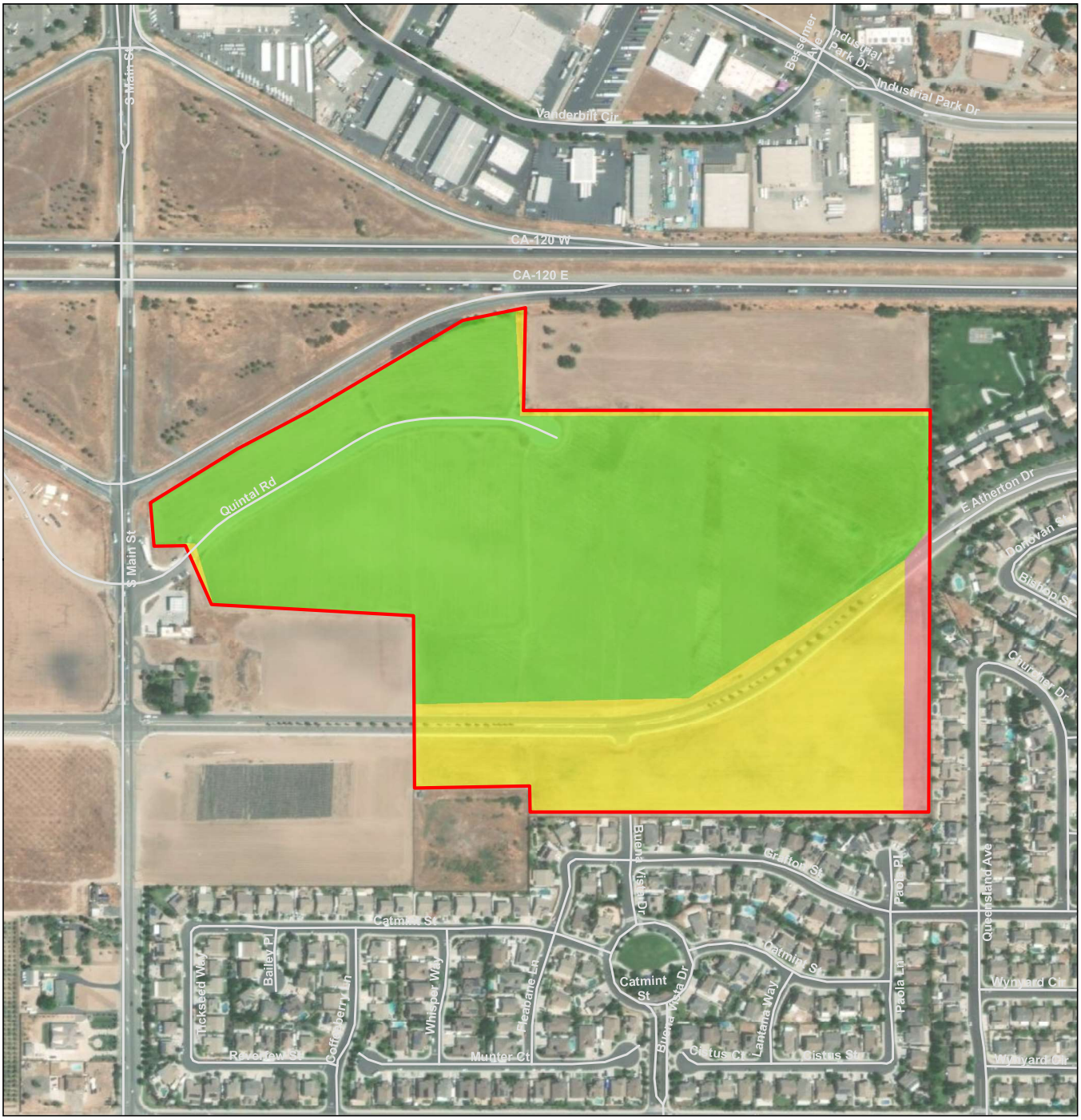
According to the DOC Division of Land Protection's FMMP, the County lost 22,359 acres of Important Farmland between 1990 and 2018 (DOC 2018). Approximately 53,331 acres of agricultural land uses in the County, including Important Farmland, were converted to urbanized uses during the same time frame.

Based on the FMMP data, the project site consists of 44.34 acres of Farmland of Statewide Importance, 17.21 acres of Farmland of Local Importance, and 1.68 acres of Urban and Built-up Land (Figure 1) (DOC 2022).

4.2.2 Williamson Act Contract Land

The Williamson Act is a statewide program enacted in 1965, allowing property owners to enter into a contract with the County to maintain the land in agricultural production. All contracts are for a term of 10 years and automatically renew each year unless a Notice of Non-Renewal is filed by the owner. The County Assessor's office is responsible for the assessment and administration of the Williamson Act. The Assessor's office annually updates the taxable values and responds to the ever-increasing information inquiries by property owners, prospective property owners, real estate agents, etc. In 2008, the state subvention monies were reduced by 10 percent due to the state budget; and from 2009 forward, the subvention funds were essentially eliminated. According to the San Joaquin County General Plan, as of 2010, there are approximately 533,000 acres of Williamson Act lands that exist in the County. Approximately 38,500 acres of County Williamson Act lands (both prime and non-prime lands) are currently under non-renewal, as identified in the County General Plan. Additionally, San Joaquin County contains an additional 60,000 acres of land that are designated as Farmland Security Zone lands, which are areas where contracts are of longer duration than regular Williamson Act contracts, initially at least 20 year terms (San Joaquin County 2014).

According to the City of Manteca General Plan Environmental Impact Report (EIR), the City's Planning Area includes approximately 1,375 acres of lands that are under a Williamson Act Contract (City of Manteca 2022). No parcels under Williamson Act contract or Farmland Security Zone contract are currently located on the project site. However, the project site is identified as within an agricultural preserve. As defined by the DOC, an agricultural preserve defines the boundary of an area within which a city or country will enter into contracts with landowners. The boundary is designated by resolution of the board of supervisors or city council having jurisdiction and only land located within an agricultural preserve is eligible for a Williamson Act contract. Agricultural preserves are regulated by rules and restrictions designated in the resolution to ensure that the land within the preserve is maintained for agricultural or open space use (DOC 2023).



Project Area (63.23 acres)

FMMP Farmland Type

- Farmland of Statewide Importance (44.34 ac.)
- Farmland of Local Importance (17.21 ac.)
- Urban and Built-up Land (1.68 ac.)

Source: Farmland Mapping and Monitoring Program, California Department of Conservation, Division of Land Resource Protection, August 2022

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Stantec

Project Location
Manteca, California

Prepared by PG on 2022-08-08
TR by EN on 2022-08-09

Client/Project
LMC Manteca Project

Figure 1

Title
Important Farmland

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5.0 METHOD

Given the presence and importance of farming and agricultural-related industries in the County and the City, the preservation of farmland is addressed in terms of land use policies in the City's General Plan. This report utilizes multiple factors in determining the impacts of farmland conversion in City of Manteca and San Joaquin County, including General Plan policy factors set forth in the City of Manteca General Plan. Further, the report examines the potential economic losses related to farmland conversion as well as numerous other important criteria that determine the relative value of farmland at its current use.

5.1 LESA MODEL

The LESA Model was developed to provide a lead agency with an optional methodology to ensure that potentially significant environmental effects of agricultural land conversions are quantitatively and consistently considered in the environmental review process (Public Resources Code Section 21095), including during CEQA reviews. As a lead agency, the City may depend on the LESA Model to evaluate the significance of agricultural land conversions.

The LESA Model evaluates and measures a project site's size, soil resource quality, water resource availability, surrounding agricultural lands, and surrounding protected resource lands. These factors are then rated, weighted, and combined, resulting in a single numeric score. This score becomes the basis for determining the significance of a project's potential impacts on agricultural resources.

Using the LESA Model, a project would result in a significant impact on agricultural resources if the project meets the threshold criteria provided in Table 1. The criteria include a Land Evaluation (LE) scoring threshold and a Site Assessment (SA) scoring threshold.

Table 1: California LESA Model Scoring Thresholds

Total LESA Score	Scoring Decision
0 to 39 points	Not considered significant
40 to 59 points	Considered significant only if LE and SA subscores are each greater than or equal to 20 points
60 to 79 points	Considered significant unless either LE or SA subscores is less than 20 points
80 to 100 points	Considered significant

Source: California Department of Conservation 1997

The LESA worksheets prepared for the proposed project to evaluate the proposed project's potential impacts are provided in Appendix A.

6.0 LAND EVALUATION

There are two LE factors used in the LESA to determine whether a project would have a significant impact on agricultural resources:

- Land Capability Classification (LCC) rating
- Storie Index rating

6.1 LAND CAPABILITY CLASSIFICATION

The LCC rating is based on the suitability of onsite soils for growing crops. The LCC rating includes eight classes of soil designations (identified as Class I through Class VIII), with soils identified as "Class I" having the fewest limitations, and soils designated as "Class VIII" being the least suitable for cropland. The types of onsite soils serve as an indicator of how valuable the project site is as an agricultural resource and, thus, serve as a measure of the capacity of a parcel to produce agricultural products. As such, a parcel with highly valued agricultural soils would rate higher in terms of land capability than a parcel with poorly valued soils. Class I through Class IV are generally considered arable land suitable for cropland (although Class IV contains severe limitations on the types of plants that can be grown), and Class V through Class VIII are generally considered to be unsuitable for cropland, but may have uses for pasture, range, woodland, or grazing. The criteria used to determine a particular soil class is based on landscape location, slope of field, depth, texture, and reaction of the soil.

Subclasses, designated with a lower-case letter (identified as e, w, s, or c), are typically used in conjunction with the roman numerals to further describe soil limitations. The letter "e" shows that the main limitation of the soil is erosion; "w" shows that the presence of water either within or on the soil causes limitation in plant growth; "s" shows that the soil is shallow, droughty, or stony; and "c" shows that the limitation is a climate that is generally too cold or hot for many plants. The c subclass is only used in some parts of the United States where the chief limitation is a climate that is too cold or too dry. There are no subclasses for Class I because these soils are considered to have few limitations.

The LESA Model takes the LCC classifications and assigns a numeric value between 0 and 100 to indicate higher favorability for agricultural production. The numeric value assigned is referred to as the LCC rating. Table 2 provides various combinations of LCC classes and subclasses, and their associated LCC ratings.

Table 2: Land Capability Classification and LCC Rating

Land Capability Classification	LCC Rating
I	100
IIe	90
IIs, w	80
IIIe	70

Land Capability Classification	LCC Rating
IIIs, w	60
IVe	50
IVs, w	40
V	30
VI	20
VII	10
VIII	0

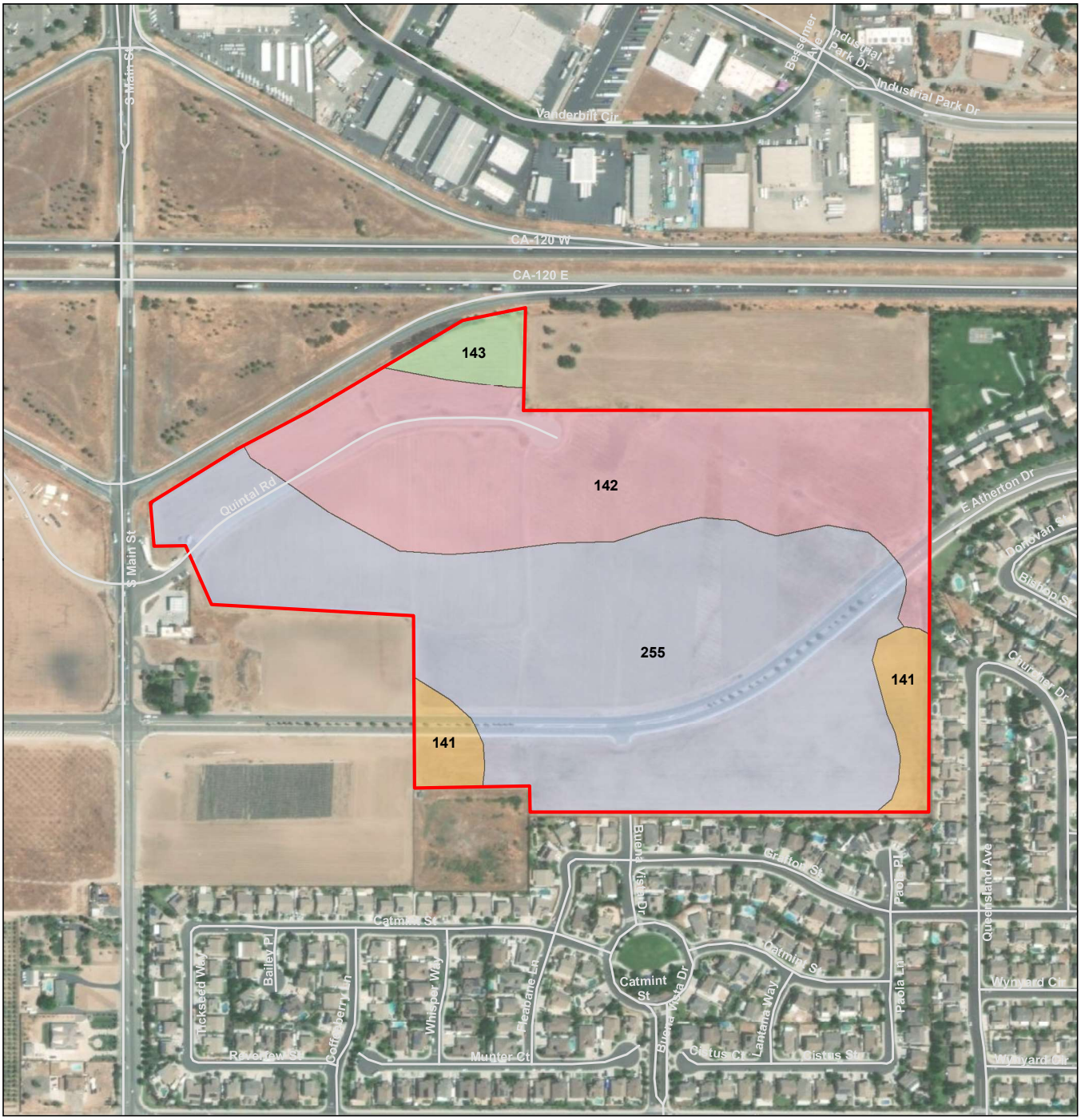
To determine the LCC classes associated with the onsite soils, the U.S. Department of Agriculture (USDA), Natural Resources Conservation Service's (NRCS) Web Soil Survey (WSS) was used (USDA 2023). The WSS provides soil data and information produced by the National Cooperative Soil Survey. It is maintained by the NRCS and provides access to one of the largest natural resource information systems worldwide. NRCS has soil maps and data available online for more than 95 percent of the nation's counties and anticipates having 100 percent soon. The WSS is updated and maintained online as the single authoritative source of soil survey information. According to the WSS, all soil types found on the project site consist of LCC Class IIIs soils (Figure 2). Table 3 provides the soil types found on the project site and their respective LCC class, rating, and score.

The data provided in Table 2 were used to derive an LCC score based on the LCC rating and the proportion of the project site covered by each soil (calculated by multiplying the LCC rating by the proportion of the site covered by a particular soil). The results of these calculations are provided in Appendix A.

As presented in Table 3, the project site's Delhi fine sand, Delhi loamy sand, Delhi-Urban land complex, and Tinnin loamy coarse sand received an LCC Rating of 60. The overall weighted LCC score for the project site is 60.0.

Table 3: Project Soils

Soil Map Unit	Acreage	LCC	LCC Rating	LCC Score
141 – Delhi fine sand, 0 to 5 percent slopes	3.32	IIIs	60	3.0
142 – Delhi loamy sand, 0 to 2 percent slopes, MLRA 17	21.88	IIIs	60	21.0
143 – Delhi-Urban land complex, 0 to 2 percent slopes	1.66	IIIs	60	1.80
255 – Tinnin loamy coarse sand, 0 to 2 percent slopes	36.37	IIIs	60	34.20
Weighted LCC Score				60.0



Project Area (63.23 acres)

Soil Type

- 141 - Delhi fine sand, 0 to 5 percent slopes (3.32 ac.)
- 142 - Delhi loamy sand, 0 to 2 percent slopes, MLRA 17 (21.88 ac.)
- 143 - Delhi-Urban land complex, 0 to 2 percent slopes (1.66 ac.)
- 255 - Tinnin loamy coarse sand, 0 to 2 percent slopes (36.37 ac.)

Source: U.S. Dept. of Agriculture, Natural Resources Conservation Service, SSURGO Soils Database, Aug. 2022

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Stantec

Project Location
Manteca, California

Prepared by PG on 2022-08-08
TR by EN on 2022-08-09

Client/Project
LMC Manteca Project

Figure 2

Title
USDA Soils

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6.2 STORIE INDEX

The Storie Index is a soil rating based on a soil's physical and chemical characteristics that numerically represents its relative degree of suitability for cultivated agricultural production. The 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, slope; and Factor X, manageable features, including drainage, microrelief, fertility, acidity, erosion, and salt content. A score ranging from 0 to 100 percent is determined for each factor, and the scores are then multiplied together to derive an index rating.

For simplification, Storie Index ratings have been combined into six grade classes as follows: Grade 1 (excellent), 100 to 80; Grade 2 (good), 79 to 60; Grade 3 (fair), 59 to 40; Grade 4 (poor), 39 to 20; Grade 5 (very poor), 19 to 10; and Grade 6 (nonagricultural), less than 10.

Like the LCC classifications, Storie Index ratings associated with onsite soils were determined using the NRCS's WSS. As shown in Table 4, the project site received a total Storie Index of 65.49.

Table 4: Storie Index

Soil Map Unit	Project Acres	Proportion of Project Area	Storie Index	Storie Index Score
141 – Delhi fine sand, 0 to 5 percent slopes	3.32	0.05	52	2.60
142 – Delhi loamy sand, 0 to 2 percent slopes, MLRA 17	21.88	0.35	68	23.80
143 – Delhi-Urban land complex, 0 to 2 percent slopes	1.66	0.03	68	2.04
255 – Tinnin loamy coarse sand, 0 to 2 percent slopes	36.37	0.57	65	37.05
Totals	**63.23**	**1**	**Storie Index Score**	**65.49**

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7.0 SITE ASSESSMENT

There are four SA factors in the LESA that are used to determine whether a project would have a significant impact on agricultural resources:

- Project Size rating
- Water Resources Availability rating
- Surrounding Agricultural Land rating
- Surrounding Protected Resource Land rating

7.1 PROJECT SIZE RATING

The Project Size rating is determined by first looking at the LCC acreage figures tabulated under the LE portion of the LESA, and then using these acreages to determine which grouping generates the highest Project Size score. This score is a function of the agricultural production potential of soil on the project site. The Project Size rating depends on the acreage figures that were tabulated under the LCC rating. This rating is based on identifying acreage figures for three separate groupings of soil classes within the site, and then determining which grouping generates the highest Project Size score. Table 5 provides the Project Size score associated with the amount and quality of soils found on a particular site.

Table 5: 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 to 79	90	120 to 159	90	240 to 219	80
40 to 59	80	80 to 119	80	160 to 239	60
20 to 39	50	60 to 79	70	100 to 159	40
10 to 19	30	40 to 59	60	100 to 159	20
Fewer than 10	0	20 to 30	30	Fewer than 40	0
		10 to 19	10		
		Fewer than 10	0		

The inclusion of the measure of a project site's size in the LESA acknowledges the role that 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 prove more favorable for larger operations. Additionally, larger operations typically 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. As shown in Table 6, the project site received a Project Size score of 70.

Table 6: Project-Specific Size Score

Soil Map Unit	LCC Class I – II	LCC Class III	LCC Class IV – VIII
141 – Delhi fine sand, 0 to 5 percent slopes		3.32	
142 – Delhi loamy sand, 0 to 2 percent slopes, MLRA 17		21.88	
143 – Delhi-Urban land complex, 0 to 2 percent slopes		1.66	
255 – Tinnin loamy coarse sand, 0 to 2 percent slopes		36.37	
Total Acres	0	63.23	0
Project Size Scores	0	70	0
Highest Project Size Score	**70**		

7.2 WATER RESOURCES AVAILABILITY RATING

The Water Resources Availability rating is based on identifying the possible water sources that may be available during years characterized as periods of drought or non-drought. The project site consists of approximately 61.55 acres of land that is identified as Farmland of Statewide Importance and Farmland of Local Importance.

There are no sloughs, creeks, drainages, ponds, or wetlands within and surrounding the project site that provide irrigation features onsite. The project site is surrounded by existing urban water supply infrastructure that receives water from the City's system.

Table 5 in the DOC's LESA Model Instruction Manual (presented as table 7 below) is used to tabulate the Water Resource Score of a project site which is based on whether irrigated and dryland agriculture if feasible, and if any physical or economic restriction exist, during both drought and non-drought years.

Table 7: Water Resources Availability Scoring

Option	Non-Drought Years			Drought Years			Water Resource Score
	Restriction			Restriction			
	Irrigated Production Feasible?	Physical Restriction?	Economic Restriction?	Irrigated Production Feasible?	Physical Restriction?	Economic Restriction?	
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

Option	Non-Drought Years			Drought Years			Water Resource Score
	Restriction			Restriction			
	Irrigated Production Feasible?	Physical Restriction?	Economic Restriction?	Irrigated Production Feasible?	Physical Restriction?	Economic Restriction?	
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

Using the Table 7 above to determine agricultural feasibility, irrigated agricultural production on the project site is currently considered feasible.

Surface water and groundwater are the major sources of water supply in the City. The City is supplied by surface water from South San Joaquin Irrigation District South County Water Supply Program and local groundwater wells. Groundwater is supplied from the Eastern San Joaquin Subbasin of the San Joaquin Valley groundwater Basin and according to the City's Urban Water Management Plan (UWMP), the groundwater basin is critically overdrafted. The City's UWMP identified that the City would have sufficient supplies to supply the City's water demand during normal years but would have a reduction in supplies during dry years. As presented in Table 8, the project site received a Water Resources Availability rating of 85.

Table 8: Water Resources Availability Rating

Project Portion	Water Source	Proportion of Project Area	Water Source Availability	Weighted Availability Score
1	Irrigated	1	85	85
Weighted Water Resources Availability Score				**85**

7.3 SURROUNDING AGRICULTURAL LAND RATING

The Surrounding Agricultural Land rating is based on identifying the project's Zone of Influence (ZOI), which consists of the land near a given project site that is likely to influence, and to be influenced by, the

agricultural use of the subject site. The ZOI is determined by creating the smallest rectangle that would completely contain the project site, then creating a second rectangle that extends 0.25 miles beyond the first rectangle, including each parcel that is completely or partially within the 0.25-mile buffer (Figure 3). The percentage of total land within the ZOI (minus the subject property) that is under agricultural production is then determined.

Table 9 shows how the ZOI score is calculated for a project's Surrounding Agricultural Land rating.

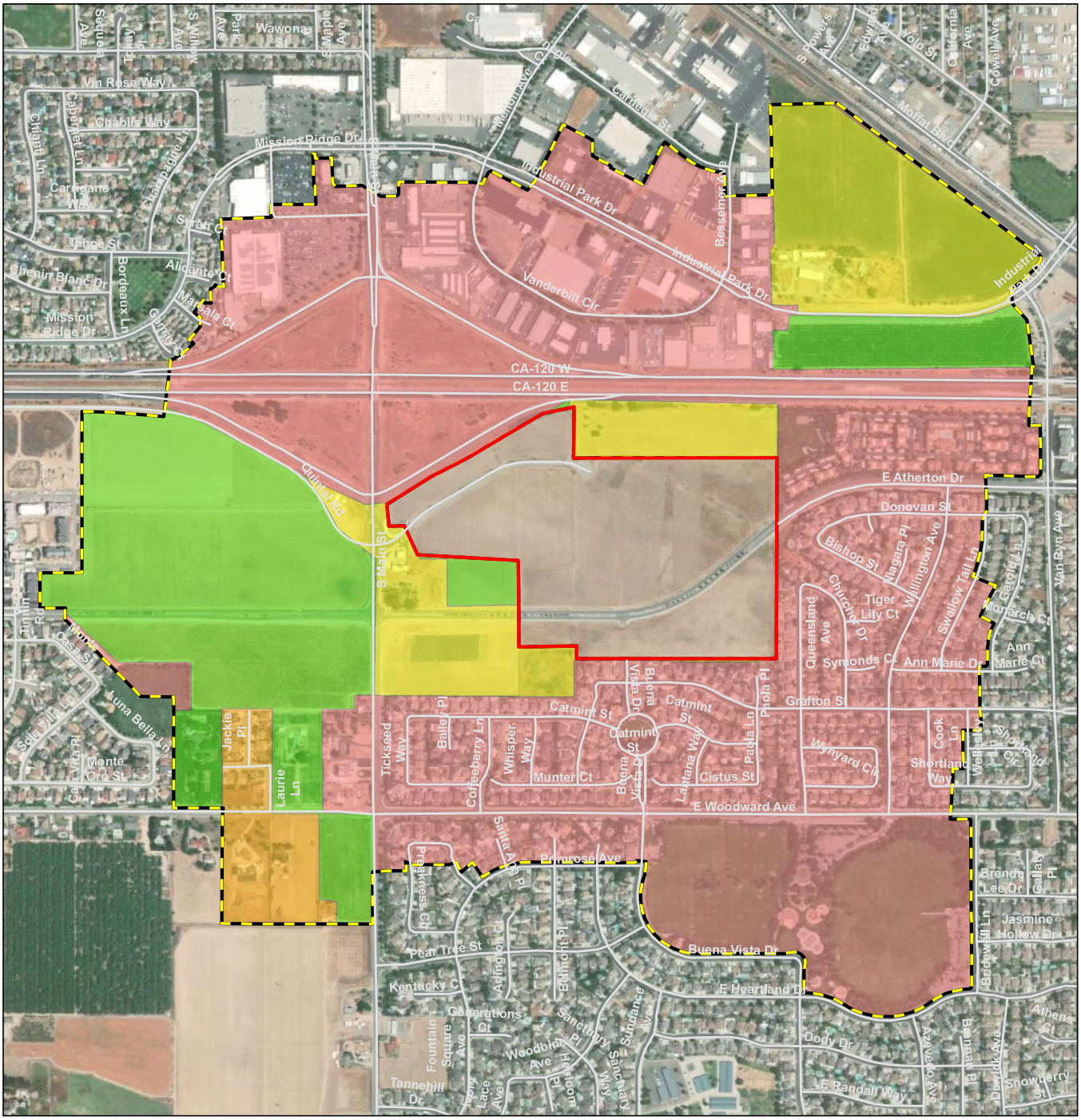
Table 9: Surrounding Agricultural Land Rating

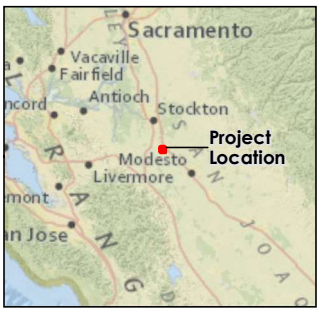
Percent of Project's Zone of Influence in Agricultural Use	Surrounding Agricultural Land Score
90 to 100	100
80 to 89	90
75 to 79	80
70 to 74	70
65 to 69	60
60 to 64	50
55 to 59	40
50 to 54	30
45 to 49	20
40 to 44	10
Less than 40	0

As Table 10 shows, the proposed project's ZOI (excluding the project site) encompasses 555.35 acres. Of this, 173.57 acres of land is designated as Important Farmland. This results in a Surrounding Agriculture Land score of 0, because less than 40 percent of the surrounding parcels are under agricultural production.

Table 10: Zone of Influence Surrounding Agricultural Land

Total Acres	Acres in Agriculture	Percent in Agriculture	Surrounding Agricultural Land Score
555.35	173.57	31%	0





Project Area (63.23 acres)
Zone of Influence

FMMP Farmland Type

- Farmland of Statewide Importance (101.07 ac.)
- Farmland of Local Importance 72.50 ac.)
- Prime Farmland (0.002 ac.)
- Rural Residential Land (15.98 ac.)
- Urban and Built-up Land (365.80 ac.)

Source: Farmland Mapping and Monitoring Program, California Department of Conservation, Division of Land Resource Protection, August 2022

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Stantec

Project Location
Manteca, California

Prepared by PG on 2022-08-08
TR by EN on 2022-08-09

Client/Project
LMC Manteca Project

Figure 3

Title
Zone of Influence

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7.4 SURROUNDING PROTECTED RESOURCE LAND RATING

The Surrounding Protected Resources Land rating is scored in a similar manner as the Surrounding Agricultural Land rating. “Protected Resource Lands” are those with long-term restrictions that are compatible with or supportive of agricultural uses of land and include 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 lands to urban or industrial uses

Table 11 shows the scoring for a project’s Surrounding Protected Resource Land rating.

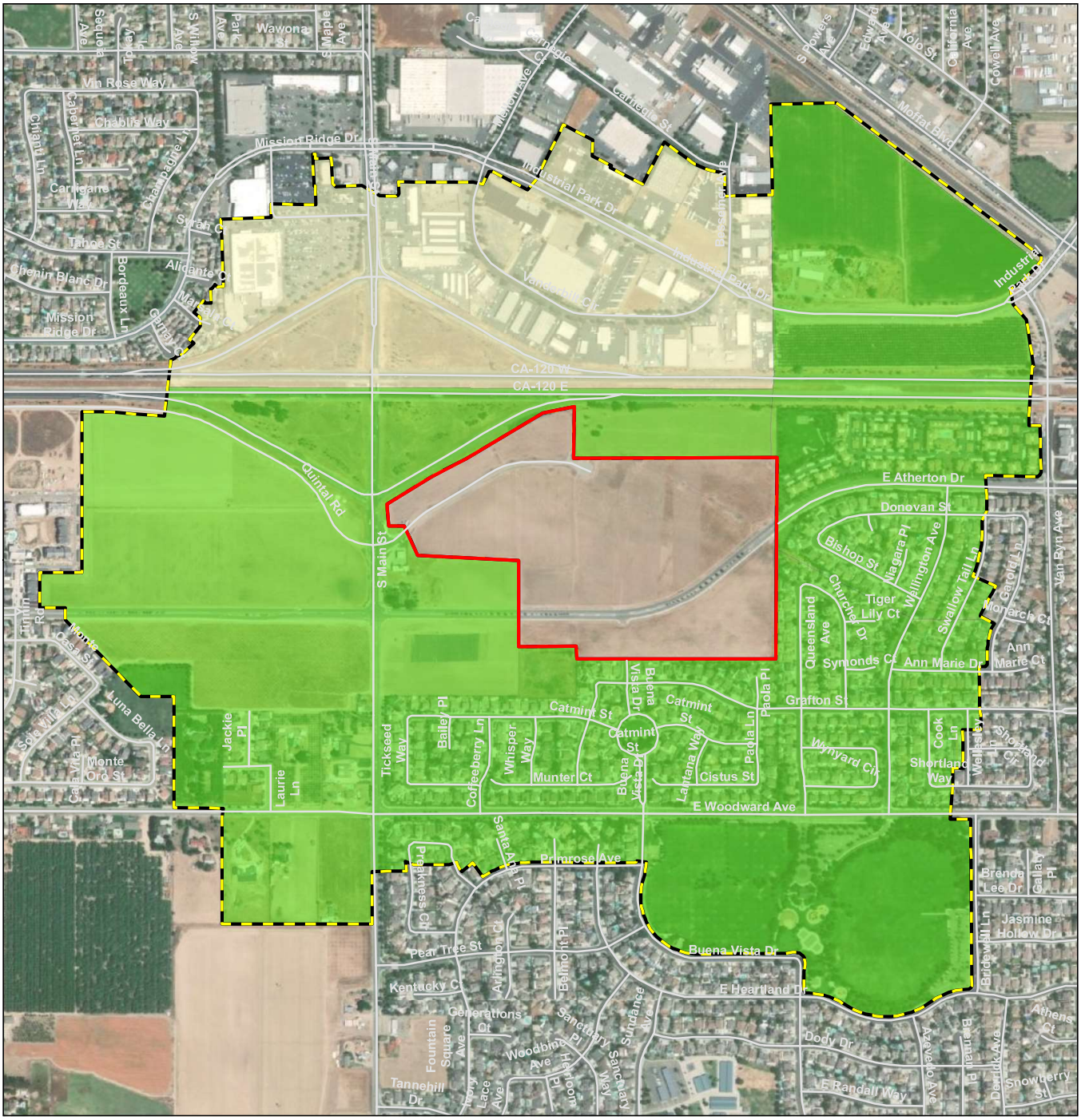
Table 11: Surrounding Protected Resource Land Rating

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

As presented in Table 12 and shown in Figure 4, the proposed project’s ZOI (excluding the project site) encompasses 555.35 acres of land, with 439.59 acres of land (79 percent of the proposed project’s ZOI) within the County’s Agricultural Preserve. Based on the Surrounding Protected Resource Land Rating presented in Table 11 above, this results in a Surrounding Protected Resource Land score of 80, since between 75 and 79 percent of the surrounding parcels are considered Protected Resources Land.

Table 12: Zone of Influence Protected Resource Land

Total Acres	Acres of Protected Resource	Percent Protected Resource Land	Surrounding Protected Resource Land Score
555.35	439.59	79%	80



Project Area (63.23 acres)

Zone of Influence

Agricultural Preserves

Agricultural Preserve (439.59 ac.)

No Preserve (115.77 ac.)

Source: County of San Joaquin, July 2022

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(At original document size of 8.5x11)

N

Stantec

Project Location
Manteca, California

Prepared by PG on 2022-08-08
TR by EN on 2022-08-09

Client/Project
LMC Manteca Project

Figure 4

Title
Agricultural Preserves

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8.0 FINAL SCORE

A single LESA score is generated for a project after all the individual LE and SA factors have been scored and weighted. Scores are based on a scale of a maximum of 100 points. As presented in Section 5.1 above, Table 1 provides the ratings that determine whether a project would result in a significant impact on agricultural resources.

As shown in Table 13, the final LESA Score for the proposed project is 58.62. The project has a total project score between 40 and 59 points and the LE and SA subscores are both over 20 points. Therefore, based on LESA significance thresholds provided in Table 1, project implementation would be considered a significant impact on agricultural resources.

Table 13: Final LESA Score Sheet

	Factor Scores	Factor Weight	Weighted Factor Scores
LE Factors			
Land Capability Classification	60.0	0.25	15.0
Storie Index	65.49	0.25	16.37
LE Subscore		0.50	29.43
SA Factors			
Project Size	70	0.15	10.5
Water Resource Availability	85	0.15	12.75
Surrounding Agricultural Land	0	0.15	0
Surrounding Protected Resources Land	80	0.05	4
SA Subscore		0.50	27.25
		Final LESA Score	**58.62**

9.0 ENVIRONMENTAL IMPACTS

This section analyzes the proposed project's potential to result in significant environmental impacts related on agricultural resources. When an impact is determined to be significant, Mitigation Measures are identified that would reduce or avoid the impact.

9.1 THRESHOLDS OF SIGNIFICANCE

In accordance with the CEQA Guidelines Appendix G Environmental Checklist (2022), the following questions were analyzed and evaluated to determine whether impacts to agricultural resources would be significant.

Would the proposed project:

- Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?
- Conflict with existing zoning for agricultural use, or a Williamson Act Contract?
- Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use?

9.2 PROJECT IMPACT ANALYSIS AND MITIGATION MEASURES

Impact AG-1 The proposed project would convert Prime, Unique, or Farmland of Statewide Importance to a non-agricultural use.

Impact Analysis

The proposed project involves construction of a new residential development with 818 residential units on a project site that is partially identified as Important Farmland by the FMMP. The project site is located in a highly urbanized area of the City and is surrounded by existing residential and commercial uses. Additionally, the project site is not actively used for agricultural uses and is vacant, undeveloped land. The proposed project consists of of 44.34 acres of Farmland of Statewide Importance and 17.21 acres of Farmland of Local Importance.

The California LESA Model is designed to assess the significance of a proposed project's conversion of agricultural land. Loss of agricultural land has typically involved conversion to permanent urban uses, and the LESA model has generally been used to evaluate that type of potential impact. The proposed project would affect the agricultural land on the project site for the duration of the life of the proposed project. Due to the long-term conversion of Important Farmland and based on the LESA score of 58.62 with the LE and SA subscores both over 20 points, the proposed project would have a potentially significant impact on agricultural resources.

Because the proposed project would have a significant impact on agricultural resources, mitigation would be required. Projects located within the City that convert Prime Farmland are subject to Manteca Municipal Code Chapter 13.42, Agricultural Mitigation Fee Program. The Agricultural Mitigation Fee Program authorizes the collection of development impact fees to offset the costs associated with the loss of productive agricultural lands converted for urban uses within the City. Agricultural mitigation fees are required to be paid prior to the issuance of any building permits and fees collected under the program may be used as fair share compensation for farmland conservation easements or farmland deed restrictions that conserve existing agricultural land. Payment of required agricultural mitigation fees would be required by Mitigation Measure AG-1.

The proposed project would convert a total of 44.34 acres of Farmland of Statewide Importance and 17.21 acres of Farmland of Local Importance to non-agricultural use. However, no area of the project site is considered Prime Farmland with prime soils. Payment of mitigation fees as required by Mitigation Measure AG-1 and Chapter 13.42 of the Manteca Municipal Code would reduce impacts from the conversion of Important Farmland to non-agricultural uses. However, as the proposed project would result in a conversion of Farmland of Statewide Importance to non-agricultural uses and therefore, even with the implementation of Mitigation Measure AG-1, the proposed project would result in a significant and unavoidable impact.

Level of Significance Before Mitigation
Potentially Significant Impact.

Mitigation Measures

MM AG-1: **Agricultural Mitigation Fee Program.** Prior to the conversion of Important Farmland on the project site, the project applicant shall participate in the City's agricultural mitigation fee program (Manteca Municipal Code Chapter 13.42) by paying the established fees on a per-acre basis for the loss of Important Farmland. Fees paid toward the City's program shall be used to fund conservation easements on comparable or better agricultural lands to provide compensatory mitigation.

Level of Significance After Mitigation
Significant and Unavoidable Impact.

Impact AG-2 The proposed project would not conflict with existing zoning for agricultural use or a Williamson Act contract.

Impact Analysis

Agricultural Zoning

The project site is not designated under the San Joaquin County General Plan or Zoning as the site is located within the Manteca city limits and therefore, the City is the governing agency for the site. The City's Zoning Ordinance designates the project site as CMU. The proposed project proposes to rezone the parcels south of E. Atherton Drive to R-2 base zoning with a PD overlay over the entirety of the

project site to better align the site with the proposed General Plan land use designation. The CMU zoning designation accommodates a variety of uses including high-density residential, employment centers, retail commercial, and professional offices. The R-2 zoning district allow for single-family homes and smaller scale multi-family developments, including garden apartment, townhouses, and cluster housing.

The site is not designated or zoned for agricultural uses. Agricultural uses are not allowed under the project site's existing and proposed zoning designations, except for some animal-related uses including animal keeping of domestic pets and exotic animals, animal sales and grooming, and veterinary facilities. Therefore, as the project site is not zoned for agricultural use and the proposed project would develop a residential development that would be consistent with the project site's existing and proposed zoning, the proposed project would not conflict with existing zoning for agricultural use. Additionally, there are no Williamson Act contract lands on the project site, as such, no conflicts would occur. Impacts would be less than significant.

Level of Significance Before Mitigation
Less Than Significant Impact.

Mitigation Measures
None required.

Level of Significance After Mitigation
Less Than Significant Impact.

Impact AG-3 The proposed project would not involve other changes in the existing environment that, due to their location or nature, could result in conversion of Farmland to non-agricultural use.

Impact Analysis

The proposed project would not cause changes to the existing environment that would result in conversion of Farmland outside the project site boundary to non-agricultural use. Farmland conversion is caused primarily by urbanization; other chief causes for the loss of Farmland include development of low-density rural residences and ecological restoration projects, such as wetlands and wildlife habitat. The proposed project does not fall in either any of these categories and would not result in any new infrastructure that could promote growth or remove development barriers.
The project site is located in a highly urbanized area of the City and is surrounded on all sides by existing residential and commercial developments and urban infrastructures such as highways. The project site is vacant, undeveloped land that has not been used for agricultural production in recent years. Though portions of the project site are identified as Important Farmland, the site would not be considered productive agricultural land as it is located within a highly urbanized area of the City and has not been used for agricultural production in more than five years.

The conversion of the project site to residential uses would be beneficial to the City as it would convert unproductive, vacant land located within a highly urbanized area of the City to urbanized uses. Productive agricultural lands within the City are located near the edges of the City limits and the conversion of the

project site to urbanized uses would help the City keep new urban development towards the City center which would align with the City's historic growth. Placing the new residential development in a highly urbanized area of the City would ensure that the proposed project would not result in conversion of nearby productive agricultural land to other uses. Additionally, there are no large-scale agricultural uses located adjacent to or near the project site. Therefore, the proposed project would not involve any other changes in the existing environment that, due to their location or nature, could result in conversion of Farmland to non-agricultural use. Impact would be less than significant.

Level of Significance Before Mitigation
Less Than Significant Impact.

Mitigation Measures
None required.

Level of Significance After Mitigation
Less Than Significant Impact.

10.0 REFERENCES

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Appendix A
LESA Model
Worksheets

Land Evaluation Worksheet

Land Capability Classification (LCC) and Storie Index Scores

Soil Map Unit	Project Acres	Proportion of Project Area	LCC	LCC Rating	LCC Score	Storie Index	Storie Index Score
141 - Delhi fine sand, 0 to 5 percent	3.32	0.05	3s	60	3.00	52	2.60
142 - Delhi loamy sand, 0 to 2 percent	21.88	0.35	3s	60	21.00	68	23.80
143 - Delhi-Urban land complex, 0 to 2	1.66	0.03	3s	60	1.80	68	2.04
255 - Tinnin loamy coarse sand, 0 to 2	36.37	0.57	3s	60	34.20	65	37.05
Totals	**63.23**	**1.00**		**LCC Total Score**	**60.00**	**Storie Index Score**	**65.49**

Site Assessment Worksheet 1

Project Size Score

	LCC Class I-II	LCC Class III	LCC Class IV-VIII
Total Acres	0	63.23	0
Project Size Scores	0	70	0

Highest Project 70

Site Assessment Worksheet 2 - Water Resources Availability

Project Portion	Water Source	Proportion of Project Area	Water Availability Score	Weighted Availability Score
1	Irrigation	1	85	85
2				0
3				0
4				0
5				0
6				0
		1	**Total Water Resource Score**	85

Type	Acreage
Prime Farmland	0.002
Farmland of Local Importance	72.5
Farmland of Statewide Importance	101.07
Unique Farmland	
Grazing Land	
Urban and Built-up Land	365.8
Other Land	15.98
Total	555.352
Acres in Ag	173.572
Protected Ag	439.59

Site Assessment Worksheet 3
Surrounding Agricultural Land and Surrounding Protected Resource Land

Zone of Influence						
Total Acres	**Acres in Agriculture**	**Acres of Protected Resource Land**	**Percent in Agriculture**	**Percent Protected Resource Land**	**Surrounding Agricultural Land Score**	**Surrounding Protected Resource Land Score**
555.35	173.57	439.59	31%	79%	0	80

Final LESA Score Sheet

Calculation of the Final LESA Score:
NOTES
(1) Multiply each factor score by the factor weight to determine the weighted score and enter in Weighted Factor Scores column.
(2) Sum the weighted factor scores for the LE factors to determine the total LE score for the project.
(3) Sum the weighted factor scores for the SA factors to determine the total SA score for the project.
(4) Sum the total LE and SA scores to determine the Final LESA Score for the project.

	Factor Scores	Factor Weight	Weighted Factor Scores
LE Factors			
Land Capability Classification	60.00	0.25	15.00
Storie Index	65.49	0.25	16.37
LE Subtotal		0.50	31.37
SA Factors			
Project Size	70	0.15	10.5
Water Resource Availability	85	0.15	12.75
Surrounding Agricultural Land	0	0.15	0
Protected Resource Land	80	0.05	4
SA Subtotal		0.50	27.25
		Final LESA Score	**58.62**

APPENDIX B

Air Quality, Greenhouse Gas, and Energy Impact Assessment

LMC Manteca Project

March 25, 2024

Prepared for:

City of Manteca
Community Development Department
Planning Division

Prepared by:

Stantec Consulting Services, Inc.

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2.2.1 Additionally, the Project would install a new curb and gutter and construct a new north bound lane of travel along S. Main Street between E. Atherton Drive and Highway 120 off and on-ramp. Project Location 2.2

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ABBREVIATIONS

AB	Assembly Bill
ACBMs	Asbestos-Containing Building Material
APN	Assessor's Parcel Number
AQGGP	Air Quality Guidelines for General Plans
BACT	Best Available Control Technology
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
CAA	Clean Air Act
CAFÉ	Corporate Average Fuel Economy
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CCAA	California Clean Air Act
CDC	Center for Disease Control
CFR	Code of Federal Regulations
CH_4	Methane
City	City of Manteca
CO	Carbon Monoxide
CO2	Carbon Dioxide
DOT	Department of Transportation
DPM	Diesel Particulate Matter
EISA	Energy Independence & Security Act
EO	Executive Order
EPCA	Energy Policy and Conservation Act
GAMAQI	Guide for Assessing, and Mitigating Air Quality Impacts
GHG	Greenhouse Gases
GWP	Global Warming Potential
HAP	Hazardous Air Pollutants
HFCs	Hydrofluorocarbons
MMcf	Million cubic feet
MMT	Million Metric Tons
$MTCO_2e$	Metric Tons of Carbon Dioxide Equivalents
MWh	Mega Watt hour
NAAQS	National Ambient Air Quality Standards
NHTSA	National Highway Traffic Safety Administration
NEPA	National Environmental Protection Act
NESHAP	National Emissions Standards for Hazardous Air Pollutants
NHTSA	National Highway Traffic Safety Administration
N_2O	Nitrous Oxide
NO_X	Oxides of Nitrogen
NO_2	Nitrogen Dioxide
O_3	Ozone
OEHHA	Office of Environmental Health Hazard Assessment
Pb	Lead
PFCs	Perfluorocarbons
PG&E	Pacific Gas & Electric
PM	Particulate Matter
$PM_{2.5}$	Fine particulate matter; particulate matter 2.5 microns or smaller

PM_{10}	Particulate matter; particulate matter 10 microns or smaller
ppb	parts per billion
ppm	parts per million
RFS	Renewable Fuel Standard
ROG	Reactive Organic Gases
SAFE	Safer Affordable Fuel-Efficient
SB	Senate Bill
SF6	Sulfur Hexafluoride
SJVAB	San Joaquin Valley Air Basin
SJVAPCD	San Joaquin Valley Air Pollution Control District
U.S.C.	United States Code
U.S. EPA	United States Environmental Protection Agency
TAC	Toxic Air Contaminants
VOC	Volatile Organic Compounds

1.0 EXECUTIVE SUMMARY

This purpose of the Air Quality, Greenhouse Gas, and Energy Technical Analysis (Study) is to support the preparation of the Draft Environmental Impact Report (DEIR) for the LMC Manteca Project (Project). This technical analysis has been prepared to analyze the potential air quality and greenhouse gas emissions generated from the Project and to evaluate the Project's energy use during construction and operation.

1.1 PROJECT UNDERSTANDING

The Project involves the development of 672 multifamily for-rent apartments, 48 for-sale duplexes, and 98 single-family for-sale homes on an approximately 59.19 acre undeveloped site. The Project would also include an approximately 1.93-acre public open space and associated parking located adjacent to the residential developments as well as other amenities such as a community gardens and orchard planting areas. Additionally, the Project would construct improvements to adjacent streets, on- and off-site utility infrastructure, parking, driveways, frontage improvements, landscaping, and a detention basin.

1.2 SUMMARY OF ANALYSIS

Impact AIR-1: The Project would not conflict with or obstruct implementation of the applicable air quality plan. **Less Than Significant Impact.**

Impact AIR-2: The Project would not 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. **Less Than Significant Impact.**

Impact AIR-3: The Project would not expose sensitive receptors to substantial pollutant concentrations. **Less Than Significant Impact.**

Impact AIR-4: The Project would not result in other emissions (such as those leading to odors) affecting a substantial number of people. **Less Than Significant Impact.**

Impact GHG-1: The Project would not generate direct and indirect greenhouse gas emissions that would result in a significant impact on the environment. **Less Than Significant Impact.**

Impact GHG-2: The Project would not conflict with any applicable plan, policy or regulation of an agency adopted to reduce the emissions of greenhouse gases. **Less Than Significant Impact.**

Impact ENERGY-1: The Project would not result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation. **Less Than Significant Impact.**

Impact ENERGY-2: The Project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. **Less Than Significant Impact.**

2.0 INTRODUCTION

2.1 PURPOSE OF ANALYSIS

The purpose of this Study is to provide a discussion of air pollutants, health risks posed to nearby sensitive receptors, energy impacts, and greenhouse gas (GHG) emissions from construction and operation of the proposed project. This evaluation relies on guidance and thresholds established by the United States Environmental Protection Agency (USEPA), the San Joaquin Valley Air Pollution Control District (SJVAPCD), and the Office of Environmental Health Hazard Assessment (OEHHA).

2.2 PROJECT DESCRIPTION

The Project involves the construction and operation of 672 multifamily for-rent apartments, 48 for-sale duplexes, and 98 single family for-sale homes on an approximately 59.19 acre undeveloped site. The Project site consists of four parcels identified as Assessor's Parcel Numbers (APNs) 224-040-520-000, 224-040-070-000, 224-040-060-000, 224-040-110-000. The site spans to the north and south of E. Atherton Drive and is bordered by Highway 120 to the north and S. Main Street to the west. The 672 high density apartments would be constructed in the northwestern and western portion of the site and the 98 single family homes, and 48 duplexes would be constructed on the eastern and southern portion of the Project site. The Project would be designed to be 100 percent electric.

The Project would also include a public open space located within the residential developments as well as other amenities such as a community gardens and orchard planting areas. Additionally, the Project would construct improvements to adjacent and new streets, on- and off-site utility infrastructure, parking, driveways, frontage improvements, landscaping, and detention basins.

Additionally, the Project would install a new curb and gutter and construct a new north bound lane of travel along S. Main Street between E. Atherton Drive and Highway 120 off and on-ramp.

2.2.1 Project Location

The Project is located in the City of Manteca (City) at the juncture of Quintal Road, S. Main Street, and E. Atherton within San Joaquin County on an approximately 59.19 acre site. The Project site primarily consists of four parcels identified as APNs: 224-040-520-000 (114 Quintal Road), 224-040-070-000 (292 Quintal Road), 224-040-060-000 (301 Quintal Road), and 224-070-110-000 (490 Quintal Road). The Project site is bordered by S. Main Street to the west and Highway 120 to the north. Existing residential development border the Project site to the south and the east.

3.0 AIR QUALITY

3.1 ENVIRONMENTAL SETTING

The proposed project is located within the San Joaquin Valley Air Basin (SJVAB). The SJVAPCD regulates air quality in either counties including: Fresno, Kern (western and central), Kings, Madera, Merced, San Joaquin, Stanislaus, and Tulare.

Air pollution in the SJVAB can be attributed to both human-related (anthropogenic) and natural (non-anthropogenic) activities that can produce emissions. Air pollution from significant anthropogenic activities in the SJVAB include a variety of industrial-based sources as well as on- and off-road mobile sources.

Activities that tend to increase mobile activity include increases in population, increases in general traffic activity (including automobiles, trucks, aircraft, and rail), urban sprawl (which will increase commuter driving distances), and general local land management practices as they pertain to modes of commuter transportation. These sources, couples with geographical and meteorological condition unique to the area, stimulate the formation of unhealthy air.

3.1.1 Climate and Topography

The following information is excerpted from the most recent version of the SJVAPCD Guide for Assessing, and Mitigating Air Quality Impacts (GAMAQI) adopted in March 2015 (SJVAPCD 2015).

The SJVAB has an “inland Mediterranean” climate and is characterized by long, hot, dry summers and short, foggy winters. Sunlight can be a catalyst in the formation of some air pollutants (such as ozone); the Basin averages over 260 sunny days per year. The SJVAB is generally shaped like a bowl. It is open in the north and is surrounded by mountain ranges on all other sides. The Sierra Nevada mountains are along the eastern boundary (8,000 to 14,000 feet in elevation), the Coast Ranges are along the western boundary (3,000 feet in elevation), and the Tehachapi Mountains are along the southern boundary (6,000 to 8,000 feet in elevation).

Dominant airflows provide the driving mechanism for transport and dispersion of air pollution. The mountains surrounding the SJVAB form natural horizontal barriers to the dispersion of air contaminants. The wind generally flows south-southeast through the valley, through the Tehachapi Pass and into the Southeast Desert Air Basin portion of Kern County. As the wind moves through the Basin, it mixes with the air pollution generated locally, generally transporting air pollutants from the north to the south in the summer and in a reverse flow in the winter.

Generally, the temperature of air decreases with height, creating a gradient from warmer air near the ground to cooler air at elevation. This gradient of cooler air over warm air is known as the environmental lapse rate. Inversions occur when warm air sits over cooler air, trapping the cooler air near the ground. These inversions trap pollutants from dispersing vertically and the mountains surrounding the San

Joaquin Valley trap the pollutants from dispersing horizontally. Strong temperature inversions occur throughout the SJVAB in the summer, fall, and winter. Daytime temperature inversions occur at elevations of 2,000 to 2,500 feet above the San Joaquin Valley floor during the summer and at 500 to 1,000 feet during the winter. The result is a relatively high concentration of air pollution in the valley during inversion episodes. These inversions cause haziness, which in addition to moisture may include suspended dust, a variety of chemical aerosols emitted from vehicles, particulates from wood stoves, and other pollutants. In the winter, these conditions can lead to carbon monoxide "hotspots" along heavily traveled roads and at busy intersections. During summer's longer daylight hours, stagnant air, high temperatures, and plentiful sunshine provide the conditions and energy for the photochemical reaction between reactive organic gases (ROG) and oxides of nitrogen (NO_X), which results in the formation of ozone.

Because of the prevailing daytime winds and time-delayed nature of ozone, concentrations are highest in the southern portion of the Basin. Summers are often periods of hazy visibility and occasionally unhealthful air, while winter air quality impacts tend to be localized and can consist of (but are not exclusive to) odors from agricultural operations; soot or smoke around residential, agricultural, and hazard-reduction wood burning; or dust near mineral resource recovery operations.

3.1.2 Criteria Air Pollutants

Criteria air pollutants includes ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter (measured both in units of smaller than 2.5 microns in diameter [$PM_{2.5}$] and in units of particulate matter smaller than 10 microns in diameter [PM_{10}]), and lead (Pb).

Ozone (O_3). Most ground-level ozone is formed as a result of complex photochemical reactions in the atmosphere between reactive organic gases (ROGs), nitrogen oxides (NOx) and oxygen. ROGs and NOx are considered precursors to the formation of ozone, a highly reactive gas that can damage lung tissue and affect respiratory function. While ozone in the lower atmosphere is considered a damaging air pollutant, ozone in the upper atmosphere is beneficial, as it protects the Earth from harmful ultraviolet radiation. However, atmospheric processes preclude ground-level ozone from reaching the upper atmosphere (USEPA 2022).

Carbon Monoxide (CO). CO is a colorless, odorless, poisonous gas produced by the incomplete combustion of fossil fuels. Elevated levels of CO can result in harmful health effects, especially for the young and elderly, and can also contribute to global climate change (USEPA 2022).

Nitrogen Dioxide (NO_2). NO_2 is a brownish, highly reactive gas primarily produced as a result of the burning of fossil fuels. NO_2 can also lead to the formation of ozone in the lower atmosphere. NO_2 can cause respiratory ailments, especially in the young and elderly, and can lead to degradations in the health of aquatic and terrestrial ecosystems (USEPA 2022).

Sulfur Dioxide (SO_2). SO_2 is primarily emitted from the combustion of coal and oil by steel mills, pulp and paper mills, and non-ferrous smelters. High concentrations of SO_2 can aggravate existing respiratory and

cardiovascular diseases in asthmatics and others who suffer from emphysema or bronchitis. SO_2 also contributes to acid rain, which in turn, can lead to the acidification of lakes and streams (USEPA 2022).

Particulate Matter (PM). Airborne PM is not a single pollutant, but rather is a mixture of many chemical species. PM is a complex mixture of solids and aerosols composed of small droplets of liquid, dry solid fragments, and solid cores with liquid coatings. Particles vary widely in size, shape, and chemical composition, and may contain inorganic ions, metallic compounds, elemental carbon, organic compounds, and compounds from the earth's crust. Particles are defined by their diameter for air quality regulatory purposes. Those with a diameter of 10 microns or less (PM_{10}) are inhalable into the lungs and can induce adverse health effects. Fine particulate matter is defined as particles that are 2.5 microns or less in diameter ($PM_{2.5}$). Therefore, $PM_{2.5}$ compromises a portion of PM_{10}. Emissions from combustion of gasoline, oil, diesel fuel or wood produce much of the $PM_{2.5}$ pollution found in outdoor air, as well as significant proportion of PM_{10}. PM_{10} also includes dust from construction sites, landfills and agriculture, wildfires and brush/waste burning, industrial sources, wind-blown dust from open lands, pollen, and fragments of bacteria.

PM may be either directly emitted from sources (primarily particles) or formed in the atmosphere through chemical reactions of gases (secondary particles) such as SO_2, NOx, and certain organic compounds (USEPA 2022).

Lead (Pb). Sources of Pb include pipes, fuel, and paint, although the use of Pb in these materials has declined dramatically in recent years. Historically, a main source of Pb was automobile emissions. Pb can be inhaled directly or ingested by consuming Pb-contaminated food, water, or dust. Fetuses and children are most susceptible to Pb poisoning, which can result in heart disease and nervous system damage (USEPA 2022). Through regulations USEPA has gradually reduced the Pb content of gasoline. This program has essentially eliminated violations of the Pb standard in urban areas excerpt those areas with Pb point sources.

3.1.3 Attainment Status

The USEPA and the California Air Resources Board (CARB) designate air basins where ambient air quality standards are exceeded as "nonattainment" areas. If standards are met, the area is designated as an "attainment" area. If there is inadequate or inconclusive data to make a definitive attainment designation, they are considered "unclassified." National nonattainment areas are further designated as marginal, moderate, serious, severe, or extreme as a function of deviation from standards. Attainment status is based on the National Ambient Air Quality Standards (NAAQS) and the California Ambient Air Quality Standards (CAAQS). Each standard has a different definition, or "form" of what constitutes attainment, based on specific air quality statistics. For example, the federal 8-hour CO standard is not to be exceeded more than once per year; therefore, an area is in attainment of the CO standard if no more than one 8-hour ambient air monitoring values exceeds the threshold per year. In contrast, the federal annual standard for PM2.5 is met if the 3-year average of the annual average PM2.5 concentration is less than or equal to the standard.

The Clean Air Act (CAA) identifies two types of NAAQS. Primary standards provide public health protection, including protecting the health of sensitive populations such as asthmatics, children, and the elderly. Secondary standards provide public welfare protection, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings (USEPA 2021). The CAAQS are equal to or more stringent than the NAAQS and include pollutants for which national standards do not exist. Table 1 presents the applicable NAAQS and CAAQS for the Project area.

Table 1: California and National Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards	National Standards	
		Concentration	Primary	Secondary
Ozone	1 hour	0.09 ppm (180 µg/m^3)	—	Same as primary standard
	8 hour	0.070 ppm (137 µg/m^3)	0.070 ppm (137 µg/m^3)	
Respirable particulate matter	24 hour	50 µg/m^3	150 µg/m^3	Same as primary standard
	Annual arithmetic mean	20 µg/m^3	—	
Fine particulate matter	24 hour	—	35 µg/m^3	Same as primary standard
	Annual arithmetic mean	12 µg/m^3	12 µg/m^3	
Carbon monoxide	1 hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	—
	8 hour	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	—
	8 hour (Lake Tahoe)	6 ppm (7 mg/m^3)	—	—
Nitrogen dioxide	1 hour	0.18 ppm (339 µg/m^3)	100 ppb (188 µg/m^3)	—
	Annual arithmetic mean	0.030 ppm (57 µg/m^3)	0.053 ppm (100 µg/m^3)	Same as primary standard
Sulfur dioxide	1 hour	0.25 ppm (655 µg/m^3)	75 ppb (196 µg/m^3)	—
	3 hour	—	—	0.5 ppm (1,300 µg/m^3)
	24 hour	0.04 ppm (105 µg/m^3)	0.14 ppm (for certain areas)	—
	Annual arithmetic mean	—	0.030 ppm (for certain areas)	—
Lead	30-day average	1.5 µg/m^3	—	—
	Calendar quarter	—	1.5 µg/m^3	Same as Primary Standard
	Rolling 3-month average	—	0.15 µg/m^3	
Visibility-reducing particles	8 hour	See Footnote[1]	No National Standards	
Sulfates	24 hour	25 µg/m^3		

Pollutant	Averaging Time	California Standards	National Standards	
		Concentration	Primary	Secondary
Hydrogen sulfide	1 hour	0.03 ppm (42 µg/m^3)		
Vinyl chloride	24 hour	0.01 ppm (26 µg/m^3)		

Notes:
1. In 1989, the CARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.
µg/m^3 =micrograms per liter
mg/m^3 = milligrams per cubic meter
Source: CARB 2016

The current attainment designations for the SJVAB are shown in Table 2. The SJVAB is designated as nonattainment for ozone, PM10, and PM2.5.

Table 2: San Joaquin Valley Air Basin Attainment Status

Pollutant	Designation/Classification	
	Federal Standards[a]	State Standards[b]
Ozone – One hour	No Federal Standard[f]	Nonattainment/Severe
Ozone – Eight Hour	Nonattainment/Extreme[e]	Nonattainment
PM_{10}	Attainment[c]	Nonattainment
$PM_{2.5}$	Nonattainment[d]	Nonattainment
Carbon Monoxide	Attainment/Unclassified	Attainment/Unclassified
Nitrogen Dioxide	Attainment/Unclassified	Attainment
Sulfur Dioxide	Attainment/Unclassified	Attainment
Lead	No Designation/Classification	Attainment
Hydrogen Sulfide	No Federal Standard	Unclassified
Sulfates	No Federal Standard	Attainment
Visibility Reducing Particles	No Federal Standard	Unclassified
Vinyl Chloride	No Federal Standard	Attainment

Notes:

a See 40 CFR Part 81

b See CCR Title 17 Sections 60200-60210

c On September 25, 2008, EPA redesignated the San Joaquin Valley to attainment for the PM10 National Ambient Air Quality Standard (NAAQS) and approved the PM10 Maintenance Plan.

d The Valley is designated nonattainment for the 1997 PM2.5 NAAQS. EPA designated the Valley as nonattainment for the 2006 PM2.5 NAAQS on November 13, 2009 (effective December 14, 2009).

e Though the Valley was initially classified as serious nonattainment for the 1997 8-hour ozone standard, EPA approved Valley reclassification to extreme nonattainment in the Federal Register on May 5, 2010 (effective June 4, 2010).

f Effective June 15, 2005, the U.S. Environmental Protection Agency (EPA) revoked the federal 1-hour ozone standard, including associated designations and classifications. EPA had previously classified the SJVAB as extreme nonattainment for this standard. EPA approved the 2004 Extreme Ozone Attainment Demonstration Plan on March 8, 2010 (effective April 7, 2010). Many applicable requirements for extreme 1-hour ozone nonattainment areas continue to apply to the SJVAB.

Source: SJVAPCD 2022.

3.1.4 Ambient Air Quality

Local air quality can be evaluated by reviewing relevant air pollution concentrations near the Project. Table 3 summarizes published monitoring data from the Tracy-Airport Monitoring Station at 5749 S. Tracy Blvd. for the years 2019 to 2021. The Tracy-Airport Monitoring Station monitors ambient ozone, PM2.5, PM10, and NOx.

Table 3: Tracy-Airport Monitoring Station

Air Pollutant	Averaging Time	Item	2019	2020	2021
Ozone	1 Hour	Max 1 Hour (ppm)	0.095	0.086	0.089
		Days > State Standard (0.09 ppm)	1	0	0
	8 Hour	Max 8 Hour (ppm)	0.079	0.078	0.077
		Days > State Standard (0.070 ppm)	3	3	3
		Days > National Standard (0.070 ppm)	3	3	3
		Days > National Standard (0.075 ppm)	1	1	2
PM2.5	24-Hour	Max 24 Hours (ug/m3)	*	*	*
		Measured Days > 24 Hour Standard	*	*	*
		Annual Average	*	*	*
PM10	24-Hour	Max 24 Hours (ug/m3)	241.4	236.0	175.7
		Measured Days > 24 Hour Standard	1	2	1
		Annual Average	19.4	27.7	23.8
Nitrogen Dioxide	1-Hour	Max 1 Hour (ppb)	36.8	37.4	35.6
		Annual Average	4	4	4
		Days > State Standard (180 ppb)	0	0	0
		Days > National Standard (100 ppb)	0	0	0

Source: California Air Resources Board, 2022.
$\mu g/m^3$ = micrograms per liter
$PM_{2.5}$ = particulate matter less than 2.5 microns in aerodynamic diameter
PM_{10} = particulate matter between 2.5 and 10 microns in aerodynamic diameter
ppb = parts per billion
ppm = parts per million
* = insufficient data available to determine the value

3.1.5 Odors

Typically, odors are generally regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from the psychological (i.e. irritation, anger,

or anxiety) to the physiological, including circulatory and respiratory effects, nausea, vomiting, and headache.

The ability to detect odors varies considerably among the population and overall is quite subjective. Some individuals can smell very 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 and in fact an odor that is offensive to one person may be perfectly acceptable to another (e.g., fast food restaurant). It is important to also 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, then 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.

Neither the state nor the federal governments have adopted rules or regulations for the control of odor sources. The SJVAPCD does not have an individual rule or regulation that specifically addresses odors; however, odors would be subject to SJVAPCD Rule 4102, Nuisance. Any actions related to odors would be based on citizen complaints to local governments and the SJVAPCD.

3.1.6 Toxic Air Contaminants

Toxic Air Contaminants (TACs) are air pollutants that may cause or contribute to an increase in mortality or serious illness, or which may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air, but due to their high toxicity, they may pose a threat to public health even at very low concentrations. Because there is no threshold level below which adverse health impacts are not expected to occur, TACs differ from criteria pollutants for which acceptable levels of exposure can be determined and for which state and federal governments have set ambient air quality standards. TACs, therefore, are not considered “criteria pollutants” under either the FCAA or the California Clean Air Act (CCAA) and are thus not subject to National or California ambient air quality standards (NAAQS and CAAQS, respectively). Instead, the EPA and the CARB regulate Hazardous Air Pollutants (HAPs) and TACs, respectively, through statutes and regulations that generally require the use of the maximum or best available control technology (BACT) to limit emissions. In conjunction with District rules, these federal and state statutes and regulations establish the regulatory framework for TACs. At the national levels, the EPA has established National Emission Standards for HAPs (NESHAPs), in accordance with

the requirements of the FCAA and subsequent amendments. These are technology-based source-specific regulations that limit allowable emissions of HAPs.

Within California, TACs are regulated primarily through the Tanner Air Toxics Act (Assembly Bill [AB] 1807) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588). The Tanner Act sets forth a formal procedure for CARB to designate substances as TACs. The following provides a summary of the primary TACs of concern within the State of California and related health effects.

Diesel Particulate Matter

Diesel Particulate Matter (DPM) was identified as a TAC by the CARB in August 1998. DPM is emitted from both mobile and stationary sources. In California, on-road diesel-fueled vehicles contribute approximately 42% of the statewide total, with an additional 55% attributed to other mobile sources such as construction and mining equipment, agricultural equipment, and transport refrigeration units. Stationary sources, contributing about 3% of emissions, include shipyards, warehouses, heavy equipment repair yards, and oil and gas production operations. Emissions from these sources are from diesel-fueled internal combustion engines. Stationary sources that report DPM emissions also include heavy construction, manufacturers of asphalt paving materials and blocks, and diesel-fueled electrical generation facilities (CARB 2022).

In October 2000, the CARB issued a report entitled: Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles, which is commonly referred to as the Diesel Risk Reduction Plan (DRRP). The DRRP provides a mechanism for combating the DPM problem. The goal of the DRRP is to reduce concentrations of DPM by 85% by the year 2020, in comparison to year 2000 baseline emissions. The key elements of the DRRP are to clean up existing engines through engine retrofit emission control devices, to adopt stringent standards for new diesel engines, and to lower the sulfur content of diesel fuel to protect new, and very effective, advanced technology emission control devices on diesel engines. When fully implemented, the DRPP will significantly reduce emissions from both old and new diesel fueled motor vehicles and from stationary sources that burn diesel fuel. In addition to these strategies, the CARB continues to promote the use of alternative fuels and electrification. As a result of these actions, DPM concentrations and associated health risks in future years are projected to decline (CARB 2022). In comparison to year 2010 inventory of statewide DPM emissions, CARB estimates that emissions of DPM in 2035 will be reduced by more than 50%.

DPM is typically composed of carbon particles (“soot”, also called black carbon) and numerous organic compounds, including over 40 known cancer-causing organic substances. Examples of these chemicals include polycyclic aromatic hydrocarbons, benzene, formaldehyde, acetaldehyde, acrolein, and 1,3-butadiene. Diesel exhaust also contains gaseous pollutants, including volatile organic compounds and NOx. NOx emissions from diesel engines are important because they can undergo chemical reactions in the atmosphere leading to formation of PM2.5 and ozone.

In California, diesel exhaust particles have been identified as a carcinogen accounting for an estimated 70% of the total known cancer risks in California. DPM is estimated to increase statewide cancer risk by

520 cancers per million residents exposed over an estimated 70-year lifetime. Non- cancer health effects associated with exposure to DPM include premature death, exacerbated chronic heart and lung disease, including asthma, and decreased lung function in children. Short-term exposure to diesel exhaust can also have immediate health effects. Diesel exhaust can irritate the eyes, nose, throat and lungs, and it can cause coughs, headaches, lightheadedness, and nausea. In studies with human volunteers, diesel exhaust particles made people with allergies more susceptible to the materials to which they are allergic, such as dust and pollen. Exposure to diesel exhaust also causes inflammation in the lungs, which may aggravate chronic respiratory symptoms and increase the frequency or intensity of asthma attacks (CARB 2022).

Individuals most vulnerable to non-cancer health effects of DPM are children whose lungs are still developing and the elderly who often have chronic health problems. The elderly and people with emphysema, asthma, and chronic heart and lung disease are especially sensitive to DPM (CARB 2022). In addition to its health effects, DPM significantly contributes to haze and reduced visibility.

Asbestos

Asbestos is the name given to a number of naturally occurring fibrous silicate minerals that have been mined for their useful properties such as thermal insulation, chemical and thermal stability, and high tensile strength. The three most common types of asbestos are chrysotile, amosite, and crocidolite. Chrysotile, also known as white asbestos, is the most common type of asbestos found in buildings. Chrysotile makes up approximately 90 to 95 percent of all asbestos contained in buildings in the United States. Exposure to asbestos is a health threat; exposure to asbestos fibers may result in health issues such as lung cancer, mesothelioma (a rare cancer of the thin membranes lining the lungs, chest, and abdominal cavity), and asbestosis (a non-cancerous lung disease that causes scarring of the lungs). Exposure to asbestos can occur during demolition or remodeling of buildings constructed prior to its ban for use in buildings in 1977. Exposure to naturally occurring asbestos can occur during soil disturbing activities in areas with deposits present.

3.1.7 Sensitive Receptors

Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved. Sensitive population groups include children, the elderly, the acutely ill, and the chronically ill, especially those with cardiovascular diseases. Examples of sensitive receptors include hospitals, residences, convalescent facilities, and schools.

The nearest sensitive receptors are immediately south and east of the Project site. In addition, new on-site residents at the Project site would be considered sensitive receptors.

3.1.8 Existing Sources of Toxic Emissions

The proposed project is located within 300 feet of an existing gas station and immediately south of Highway 120. The primary TAC of concern from Highway 120 is DPM, primarily from diesel trucks

traveling along the highway. The existing gas station would generate benzene emissions from gas fueling, storage, and spillage.

3.1.9 Valley Fever

Valley Fever is an infection caused by a fungus that lives in the soil. About 10,000 U.S. cases are reported each year, mostly from Arizona and California. Valley fever can be misdiagnosed because its symptoms are like those of other illnesses.

The fungus that causes Valley fever, Coccidioides, is found in the southwestern United States, parts of Mexico and Central America, and parts of South America. The fungus grows naturally and is endemic in many areas along the southwestern region of Tulare County. People can get this infection by breathing in fungal spores from the air, especially when the wind blows the soil with the fungal spores into the air or the dirt is moved by human activity. About 40% of the people who come into contact with the fungal spores will develop symptoms that may require medical treatment and the symptoms will not go away on their own. Some people may develop a more severe infection, especially those with compromised immune systems (Centers for Disease Control and Prevention [CDC] 2020).

3.2 REGULATORY SETTING

3.2.1 Federal

U.S. Environmental Protection Agency

At the federal level, the USEPA has been charged with implementing national air quality programs. The EPA's air quality mandates are drawn primarily from the CAA, which was signed into law in 1970. Congress substantially amended the CAA in 1977 and again in 1990.

Clean Air Act

The CAA required the USEPA to establish NAAQS, and also set deadlines for their attainment. Two types of NAAQS have been established: primary standards, which protect public health, and secondary standards, which protect public welfare from non-health-related adverse effects, such as visibility restrictions. NAAQS are summarized in Table 1.

National Emission Standards for Hazardous Air Pollutants

Pursuant to the CAA of 1970, the USEPA established the National Emission Standards for Hazardous Air Pollutants (NESHAPs). These are technology-based source-specific regulations that limit allowable emissions of HAPs. Among these sources include asbestos-containing building materials (ACBMs). NESHAPs include requirements pertaining to the inspection, notification, handling, and disposal of ACBMs associated with the demolition and renovation of structures.

3.2.2 State

California Air Resources Board

The CARB is the agency responsible for coordination and oversight of state and local air pollution control programs in California and for implementing the CCAA of 1988. Other CARB duties include monitoring air quality (in conjunction with air monitoring networks maintained by air pollution control districts and air quality management districts), establishing CAAQS, which in many cases are more stringent than the NAAQS, and setting emissions standards for new motor vehicles. The emission standards established for motor vehicles differ depending on various factors including the model year, and the type of vehicle, fuel and engine used. The CAAQS are summarized in Table 1.

California Clean Air Act

The CCAA requires that all air districts in the state endeavor to achieve and maintain CAAQS for O_3, CO, SO_2, and NO_2 by the earliest practical date. The CCAA specifies that districts focus attention on reducing the emissions from transportation and area-wide emission sources, and the act provides districts with authority to regulate indirect sources. Each district plan is required to either (1) achieve a 5% annual reduction, averaged over consecutive 3-year periods, in district-wide emissions of each non-attainment pollutant or its precursors, or (2) to provide for implementation of all feasible measures to reduce emissions. Any planning effort for air quality attainment would thus need to consider both state and federal planning requirements.

Assembly Bills 1807 & 2588 - Toxic Air Contaminants

Within California, TACs are regulated primarily through Assembly Bill (AB) 1807 (Tanner Air Toxics Act) and AB 2588 (Air Toxics Hot Spots Information and Assessment Act of 1987). The Tanner Air Toxics Act sets forth a formal procedure for CARB to designate substances as TACs. This includes research, public participation, and scientific peer review before CARB designates a substance as a TAC.

Existing sources of TACs that are subject to the Air Toxics Hot Spots Information and Assessment Act are required to: (1) prepare a toxic emissions inventory; (2) prepare a risk assessment if emissions are significant; (3) notify the public of significant risk levels; and (4) prepare and implement risk reduction measures.

Assembly Bill 617

In response to AB 617 (C. Garcia, Chapter 136, Statutes of 2017), the CARB established the Community Air Protection Program. The Community Air Protection Program includes community air monitoring and community emissions reduction program's focus is to reduce exposure in communities most impacted by air pollution. The Legislature has appropriated funding to support early actions to address localized air pollution through targeted incentive funding to deploy cleaner technologies in these communities, as well as grants to support community participation in the AB 617 process. AB 617 also includes new requirements for accelerated retrofit of pollution controls on industrial sources, increased penalty fees,

and greater transparency and availability of air quality and emissions data, which will help advance air pollution control efforts throughout the State.

Regulatory Attainment Designations

Under the CCAA, CARB is required to designate areas of the state as attainment, nonattainment, or unclassified with respect to applicable standards. An "attainment" designation for an area signifies that pollutant concentrations did not violate the applicable standard in that area. A "nonattainment" designation indicates that a pollutant concentration violated the applicable standard at least once, excluding those occasions when a violation was caused by an exceptional event, as defined in the criteria. Depending on the frequency and severity of pollutants exceeding applicable standards, the nonattainment designation can be further classified as serious nonattainment, severe nonattainment, or extreme nonattainment, with extreme nonattainment being the most severe of the classifications. An "unclassified" designation signifies that the data does not support either an attainment or nonattainment designation. The CCAA divides districts into moderate, serious, and severe air pollution categories, with increasingly stringent control requirements mandated for each category.

The EPA designates areas for O_3, CO, and NO_2 as "does not meet the primary standards," "cannot be classified," or "better than national standards." For SO_2, areas are designated as "does not meet the primary standards," "does not meet the secondary standards," "cannot be classified," or "better than national standards." However, CARB terminology of attainment, nonattainment, and unclassified is more frequently used. The EPA uses the same sub-categories for nonattainment status: serious, severe, and extreme. In 1991, EPA assigned new nonattainment designations to areas that had previously been classified as Group I, II, or III for PM_{10} based on the likelihood that they would violate national PM_{10} standards. All other areas are designated "unclassified." State attainment status within the SJVAPCD is identified in Table 2.

3.2.3 Regional

San Joaquin Valley Air Pollution Control District

The SJVAPCD is the agency primarily responsible for ensuring that NAAQS and CAAQS are not exceeded and that air quality conditions are maintained in the SJVAB, within which the proposed project is located. Responsibilities of the SJVAPCD include, but are not limited to, preparing plans for the attainment of ambient air quality standards, adopting and enforcing rules and regulations concerning sources of air pollution, issuing permits for stationary sources of air pollution, inspecting stationary sources of air pollution and responding to citizen complaints, monitoring ambient air quality and meteorological conditions, and implementing programs and regulations required by the FCAA and the CCAA.

SJVAPCD Rules and Regulations

The SJVAPCD rules and regulations that may apply to projects that will occur during buildout of the project include but are not limited to the following:

Rule 2010 – Permits Required. The purpose of this rule is to require any person constructing, altering, replacing or operating any source operation which emits, may emit, or may reduce emissions to obtain an Authority to Construct or a Permit to Operate. This rule also explains the posting requirements for a Permit to Operate and the illegality of a person willfully altering, defacing, forging, counterfeiting or falsifying any Permit to Operate.

Rule 2201 – New and Modified Stationary Source Review Rule. The purpose of this rule is to provide for the following:

- The review of new and modified Stationary Sources of air pollution and to provide mechanisms including emission trade-offs by which Authorities to Construct such sources may be granted, without interfering with the attainment or maintenance of Ambient Air Quality Standards; and
- No net increase in emissions above specified thresholds from new and modified Stationary Sources of all nonattainment pollutants and their precursors.

Rule 4002 – National Emission Standards for Hazardous Air Pollutants. This rule incorporates the National Emission Standards for Hazardous Air Pollutants from Part 61, Chapter I, Subchapter C, Title 40, Code of Federal Regulations (CFR) and the National Emission Standards for Hazardous Air Pollutants for Source Categories from Part 63, Chapter I, Subchapter C, Title 40, Code of Federal Regulations (CFR).

Rule 4102 – Nuisance. The purpose of this rule is to protect the health and safety of the public and applies to any source operation that emits or may emit air contaminants or other materials.

Rule 4601 – Architectural Coatings. The purpose of this rule is to limit Volatile Organic Compounds (VOC) emissions from architectural coatings. Emissions are reduced by limits on VOC content and providing requirements on coatings storage, cleanup, and labeling.

Rule 4623 – Storage of Organic Liquids. The purpose of this rule is to limit volatile organic compound (VOC) emissions from the storage of organic liquids.

Rule 4624 – Transfer of Organic Liquids. The purpose of this rule is to limit volatile organic compound (VOC) emissions from the transfer of organic liquids.

Rule 4641 – Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations. The purpose of this rule is to limit VOC emissions from asphalt paving and maintenance operations. If asphalt paving will be used, then the paving operations will be subject to Rule 4641.

Regulation VIII – Fugitive PM10 Prohibitions. Rule 8011-8081 are designed to reduce PM10 emissions (predominantly dust/dirt) generated by human activity, including construction and demolition activities, road construction, bulk materials storage, paved and unpaved roads, carryout and trackout, etc. All development projects that involve soil disturbance are subject to at least one provision of the Regulation VIII series of rules.

Rule 9510 – Indirect Source Review. This rule reduces the impact of NOx and PM10 emissions from growth on the Air Basin. The rule places application and emission reduction requirements on development projects meeting applicability criteria to reduce emissions through onsite mitigation, offsite District -administered projects, or a combination of the two. This project must comply with Rule 9510 because it would develop more than 2,000 square feet of commercial space.

CEQA

The SJVAPCD has three roles under CEQA:

Lead Agency: responsible for preparing environmental analyses for its own projects (adoption of rules, regulations, or plans) or permit projects filed with the District where the District has primary approval authority over the project.

Responsible Agency: The discretionary authority of a Responsible Agency is more limited than a Lead Agency; having responsibility for mitigating or avoiding only the environmental effects of those parts of the project which it decides to approve, carry out, or finance. The District defers to the Lead Agency for preparation of environmental documents for land use projects that also have discretionary air quality permits unless no document is prepared by the Lead Agency and potentially significant impacts related to the permit are possible. The District comments on documents prepared by Lead Agencies to ensure that District concerns are addressed.

Commenting Agency: The District reviews and comments on air quality analyses prepared by other public agencies (such as the project).

The SJVAPCD also provides guidance and thresholds for CEQA air quality and GHG analyses. The result of this guidance as well as state regulations to control air pollution is an overall improvement in the Air Basin. In particular, the SJVAPCD's 2015 GAMAQI states the following:

1. The District's Air Quality Attainment Plans include measures to promote air quality elements in county and city general plans as one of the primary indirect source programs. The general plan is the primary long-range planning document used by cities and counties to direct development. Since air districts have no authority over land use decisions, it is up to cities and counties to ensure that their general plans help achieve air quality goals. Section 65302.1 of the California Government Code requires cities and counties in the San Joaquin Valley to amend appropriate elements of their general plans to include data, analysis, comprehensive goals, policies, and feasible implementation strategies to improve air quality in their next housing element revisions.

2. The Air Quality Guidelines for General Plans (AQGGP), adopted by the District in 1994 and amended in 2005, is a guidance document containing goals and policy examples that cities and counties may want to incorporate into their General Plans to satisfy Section 65302.1. When adopted in a general plan and implemented, the suggestions in the AQGGP can reduce vehicle trips and miles traveled and improve air quality. The specific suggestions in the AQGGP are voluntary. The District strongly encourages cities and counties to use their land use and transportation planning authority to help achieve air quality goals by adopting the suggested policies and programs.

3.2.4 Local

Manteca City General Plan

The City of Manteca released a draft General Plan in 2022 that contains the following goals and policies applicable to the project (City of Manteca 2022):

- **Goal RC-5.** Protect the health and welfare of city residents and visitors by promoting development and planning practices that are compatible with federal, state, and local air quality standards and regulations and implement regional efforts to improve air quality.
    - **Policy RC-5.1.** Coordinate with the SJVAPCD, San Joaquin Council of Governments (SJVOG), and the CARB, and other agencies to develop and implement regional and county plans, programs, and mitigation measures that address cross-jurisdictional and regional air quality impacts, including land use, transportation and climate change impact, and incorporate the relevant provisions of those plans into City planning and project review procedures. Also cooperate with Air District, SJCOG, and CARB in:
        - Enforcing the provisions of the California and Federal Clean Air Acts, state and regional policies, and established standards for air quality.
        - Identifying baseline air pollutant and greenhouse gas emissions.
        - Encouraging zero emission or alternative city vehicle fleets, when feasible.
        - Developing consistent procedures for evaluating and mitigating project-specific and cumulative air quality impacts for projects.
        - Promoting participation of major existing and new employers in the transportation demand management (TDM) program facilitated by SJCOG.
    - **Policy RC-5.2.** Minimize exposure of the public to toxic or harmful air emissions and odors through requiring an adequate buffer or distance between residential and other sensitive land uses and land uses that typically generate air pollutants, toxic air contaminants, or obnoxious fumes or odors, including but not limited to industrial, manufacturing, and processing facilities, highways, and rail lines and, where uses or facilities pose substantial health risks, ensure that a Health Risk Assessment is conducted to identify and mitigate exposure to toxic air contaminants.
    - **Policy RC-5.3.** Require construction and operation of new development to be managed to minimize fugitive dust and air pollutant emissions.
    - **Policy RC 5.4.** Require installation of energy-efficiency appliances and equipment, including wood-burning devices, in development projects to meet current standards for controlling air pollution, including particulate matter and toxic air contaminants.

4.0 GREENHOUSE GAS

4.1 ENVIRONMENTAL SETTING

To fully understand global climate change, it is important to recognize the naturally occurring "greenhouse effect" and to define the GHGs that contribute to this phenomenon. Various gases in the earth's atmosphere, classified as atmospheric GHGs, play a critical role in determining the earth's surface temperature. Solar radiation enters the earth's atmosphere from space and a portion of the radiation is absorbed by the earth's surface. The earth emits this radiation back toward space, but the properties of the radiation change from high-frequency solar radiation to lower-frequency infrared radiation. GHGs, which are transparent to solar radiation, are effective in absorbing infrared radiation. As a result, this radiation that otherwise would have escaped back into space is now retained, resulting in a warming of the atmosphere. This phenomenon is known as the greenhouse effect.

4.1.1 Greenhouse Gases

Among the prominent GHGs contributing to the greenhouse effect are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). Primary GHGs attributed to global climate change, are discussed in the following subsections.

Carbon Dioxide

CO_2 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 (EPA 2021).

Methane

CH_4 is a colorless, odorless gas that is not flammable under most circumstances. CH_4 is the major component of natural gas, about 87% by volume. It is also formed and released to the atmosphere by biological processes occurring in anaerobic environments. CH_4 is emitted from a variety of both human-related and natural sources. Human-related sources include fossil fuel production, animal husbandry (enteric fermentation in livestock and manure management), rice cultivation, biomass burning, and waste management. These activities release significant quantities of methane to the atmosphere. Natural sources of methane 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 (EPA 2021).

Nitrous Oxide

N_2O is a clear, colorless gas with a slightly sweet odor. N_2O 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 (EPA 2021).

Hydrofluorocarbons

HFCs are man-made chemicals, many of which have been developed as alternatives to ozone-depleting substances for industrial, commercial, and consumer products. The only significant emissions of HFCs before 1990 were of the chemical HFC-23, which is generated as a byproduct of the production of HCFC-22 (or Freon 22, used in air conditioning applications). The atmospheric lifetime for HFCs varies from just over a year for HFC-152a to 260 years for HFC-23. Most of the commercially used HFCs have atmospheric lifetimes of less than 15 years (e.g., HFC-134a, which is used in automobile air conditioning and refrigeration, has an atmospheric life of 14 years) (EPA 2021).

Perfluorocarbons

PFCs are colorless, highly dense, chemically inert, and nontoxic. There are seven PFC gases: perfluoromethane (CF_4), perfluoroethane (C_2F_6), perfluoropropane (C_3F_8), perfluorobutane (C_4F_{10}), perfluorocyclobutane (C_4F_8), perfluoropentane (C_5F_{12}), and perfluorohexane (C_6F_{14}). Natural geological emissions have been responsible for the PFCs that have accumulated in the atmosphere in the past; however, the largest current source is aluminum production, which releases CF_4 and C_2F_6 as byproducts. The estimated atmospheric lifetimes for CF_4 and C_2F_6 are 50,000 and 10,000 years, respectively (EPA 2021).

Nitrogen Trifluoride

Nitrogen trifluoride (NF_3) is an inorganic, colorless, odorless, toxic, nonflammable gas used as an etchant in microelectronics. NF_3 is predominantly employed in the cleaning of the plasma-enhanced chemical vapor deposition chambers in the production of liquid crystal displays and silicon-based thin film solar cells. In 2009, NF_3 was listed by California as a potential GHG to be listed and regulated under AB 32 (Section 38505 Health and Safety Code).

Sulfur Hexafluoride

SF_6 is an inorganic compound that is colorless, odorless, nontoxic, and generally nonflammable. SF_6 is primarily used as an electrical insulator in high voltage equipment. The electric power industry uses roughly 80% of all SF_6 produced worldwide. Leaks of SF_6 occur from aging equipment and during equipment maintenance and servicing. SF_6 has an atmospheric life of 3,200 years (EPA 2021).

Black Carbon

Black carbon is the most strongly light-absorbing component of PM emitted from burning fuels such as coal, diesel, and biomass. Black carbon contributes to climate change both directly by absorbing sunlight and indirectly by depositing on snow and by interacting with clouds and affecting cloud formation. Black carbon is considered a short-lived species, which can vary spatially and, consequently, it is very difficult to quantify associated global-warming potentials. The main sources of black carbon in California are wildfires, off-road vehicles (locomotives, marine vessels, tractors, excavators, dozers, etc.), on-road vehicles (cars, trucks, and buses), fireplaces, agricultural waste burning, and prescribed burning (planned burns of forest or wildlands). California has been an international leader in reducing emissions of black carbon, including programs that target reducing PM from diesel engines and burning activities (CARB 2013).

4.1.2 Global Warming Potential

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. Often, estimates of GHG emissions are presented in carbon dioxide equivalents (CO_2e), which weight each gas by its global warming potential (GWP).

Expressing GHG emissions in carbon dioxide equivalents takes the contribution of all GHG emissions to the greenhouse effect and converts them to a single unit equivalent to the effect that would occur if only CO_2 were being emitted. Based on a 100-year time horizon, Methane traps over 25 times more heat per molecule than CO_2, and N_2O absorbs roughly 298 times more heat per molecule than CO_2. Additional GHGs with high GWP include NF_3, SF_6, PFCs, and black carbon.

4.1.3 Sources of Greenhouse Gas Emissions

On a global scale, GHG emissions are predominantly associated with activities related to energy production; changes in land use, such as deforestation and land clearing; industrial sources; agricultural activities; transportation; waste and wastewater generation; and commercial and residential land uses. World-wide, energy production including the burning of coal, natural gas, and oil for electricity and heat is the largest single source of global GHG emissions.

United States

In 2019, GHG emissions in the United States totaled 6,558 million metric tons (MMT) of CO2e. Within the United States, the largest contributor to GHG emissions is the transportation sector (29%). The next largest contributors are from electricity production (25%) and industry (23%) followed by the commercial and residential sector (13%) and the agricultural sector (10%). Transportation emissions primarily come from burning fossil fuels for our cars, trucks, ships, trains, and plans. Over 90 percent of the fuel used for transportation is petroleum based, which includes primarily gasoline and diesel. The bulk of emissions generated from energy production come from burning fossil fuels, mostly coal and natural gas. Industry emissions are also primarily generated from fossil fuels burned for heat, the use of certain products that contain GHGs, and the handling of waste. Similar to industry sector emissions, commercial and

residential uses arise primarily from fossil fuels for heat, the use of certain products that contain GHGs, and the handling of waste. Agricultural emissions come from livestock such as cows, agricultural soil, and rice production. The land use and forestry sector within the US serves as a carbon sink. Carbon sinks absorbs CO2 from the atmosphere. Land areas across the US absorbed approximately 12% of the 2019 GHG emissions (USEPA 2021).

California

In 2019, GHG emissions within California totaled 418.1 MMT of CO_2e. Similar to national emissions, in California the transportation sector is the largest contributor. Transportation emissions account for approximately 41% of the total statewide GHG emissions. The majority of transportation emissions are derived from passenger vehicles and heavy-duty trucks. Emissions associated with industrial uses are the second largest contributor, totaling roughly 24%. Industrial emissions are driven by fuel combustion from sources that include refineries, oil and gas extraction, cement plants, and the portion of cogeneration emissions attribution to thermal energy output. Electricity generation (in state and imports) totaled roughly 14%. Emissions from the electricity generation sector have declined over the years due to the increase in renewable generation that continue to replace fossil power (CARB 2021).

4.1.4 Effects of Global Climate Change

There are uncertainties as to exactly what the climate changes will be in various local areas of the earth. There are also uncertainties associated with the magnitude and timing of other consequences of a warmer planet: sea level rise, spread of certain diseases out of their usual geographic range, the effect on agricultural production, water supply, sustainability of ecosystems, increased strength and frequency of storms, extreme heat events, increased air pollution episodes, and the consequence of these effects on the economy.

Within California, climate changes would likely alter the ecological characteristics of many ecosystems throughout the state. Such alterations would likely include increases in surface temperatures and changes in the form, timing, and intensity of precipitation. For instance, historical records are depicting an increasing trend toward earlier snowmelt in the Sierra Nevada. This snowpack is a principal supply of water for the state, providing roughly 50% of state's annual runoff. If this trend continues, some areas of the state may experience an increased danger of floods during the winter months and possible exhaustion of the snowpack during spring and summer months. An earlier snowmelt would also impact the state's energy resources. An early exhaustion of the Sierra snowpack may force electricity producers to switch to more costly or non-renewable forms of electricity generation during spring and summer months. A changing climate may also impact agricultural crop yields, coastal structures, and biodiversity. As a result, resultant changes in climate will likely have detrimental effects on some of California's largest industries, including agriculture, wine, tourism, skiing, recreational and commercial fishing, and forestry.

4.2 REGULATORY SETTING

There are considerable regulatory actions regarding GHGs and climate change at the federal and state level. The following includes the key state, and regional regulations applicable to the Project.

4.2.1 State

Assembly Bill 32

The California State Legislature enacted Assembly Bill (AB) 32, the California Global Warming Solutions Act of 2006. AB 32 requires that GHGs emitted in California be reduced to 1990 levels by the year 2020. "Greenhouse gases" as defined under AB 32 include CO_2, methane (CH_4), nitrogen oxides (NO_X), hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. Since AB 32 was enacted, a seventh chemical, nitrogen trifluoride, has also been added to the list of GHGs. The California Air Resources Board (CARB) is the state agency charged with monitoring and regulating sources of GHGs. AB 32 states the following:

> *Global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California. The potential adverse impacts of global warming include the exacerbation of air quality problems, a reduction in the quality and supply of water to the state from the Sierra snowpack, a rise in sea levels resulting in the displacement of thousands of coastal businesses and residences, damage to marine ecosystems and the natural environment, and an increase in the incidences of infectious diseases, asthma, and other human health-related problems.*

CARB approved the 1990 GHG emissions level of 427 $MMTCO_2e$ on December 6, 2007 (CARB 2007). Therefore, to meet the state's target, emissions generated in California in 2020 are required to be equal to or less than 427 $MMTCO_2e$. Emissions in 2020 in a business as usual (BAU) scenario were estimated to be 596 $MMTCO_2e$, which do not account for reductions from AB 32 regulations (CARB 2008). At that rate, a 28 percent reduction was required to achieve the 427 $MMTCO_2e$ 1990 inventory. In October 2010, CARB prepared an updated 2020 forecast to account for the effects of the 2008 recession and slower forecasted growth. The 2020 inventory without the benefits of adopted regulation is now estimated at 545 $MMTCO_2e$. Therefore, under the updated forecast, a 21.7 percent reduction from BAU is required to achieve 1990 levels (CARB 2010).

Progress in Achieving Assembly Bill 32 Targets and Remaining Reductions Required

The state has made steady progress in implementing AB 32 and achieving targets included in EO S-3-05. The progress is evident in updated emission inventories prepared by CARB, which showed that the state inventory dropped below 1990 levels for the first time in 2016 (CARB 2018). CARB's Climate Change Scoping Plan (Scoping Plan) (subsequently amended by the 2017 update) includes projections indicating that the state would meet or exceed the 2020 target with adopted regulations (CARB 2017). California met AB 32 goals in July 2018 (CARB 2018).

CARB 2008 Scoping Plan

The Scoping Plan contains measures designed to reduce the state's emissions to 1990 levels by the year 2020 to comply with AB 32 (CARB 2008). The Scoping Plan identifies recommended measures for multiple GHG emission sectors and the associated emission reductions needed to achieve the year 2020 emissions target—each sector has a different emission reduction target. Most of the measures target the transportation and electricity sectors.

Cap-and-Trade Program

The Cap-and-Trade Program is a key element of the Scoping Plan. It sets a statewide limit on sources responsible for 85 percent of California's GHG emissions and establishes a price signal needed to drive long-term investment in cleaner fuels and more efficient use of energy. The program is designed to provide covered entities the flexibility to seek out and implement the lowest cost options to reduce emissions. The program conducted its first auction in November 2012. Compliance obligations began for power plants and large industrial sources in January 2013. Other significant milestones include linkage to Quebec's Cap-and-Trade system in January 2014 and starting the compliance obligation for distributors of transportation fuels, natural gas, and other fuels in January 2015.

The Cap-and-Trade Program provides a firm cap, ensuring that the 2020 statewide emission limit would not be exceeded. An inherent feature of the Cap-and-Trade Program is that it does not guarantee GHG emissions reductions in any discrete location or by any particular source. Rather, GHG emissions reductions are guaranteed only on an accumulative basis.

The Cap-and-Trade Program works with other direct regulatory measures and provides an economic incentive to reduce emissions. If California's direct regulatory measures reduce GHG emissions more than expected, then the Cap-and-Trade Program would be responsible for relatively fewer emissions reductions. If California's direct regulatory measures reduce GHG emissions less than expected, then the Cap-and-Trade Program would be responsible for relatively more emissions reductions. Thus, the Cap-and-Trade Program assures that California would meet its 2020 GHG emissions reduction mandate.

CARB approved the First Update to the Scoping Plan (Update) on May 22, 2014. The Update identified the next steps for California's climate change strategy. The Update shows how California continues on its path to meet the near-term 2020 GHG limit, but also sets a path toward long-term, deep GHG emission reductions. The report established a broad framework for continued emission reductions beyond 2020, on the path to 80 percent below 1990 levels by 2050. California met AB 32 goals in July 2018.

Assembly Bill 398

The Governor signed AB 398 on July 25, 2017, to extend the Cap-and-Trade Program to 2030. The legislation includes provisions to ensure that offsets used by sources are limited to 4 percent of their compliance obligation from 2021 to 2025 and 6 percent of their compliance obligation from 2026 through 2030. AB 398 also prevents air districts from adopting or implementing emission reduction rules from stationary sources that are also subject to the Cap-and-Trade Program (CARB 2017).

Senate Bill 32

Senate Bill (SB) 32 was signed into law on September 8, 2016. SB 32 gives CARB the statutory responsibility to include the 2030 target previously contained in EO B-30-15 in the 2017 Scoping Plan Update. SB 32 states that "In adopting rules and regulations to achieve the maximum technologically feasible and cost-effective greenhouse gas emissions reductions authorized by this division, the state [air resources] board shall ensure that statewide greenhouse gas emissions are reduced to at least 40 percent below the statewide greenhouse gas emissions limit no later than December 31, 2030."

2017 Climate Change Scoping Plan Update

The 2017 Climate Change Scoping Plan Update was adopted on December 14, 2017 amending the 2008 Scoping Plan and addresses the SB 32 targets. The major elements of the framework proposed to achieve the 2030 target are as follows:

1. SB 350
    a. Achieve 50 percent Renewables Portfolio Standard (RPS) by 2030.
    b. Doubling of energy efficiency savings by 2030.
2. Low Carbon Fuel Standard
    a. Increased stringency (reducing carbon intensity 18 percent by 2030, up from 10 percent in 2020).
3. Mobile Source Strategy (Cleaner Technology and Fuels Scenario)
    a. Maintaining existing GHG standards for light- and heavy-duty vehicles.
    b. Put 4.2 million zero-emission vehicles on the roads.
    c. Increase zero-emission vehicles buses and delivery and other trucks.
4. Sustainable Freight Action Plan
    a. Improve freight system efficiency.
    b. Maximize use of near-zero emission vehicles and equipment powered by renewable energy.
    c. Deploy over 100,000 zero-emission trucks and equipment by 2030.
5. Short-Lived Climate Pollutant Reduction Strategy
    a. Reduce emissions of methane and hydrofluorocarbons 40 percent below 2013 levels by 2030.
    b. Reduce emissions of black carbon 50 percent below 2013 levels by 2030.

6. SB 375 Sustainable Communities Strategies
    a. Increased stringency of 2035 targets.
7. Post-2020 Cap-and-Trade Program
    a. Declining caps, continued linkage with Québec, and linkage to Ontario, Canada.
    b. CARB will look for opportunities to strengthen the program to support more air quality co-benefits, including specific program design elements. In Fall 2016, CARB staff described potential future amendments including reducing the offset usage limit, redesigning the allocation strategy to reduce free allocation to support increased technology and energy investment at covered entities and reducing allocation if the covered entity increases criteria or toxics emissions over some baseline.
8. 20 percent reduction in GHG emissions from the refinery sector.
9. Develop Integrated Natural and Working Lands Action Plan to secure California's land base as a net carbon sink.

Many of the measures included in the 2017 Climate Change Scoping Plan Update are implemented on a statewide level and do not specifically apply to the Project. However, the short-lived climate pollutants would be applicable to the Program through the use of cleaner construction equipment.

Senate Bill 375: The Sustainable Communities and Climate Protection Act of 2008

SB 375 was signed into law on September 30, 2008. According to SB 375, the transportation sector is the largest contributor of GHG emissions, which emits more than 40 percent of the total GHG emissions in California. SB 375 states, "Without improved land use and transportation policy, California will not be able to achieve the goals of AB 32." SB 375 does the following: (1) requires metropolitan planning organizations to include sustainable community strategies in their regional transportation plans for reducing GHG emissions, (2) aligns planning for transportation and housing, and (3) creates specified incentives for the implementation of the strategies.

CARB has prepared the Proposed Update to the SB 375 Greenhouse Gas Emission Reduction Targets.

Assembly Bill 1493: Pavley Regulations and Fuel Efficiency Standards

AB 1493, enacted on July 22, 2002, required CARB to develop and adopt regulations and fuel efficiency standards that reduce GHGs emitted by passenger vehicles and light duty trucks. Implementation of the regulation was delayed by lawsuits filed by automakers and by USEPA's denial of an implementation waiver. U.S. EPA subsequently granted the requested waiver in 2009, which was upheld by the by the U.S. District Court for the District of Columbia in 2011.

The standards were phased in during the 2009 through 2016 model years. When fully phased in, the near-term (2009–2012) standards resulted in an approximately 22 percent reduction compared with the

2002 fleet, and the mid-term (2013–2016) standards resulted in about a 30 percent reduction. Several technologies stand out as providing significant reductions in emissions at favorable costs. These include discrete variable valve lift or camless valve actuation to optimize valve operation, rather than relying on fixed valve timing and lift as has historically been done; turbocharging to boost power and allow for engine downsizing; improved multi-speed transmissions; and improved air conditioning systems that operate optimally, leak less, and/or use an alternative refrigerant.

The second phase of the implementation for AB 1493 was incorporated into Amendments to the Low-Emission Vehicle Program, referred to as LEV III or the Advanced Clean Cars program. The Advanced Clean Cars program combines the control of smog-causing pollutants and GHG emissions into a single coordinated package of requirements for model years 2017 through 2025. The regulation would reduce GHGs from new cars by 34 percent from 2016 levels by 2025. The rules would reduce pollutants from gasoline and diesel-powered cars and would deliver increasing numbers of zero-emission technologies, such as full battery electric cars, newly emerging plug-in hybrid electric vehicles, and hydrogen fuel cell cars. The regulations would also ensure that adequate fueling infrastructure is available for the increasing numbers of hydrogen fuel cell vehicles planned for deployment in California.

Senate Bill 1368: Emission Performance Standards

In 2006, the State Legislature adopted SB 1368, which was subsequently signed into law by the governor. SB 1368 directs the California Public Utilities Commission to adopt a performance standard for GHG emissions for the future power purchases of California utilities. SB 1368 seeks to limit carbon emissions associated with electrical energy consumed in California by forbidding procurement arrangements for energy longer than 5 years from resources that exceed the emissions of a relatively clean, combined cycle natural gas power plant.

Because of the carbon content of its fuel source, a coal-fired plant cannot meet this standard because such plants emit roughly twice as much carbon as natural gas, combined cycle plants. Accordingly, the new law effectively prevents California's utilities from investing in, otherwise financially supporting, or purchasing power from new coal plants located in or out of the state. The California Public Utilities Commission adopted the regulations required by SB 1368 on August 29, 2007. The regulations implementing SB 1368 establish a standard for baseload generation owned by, or under long-term contract to publicly owned utilities, of 1,100 pounds of CO_2 per megawatt-hour (MWh).

Senate Bill 1078: Renewable Electricity Standards

On September 12, 2002, Governor Gray Davis signed SB 1078, requiring California to generate 20 percent of its electricity from renewable energy by 2017. SB 107 changed the due date to 2010 instead of 2017. On November 17, 2008, Governor Arnold Schwarzenegger signed EO S-14-08, which established an RPS target for California requiring that all retail sellers of electricity serve 33 percent of their load with renewable energy by 2020. Governor Schwarzenegger signed EO S-21-09, which directed CARB to adopt a regulation by July 31, 2010, requiring the state's load serving entities to meet a 33 percent renewable energy target by 2020. CARB approved the Renewable Electricity Standard on September 23,

2010, by Resolution 10-23. In 2011, the State Legislature adopted this higher standard in SB X1-2. Renewable sources of electricity include wind, small hydropower, solar, geothermal, biomass, and biogas.

Senate Bill 350: Clean Energy and Pollution Reduction Act of 2015

The legislature approved and the governor then signed SB 350 on October 7, 2015, which reaffirms California's commitment to reducing its GHG emissions and addressing climate change. Key provisions include an increase in the RPS, higher energy efficiency requirements for buildings, initial strategies towards a regional electricity grid, and improved infrastructure for electric vehicle charging stations.

Senate Bill 100: California Renewables Portfolio Standard Program.

The Governor approved SB 100 on September 10, 2018. The legislation revised the RPS goals to achieve the 50 percent renewable resources target by December 31, 2026, and to achieve a 60 percent target by December 31, 2030. The bill would require that retail sellers and local publicly owned electric utilities procure a minimum quantity of electricity products from eligible renewable energy resources so that the total kilowatt hours of those products sold to their retail end-use customers achieve 44 percent of retail sales by December 31, 2024; 52 percent by December 31, 2027; and 60 percent by December 31, 2030.

Senate Bill X7-7: The Water Conservation Act of 2009

SB X7-7 directs urban retail water suppliers to set individual 2020 per capita water use targets and to begin implementing conservation measures to achieve those goals. Meeting this statewide goal of 20 percent decrease in demand will result in a reduction of almost 2 million acre-feet of urban water use in 2020.

Executive Order S-3-05

On June 1, 2005, former California Governor Arnold Schwarzenegger announced EO S-3-05, which announced the following reduction targets for GHG emissions:

- By 2010, reduce GHG emissions to 2000 levels.
- By 2020, reduce GHG emissions to 1990 levels.
- By 2050, reduce GHG emissions to 80 percent below 1990 levels.

The 2050 reduction goal represents what some scientists believe is necessary to reach levels that would stabilize the climate. The 2020 goal was established to be a mid-term target. Because this is an EO, the goals are not legally enforceable for local governments or the private sector.

Executive Order B-30-15

On April 29, 2015, Governor Edmund G. Brown Jr. issued 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 ahead of the United Nations Climate Change Conference in Paris in late 2015. The EO sets a new interim statewide GHG emission reduction target to reduce GHG emissions to 40 percent below 1990 levels by 2030 in order to ensure that California meets its target of reducing GHG emissions to 80 percent below 1990 levels by 2050, and directs CARB to update the Climate Change Scoping Plan to express the 2030 target in terms of $MMTCO_2e$. The EO also requires the state's climate adaptation plan to be updated every 3 years and for the state to continue its climate change research program, among other provisions. As with EO S-3-05, this EO is not legally enforceable against local governments and the private sector. Legislation that would update AB 32 to provide post-2020 targets was signed by the Governor in 2016. SB 32 includes a 2030 mandate matching the requirements of the EO.

Executive Order S-01-07: Low Carbon Fuel Standard

The governor signed EO S-01-07 on January 18, 2007. The order mandates that a statewide goal shall be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020. In particular, the EO established a Low Carbon Fuel Standard (LCFS) and directed the Secretary for Environmental Protection to coordinate the actions of the California Energy Commission, CARB, the University of California, and other agencies to develop and propose protocols for measuring the "life-cycle carbon intensity" of transportation fuels. This analysis supporting development of the protocols was included in the State Implementation Plan for alternative fuels (State Alternative Fuels Plan adopted by California Energy Commission on December 24, 2007) and was submitted to CARB for consideration as an "early action" item under AB 32. CARB adopted the Low Carbon Fuel Standard on April 23, 2009.

The LCFS was subject to legal challenge in 2011. Ultimately, CARB was required to bring a new LCFS regulation for consideration in February 2015. The proposed LCFS regulation was required to contain revisions to the 2010 LCFS as well as new provisions designed to foster investments in the production of the low-carbon fuels, offer additional flexibility to regulated parties, update critical technical information, simplify and streamline program operations, and enhance enforcement. The Office of Administrative Law approved the regulation on November 16, 2015. The regulation was last amended in 2018.

Executive Order S-13-08

EO S-13-08 states that "climate change in California during the next century is expected to shift precipitation patterns, accelerate sea level rise and increase temperatures, thereby posing a serious threat to California's economy, to the health and welfare of its population and to its natural resources." Pursuant to the requirements in the EO, the 2009 California Climate Adaptation Strategy was adopted, which is the "… first statewide, multi-sector, region-specific, and information-based climate change adaptation strategy in the United States." Objectives include analyzing risks of climate change in California, identifying and exploring strategies to adapt to climate change, and specifying a direction for future research.

Executive Order B-55-18

EO B-55-18 issued by Governor Brown on September 10, 2018, establishes a new statewide goal to achieve carbon neutrality as soon as possible, but no later than 2045, and to achieve and maintain net negative emissions thereafter. The EO directs CARB to work with relevant state agencies to develop a framework for implementation and accounting that tracks progress toward this goal.

4.2.2 Regional

San Joaquin Valley Air Pollution Control District

On December 17, 2009, the SJVAPCD Governing Board adopted "Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA," and the policy "District Policy—Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency." SJVAPCD concluded that the existing science is inadequate to support quantification of the impacts that project-specific GHG emissions have on global climate change. SJVAPCD found the effects of project-specific emissions to be cumulative, and without mitigation, their incremental contribution to global climate change could be considered cumulatively considerable. SJVAPCD found that this cumulative impact is best addressed by requiring all projects to reduce their GHG emissions, whether through project design elements or mitigation.

4.2.3 Local

City of Manteca Climate Action Plan

The City of Manteca prepared a Climate Action Plan (CAP) in 2013 as the primary strategy for ensuring that the buildout of the Manteca General Plan supports the goals of AB 32. Achieving AB 32 GHG reduction requirements would require the City to reduce emissions by 21.7 percent. Applying the 21.7 percent reduction to the City's overall 2020 business as usual (BAU) would result in a target reduction for the City of 429,693 MT CO2e per year or 4.91 MTCO2e per person per year. In order to meet the target reduction, the City has developed a variety of reduction strategies. For new development projects constructed in the City, the CAP requires development projects to achieve GHG emissions reductions by taking the following actions:

- Comply with the applicable land use, sustainable development, and resource conservation policies of the Manteca General Plan
- Construct project transportation infrastructure that supports walking, bicycling, and transit use
- Implement transportation demand management programs in projects with large numbers of employees
- Design and construct project buildings to exceed Title 24 Energy Efficiency Standards by at least 10 percent.

- Implement project buildings to exceed Title 24 Energy Efficiency Standards by at least 10 percent.
- Implement project buildings including water conservation measures that meet or exceed the California Green Building Code standards 20 percent requirement.
- Install project landscaping that meets or exceeds water conservation standards of the City's adopted landscaping ordinance 20 percent reduction requirement.
- Develop programs to exceed state recycling and diversion targets by at least 10 percent.

The City of Manteca is preparing an update to the existing CAP, however, the updated CAP has not yet been adopted.

City of Manteca General Plan

The City of Manteca released a draft General Plan in 2022 that contains the following goals and policies applicable to the project (City of Manteca 2022):

- **Goal RC-4.** Improve climate resiliency through reducing greenhouse gas emissions through sustainable energy, transportation, land use, and local government actions that maximize energy efficiency and reduce energy usage and greenhouse gas emissions.
    - **Policy RC-4.1**. Support the conservation of energy through comprehensive and sustainable land use, transportation, and energy planning, implementation greenhouse gas reduction measures, and inclusive public education and outreach regarding climate adaptation and greenhouse gas emissions to address opportunities to decrease emissions associated with growth, development, and local government operations.
- **Goal RC-5.** Protect the health and welfare of city residents and visitors by promoting development and planning practices that are compatible with federal, state, and local air quality standards and regulations and implement regional efforts to improve air quality.
    - **Policy RC-5.1.** Coordinate with the SJVAPCD, San Joaquin Council of Governments (SJVOG), and the CARB, and other agencies to develop and implement regional and county plans, programs, and mitigation measures that address cross-jurisdictional and regional air quality impacts, including land use, transportation and climate change impact, and incorporate the relevant provisions of those plans into City planning and project review procedures. Also cooperate with Air District, SJCOG, and CARB in:
        - Enforcing the provisions of the California and Federal Clean Air Acts, state and regional policies, and established standards for air quality.
        - Identifying baseline air pollutant and greenhouse gas emissions.

- Encouraging zero emission or alternative city vehicle fleets, when feasible.
- Developing consistent procedures for evaluating and mitigating project-specific and cumulative air quality impacts for projects.
- Promoting participation of major existing and new employers in the transportation demand management (TDM) program facilitated by SJCOG.

- **Policy RC-5.6.** Encourage and support the regional Sustainable Communities Strategy that integrates planning for growth, transportation, land use, housing, and sustainability to meet State greenhouse gas reduction goals.

5.0 ENERGY

5.1 ENVIRONMENTAL SETTING

Pacific Gas and Electric (PG&E) is the provider of electrical and natural gas supplier to most of the County. PG&E's service area spans 70,000 square miles and serves over 16 million people in Northern and Central California. In 2020, PG&E distributed approximately 35,838 gigawatt-hours (GWh) of electricity and 848,705 million cubic feet (MMcf) of natural gas across its service area (PG&E 2021a). In 2020, approximately 85% of the electricity supplied from PG&E was produced free of GHG Emissions. Sources of electricity sold by PG&E in 2020 were:

- 30.6 percent eligible renewable (solar, wind, geothermal, biomass, and small hydroelectric)
- 16.4 percent fossil fuel-fired
- 42.8 percent nuclear
- 10.1 percent large hydroelectric

The California Energy Commission (CEC) tracks electricity and natural consumption across the state for residential and non-residential sources. In 2020, San Joaquin County used a total of 5,737 GWh of electricity and 184 millions of therms of natural. Approximately 63% of the electricity usage and 51% of the natural gas use in the County came from non-residential sources (CEC 2016a, CEC 2016 b).

5.2 REGULATORY SETTING

There are considerable regulatory actions regarding energy at the federal and state level. The following includes the key state, and regional regulations applicable to the Project.

5.2.1 Federal

Federal Energy Policy and Conservation Act

The Energy and Policy Conservation Act was enacted by Congress in 1975. This Act established the first fuel economy standards for on-road motor vehicles in the United States. Pursuant to the act, the National Highway Traffic Safety Administration (NHTSA) is responsible for establishing additional vehicle standards.

Energy Independence and Security Act of 2007

This Act set increased Corporate Average Fuel Economy (CAFÉ) standards for motor vehicles and includes the following provisions related to energy efficiency:

- Renewable fuel standards (RFS)

- Appliance and lighting efficiency standards
- Building energy efficiency

This Act requires increasing levels of renewable fuels to replace petroleum. The U.S. EPA is responsible for developing and implementing regulations to ensure transportation fuel sold into the US contains a minimum volume of renewable fuel.

The RFS programs regulations were developed in collaboration with refiners, renewable fuel products, and other stakeholders and were created under the Energy Policy Act of 2005. The RFS program established the first renewable fuel volume mandate in the US. As required under the act, the original RFS program required 7.5 billion gallons of renewable fuel to be blended into gasoline by 2012. Under the Act, the RFS program was expanded in several ways that laid the foundation for achieving significant reductions of GHG emissions through the use of renewable fuels, for reducing imported petroleum, and for encouraging the development and expansion of the nation's renewable fuels sector. The updated program is referred to as RFS2 and includes the following:

- Energy Independence and Security Act of 2007 (EISA) expanded the RFS program to include diesel, in addition to gasoline:
- EISA increase the volume of renewable fuel required to be blended into transportation fuel from 9 billion gallons in 2008 to 36 billion gallons by 2022;
- EISA established new categories of renewable fuel and set separate volume requirements for each one; and
- EISA required by the U.S. EPA to apply lifecycle GHG performance threshold standards to ensure that each category of renewable fuel emits fewer GHGs than the petroleum fuel it replaces.

Additional provisions of the EISA address energy savings in government and public institutions, promoting research for alternate energy, additional research in carbon capture, international energy programs, and the creation of "green jobs."

Federal Vehicle Standards

The Energy Policy and Conservation Act of 1975 (EPCA) mandated that the NHTSA establish and implement a regulatory program for motor vehicle fuel economy, known as the CAFE program, to reduce national energy consumption. As codified in Chapter 329 of Title 49 of the U.S. Code (U.S.C.) and, as amended by the EISA, EPCA sets forth specific requirements concerning the establishment of average fuel economy standards for passenger cars and light trucks. These are motor vehicles with a gross vehicle weight rating less than 8,500 pounds and medium-duty passenger vehicles with a gross vehicle weight rating less than 10,000 pounds. The Secretary of Transportation delegated responsibility for implementing the CAFE program to NHTSA.

EISA, enacted by Congress in December 2007, amended the EPCA CAFE program requirements by providing the Department of Transportation (DOT) additional rulemaking authority and responsibilities. Consistent with its statutory authority, in rulemaking to establish CAFE standards for model year 2017 and beyond passenger cars and light trucks, NHTSA developed two phases of standards. The first phase included final standards for model years 2017–2021. The second phase, covering model years 2022–

2025, included standards that were not final, due to the statutory requirement that NHTSA set average fuel economy standards not more than five model years at a time. Rather, NHTSA wrote that those standards were augural, meaning that they represented its best estimate, based on the information available at that time, of what levels of stringency might be maximum feasible in those model years. In 2012, the agencies jointly adopted more stringent Phase B standards for light duty cars and trucks, which would cover model years 2017 through 2025. In August of 2016, the agencies adopted more stringent Phase B standards for medium- and heavy-duty vehicles, which would cover model years 2018 through 2027 for certain trailers and model years 2021 through 2027 for semi-trucks, large pickup trucks, vans, and all types and sizes of buses and work trucks.

On March 31, 2020, NHTSA and the USEPA released a new rule, the final Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule, setting CAFE and CO_2 emissions standards for model years 2021 through 2026 passenger cars and light trucks. The rule rolls back the 2012 standards for model years 2021 through 2026 for passenger cars and light trucks which required an average fleetwide fuel economy equivalent of 54.5 miles per gallon in model year 2025 with a 5 percent annual increase to an average fuel economy of about 40 miles per gallon in model year 2025 with annual increases of 1.5 percent starting in 2021. As a part of issuing the new SAFE rule, NHTSA issued a Final Environmental Impact Statement which found that the relaxed standards would result in increased petroleum consumption which in turn would result in increases to greenhouse gases and criteria pollutants known to contribute to adverse health impacts (NHTSA 2020). These estimated increases from the roll back of the 2012 standards are expected to result in more than a billion metric tons additional climate pollution through 2040 as determined by calculating the difference from the reduction of 2 billion metric tons the 2012 rule was expected to accomplish compared to the standards of the 2020 rule (NHTSA 2020).

5.2.2 State

In addition to the myriad of GHG legislation and Executive Orders that have the cross benefit of reducing energy usage, the State also has an aggressive Energy Code.

California Energy Code

Compliance with the California Energy Code (Title 24, Part 6, of the California Code of Regulations [CCR], California's Energy Efficiency Standards) and Title 20, Public Utilities and Energy, standards must occur for all new buildings constructed in California. These efficiency standards apply to new construction of both residential and nonresidential (i.e., maintenance buildings and pump station buildings associated with the Program) buildings, and they regulate energy consumed for heating, cooling, ventilation, water heating, and lighting. The building efficiency standards are enforced through the local building permit processes, and local government agencies may adopt and enforce energy standards for new buildings provided that these standards meet or exceed those provided in the Title 24 guidelines.

5.2.3 Local

City of Manteca General Plan

The City of Manteca released a draft General Plan in 2022 that contains the following goals and policies applicable to the project (City of Manteca 2022):

- **Goal RC-4.** Improve climate resiliency through reducing greenhouse gas emissions through sustainable energy, transportation, land use, and local government actions that maximize energy efficiency and reduce energy usage and greenhouse gas emissions.
    - **Policy RC-4.1**. Support the conservation of energy through comprehensive and sustainable land use, transportation, and energy planning, implementation greenhouse gas reduction measures, and inclusive public education and outreach regarding climate adaptation and greenhouse gas emissions to address opportunities to decrease emissions associated with growth, development, and local government operations.
    - **Policy RC-4.5**. Encourage private development to exposure and apply non-traditional energy sources such as co-generation, wind, and solar to reduce dependence on traditional energy sources.
    - **Policy RC-4.6**. Require all new public and privately constructed buildings to meet and comply with construction and design standards that promote energy conservation, including the most current "green" development standards in the California Green Building Standards Code.
    - **Policy RC-4.7**. Support expanded innovative and green building best practices including, but not limited to, LEED certification for all new development and retrofitting existing uses, and encourage public and private projects to exceed the most current "green" development standards in the California Green Building Standards Code.
    - **Policy RC-4.10.** Encourage measures, including building siting and shading and use of shade trees, to reduce urban heat island effects.
    - **Policy RC-4.11.** Support state efforts to power electricity with renewable and zero-carbon resources, such as solar and wind energy.
    - **Policy RC 4-12.** Encourage the conservation of petroleum products.
- **Goal RC-5.** Protect the health and welfare of city residents and visitors by promoting development and planning practices that are compatible with federal, state, and local air quality standards and regulations and implement regional efforts to improve air quality.

- **Policy RC 5.4.** Require installation of energy-efficiency appliances and equipment, including wood-burning devices, in development projects to meet current standards for controlling air pollution, including particulate matter and toxic air contaminants.

6.0 MODELING INPUTS AND PARAMETERS

The following modeling parameters and assumptions will be used to generate criteria air pollutant and GHG emissions for the Proposed Project.

6.1 CRITERIA AIR POLLUTANT AND GHG MODEL SELECTION

The California Emissions Estimator Model (CalEEMod) is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and GHG emissions associated with both construction and operations from a variety of land use projects. CalEEMod quantifies direct emissions from construction and operational activities (including vehicle use), as well as indirect emissions, such as GHG emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use. Further, CalEEMod identifies mitigation measures to reduce criteria pollutant and GHG emissions along with calculating the benefits achieved from measures chosen by the user.

CalEEMod was developed for the California Air Pollution Control Officers Association (CAPCOA) in collaboration with the California Air Districts. Default data (e.g., emission factors, trip lengths, meteorology, source inventory, etc.) have been provided by the various California Air Districts to account for local requirements and conditions.

CalEEMod is a comprehensive tool for quantifying air quality impacts from land use projects located throughout California. The model can be used for a variety of situations where an air quality analysis is necessary or desirable such as preparing California Environmental Quality Act (CEQA) or National Environmental Policy Act documents, conducting pre-project planning, and, verifying compliance with local air quality rules and regulations, etc.

CalEEMod version 2020.4.0 was used to estimate construction and operational impacts of the proposed project.

Construction Modeling Assumptions

Land Use

Table 4 provides a summary of the land use inputs included in the CalEEMod modeling.

Table 4: CalEEMod Land Use Development Summary Table for the Proposed Project

Project Component	CalEEMod Land Use Type	Land Use Unit Amount (Size)	Land Use Size Metric	Total Square Footage (Building Square Footage is Used for Buildings)	Land Use Acreage
Phase A – Duplex Construction and Single-Family Construction					
Single Family Residential	Single Family Housing	98	Du	176.4 ksf	31.82 AC
Duet Residential	Condo/Townhouse	48	Du	48.0 ksf	3 AC
Parking[1]	Enclosed Parking Structure	96	Spaces	38.4 ksf	0.86 AC
Phase B – Multi-Family Construction					
Multifamily Residential	Apartments Mid Rise	672	Du	291.2 ksf	20.5 AC
Parking	Parking Lot	728	Spaces	291.2 ksf	6.55 AC
Parking	Enclosed Parking with Elevator	180	Spaces	72.0 ksf	1.62 AC
Parking	Unenclosed Parking Structure	257	Spaces	102.80 ksf	2.31 AC

Notes:

KSF = 1,000 square feet

AC = acre

Du = dwelling unit

[1] The parking spaces account for the proposed garage parking for each duet (modeled as condo/townhouse). According to the CalEEMod User's Guide, parking for the single-family residences is already incorporated as part of CalEEMod and no separate parking land use needs to be identified for the proposed single family residences.

Table 5 provides a summary of the inputs included in the Roadway Construction Model which was used to estimate emissions for the preconstruction utility work and off-site improvements..

Table 5: Roadway Construction Model Inputs for Offsite Improvements

Project Component	Project Length (miles)	Project Area (acreage)
Off-Site Improvements[1]		
Utility Trench	10.86	3.95
Utility Trench (SSJID)	0.33	0.28
Rule 20 (PG&E)	0.36	0.13
Total	**11.55**	**4.36**
Off-Site Improvements		
Roadway Widening	0.55	6.93
Class I Bicycle Path Extension	0.50	1.45
Total	**1.05**	**8.38**

[1] Acreage for offsite improvements based on the width of trenching. Utility Tench and Rule 20 (PG&E) require a 3 foot wide trench and Utility Trench (SSJID) requires a 7 foot wide trench.

Construction Schedule

The proposed project would require various tasks including site preparation, grading, building construction, architectural coatings, and paving. Table 6**:** shows the anticipated construction schedule. The construction schedule utilized in the analysis will represent a “worst-case” analysis scenario since emission factors for construction equipment decrease as the analysis year increases, due to improvements in technology and more stringent regulatory requirements. Therefore, construction emissions would decrease if the construction schedule moved to later years or is phased over multiple years. The duration of construction activity and associated equipment represent a reasonable approximation of the expected construction fleet as required per CEQA guidelines. The site-specific construction fleet may vary due to specific project needs at the time of construction.

Table 6: Project Construction Schedule

Construction Task	Start Date	End Date	Workdays
Pre-Construction Utility Lines			
Lateral Y	1/1/2025	2/28/2025	
PG&E Line	1/1/2025	2/28/2025	
Phase A – Duplex Construction and Single-Family Construction			
Site Preparation	7/1/2025	9/22/2025	60

Construction Task	Start Date	End Date	Workdays
Grading	7/1/2025	9/22/2025	60
Utilities	8/1/2025	12/5/2025	91
Building Construction[1]	11/15/2025	10/17/2027	502
Paving	11/1/2025	11/8/2025	7
Phase B – Multi-Family Construction			
Site Preparation	7/1/2025	10/14/2025	60
Grading	7/1/2025	10/14/2025	60
Utilities	9/15/2025	2/22/2026	91
Building Construction[1]	2/1/2026	7/13/2028	502
Paving	1/1/2026	1/9/2026	7
Off-Site Improvements			
Off-Site Improvements	11/12/2027	7/13/2028	

Source: CalEEMod Output (Attachment A). Construction schedule provided by the Project Applicant.

[1] Includes architectural coating and finishing phase.

The offsite improvements would concurrently with the building construction of Phase B. The offsite improvements would not be a separate phase but would occur within the scope of the two phases.

Construction Equipment

The off-road equipment fleet for construction were generated using default values from CalEEMod. CalEEMod generates construction fleets for construction activities based on the size of the construction areas. The Project would use off-road diesel-powered construction equipment that meets the US Environmental Protection Agency (USEPA) or CARB Tier 4 off-road emissions standards.

Construction equipment for each construction activity by phase is shown in Table 7.

Table 7: Project Construction Equipment

Construction Task	Equipment Type	Pieces of Equipment	Usage (hours/day)	Horsepower	Load Factor
Preconstruction Utility Work					
Grubbing/Land Clearing	Crawler Tractors	1	8	212	0.43
	Excavators	2	8	158	0.38
Grading/Excavation	Crawler Tractors	1	8	212	0.43
	Excavators	3	8	158	0.38
	Graders	2	8	187	0.41

Construction Task	Equipment Type	Pieces of Equipment	Usage (hours/day)	Horsepower	Load Factor
	Rollers	2	8	80	0.38
	Rubber Tired Loaders	1	8	203	0.36
	Scrapers	2	8	367	0.48
	Tractors/Loaders/Backhoes	4	8	97	0.37
Drainage/Utilities/Sub-grade	Air Compressors	1	8	78	0.48
	Generator Sets	1	8	84	0.74
	Graders	1	8	187	0.41
	Paving Equipment	1	8	132	0.36
	Pumps	1	8	84	0.74
	Rough Terrain Forklifts	1	8	100	0.40
	Scrapers	1	8	367	0.48
	Tractors/Loaders/Backhoes	3	8	97	0.37
Phase A – Duplex Construction and Single-Family Construction					
Site Preparation	Rubber Tired Dozers	3	8	367	0.4
	Tractors/Loaders/Backhoes	4	8	84	0.37
Grading	Excavators	2	8	36	0.38
	Graders	1	8	148	0.41
	Rubber Tired Dozers	1	8	367	0.4
	Scrapers	2	8	423	0.48
	Tractors/Loaders/Backhoes	2	8	84	0.37
Utilities	Excavators	2	8	36	0.38
	Graders	1	8	148	0.41
	Rubber Tired Dozers	1	8	367	0.40
	Scrapers	2	8	423	0.48
	Tractors/Loaders/Backhoes	2	8	84	0.37
Building Construction	Cranes	1	7	367	0.29
	Forklifts	3	8	82	0.2
	Generator Sets	1	8	14	0.74
	Tractors/Loaders/Backhoes	3	7	84	0.37
	Welders	1	8	46	0.45
	Air Compressors	1	8	37	0.48
Paving	Pavers	2	8	81	0.42

Construction Task	Equipment Type	Pieces of Equipment	Usage (hours/day)	Horsepower	Load Factor
	Paving Equipment	2	8	89	0.36
	Rollers	2	8	36	0.38
Phase B – Multi-Family Construction					
Site Preparation	Rubber Tired Dozers	3	8	367	0.4
	Tractors/Loaders/Backhoes	4	8	84	0.37
Grading	Excavators	2	8	36	0.38
	Graders	1	8	148	0.41
	Rubber Tired Dozers	1	8	367	0.4
	Scrapers	2	8	423	0.48
	Tractors/Loaders/Backhoes	2	8	84	0.37
Utilities	Excavators	2	8	36	0.38
	Graders	1	8	148	0.41
	Rubber Tired Dozers	1	8	367	0.40
	Scrapers	2	8	423	0.48
	Tractors/Loaders/Backhoes	2	8	84	0.37
Building Construction	Cranes	1	7	367	0.29
	Forklifts	3	8	82	0.2
	Generator Sets	1	8	14	0.74
	Tractors/Loaders/Backhoes	3	7	84	0.37
	Welders	1	8	46	0.45
	Air Compressors	1	8	37	0.48
Paving	Pavers	2	8	81	0.42
	Paving Equipment	2	8	89	0.36
	Rollers	2	8	36	0.38
Offsite Improvements					
Grubbing/Land Clearing	Crawler Tractors	1	8	212	0.43
	Excavators	2	8	158	0.38
	Signal Boards	3	8	6	0.82
Grading/Excavation	Crawler Tractors	1	8	212	0.43
	Excavators	3	8	158	0.38
	Graders	2	8	187	0.41
	Rollers	2	8	80	0.38

Construction Task	Equipment Type	Pieces of Equipment	Usage (hours/day)	Horsepower	Load Factor
	Rubber Tired Loaders	1	8	203	0.36
	Scrapers	2	8	367	0.48
	Signal Boards	3	8	6	0.82
	Tractors/Loaders/Backhoes	4	8	97	0.37
Drainage/Utilities/Sub-grade	Air Compressors	1	8	78	0.48
	Generator Sets	1	8	84	0.74
	Graders	1	8	187	0.41
	Paving Equipment	1	8	132	0.36
	Pumps	1	8	84	0.74
	Rough Terrain Forklifts	1	8	100	0.40
	Scrapers	1	8	367	0.48
	Signal Boards	3	8	6	0.82
	Tractors/Loaders/Backhoes	3	8	97	0.37
Paving	Pavers	1	8	130	0.42
	Paving Equipment	1	8	132	0.36
	Rollers	2	8	80	0.38
	Signal Boards	3	8	6	0.82
	Tractors/Loaders/Backhoes	3	8	97	0.37

Source: CalEEMod and Road Construction Model

Note: The Project would use off-road diesel-powered construction equipment that meets Tier 4 off-road emission standards during all Project phases.

Vehicle Trips

Off-site construction emissions are caused by motor vehicle exhaust from delivery vehicles, worker traffic, and road dust (PM_{10} and $PM_{2.5}$). Table 8 provides a summary of the construction-related vehicle trips. The number of daily worker trips were based on the Project Applicant's estimation of the average number of daily workers and CalEEMod and Roadway Construction Model defaults.

The Project's Phase A construction is expected to require 100 workers during peak construction stage and peak construction traffic is anticipated to require 275 off-haul truck trips per day. The Project's Phase B construction is expected to require approximately 150 workers during peak construction stage and peak construction traffic is anticipated to require approximately 300 off-haul truck trips per day. For both phases, it was assumed that the peak amount of construction workers would be required during the

building construction phases while the peak construction traffic from hauling trucks would occur during the grading phases.

CalEEMod default values were used to estimate the number of vendor vehicle trips during the building construction phase. The number of vendor trips during the Building Construction phase is derived from a study conducted by the Sacramento Metropolitan Air Quality Management District (SMAQMD) as per the CalEEMod defaults. The SMAQMD trip survey during construction counted cement and water trucks as vendor trips (instead of counting them as off-road vehicle trips) and these trip rates were incorporated into the calculations for the Building Construction phase. CalEEMod default values were also used to estimate the number of worker trips during the site preparation, grading, and paving phases of construction. For these phases of construction, default values are calculated by multiplying the number of pieces of equipment per phase by 2.5 to reach the number of construction worker one-way trips per day.

The fleet mix for worker trips is light-duty passenger vehicles to light-duty trucks. The vendor trips fleet mix is composed of a mixture of medium and heavy-duty diesel trucks. CalEEMod default trip lengths for a project in San Joaquin County and an urban setting were used for the worker (10.8 miles), vendor (7.3 miles), and hauling trips (20 miles).

Table 8: Construction Vehicle Trips

Construction Task	Worker Trips per Day	Vendor Trips per Day	Average Haul Truck Trips per Day
Preconstruction Utility Work			
Grubbing/Land Clearing	20	0	0
Grading/Excavation	20	0	96
Drainage/Utilities/Sub-grade	20	0	0
Phase A – Duplex Construction and Single-Family Construction			
Site Preparation	18	0	0
Grading	20	0	18.8
Utilities	20	0	0
Building Construction	200	22	0
Paving	15	0	0
Phase B – Multi-Family Construction			
Site Preparation	18	0	0
Grading	20	0	14.8
Utilities	20	0	0
Building Construction	300	100	0
Paving	15	0	0
Offsite Improvements			

Grubbing/Land Clearing	16	0	0
Grading/Excavation	46	0	10
Drainage/Utilities/Sub-grade	34	0	0
Paving	26	0	0

Notes: All trips are presented as one-way trips.
Source: CalEEMod Output (Attachment A).

Operational Modeling Assumptions

Operational emissions are those emissions that occur during operation of the proposed project. The sources are summarized below.

Motor Vehicles

Motor vehicle emissions refer to exhaust and road dust emissions from the automobiles that would travel to and from the proposed project site. Trip generation rates were based on the transportation study prepared by Stantec Consulting Services Inc. and are presented in Table 9.

Table 9: Operational Vehicle Trips

Land Use	Amount (du)	Trip Rate (trips/du)	Average Daily Trips
Multifamily Family Housing	672	6.74	4,529
Duplex	48	9.43	453
Single Family	98	9.43	924
		Total Daily Trips	***5,906***

Notes:
du = dwelling units

Trip Lengths

The CalEEMod default round trip lengths for an urban setting in San Joaquin County were used in this analysis. Trip lengths are for primary trips. Trip purpose are primary, diverted, and pass-by trips. Diverted trips take a slightly different path than a primary trip. The CalEEMod default rates for percentages of primary, diverted, and pass-by trips were used. The emissions estimate also considers the internal capture rates, consistent with the project-specific trip generation. Internal capture rates account for vehicle trips that visit the project site for the purpose of visiting more than land use within the project.

Vehicle Fleet Mix

The vehicle fleet mix is defined as the mix of motor vehicle classes active during the operation of the proposed project. Emission factors are assigned to the expected vehicle mix as a function of vehicle

class, speed, and fuel use (gasoline- and diesel-powered vehicles). CalEEMod default fleet mix was used for this analysis.

Table 10: Fleet Mix

California Air Resources Board Vehicle Classification Type	Vehicle Fleet Mix Percentage
Light Duty Auto (LDA) Passenger Cars	0.546
LDT1 (Light-Duty Trucks) GVWR < 6,000 lbs. and ETW <= 3750 lbs.	0.053
LDT2 (Light-Duty Trucks) GVWR <6000 lbs. and ETW 3751-5750 lbs.	0.171
MDV (Medium-Duty Trucks) GVWR 5751-8500 lbs.	0.143
LHD1 (Light-Heavy Duty Trucks) GVWR 8501-10000 lbs.	0.024
LHD2 (Light-Heavy Duty Trucks) GVWR 10001-14000 lbs.	0.006
MHD (Medium-Heavy Duty Truck) GVWR 14001-33000	0.013
HHD (Heavy-Heavy Duty Truck) GVWR 33001 and over	0.0169
OBUS (Other Bus)	0.0004
UBUS (Urban Bus)	0.0003
MCY (Motorcycle)	0.022
SBUS (School Bus)	0.001
MH (Motor Home)	0.003

Notes:
ETW = Equivalent Test Weight
GVWR = Gross Vehicle Weight Rating
Lbs. = pounds

Area Sources

Consumer Products

Consumer products are various solvents used in non-industrial applications that emit ROG during their product use. These typically include cleaning supplies, kitchen aerosols, cosmetics, and toiletries. The default CalEEMod values were used for this project.

Architectural Coatings (Painting)

Paints release VOC emissions. The buildings would be repainted on occasion. CalEEMod defaults for the wall painting size and VOC paint concentration were used for this purpose.

Landscaping Emissions

CalEEMod will estimate a total of 180 days for which landscaping equipment would be used to estimate potential emissions for the proposed project.

Indirect Emissions

For GHG emissions, CalEEMod contains calculations to estimate indirect GHG emissions. Indirect emissions are emissions where the location of consumption or activity is different from where actual emissions are generated. For example, electricity would be consumed at the proposed project site; however, emissions associated with producing that electricity are generated off-site at a power plant. Since the electricity can vary greatly based on locations, the user should override these values if they have more specific information regarding their specific water supply and treatment.

Energy Use

PG&E would provide electricity services to the project site. PG&E provides emission factors for the electricity it provides to customers for its energy portfolio that is used to estimate project emissions. The utilities will be required to increase the use of renewable energy sources to 60 percent by 2030. These reductions have been accounted within CalEEMod 2020.4.0 defaults.

The emissions associated with the building electricity and natural gas usage (non-hearth) were estimated based on the land use type and size. The electricity energy use is in units of kilowatt hours per size metric for each land use type. Natural gas use is in units of one thousand British Thermal Units per size metric for each land use type. Since the Project would be 100 percent electric, the default natural gas assumptions in the modeling were converted to electricity use.

Other Indirect Emissions (Water Use, Wastewater Use, and Solid Waste)

CalEEMod includes calculations for indirect GHG emissions for electricity consumptions, water consumption, and solid waste disposal. For water consumption, CalEEMod calculates embedded energy (e.g., treatment, conveyance, distribution) associated with providing each gallon of potable water to the project. For solid waste disposal, GHG emissions are associated with the disposal of solid waste generated by the proposed project into landfills. CalEEMod default data were used for inputs associated with water use, wastewater use, and solid waste.

7.0 AIR QUALITY IMPACT ANALYSIS

This section calculates the expected emissions from construction and operation of the proposed project as necessary requisite for assessing the regulatory significance of proposed Project emissions on a regional and localized level.

7.1 CEQA GUIDELINES

According to the CEQA Guidelines' Appendix G Environmental Checklist, the following questions are analyzed and evaluated to determine whether impacts to air quality are significant environmental effects.

Where the Project:

a) Conflict with or obstruct implementation of the applicable air quality plan?

b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?

c) Expose sensitive receptors to substantial pollutant concentrations?

d) Result in other emissions (such as those leading to odors) affecting a substantial number of people?

7.1.1 Thresholds of Significance

While the final determination of whether a project is significant is within the purview of the Lead Agency pursuant to Section 15064(b) of the CEQA Guidelines, the SJVAPCD recommends that its quantitative air pollution thresholds (shown in Table 11) be used to determine the significance of project emissions. If the Lead Agency finds that the project has the potential to exceed these air pollution thresholds, the project should be considered to have significant air quality impacts.

In developing thresholds of significance for air pollutants, SJVAPCD considered the emission levels for which a project's individual emissions would be cumulatively considerable. Therefore, if a project's emissions exceed thresholds of significance then the project would be expected to result in a cumulatively considered net increase of any criteria air pollutant. If a project is below significance thresholds, it cannot be considered cumulatively considerable (SJVAPCD 2015).

Table 11: SJVAPCD Significance Thresholds

Pollutant	Significance Threshold	
	Construction Emissions (tons/year)	Operational Emission (tons/year)
CO	100	100
NO_X	10	10
ROGs	10	10
SO_X	27	27
PM10	15	15
PM2.5	15	15

Source: SJVAPCD 2015

7.2 AIR IMPACT ANALYSIS

Impact AIR-1 Conflict with or obstruct implementation of the applicable air quality plan?

Impact Analysis

The CEQA Guidelines indicate that a significant impact would occur if the Project would conflict with or obstruct implementation of the applicable air quality plan. The GAMAQI does not provide specific guidance on analyzing conformity with the Air Quality Plan (AQP). Therefore, this document proposes the following criteria for determining project consistency with the current AQP's:

1. Will the project result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emissions reductions specified in the AQPs? This measure is determined by comparison to the regional and localized thresholds identified by the District or Regional and Local Air Pollutants.

2. Will the project conform to the assumptions in the AQPs?

3. Will the project comply with applicable control measures in the AQPs?

The use of criteria listed above is a standard approach for CEQA analysis of projects in the SJVAPCD's jurisdictions, as well as within other air districts, for the following reasons:

- Significant contribution to existing or new exceedances of the air quality standards would be inconsistent with the goal of attaining the air quality standards.
- Air Quality Plan (AQP) emissions inventories and attainment modeling are based on growth assumptions for the area within the SJVAPCD's jurisdiction.

- AQPs rely on a set or air district-initiated control measures as well as implementation of federal and state measures to reduce emissions within their jurisdictions, with the goal of attaining the air quality standards.

AQPs are plans for reaching attainment of air quality standards. The assumptions, inputs, and control measures are analyzed to determine if the SJVAB can reach attainment for the ambient air quality standards. To show attainment of the standards, the SJVAPCD analyzes the growth projections in the valley, contributing factors in air pollutant emissions and formations, and existing and adopted emissions controls. The SJVAPCD then formulates a control strategy to reach attainment that includes both State and SJVAPCD regulations and other local programs and measures. The applicable AQPs include the 2016 8-Hour Ozone Plan which contains measures to achieve reductions in emissions of ozone precursors and sets plans towards attainment of ambient ozone standards by 2031 and the 2018, 2016, 2015, 2012, and 2008 PM2.5 Plans to address multiple PM2.5 air quality standards and attainment deadlines.

Contribution to Air Quality Violations

A measure of determining if the Project is consistent with the air quality plans is if the Project would not result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations or delay timely attainment of air quality standards or the interim emission reductions specified in the air quality plans. Because of the region's nonattainment status for ozone, PM2.5, and PM10, if Project-generated emissions of either of the ozone precursor pollutants (ROG and NO_x), PM10, or PM2.5 would exceed the SJVAPCD's significance thresholds, then the Project would be considered to conflict with the attainment plans.

As shown in Impact AIR-2, emissions of ROG, NOx, PM10, and PM2.5 from construction and operation of the Project would not exceed the SJVAPCD's significance thresholds. As shown in Impact AIR-3, the Project would not expose sensitive receptors to a substantial pollutant concentration. Therefore, the Project would not contribute to air quality violations.

Consistency with Assumptions in AQPs

The primary way of determining consistency with the AQP's assumptions is determining consistency with the applicable General Plan to ensure that the project's population density and land use are consistent with the growth assumptions used in the AQPs for the SJVAB.

As required by California law, the County General Plan contain a Land Use Element that details the types and quantities of land uses that the city or county estimates will be needed for future growth and designates locations for land uses to regulate growth. The San Joaquin Council of Governments (SJCOG) uses the growth projections and land use information in adopted general plans, among other sources to estimate future average daily trips and then vehicles miles traveled (VMT), which are then provided to the SJVAPCD to estimate future emissions in the AQPs. Existing and future pollutant emissions computed in the AQPs are based on land uses from area general plans. AQPs detail the

control measures and emission reductions required for reaching attainment of the air standards based on these growth and emission estimates.

The applicable General Plan for the project is the City of Manteca General Plan, which was adopted in 2003, prior to the SJVAPCD's adoption of the applicable AQPs. The Land Use General Plan designated the site as Commercial Mixed Use north of East Atherton Road and Medium Density Residential south of East Atherton Road. Therefore, the Project would be consistent with the modeling used to prepare the AQPs. The impact would be less than significant.

Control Measures

The AQP contains several control measures, which are enforceable requirements through the adoption of rules and regulations. A detailed description of rules and regulations that apply to this Project is provided in the Regulatory Setting. The Project would comply with all applicable SJVAPCD rules and regulations. Therefore, the project complies with this criterion and would not conflict with or obstruct implementation of the applicable air quality plan.

Conclusion

The Project would not conflict with or obstruct implementation of the applicable AQPs.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

None are required.

Level of Significance After Mitigation

Less Than Significant Impact.

Impact AIR-2 **Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or State ambient air quality standard?**

Impact Analysis

To result in a less than significant impact, the following criteria must be true:

1. Regional analysis: emissions of nonattainment pollutants must be below the SJVAPCD's regional significance thresholds. This is an approach recommended by the SJVAPCD in its GAMAQI.

2. Summary of projections: the project must be consistent with current air AQPs including control measures and regulations. This is an approach consistent with Section 15130(b) of the CEQA Guidelines.

3. Cumulative health impacts: the project must result in less than significant cumulative health effects from the nonattainment pollutants. This approach correlates the significance of the regional analysis with health effects, consistent with the court decision, *Bakersfield Citizens for Local Control v. City of Bakersfield* (2004) 124 Cal.App.4th 1184, 1219-20.

Step 1: Regional Analysis

Air pollutant emissions have regional effects and localized effects. This analysis assesses the regional effects of the Project's criteria pollutant emissions in comparison to SJVAPCD thresholds of significance for short-term construction activities and long-term operation of the project. Localized emissions from Project construction and operation are also assessed using concentration-based thresholds that determine if the Project would result in a localized exceedance of any ambient air quality standards or would make a cumulatively considerable contribution to an existing exceedance.

The primary pollutants of concern during Project construction and operation are ROG, NO_x, PM10, and PM2.5. The SJVAPCD GAMAQI adopted in 2015 contains thresholds for ROG and NO_x; SO_X, CO, PM10, and PM2.5, see Table 10.

Ozone is a secondary pollutant that can be formed miles away from the source of emissions through reactions of ROG and NO_x emissions in the presence of sunlight. Therefore, ROG and NO_x are termed ozone precursors. The SJVAB often exceeds the state and national ozone standards. Therefore, if the Project emits a substantial quantity of ozone precursors, the Project may contribute to an exceedance of the ozone standard. The SJVAB also exceeds air quality standards for PM10, and PM2.5; therefore, substantial Project emissions may contribute to an exceedance for these pollutants. The SJVAPCD's annual emission significance thresholds used for the Project define substantial contribution both operational and construction emissions are provided in Table 10.

Construction Emissions

Construction emissions associated with the Project are shown in Table 12:. See the modeling parameters and assumptions section of this study for a discussion of the modeling inputs. As shown in Table 12, the emissions are below the significance thresholds and, therefore, are less than significant on a Project basis. Moreover, as discussed above, the Project would utilize Tier 4 construction equipment therefore the emission reductions from that construction feature are included in the modeling.

Table 12: Construction Emissions

Emissions Source	Emissions (Tons/Year)[1]					
	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
On-Site Project Construction						

Emissions Source	Emissions (Tons/Year)[1]					
	ROG	**NO_X**	**CO**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
2025	0.05	0.18	0.91	0.00	0.23	0.05
Phase A – Duplex Construction and Single-Family Construction						
2025	0.87	2.18	4.05	0.01	1.36	0.61
2026	0.14	1.50	3.08	<0.005	0.26	0.07
2027	0.11	1.18	2.39	<0.005	0.20	0.06
Phase B – Multi-Family Construction						
2025	0.09	2.10	3.89	0.01	1.50	0.69
2026	0.21	2.13	4.12	0.01	0.59	0.19
2027	0.19	1.86	3.59	0.01	0.45	0.13
2028	0.09	0.99	1.86	<0.005	0.24	0.07
Off-Site Roadway Improvements						
2027[2]	0.17	0.52	3.51	0.01	1.60	0.35
Total Construction Emissions by Year						
2023	1.01	4.46	8.85	0.02	3.09	1.35
2024	0.35	3.63	7.20	0.01	0.85	0.26
2025	0.47	3.56	9.49	0.02	2.25	0.54
2026	0.09	0.99	1.86	<0.005	0.24	0.07
Significance Thresholds	10	10	100	27	15	15
Any Year Exceed Significance Thresholds?	No	No	No	No	No	No

Notes:
Source of Emissions: CalEEMod Output (Attachment A).
Source of Thresholds: SJVAPCD 2015.
[1] The Project would use off-road diesel-powered construction equipment that meets Tier 4 off-road emission standards during all Project phases.
[2] Off-site roadway improvements would extend into 2028, conservatively assumed all emissions would take place in 2027.

Operations

Operational emissions occur over the lifetime of the project and from two main sources: areas sources and motor vehicles. The SJVAPCD considers construction and operations emissions separately when making significance determination. Modeling parameters and assumptions are in Appendix A. As shown in Table 13, the emissions are below the significance thresholds and, therefore, are less than significant on a Project basis.

Table 13: Operational Emissions

Source	Emissions (tons/year)					
	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Phase A Operation						
Area	1.26	0.08	2.27	<0.005	0.20	0.19
Energy	0.00	0.00	0.00	0.00	0.00	0.00
Mobile	0.93	0.99	7.28	0.02	1.62	0.42
Total Phase One Operational	*2.20*	*1.07*	*9.55*	*0.02*	*1.82*	*1.47*
Phase B Construction						
Area	3.84	0.37	10.40	0.02	0.91	0.88
Energy	0.00	0.00	0.00	0.00	0.00	0.00
Mobile	2.74	2.72	20.80	0.05	5.06	1.32
Total Phase Two Construction (2023)	*6.58*	*3.09*	*31.20*	*0.07*	*5.97*	*2.19*
Total Emissions (Phase A Operation and Phase B Construction)						
Total	8.78	4.16	40.75	0.09	7.79	3.66
Significance Thresholds	10	10	100	27	15	15
Exceed Significance Thresholds?	No	No	No	No	No	No

Notes:

Emissions were quantified using CalEEMod, version 2020.4.0 based on project details and estimated operating year for the proposed project. Totals may not sum exactly due to rounding.

Source: CalEEMod Output (Attachment A).

If an area is in nonattainment for a criteria pollutant, then the background concentration of that pollutant has historically exceeded the ambient air quality standard. It follows that if a project exceeds the regional threshold for that nonattainment pollutant, then it would result in a cumulatively considerable net increase of that pollutant and result in a significant cumulative impact.

The SJVAB is in nonattainment for PM_{10}, $PM_{2.5}$, and ozone. Therefore, if the Project exceeds the regional thresholds for PM_{10}, or $PM_{2.5}$, then it contributes to a cumulatively considerable impact for those pollutants. If the Project exceeds the regional threshold for NO_X or ROG, then it follows that the Project would contribute to a cumulatively considerable impact for ozone.

The criteria pollutant emissions analysis, as shown in above, assessed whether the Project would exceed the SJVAPCD's thresholds of significance. As shown in Table 12: through Table 13, criteria pollutant emissions would not exceed any threshold of significance during Project construction or operation. Therefore, the combination of unmitigated Project emissions with the criteria pollutants from other sources within the SJVAB would not cumulatively contribute to a significant impact according to this criterion.

Step 2: Plan Approach

Section 15130(b) of the CEQA Guidelines states the following:

The following elements are necessary to an adequate discussion of significant cumulative impacts: 1) Either: (A) A list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency, or (B) A summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or area wide conditions contributing to the cumulative impact.

In accordance with CEQA Guidelines 15130(b), this analysis of cumulative impacts is based on a summary of projections analysis. The SJVAB is in nonattainment for ozone and particulate matter (PM_{10} and $PM_{2.5}$), which means that concentrations of these pollutants currently exceed the applicable ambient air quality standards.

Cumulative impacts may be analyzed using other plans that evaluate relevant cumulative effects. The geographic scope for cumulative criteria pollution from air quality impacts is the SJVAB, because that is the area in which the air pollutants generated by the sources within the SJVAB circulate and are often trapped. The SJVAPCD is required to prepare and maintain air quality attainment plans and a State Implementation Plan to document the strategies and measures to be undertaken to reach attainment of ambient air quality standards. While the SJVAPCD does not have direct authority over land use decisions, it is recognized that changes in land use and circulation planning would help the SJVAB achieve clean air mandates. The SJVAPCD evaluated emissions from land uses and transportation in the entire SJVAB when it developed its attainment plans.

In accordance with CEQA Guidelines Section 15064, subdivision (h)(3), a lead agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the Project complies with the requirements in a previously approved plan or mitigation program.

As discussed in Impact AIR-1, the project is consistent with all applicable control measures in the air quality attainment plans. The Project would be required to comply with any SJVAPCD rules and regulations that may pertain to implementation of the AQPs. Therefore, impacts would be less than significant with regard to compliance with control measures and regulations.

Step 3: Cumulative Health Impacts

The SJVAB is in nonattainment for ozone, PM_{10}, and $PM_{2.5}$, which means that the background levels of those pollutants are at times higher than the ambient air quality standards. The air quality standards were set to protect public health, including the health of sensitive individuals (such as children, the elderly, and the infirm). Therefore, when the concentration of those pollutants exceeds the standard, it is likely that some sensitive individuals in the population would experience health effects.

Adverse health effects induced by ozone includes short-term effects such as coughing, difficulty breathing, and sore throat as well as long-term effects including inflamed or damaged airways, aggravated lung diseases like asthma or bronchitis, and increased frequency of asthma attacks. O_3 is created through chemical reactions between NOx, VOCs, and oxygen (EPA 2021). Therefore, the health effects related to O_3 are the product of emissions generated by numerous sources throughout the region.

Exposure to particulate matter (PM_{10} and $PM_{2.5}$) can affect the lungs and heart and may cause irregular heartbeat, aggravated asthma, and decreased lung function (EPA 2021). Direct sources of particulate matter include construction sites, unpaved roads, fields, and fires. Particulate matter is also formed indirectly as a result of complex reactions of chemicals such as SOx and NOx (EPA 2021).

The SJVAPCD has acknowledged that while HRAs for localized air toxic impacts are commonly prepared, the currently available modeling tools are not equipped to provide a meaningful analysis of the correlation between an individual development project's criteria air pollutant emissions and specific human health impacts (SJVAPCD 2015). The South Coast Air Quality Management District (SCAQMD) states that based on their own modeling in the SCAQMD's *2012 Air Quality Management Plan*, a reduction of 432 tons (864,000 pounds) per day of NOx and a reduction of 187 tons (374,000 pounds) per day of VOC would reduce O_3 levels at the highest monitored site by only nine parts per billion. As such, the SCAQMD concludes that it is not currently possible to accurately quantify O_3-related health impacts caused by NOx or VOC emissions from relatively small projects (defined as projects with regional scope) due to photochemistry and regional model limitations (SCAQMD 2015).

The regional analysis of construction and operational emissions, as shown above indicates that the Project would not exceed the SJVAPCD's significance thresholds, and the Project is consistent with the applicable AQPs. Therefore, the Project's emissions would not have a measurable effect on human health and would not result in significant cumulative health impacts from nonattainment pollutants and impacts would be less than significant.

Conclusion

The proposed Project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

None are required.

Level of Significance After Mitigation

Less Than Significant Impact.

Impact AIR-3 Expose sensitive receptors to substantial pollutant concentrations?

Impact Analysis

This discussion addresses whether the proposed Project would expose sensitive receptors to Naturally Occurring Asbestos (NOA), construction-generated fugitive dust (PM_{10}), ROG, NO_X, $PM_{2.5}$, Valley Fever, construction generated DPM and operational health risks from the proposed service station. A sensitive receptor is a person in a population who is particularly susceptible to health effects due to exposure to an air contaminant. The following are land uses (sensitive sites) where sensitive receptors are typically located:

- Long-term health care facilities
- Rehabilitation centers
- Convalescent centers
- Hospitals
- Retirement homes
- Residences
- Schools, playgrounds and childcare centers

The nearest sensitive receptors are immediately south and east of the Project site. In addition, new on-site residents at the Project site would be considered sensitive receptors. Two quantitative HRAs were prepared. The first HRA evaluates the risk to existing, off-site residences during Project construction. The second HRA evaluates the risk posed to new, on-site receptors during Project operation from existing TAC sources including the nearby gas station and highway.

Localized Impacts

Emissions occurring at or near the Project have the potential to create a localized impact also referred to as an air pollutant hotspot. Localized emissions are considered significant if when combined with background emissions, they would result in exceedance of any health-based air quality standard. In locations that already exceed standards for these pollutants, significance is based on a significant impact

level (SIL) that represents the amount that is considered a cumulatively considerable contribution to an existing violation of an air quality standard. The pollutants of concern for localized impact in the SJVAB are NO_2 and CO.

The SJVAPCD has provided guidance for screening localized impacts in the GAMAQI that establishes a screening threshold of 100 pounds per day of any criteria pollutant. If a project exceeds 100 pounds per day of any criteria pollutant, then ambient air quality modeling would be necessary. If the Project does not exceed 100 pounds per day of any criteria pollutant, then it can be assumed that it would not cause a violation of an ambient air quality standard.

Construction: Localized Concentrations of PM_{10}, $PM_{2.5}$, CO, and NO_2

Local construction impacts would be short-term in nature lasting only during the duration of construction. Because of the short duration and limited amount of construction anticipated for the Project, application of best management practices through compliance with Regulation VIII Fugitive Dust Prohibitions to minimize construction emissions, and levels of emissions less than the SJVAPCD's emission significance thresholds, localized construction concentrations are considered less than significant. It should also be noted that the on-site construction emissions would be less than 100 pounds per day for each of the criteria pollutants, as shown in Table 12 below. To present a conservative estimate, on-site emissions for on-road construction vehicles were included in the localized analysis. It should be noted that the estimates below do not include reductions associated with Rule 9510 compliance, which would reduce NO_X and PM_{10} emissions. Furthermore, as discussed below, the Project would use Tier 4 construction equipment for the on-site construction. Table 14 includes the unmitigated, on-site air emissions.

Based on the SJVAPCD's guidance the construction emissions would not cause an ambient air quality standard violation. Impacts would be less than significant.

Table 14: Localized Concentrations of PM10, PM2.5, CO, and NOx for Construction

Year	Emissions (pounds per day)			
	NO_X	CO	PM_{10}	PM2.5
Preconstruction Utilities				
2025				
Grubbing/Land Clearing	1.2	13.06	10.1	2.15
Grading/Excavation	15.86	58.16	10.68	2.51
Drainage/Utilities/Sub-Grade	3.38	33.2	10.2	2.25
2025 Preconstruction Utilities Maximum	*15.86*	*58.16*	*10.68*	*2.51*
Phase A – Duplex Construction and Single-Family Construction				
2025				
Site Preparation	14.7	28.3	19.8	10.2
Grading	19.4	35.3	9.4	3.84
Utilities	19.4	35.3	9.38	3.83
Building Construction	10.2	15.6	0.13	0.12
Paving	7.21	10.6	0.09	0.08
2025 Phase A Maximum	*19.4*	*35.3*	*9.4*	*3.84*
2026				
Building Construction	10.2	15.6	0.13	0.12
2026 Phase A Maximum	*10.2*	*15.6*	*0.13*	*0.12*
2027				
Building Construction	10.2	15.6	0.13	0.12
2027 Phase A Maximum	*10.2*	*15.6*	*0.13*	*0.12*
Phase B – Multi-Family Construction				
2025				
Site Preparation	14.7	28.3	19.8	10.2
Grading	19.4	35.3	9.39	3.84
Utilities	19.4	35.3	9.38	3.83
Building Construction	10.2	15.6	0.13	0.12

Year	Emissions (pounds per day)			
	NO_X	**CO**	**PM_{10}**	**PM2.5**
Paving	7.21	10.6	0.09	0.08
2025 Phase A Maximum	*19.4*	*35.3*	*9.38*	*3.84*
2026				
Utilities	19.4	35.3	9.38	3.83
Building Construction	10.2	15.6	0.13	0.12
Paving	7.21	1.6	0.09	0.08
2026 Phase A Maximum	*19.4*	*35.3*	*9.38*	*3.84*
2027				
Building Construction	10.2	15.6	0.13	0.12
2027 Phase A Maximum	*10.2*	*15.6*	*0.13*	*0.12*
2028				
Building Construction	10.2	15.6	0.13	0.12
2028 Phase A Maximum	*10.2*	*15.6*	*0.13*	*0.12*
Off-Site Roadway Improvements (2027)				
Off-Site Roadway Improvements	8.45	58.61	21.46	4.74
2026 Off-Site Maximum	*8.45*	*58.61*	*21.46*	*4.74*
Combined Maximum Per Year				
2025 (Preconstruction Utilities)	15.86	58.16	10.68	2.51
2025 (Phase A and Phas B)	38.8	70.6	18.78	7.68
2026	27.85	93.91	30.84	8.58
2027	28.85	89.81	21.72	4.98
2028	10.2	15.6	0.13	0.12
Significance Thresholds	**100**	**100**	**100**	**100**

Year	Emissions (pounds per day)			
	NO_X	**CO**	**PM_{10}**	**PM2.5**
Any Year Exceed Significance Thresholds?	***No***	***No***	***No***	***No***

Notes: PM_{10} and $PM_{2.5}$ emissions are from the unmitigated output and as a result are more conservative as they do not reflect compliance with Regulation VIII—Fugitive PM_{10} Prohibitions. The table only accounts for on-site construction emissions.

Preconstruction utilities takes place prior to Phase A or Phase B construction and, as a result, the emissions would not overlap.

Source of Thresholds: San Joaquin Valley Air Pollution Control District (SJVAPCD). 2015.

Operation: Localized Concentrations of PM10, PM2.5, CO, and NO_2

Localized impacts could occur in areas with a single large source of emissions such as a power plant or with multiple sources concentrated in a small area such as a distribution center. Since the proposed project is proposing the develop residential land uses localized levels of PM10, PM2.5, CO, and NO2 are not expected to exceed localized impacts.

Construction

ROG

During paving operations, ROG is emitted. The amount emitted is dependent on the amount of ROG (or VOC) in the paving materials. There are three types of asphalt that are typically used in paving: asphalt cements, cutback asphalts, and emulsified asphalts. However, SJVAPCD Rule 4641 prohibits the use of the following types of asphalt: rapid cure cutback asphalt; medium cure cutback asphalt; slow cure asphalt that contains more than one-half (0.5) percent of organic compounds that evaporate at 500 degrees Fahrenheit (°F) or lower; and emulsified asphalt containing organic compounds, in excess of 3 percent by volume, that evaporate at 500°F or lower. An exception to this is medium cure asphalt when the National Weather Service official forecast of the high temperature for the 24-hour period following application is below 50°F.

The acute (short-term) health effects from worker direct exposure to asphalt fumes include irritation of the eyes, nose, and throat. Other effects include respiratory tract symptoms and pulmonary function changes. The studies were based on occupational exposure of fumes. Sensitive receptors are not in the immediate vicinity of the fumes; therefore, they would not be subjected to concentrations high enough to evoke a negative response. In addition, the restrictions that are placed on asphalt in the San Joaquin Valley reduce ROG emissions from asphalt and exposure. The impact to sensitive receptors from ROG during construction is less than significant.

Naturally-Occurring Asbestos

According to a map of areas where naturally occurring asbestos in California are likely to occur (U.S. Geological Survey n.d.), there are no such areas in the Project area. Therefore, development of the project is not anticipated to expose receptors to naturally occurring asbestos. Impacts would be less than significant.

Fugitive Dust (PM_{10})

PM_{10} emissions would not exceed the thresholds of significance, nevertheless, the potential for localized PM_{10} health impacts are a concern, however, the Project would comply with the SJVAPCD's Regulation VIII incorporating Best Management Practices for reducing fugitive dust, thus potential impacts are reduced to a less than significant level.

Valley Fever

Valley fever, or coccidioidomycosis, is an infection caused by inhalation of the spores of the fungus, *Coccidioides immitis* (*C. immitis*). The spores live in soil and can live for an extended time in harsh environmental conditions. Activities or conditions that increase the amount of fugitive dust contribute to greater exposure, and they include dust storms, grading, and recreational off-road activities. The San Joaquin Valley is considered an endemic area for Valley fever.

Construction activities would generate fugitive dust that could contain *C. immitis* spores. The Project will minimize the generation of fugitive dust during construction activities by complying with the SJVAPCD's Regulation VIII. Therefore, this regulation would reduce Valley fever impacts to less than significant.

During operations, dust emissions are anticipated to be negligible, because most of the Project area would be occupied by buildings, pavement, and landscaped areas. This condition would preclude the possibility of the Project from generating fugitive dust that may contribute to Valley fever exposure. Impacts would be less than significant.

Health Risk Assessment

Construction

Construction activities have the potential to generate Diesel Particulate Matter (DPM) emissions related to the number and types of equipment typically associated with construction. Off-road, heavy-duty diesel equipment used for site grading, paving, and other construction activities result in the generation of DPM. For construction activity, DPM is the primary air toxic of concern. Particulate exhaust emissions from diesel-fueled engines (i.e., DPM) were identified as a toxic air contaminant (TAC) by the California Air Resources Board (CARB) in 1998. Because of the proximity of sensitive receptors there is the potential for the DPM emissions to result in a health impact. Accordingly, an analysis was prepared to determine if a potential health risk would occur.

A construction HRA was prepared in accordance with SJVAPCD and OEHHA guidance for the proposed project and is included as Appendix B. To assess the project's total health risk impacts, impacts from both construction and operations were considered in this HRA; therefore, the construction HRA is summarized below.

The construction HRA evaluated DPM (represent as exhaust PM_{10}) emissions generated during construction of the proposed project and the related health risk impacts for sensitive receptors located within 1,000 feet of the project boundary. A project would result in a significant impact if it would individually expose sensitive receptors to TACs resulting in an increased cancer risk greater than 20 in one million or an increased non-cancer risk of greater than 1.0 on the hazard index. It should be noted that the SJVAPCD's latest threshold of significance for TAC emissions is an increase in cancer risk for the maximally exposed individual of 20 in one million (formerly 10 in one million).

The project site is located within 1,000 feet from existing sensitive receptors that could be exposed to diesel emission exhaust during the construction and operational periods. The nearest sensitive receptors are residents occupying the single-family houses adjacent to the project site to the south and east. To estimate the potential cancer risk associated with construction of the proposed project from equipment exhaust (including DPM), a dispersion model was used to translate an emission rate from the source location to concentrations at the receptor locations of interest (i.e., receptors at nearby residences).

The location of the maximally exposure individual receptor (MEIR) is located on Queensland Avenue, immediately east of the project site. As discussed above, AERMOD dispersion model was used to predict concentrations of DPM and PM2.5 at sensitive receptors within 1,000 feet of the project site, as recommended by the SJVAPCD. To model emissions, a release height of 3 meters was chosen to represent the release height of construction equipment. Emissions from off-road construction equipment and on-road vehicle travel were distributed throughout the modeled area source. AERMOD modeling was performed to assess the risks posed to nearby receptors from the on-site construction and off-site roadway improvements. On-site modeling was assumed to occur as an area source, while the off-site roadway construction was modeled as a linear volume source. Roadway construction would occur west of the project site.

The current OEHHA guidance recommends that cancer risks be calculated by age groups to account for different breathing rates and sensitivity to TACs. Specifically, it recommends evaluating the risks for the third trimester of pregnancy to age zero (third trimester exposure), ages zero to less than two (infant exposure), ages two to less than 16 (child exposure), and ages 16 to 70 (adult exposure). Age sensitivity factors (ASFs) associated with the different types of exposure are an ASF of 10 for the third trimester and infant exposure, an ASF of 3 for child exposure, and an ASF of 1 for an adult exposure. Also associated with each exposure type are different breathing rates, expressed as liters per kilograms of body weight per day (L/kg-day). As recommended, 95th percentile breathing rates are used for the third trimester and infant exposure, and 80th percentile breathing rates are used for child and adult exposure. These age-specific breathing rates are 361 L/kg-day for the third trimester receptor, 1,090 L/kg-day for the infant receptors, 572 L/kg-day for child receptors, and 233 L/kg-day for adult receptors (OEHHA 2015). According to OEHHA, the cancer risk for a residential receptor is assumed to start in the third trimester of

life. Phase 1 and Phase 2 of project construction would occur over 2.4 years, and would include the third trimester, infant, and the first 0.15 years of the child stages of life. Off-site road improvements would occur over an 8 month period and were assumed to immediately follow on-site construction.

Results of the construction health risk analysis are summarized in Table 15.

The calculations and AERMOD output data used in the assessment are included in Appendix B.

Table 15: Health Risks from Project Construction at the Maximally Exposed Sensitive Receptor

Health Impact Metric	Carcinogenic Inhalation Health Risk in One Million	Chronic Inhalation Hazard Index (preconstruction)[2]	Chronic Inhalation Hazard Index (on-site construction)[2]	Chronic Inhalation Hazard Index (off-site roadway improvements)[2]
MEIR - Mitigated	17.7	0.016	0.009	0.012
Threshold	**20**	**1**	**1**	**1**
Exceeds Threshold?	**No**	**No**	**No**	**No**

Notes:
[1] MEIR = maximally exposed individual receptor
[2] Chronic non-cancer hazard index was estimated by dividing the annual DPM concentration (as PM10 exhaust) by the REL of 5 µg/m^3.
Source: Appendix B.

Operations

The greatest potential during long-term operations for exposure to TACs is from the use of heavy-duty diesel trucks and stationary generators that use diesel fuel. The proposed project is a residential development. Once operational, the majority of vehicle trips to the project site will be from residents and, as a result, the proposed project would attract very few diesel truck trips. Additionally, the project does not propose any stationary generators on-site. For these reasons, once operational, the proposed project would not be expected to expose nearby sensitive receptors to substantial amounts of air toxics.

The Project would site new, on-site sensitive receptors within 300 feet of an existing gas station and 500 feet of Highway 120. According to the California Supreme Court decision in the case of *California Building Industry Association v. Bay Area Air Quality Management District (2015) 62 Cal 4th 369*, lead agencies are not required under CEQA to analyze the impact of the existing environmental conditions on a project's future users or residents unless the project will exacerbate the existing environmental hazards of conditions. However, the City's general plan policies, and SJVAPCD recommendations require an evaluation of potential health risk impacts to new sensitive receptors when locating near sources of TACs. A quantitative operational HRA using dispersion modeling was prepared in accordance with the SJVAPCD Modeling Guidance assuming a 70 year exposure duration.

The DPM emissions from Highway 120 were calculated based on the California Department of Transportation's (CalTrans) highway annual average truck and passenger vehicle traffic. DPM emissions from the average truck and passenger truck counts were calculated based on CARB's EMFAC2021 emission factors, using PM_{10} exhaust emissions as a proxy for DPM.

Benzene emissions generated from the existing gas station located to the west of the site were calculated based on the average gasoline throughput from U.S. EPA and CARB's emission rates for the spillage, refueling, loading, and breathing emissions associated with the gas station.

AERMOD dispersion model was used to predict concentrations of DPM concentrations for on-site sensitive receptors from Highway 120 and benzene concentrations for on-site receptors from the nearby gas station. To model emissions, a release height of 3 meters was chosen to represent the release height of diesel trucks on the highway and 1 meter for the gas station fuel pumps. Roadway emissions were modeled on a one-mile segment along Highway 120 immediately north of the site. Gas station emissions were distributed throughout the modeled area source.

Results of the operational health risk analysis are summarized in Table 16. As shown in

16, the risk posed to new, on-site receptors from the nearby highway and gas station would be less than 20 in one million. The calculations and AERMOD output data used in the assessment are included in Appendix B.

Table 16: Health Risks Posed to New, On-Site Receptors from Existing TAC Sources

TAC Source	Carcinogenic Inhalation Health Risk in One Million	Chronic Inhalation Hazard Index (on-site construction)[2]
Highway 120 – DPM emissions	7.76	0.002
Gas Station – Benzene emissions	1.33	0.001
Total Risk	9.09	0.003
Threshold	**20**	**1**
Exceeds Threshold?	**No**	**No**

Notes:
[1] MEIR = maximally exposed individual receptor
[2] Chronic non-cancer hazard index was estimated by dividing the annual DPM concentration (as PM_{10} exhaust) by the REL of 5 $\mu g/m^3$ and the annual benzene concentration by the REL of 27.
Source: Appendix B.

As shown in Table 16, the existing TAC sources would not expose new, on-site receptors to a significant health risk. Moreover, consistent with 2024 CalGreen building standards, as a residential project, the applicant would be required to implement filters with a Minimum Efficiency Reporting Value (MERV) 13.

MERV 13 filters have an efficiency rating of 50 percent for particles 0.30 to 1.0 microns, 80% for particles 1.0 to 3.0 microns, and 90 percent for particles 3.0 to 10.0 microns (EPA 2022). Therefore, while the existing environmental conditions are not required to be evaluated under CEQA, the risk posed to new, on-site receptors would be greatly reduced by the MERV 13 requirements under CalGreen. As such, during operation, the project would have a less than significant impact.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

None required.

Level of Significance After Mitigation

Less Than Significant Impact.

Impact AIR-4 Result in other emissions (such as those leading to odors) affecting a substantial number of people?

Impact Analysis

While offensive odors rarely cause any physical harm, they can still be very unpleasant, leading to considerable distress among the public and often generating citizen complaints to local governments and the SJVAPCD. The occurrence and severity of odor impacts depends on numerous factors, including nature, frequency, and intensity of the source, the wind speed and direction, and the sensitivity of the receptor.

Construction activities associated with the proposed Project could result in short-term odorous emissions from diesel exhaust associated with construction equipment. However, these emissions would be intermittent and would dissipate rapidly from the source. In addition, this diesel-powered equipment would only be present on site temporarily during construction activities. Therefore, construction would not create objectionable odors affecting a substantial number of people, and the impact would be less than significant.

Land uses typically considered associated with odors include wastewater treatment facilities, waste-disposal facilities, or agricultural operations. The Project does not contain land uses typically associated with emitting objectionable odors and is not located within the screening distances to sources of odors recommended by the SJVAPCD. Therefore, the impact would be less than significant.

Conclusion

The proposed Project would not create objectionable odors affecting a substantial number of people.

Air Quality Impact Analysis

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

None required.

Level of Significance After Mitigation

Less Than Significant Impact.

8.0 GREENHOUSE GAS IMPACT ANALYSIS

This section discusses potential impacts concerning greenhouse gases associated with the proposed project and provides mitigation measures where necessary.

8.1 CEQA GUIDELINES

The CEQA Guidelines define a significant effect on the environment as "a substantial, or potentially substantial, adverse change in the environment." To determine if a project would have a significant impact on GHGs, the type, level, and impact of emissions generated by the project must be evaluated.

The following GHG significance thresholds are contained in Appendix G of the CEQA Guidelines:

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

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

8.1.1 Thresholds

The SJVAPCD's Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA presents a tiered approach to analyzing project significance with respect to GHG emissions. Project GHG emissions are considered less than significant if they can meet any of the following conditions, evaluated in the order presented:

- Project is exempt from CEQA requirements;
- Project complies with an approved GHG emission reduction plan or GHG mitigation program;
- Project implements Best Performance Standards (BPS); or
- Project demonstrates that specific GHG emissions would be reduced or mitigated by at least 29 percent compared to Business-as-Usual (BAU), including GHG emission reductions achieved since the 2002-2004 baseline period.

On November 20, 2015, the California Supreme Court (Court) issued its decision on the Center for Biological Diversity v. California Department of Fish and Wildlife on the Newhall Ranch project case. The Court determined that there is not substantial evidence to link a specific project's achievement of CARB's Scoping Plan's statewide average reduction below BAU to the conclusion that the project's reduction would meet AB32's 2020 goals. Furthermore, since the release of SJVAPCD's guidance, SB32 has been issued that requires the state to further reduce GHG emissions beyond the goals laid out in AB32. As a result, the 29 percent reduction in emissions as compared to a BAU standard are outdated and were not used for this analysis.

CEQA Guidelines 15064.4 provides guidance for determining the significance of impacts from GHGs as follows:

(a) The determination of the significance of greenhouse gas emissions calls for a careful judgment by the lead agency consistent with the provisions in section 15064. A lead agency shall make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project. A lead agency shall have discretion to determine, in the context of a particular project, whether to:

(1) Quantify greenhouse gas emissions resulting from a project; and/or

(2) Rely on a qualitative analysis or performance-based standards.

(b) In determining the significance of a project's greenhouse gas emissions, the lead agency should focus its analysis on the reasonably foreseeable incremental contribution of the project's emissions to the effects of climate change. A project's incremental contribution may be cumulatively considerable even if it appears relatively small compared to statewide, national or global emissions. The agency's analysis should consider a timeframe that is appropriate for the project. The agency's analysis also must reasonably reflect evolving scientific knowledge and state regulatory schemes. A lead agency should consider the following factors, among others, when determining the significance of impacts from greenhouse gas emissions on the environment:

(1) The extent to which the project may increase or reduce greenhouse gas 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 greenhouse gas emissions (see, e.g., section 15183.5(b)). Such requirements must be adopted by the relevant public agency through a public review process and must reduce or mitigate the project's incremental contribution of greenhouse gas emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project. In determining the significance of impacts, the lead agency may consider a project's consistency with the State's long-term climate goals or strategies, provided that substantial evidence supports the agency's analysis of how those goals or strategies address the project's incremental contribution to climate change and its conclusion that the project's incremental contribution is not cumulatively considerable.

(c) A lead agency may use a model or methodology to estimate greenhouse gas emissions resulting from a project. The lead agency has 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. The lead agency must support its selection of a model or methodology

with substantial evidence. The lead agency should explain the limitations of the particular model or methodology selected for use.

Project Threshold

The City of Manteca prepared a CAP in 2013 to comply with AB 32 GHG reductions. While the CAP is outdated, it provides relevant GHG reduction strategies for individual projects and the project is required to demonstrate compliance. In addition, the Project will be required to comply with a series of state and regional GHG reduction plans, including CARB's 2017 Scoping Plan and SJVAPCD's Climate Change Action Plan (CCAP) Measures. These plans include approved GHG emission reduction plans and Project's consistent with these plans would also comply with SB32. Therefore, as SJVAPCD does not have a quantifiable emissions threshold, project significance was determined based on compliance with applicable plans to reduce GHG emissions in accordance with CEQA Guidelines 15064.4(b)(3).

8.2 GHG IMPACT ANALYSIS

Impact GHG-1 Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Impact Analysis

The following emissions estimate is consistent with CEQA Guidelines 15064.4. CalEEMod was used to estimate the Project's GHG emissions. Modeling assumptions are described in Section 6, **Error! Reference source not found.**.

Constructions Emission Inventory

Construction GHGs would be emitted by the off-road construction equipment and vehicle travel by workers and material deliveries to the project site. The estimated construction GHG emissions are shown in Table 17. Because construction GHG emissions are temporary and reduction measures are limited, a common professional practice is to amortize the construction emissions over the life of the project. A residential project is conservatively assumed to have a life of 30 years.

Table 17: Construction Greenhouse Gas Emissions

Construction Year	$MTCO_2e$
Preconstruction Utility Work	
2025	194
Phase A – Duplex Construction and Single-Family Construction	
2025	731
2026	582
2027	459

Construction Year	$MTCO_2e$
Phase B – Multi-Family Construction	
2025	698
2026	994
2027	942
2028	495
Off-site Roadway Improvements	
2026	584
Total	**5,679**
Amortized over 30 years[1]	189.3

Notes:
1. GHG emissions are amortized over the 30-year life of the proposed project.
Source: Stantec 2022.

Operational Emission Inventory

Operational or long-term emissions occur over the life of the project. Sources of emissions may include motor vehicles and trucks, energy usage, water usage, waste generation, and area sources, such as landscaping activities and residential woodburning. Operational GHG emissions associated with the project were estimated using CalEEMod 2020.4.0.

Operational GHG emissions are shown in Table 16.

Table 18: Operational Greenhouse Gas Emissions

Source	Emissions (MT CO_2e per year)
Phase A – Duplex Construction and Single-Family Construction	
Area	92.6
Energy	114
Mobile	1,722
Waste	13.1
Water	13.8
Refrigerants	0.29
Subtotal	1,980
Phase B – Multi-Family Construction	

Source	Emissions (MT CO_2e per year)
Area	426
Energy	357
Mobile	5,160
Waste	155
Water	45.6
Refrigeration	0.76
Subtotal	6,145
Amortized Construction Emissions	189
Total	**8,314**

Source: Stantec 2022, CalEEMod 2020.4.0 (Appendix A).
Off-site roadway improvements would not generate any operational emissions.

The proposed project's GHG impact is determined by its consistency with applicable local, statewide, and regional GHG reduction plans. As shown in Impact GHG-2, the proposed project would be consistent with the City's CAP, CARB's 2017 Scoping Plan, and San Joaquin Council of Governments (SJCOG) 2018 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) goals to reduce GHG emissions, as such the Project will comply with applicable reduction plans and GHG emissions are less than significant.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

Impact GHG-2 Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

The proposed project would have a significant impact with respect to GHG emissions and global climate change if it would substantially conflict with the provisions of Section 15064.4(b) of the *CEQA Guidelines.*

Pursuant to Appendix G of the *CEQA Guidelines*, a significant GHG impact is identified if the project could conflict with applicable GHG reduction plans, policies, or regulations. Development projects would be subject to complying with the City's CAP, the SJCOG 2018 RTP/SCS as well as SB 32. SB 32 is a statewide reduction goal aimed at reducing emissions to 40% below 1990 levels by 2030. CARB's 2017 Scoping Plan sets a framework for the State to meet the reduction targets of SB 32. Additionally, the Project was compared to CARB's 2022 Scoping Plan which is intended to meet California's AB 1279 goal of meeting net neutrality by 2045.

Consistency with the City's CAP

The City's CAP is intended to support the goals of AB 32. For new development projects. The City's CAP requires new development projects within the City to achieve GHG emissions reductions by implementation specific reduction strategies. Table 19 identifies the CAP strategies applicable to the proposed Project. As shown, the Project would be consistent with the CAP.

Table 19: Project Consistency with City of Manteca's Climate Action Plan

CAP Strategy	Consistency Discussion
Comply with the applicable land use, sustainable development, and resource conservation policies of the Manteca General Plan.	**Consistent.** The City is currently updating its General Plan which is anticipated to be adopted in 2022. The updated General Plan includes new land use and zoning designations. The existing zoning for the entire site is Commercial Mixed-Use (CMU) and the proposed zoning would update the portion of the site south of E. Atherton Drive to Medium Density Residential (MDR). MDR zoning allows a mix of housing typologies including single-family housing. The Project proposes a mix of housing typologies north of Atherton consistent with the CMU zoning. To the south of Atherton, the Project proposes single-family housing that would be consistent with the proposed MDR zoning and implementation of the proposed land use policy (LU 1.5) would result in the project being consistent with the General Plan update. In the event that the updated General Plan is not approved, the Project would require General Plan amendments and since the General Plan Update has not yet been approved, the Project proposes rezoning to a Planned Development Overlay that would provide a variety of residential uses and recreational amenities, while retaining the underlying based zoning of CMU north of Atherton and rezoning to Medium Density Residential (R-2) south of Atherton. The project would be consistent with the 2003 General Plan Goal LU-2 which states, "To provide adequate land in a range of densities to meet the housing needs of all income groups expected to reside in Manteca, and to regulate residential growth consistent with the capacities of City facilities and services and the ability of the community to assimilate new development."

	Furthermore, the City is also under obligation to achieve its allocation of new housing under the Regional Housing Needs Allocation (RHNA), which is updated every eight years. According to SJCOG, the City of Manteca would be required to add 8,306 additional housing from June 2023 to December 3031.[1] The RHNA allocations for this cycle could not have been known at the time the existing 2003 General Plan was prepared. Therefore, adding additional residential units to the City of Manteca's housing stock would be consistent with the overall goals and requirements of the city Therefore, while the Project would require zoning changes that differ from the existing, 2003 General Plan, the Project would continue to support land use goals (i.e. LU-1, LU-2, and LU-8) and the RHNA allocations by constructing new housing units within the City. Furthermore, the Project would be consistent with the updated General Plan. The Project would also be consistent with the General Plan's sustainability and conservation policies.
Construct project transportation infrastructure that supports walking, bicycling, and transit use.	**Consistent.** Project construction will include the development of pedestrian accessible sidewalks throughout the site. In addition, the proposed Project will construct an extension of a Class I bicycle trail across the northern frontage of E. Atherton Drive. The bicycle trail extension would follow the City's standards for a 24 foot Class I Bicycle Lane.
Implement Transportation Demand Management (TDM) programs in projects with large numbers of employees.	**Not Applicable.** The Project is a residential development that would only include 11 on-site employees. Therefore, the strategy is not applicable to the proposed Project. Implementation of the Project would not interfere with implementation of this strategy.
Design and construct project buildings to exceed Title 24 Energy Efficiency Standards by at least 10 percent.	**Consistent.** The City of Manteca CAP was adopted in 2013 and, thus, the applicable Title 24 standards at the time of adoption were the 2010 Energy Efficiency Standards. The current 2022 Energy Efficiency Standards are greater than 10 percent more efficient that the 2010 standards. Moreover, 2022 CALGreen standards require new, single family residences to be equipped with solar paneling which would offset some of the site's energy demands. Therefore, energy efficiency would exceed Title 24 energy efficiency standards beyond the CAP goal set for 2013 standards.
Implement project buildings including water conservation measures that meet or exceeds water conservation standards of the City's adopted landscaping ordinance 20 percent reduction requirement.	**Consistent.** The proposed project would be required to meet the water efficiency regulations within the CALGreen Code. As such, the proposed project would comply with this measure.
Install project landscaping that meets or exceeds water conservation standards of the City's adopted landscaping ordinance 20 percent reduction requirement.	**Consistent.** Landscaping within the project site would be required to comply with the CALGreen Code and all water efficiency measures therein, including the MWELO. In addition, the project would be required to comply with the adopted water conservation standards

	set forth in Chapter 17.48 of the City's Municipal Code. As such, the proposed project would comply with this measure.
Develop programs to exceed state recycle and diversion targets by at least 10 percent.	**Consistent.** Pursuant to Municipal Code Section 13.02.120, all construction materials associated with the proposed project shall be recycled. Pursuant to Municipal Code Section 13.02.090, owners of multifamily complexes are to utilize Manteca's recycling service and allow for the convenient location of recycling containers. During operation, the site would include three-stream waste management facilities which distribute solid waste by kitchen organics, recyclables, and garbage. The site would be serviced by a solid waste disposal company (Manteca Public Works Department, Solid Waste Diversion) that is subject to the California Integrated Waste Management Act (AB 939) and AB 341. AB 341 set a goal that not less than 75 percent of solid waste be source reduced, recycled, or composted by the year 2020. Moreover, after the release of the City's CAP in 2013, the state passed SB 1383 (in 2016) that aimed to reduce organic waste landfill disposal by 75% from 2014 levels by 2025 and beginning in January 2022, residences and businesses are required to sort and separate collect food scraps, yard debris and food soiled paper from trach and recycling services and subscribe to an organics waste collection service. The Manteca Public Works Department, Solid Waste Diversion also has a waste to fuel program that aims to divert recoverable non-cellulose organic waste produced in the City from landfill disposal towards biologically generated, carbon negative transportation fuel. Therefore, statewide programs developed after CAP approval, local programs, and the site's three stream waste system would reduce waste and diversion beyond the CAP goal set for 2013 standards.

1 SJCOG. 2022.

Source of Measures: City of Manteca, 2013.

Source of Consistency Determination: Stantec Consulting Services Inc, 2022.

Consistency with CARB's Scoping Plan

CARB issued the Final 2017 Scoping Plan Update in November 2017 and establishes emissions reduction strategies necessary to meet SB 32's 2030 reduction goals. Table 20 identifies the Scoping Plan policies that are applicable to the proposed project. As shown, the proposed project would be consistent with the Scoping Plan.

Table 20: Project Consistency with Applicable 2017 Scoping Plan Greenhouse Gas Reduction Strategies

Measure Name	Measure Description	Consistency Determination
SB 350 50% Renewable Mandate.	Utilities subject to the legislation will be required to increase their renewable energy mix from 33% in 2020 to 50% in 2030.	**Consistent.** The proposed project will purchase electricity from a utility subject to the SB 350 Renewable Mandate. In addition, the proposed project includes renewable energy through roof top solar systems.
Low Carbon Fuel Standard	This measure requires fuel providers to meet an 18 percent reduction in carbon content by 2030.	**Consistent.** Vehicles accessing the proposed project site will use fuel containing lower carbon content as the fuel standard is implemented.
Mobile Source Strategy (Cleaner Technology and Fuels Scenario)	Vehicle manufacturers will be required to meet existing regulations mandated by the LEV III and Heavy-Duty Vehicle programs. The strategy includes a goal of having 4.2 million ZEVs on the road by 2030 and increasing numbers of ZEV trucks and buses.	**Consistent.** Future residents can be expected to purchase increasing numbers of more fuel efficient and zero emission cars and trucks each year. The 2022 CALGreen Code requires electrical service in new single-family housing to be EV charger-ready and requires new multi-family housing to equip 25% of the parking with EV charging. Moreover, home deliveries will be made by increasing numbers of ZEV delivery trucks.
Short-Lived Climate Pollutant (SLCP) Reduction Strategy	The strategy requires the reduction of SLCPs by 40 percent from 2013 levels by 2030 and the reduction of black carbon by 50 percent from 2013 levels by 2030.	**Consistent.** SJVAPCD limits wood burning devices in new homes. Therefore, the proposed project will not generate black carbon.
SB 375 Sustainable Communities Strategies	Requires Regional Transportation Plans to include a sustainable communities' strategy for reduction of per capita vehicle miles traveled.	**Consistent.** The Project proposes to extend a Class I bike lane along S. Main Street and construct a total of 336 bike parking spaces. In addition, the site is situated near existing bus stops including W Woodward Ave at Laurie Avenue that serves Manteca Transit Route 4 and E Atherton Drive at Van Ryan Ave that serves Manteca Transit Route 2.

Measure Name	Measure Description	Consistency Determination
Post-2020 Cap-and-Trade Program	The Post 2020 Cap-and-Trade Program continues the existing program for another 10 years. The Cap-and-Trade Program applies to large industrial sources such as power plants, refineries, and cement manufacturers.	**Consistent.** The post-2020 Cap-and-Trade Program indirectly affects people who use the products and services produced by the regulated industrial sources when increased cost of products or services (such as electricity and fuel) are transferred to the consumers. The Cap-and-Trade Program covers the GHG emissions associated with electricity consumed in California, whether generated in-state or imported. Accordingly, GHG emissions associated with CEQA projects' electricity usage are covered by the Cap- and-Trade Program. The Cap-and-Trade Program also covers fuel suppliers (natural gas and propane fuel providers and transportation fuel providers) to address emissions from such fuels and from combustion of other fossil fuels not directly covered at large sources in the program's first compliance period.

Source of Measures: CARB, 2017

Source of Consistency Determination: Stantec Consulting Services Inc, 2022.

Based on this evaluation, this analysis finds the project would be consistent with all feasible and applicable strategies recommended in the 2017 Scoping Plan Update.

Additionally, CARB released the 2022 Scoping Plan to demonstrate how to state can achieve AB 1279's GHG reduction goals. The proposed project's consistency with the 2022 Scoping Plan goals is included in Table 21 below.

Table 21: Project Consistency with the 2022 CARB Scoping Plan

Measure	Consistency Determination
Deploy ZEVs and reduce driving demand	**Consistent.** The Project would provide 1,437 parking spaces, of which 262 would be EV spaces, 58 EV spaces would be fully functional on Day 1 of operation and 204 EV spaces would be pre-wired for future use. The Project would be constructed in an area already developed in a developed, residential area with existing parks, including the Paseo Circle Park and Woodward Community Park. The Project site would include many amenities on site for residents that would reduce the need for vehicle trips. These onsite amenities include 1.93 acres of public open spaces, community gardens, orchard planting areas, pools, and indoor community space. The Project is also within 0.5 miles of three existing bus stops that are serviced by Manteca Transit Route 2 and Route 4. Finally, the Project would reduce driving demand by extending a Class I bicycle path on the northern frontage of E. Atherton Drive and would construct a new bus stop on E. Atherton.

Measure	Consistency Determination
Coordinate supply of liquid fossil fuels with declining CA fuel demand	**Not Applicable.** This measure is aimed at the State to work with fuel manufacturers. However, the Project would not interfere with this measure, as the Project would comply with all State rules and regulations to reduce fossil fuels.
Generate clean electricity	**Consistent.** Solar panels would also be provided on the roofs of the single-family homes and on the covered parking spaces for the multi-family component.
Decarbonize Buildings	**Consistent.** The Project would construct 672 multi-family apartments, 48 two-family units, and 98-single family homes that will be all electric. The residents would be constructed in compliance with the California Green Building (CALGreen) standards that require new residential units to incorporate energy reducing measures, including the requirement of incorporate EV parking. The Project would provide 1,437 parking spaces, of which 262 would be EV spaces, 58 EV spaces would be fully functional on Day 1 of operation and 204 EV spaces would be pre-wired for future use. Solar panels would also be provided on the roofs of the single-family homes and on the covered parking spaces for the multi-family component.
Decarbonize Industrial Energy Supply	**Not Applicable.** The Project would only include residential land uses, therefore this goal is not applicable to the Project.
Reduce non-combustion emissions (Methane)	**Not Applicable.** The Project would not produce any fossil fuels and would not include any livestock or agricultural practices that would produce methane.
Reduce non-combustion emissions (Hydrofluorocarbons [HFCs])	**Consistent.** CARB has issued a series of HFC prohibitions for aerosols, foams, refrigerants, cold storage warehouses, vending machines, and chillers (CARB 2023c). The Project would be required to adhere to all HFC prohibitions.
Compensate for remaining emissions	**Not Applicable.** This measure is aimed at the State to reduce the remainder of the GHG emissions.

Source: CARB 2022.

Consistency with SJCOG RTP/SCS

The SJCOG 2018 RTP/SCS includes a series of strategies for long-term transportation planning across San Joaquin County. Implementation of these strategies would also reduce GHG emissions and air quality emissions. Most of these strategies are aimed targeted for regional implementation. However, some of these strategies would also be applicable at the Project-level. The proposed project's consistency with the applicable measures is included in Table 21 below. As shown in the table, the project would be consistent with applicable RTP/SCS measures.

Table 22: Project Consistency with Applicable SJCOG RTP/SCS Strategies

RTP/SCS Strategy	Consistency Discussion
Enhance the connection between land use and transportation choices through projects supporting energy and water efficiency.	**Consistent.** The Project would be in compliance with state and local regulations for energy and water efficiency.
Improve air quality by reducing transportation-related emissions	**Consistent.** The Project would upgrade the traffic signals at the intersection of S. Main and E. Atherton Drive, and both signals at the north and south intersections of S. Main Street and HWY 120 on and off ramps with modern traffic signal controllers to appropriately synchronize the timing of the signals of all of the aforementioned signals. The Project would also extend a Class I bicycle trail across the northern frontage of E. Atherton Drive which would follow the City's standards for a 24 foot Class I Bicycle Lane. As such, the project would reduce air quality emissions by synchronizing the traffic lights to reduce the amount of time cars spend idling and would support bike travel in the City.
Provide transportation improvements to facilitate non-motorized travel, including the incorporation of complete streets elements as appropriate.	**Consistent.** The Project proposes to extend a Class I bicycle trail across the northern frontage of E. Atherton Drive which would follow the City's standards for a 24 foot Class I Bicycle Lane.
Enhance public health through active transportation projects.	**Consistent.** The Project proposes to extend a Class I bicycle trail across the northern frontage of E. Atherton Drive which would follow the City's standards for a 24 foot Class I Bicycle Lane.

Source of Measures: SJCOG 2018

Source of Consistency Determination: Stantec Consulting Services Inc, 2022.

Conclusion

The Project proposes to construct multi-family and single-family residences in an existing residential community. The site lies near existing bus stations for transit and will construct a Class I bike path extension that will reduce VMT by single-passenger vehicles. The Project will be required to adhere to the latest Title 24 and California Building Standards, which will require each single-family home to include photovoltaic cells. The proposed project would not conflict with the goals and objectives of the City's CAP, SJCPOG RTP/SCS, CARB's 2017 Scoping Plan, or any other State or regional plan, policy, or regulation of an agency adopted for the purpose of reducing GHG emissions. As such, the proposed project would not conflict with an applicable plan; therefore, impacts would be considered less than significant.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

Greenhouse Gas Impact Analysis

None.

Level of Significance After Mitigation

Less Than Significant Impact.

9.0 ENERGY

This section discusses potential energy impacts associated with the proposed project and provides mitigation measures where necessary.

9.1 CEQA GUIDELINES

The CEQA Guidelines define a significant effect on the environment as "a substantial, or potentially substantial, adverse change in the environment." To determine if a project would have a significant impact on energy the following must be evaluated.

Would the project:

a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

9.2 ENERGY IMPACT ANALYSIS

Impact ENERGY-1	Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Impact Analysis

The energy requirements for the proposed project were determined using the construction and operational estimates generated from the Methodology and Modeling Assumptions. The calculation worksheets for energy consumption are provided in Appendix C.

This impact addresses the energy consumption from both the short-term construction and long-term operations and are discussed separately below.

Short-Term Construction

Off-Road Equipment

Table 22 provides estimates of the project's construction fuel consumption from off-road construction equipment.

Table 23: Construction Off-Road Fuel Consumption

Project Component	Total Annual Fuel Consumption (gallons)
Preconstruction Utilities	12,678
Phase A Construction Off-Road Equipment	107,921
Phase B Construction Off-Road Equipment	137,277
Off-site Roadway Improvement Phase Equipment	48,132
Total	**306,008**

Source: Appendix C

As shown in **Error! Reference source not found.**, construction activities associated with the proposed project would be estimated to consume 306,008 gallons of diesel fuel. There are no unusual project characteristics that would necessitate the use of construction equipment that would be less energy-efficient than at comparable construction sites in other parts of the state.

On-Road Vehicles

On-road vehicles for construction workers, vendors, and haulers would require fuel for travel to and from the site during construction. Table 23 provides an estimate of the total on-road vehicle fuel usage during construction. There are no unusual project characteristics that would necessitate the use of construction equipment that would be less energy-efficient than at comparable construction sites in other parts of the state. Therefore, it is expected that construction fuel consumption associated with the proposed project would not be any more inefficient, wasteful, or unnecessary than at other construction sites in the region.

Table 24: Construction On-Road Fuel Consumption

Project Component	Total Annual Fuel Consumption (gallons)
Preconstruction Utilities	4,951
Phase A Construction Off-Road Equipment	124,097
Phase B Construction Off-Road Equipment	320,359
Off-site Roadway Improvement Phase Equipment	3,083
Total	**452,491**

Source: Appendix C

Long-term Operations

Transportation Energy Demand

Table 24 provides an estimate of the daily and annual fuel consumed by vehicles traveling to and from the project site. These estimates were derived using the same assumptions used in the operational air quality analysis for the proposed project. For details relating assumptions used in the calculations, please refer to Appendix C.

Table 25: Long-Term Operational Vehicle Fuel Consumption

Vehicle Type	Total Annual Fuel Consumption (gallons)
Passenger Cars (LDA)	284,915
Light Trucks and Medium Duty Vehicles (LDT1, LDT2, MDV)	313,763
Light-Heavy to Heavy-Heavy Diesel Trucks (LHD1, LHD2, MHDT, HHDT)	237,819
Motorcycles (MCY)	1,367
Other (OBUS, UBUS, SBUS, MH)	6,301
Total	**844,166**

Source: Appendix C

As shown in Table 25, annual vehicular fuel consumption is estimated to be 844,166 gallons of a combination of gasoline and diesel fuel.

Building Energy Demand

As shown in Appendix C the proposed project is estimated to demand 5,048,019 kilowatt hours of electricity on an annual basis. The Project would be designed to be 100 percent electric and would not use any natural gas.

It would be expected that building energy consumption associated with the proposed project would not be any more inefficient, wasteful, or unnecessary than for any other similar buildings in the region. Current state regulatory requirements for new building construction contained in the 2022 CALGreen and Title 24 standards would increase energy efficiency and reduce energy demand in comparison to existing commercial structures, and therefore would reduce actual environmental effects associated with energy use from the proposed project. Additionally, the CALGreen and Title 24 standards have increased efficiency standards through each update. Further, CALGreen standards require single-family housing constructed after January 1, 2020 to include rooftop photovoltaic cells. The reductions from the energy generation was not accounted for in order to provide a conservative analysis.

Therefore, while the proposed project would result in increased electricity demand, the electricity would be consumed more efficiently and would be typical of residential development. Compliance with future building code standards would result in increased energy efficiency.

For the above reasons, energy impacts would be less than significant.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

None.

Level of Significance After Mitigation

Less Than Significant Impact.

Impact ENERGY-2 Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

The proposed project would comply with federal, State, and local regulations aimed at reducing energy consumption. Local regulations have been developed in accordance with federal and State energy regulations, such as the California Energy Code Building Energy Efficiency Standards (CCR Title 24, Part 6), the CALGreen Code (CCR Title 24, Part 11), and SB 743, which are also aimed at reducing energy consumption.

The proposed project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. The impact would be less than significant.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

None.

Level of Significance After Mitigation

Less Than Significant Impact.

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ATTACHMENT A:
AIR MODELING INPUT AND OUTPUT FILES

Manteca Phase A Detailed Report

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4.5.1. Unmitigated

4.5.2. Mitigated

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

4.6.2. Mitigated

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

4.7.2. Mitigated

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

4.8.2. Mitigated

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

4.9.2. Mitigated

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

5. Activity Data

5.1. Construction Schedule

5.2. Off-Road Equipment

5.2.1. Unmitigated

5.2.2. Mitigated

5.3. Construction Vehicles

5.3.1. Unmitigated

5.3.2. Mitigated

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

5.5. Architectural Coatings

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

5.6.2. Construction Earthmoving Control Strategies

5.7. Construction Paving

5.8. Construction Electricity Consumption and Emissions Factors

5.9. Operational Mobile Sources

5.9.1. Unmitigated

5.9.2. Mitigated

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.1.2. Mitigated

5.10.2. Architectural Coatings

5.10.3. Landscape Equipment

5.10.4. Landscape Equipment - Mitigated

5.11. Operational Energy Consumption

5.11.1. Unmitigated

5.11.2. Mitigated

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

5.12.2. Mitigated

5.13. Operational Waste Generation

5.13.1. Unmitigated

5.13.2. Mitigated

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

5.14.2. Mitigated

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

5.15.2. Mitigated

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

5.16.2. Process Boilers

5.17. User Defined

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

5.18.1.2. Mitigated

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

5.18.1.2. Mitigated

5.18.2. Sequestration

5.18.2.1. Unmitigated

5.18.2.2. Mitigated

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

6.2. Initial Climate Risk Scores

6.3. Adjusted Climate Risk Scores

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

7.2. Healthy Places Index Scores

7.3. Overall Health & Equity Scores

7.4. Health & Equity Measures

7.5. Evaluation Scorecard

7.6. Health & Equity Custom Measures

8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Manteca Phase A
Construction Start Date	7/1/2025
Operational Year	2026
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.40
Precipitation (days)	9.00
Location	490 Quintal Rd, Manteca, CA 95337, USA
County	San Joaquin
City	Manteca
Air District	San Joaquin Valley APCD
Air Basin	San Joaquin Valley
TAZ	2132
EDFZ	4
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.22

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description

Enclosed Parking Structure	96.0	Space	0.86	38,400	0.00	0.00	—	—
Condo/Townhouse	48.0	Dwelling Unit	3.00	50,880	0.00	—	155	—
Single Family Housing	98.0	Dwelling Unit	31.8	191,100	1,147,860	—	317	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Energy	E-15	Require All-Electric Development

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.56	19.3	55.3	102	0.18	0.49	38.9	39.4	0.48	17.6	18.1	—	20,340	20,340	0.80	0.37	7.71	20,477
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.11	18.8	31.2	60.3	0.09	0.32	11.2	11.5	0.31	4.13	4.44	—	11,634	11,634	0.44	0.24	0.24	11,718
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.84	4.79	11.9	22.2	0.04	0.11	7.36	7.47	0.11	3.25	3.36	—	4,386	4,386	0.17	0.13	2.38	4,416
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.15	0.87	2.18	4.05	0.01	0.02	1.34	1.36	0.02	0.59	0.61	—	726	726	0.03	0.02	0.39	731

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	2.56	19.3	55.3	102	0.18	0.49	38.9	39.4	0.48	17.6	18.1	—	20,340	20,340	0.80	0.37	5.16	20,477
2026	1.23	1.15	11.4	25.5	0.03	0.14	1.85	1.98	0.13	0.44	0.57	—	4,995	4,995	0.15	0.18	7.71	5,060
2027	1.19	1.11	11.3	24.8	0.03	0.14	1.85	1.98	0.13	0.44	0.57	—	4,954	4,954	0.15	0.18	6.91	5,018
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	2.11	18.8	31.2	60.3	0.09	0.32	11.2	11.5	0.31	4.13	4.44	—	11,634	11,634	0.44	0.24	0.24	11,718
2026	1.18	1.09	11.6	23.5	0.03	0.14	1.85	1.98	0.13	0.44	0.57	—	4,822	4,822	0.16	0.18	0.20	4,880
2027	1.08	1.05	11.5	22.9	0.03	0.14	1.85	1.98	0.13	0.44	0.57	—	4,784	4,784	0.16	0.18	0.18	4,842
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.61	4.79	11.9	22.2	0.04	0.11	7.36	7.47	0.11	3.25	3.36	—	4,386	4,386	0.17	0.08	0.74	4,416
2026	0.84	0.78	8.22	16.9	0.02	0.10	1.31	1.41	0.09	0.31	0.41	—	3,473	3,473	0.11	0.13	2.38	3,517
2027	0.61	0.60	6.47	13.1	0.02	0.08	1.04	1.12	0.07	0.25	0.32	—	2,737	2,737	0.09	0.10	1.69	2,772
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.11	0.87	2.18	4.05	0.01	0.02	1.34	1.36	0.02	0.59	0.61	—	726	726	0.03	0.01	0.12	731
2026	0.15	0.14	1.50	3.08	< 0.005	0.02	0.24	0.26	0.02	0.06	0.07	—	575	575	0.02	0.02	0.39	582
2027	0.11	0.11	1.18	2.39	< 0.005	0.01	0.19	0.20	0.01	0.05	0.06	—	453	453	0.01	0.02	0.28	459

2.3. Construction Emissions by Year, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	2.56	19.3	55.3	102	0.18	0.49	38.9	39.4	0.48	17.6	18.1	—	20,340	20,340	0.80	0.37	5.16	20,477
2026	1.23	1.15	11.4	25.5	0.03	0.14	1.85	1.98	0.13	0.44	0.57	—	4,995	4,995	0.15	0.18	7.71	5,060
2027	1.19	1.11	11.3	24.8	0.03	0.14	1.85	1.98	0.13	0.44	0.57	—	4,954	4,954	0.15	0.18	6.91	5,018
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	2.11	18.8	31.2	60.3	0.09	0.32	11.2	11.5	0.31	4.13	4.44	—	11,634	11,634	0.44	0.24	0.24	11,718
2026	1.18	1.09	11.6	23.5	0.03	0.14	1.85	1.98	0.13	0.44	0.57	—	4,822	4,822	0.16	0.18	0.20	4,880
2027	1.08	1.05	11.5	22.9	0.03	0.14	1.85	1.98	0.13	0.44	0.57	—	4,784	4,784	0.16	0.18	0.18	4,842
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.61	4.79	11.9	22.2	0.04	0.11	7.36	7.47	0.11	3.25	3.36	—	4,386	4,386	0.17	0.08	0.74	4,416
2026	0.84	0.78	8.22	16.9	0.02	0.10	1.31	1.41	0.09	0.31	0.41	—	3,473	3,473	0.11	0.13	2.38	3,517
2027	0.61	0.60	6.47	13.1	0.02	0.08	1.04	1.12	0.07	0.25	0.32	—	2,737	2,737	0.09	0.10	1.69	2,772
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.11	0.87	2.18	4.05	0.01	0.02	1.34	1.36	0.02	0.59	0.61	—	726	726	0.03	0.01	0.12	731
2026	0.15	0.14	1.50	3.08	< 0.005	0.02	0.24	0.26	0.02	0.06	0.07	—	575	575	0.02	0.02	0.39	582
2027	0.11	0.11	1.18	2.39	< 0.005	0.01	0.19	0.20	0.01	0.05	0.06	—	453	453	0.01	0.02	0.28	459

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	14.6	15.9	7.81	89.6	0.23	4.98	8.87	13.8	4.80	2.26	7.05	871	14,363	15,234	12.1	0.54	39.2	15,736
Mit.	14.5	15.8	6.81	89.1	0.22	4.90	8.87	13.8	4.71	2.26	6.97	871	13,096	13,967	12.0	0.53	39.2	14,466

% Reduced	1%	< 0.5%	13%	< 0.5%	3%	2%	—	1%	2%	—	1%	—	9%	8%	1%	< 0.5%	—	8%
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	13.1	14.5	8.49	73.9	0.22	4.97	8.87	13.8	4.79	2.26	7.05	871	13,555	14,426	12.2	0.58	2.70	14,905
Mit.	13.0	14.4	7.49	73.5	0.21	4.89	8.87	13.8	4.71	2.26	6.96	871	12,287	13,158	12.1	0.57	2.70	13,634
% Reduced	1%	< 0.5%	12%	1%	3%	2%	—	1%	2%	—	1%	—	9%	9%	1%	< 0.5%	—	9%
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	7.88	12.1	6.85	52.7	0.13	1.25	8.82	10.1	1.21	2.24	3.45	256	12,560	12,815	9.27	0.56	17.9	13,230
Mit.	7.76	12.0	5.85	52.3	0.13	1.17	8.82	9.99	1.12	2.24	3.37	256	11,292	11,548	9.16	0.55	17.9	11,960
% Reduced	1%	< 0.5%	15%	1%	5%	6%	—	1%	7%	—	2%	—	10%	10%	1%	< 0.5%	—	10%
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.44	2.21	1.25	9.62	0.02	0.23	1.61	1.84	0.22	0.41	0.63	42.3	2,079	2,122	1.54	0.09	2.96	2,190
Mit.	1.42	2.20	1.07	9.55	0.02	0.21	1.61	1.82	0.21	0.41	0.61	42.3	1,870	1,912	1.52	0.09	2.96	1,980
% Reduced	1%	< 0.5%	15%	1%	5%	6%	—	1%	7%	—	2%	—	10%	10%	1%	< 0.5%	—	10%

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	5.97	5.54	4.97	45.7	0.11	0.09	8.87	8.95	0.08	2.26	2.34	—	10,816	10,816	0.42	0.49	37.5	11,010
Area	8.55	10.3	1.84	43.4	0.12	4.81	—	4.81	4.63	—	4.63	793	1,566	2,360	3.74	< 0.005	—	2,454

Energy	0.12	0.06	1.00	0.43	0.01	0.08	—	0.08	0.08	—	0.08	—	1,951	1,951	0.22	0.02	—	1,962
Water	—	—	—	—	—	—	—	—	—	—	—	11.4	30.0	41.4	1.17	0.03	—	79.1
Waste	—	—	—	—	—	—	—	—	—	—	—	65.9	0.00	65.9	6.59	0.00	—	231
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.73	1.73
Total	14.6	15.9	7.81	89.6	0.23	4.98	8.87	13.8	4.80	2.26	7.05	871	14,363	15,234	12.1	0.54	39.2	15,736
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	5.55	5.09	5.74	40.0	0.10	0.09	8.87	8.95	0.08	2.26	2.34	—	10,036	10,036	0.48	0.53	0.97	10,207
Area	7.48	9.30	1.75	33.5	0.12	4.80	—	4.80	4.63	—	4.63	793	1,537	2,331	3.74	< 0.005	—	2,425
Energy	0.12	0.06	1.00	0.43	0.01	0.08	—	0.08	0.08	—	0.08	—	1,951	1,951	0.22	0.02	—	1,962
Water	—	—	—	—	—	—	—	—	—	—	—	11.4	30.0	41.4	1.17	0.03	—	79.1
Waste	—	—	—	—	—	—	—	—	—	—	—	65.9	0.00	65.9	6.59	0.00	—	231
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.73	1.73
Total	13.1	14.5	8.49	73.9	0.22	4.97	8.87	13.8	4.79	2.26	7.05	871	13,555	14,426	12.2	0.58	2.70	14,905
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	5.55	5.11	5.41	39.9	0.10	0.09	8.82	8.90	0.08	2.24	2.32	—	10,219	10,219	0.45	0.51	16.2	10,398
Area	2.21	6.93	0.44	12.4	0.03	1.08	—	1.08	1.04	—	1.04	178	360	538	0.84	< 0.005	—	559
Energy	0.12	0.06	1.00	0.43	0.01	0.08	—	0.08	0.08	—	0.08	—	1,951	1,951	0.22	0.02	—	1,962
Water	—	—	—	—	—	—	—	—	—	—	—	11.4	30.0	41.4	1.17	0.03	—	79.1
Waste	—	—	—	—	—	—	—	—	—	—	—	65.9	0.00	65.9	6.59	0.00	—	231
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.73	1.73
Total	7.88	12.1	6.85	52.7	0.13	1.25	8.82	10.1	1.21	2.24	3.45	256	12,560	12,815	9.27	0.56	17.9	13,230
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.01	0.93	0.99	7.28	0.02	0.02	1.61	1.62	0.01	0.41	0.42	—	1,692	1,692	0.07	0.08	2.68	1,722
Area	0.40	1.26	0.08	2.27	< 0.005	0.20	—	0.20	0.19	—	0.19	29.5	59.5	89.1	0.14	< 0.005	—	92.6
Energy	0.02	0.01	0.18	0.08	< 0.005	0.01	—	0.01	0.01	—	0.01	—	323	323	0.04	< 0.005	—	325
Water	—	—	—	—	—	—	—	—	—	—	—	1.88	4.96	6.85	0.19	< 0.005	—	13.1

Waste	—	—	—	—	—	—	—	—	—	—	—	10.9	0.00	10.9	1.09	0.00	—	38.2
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.29	0.29
Total	1.44	2.21	1.25	9.62	0.02	0.23	1.61	1.84	0.22	0.41	0.63	42.3	2,079	2,122	1.54	0.09	2.96	2,190

2.6. Operations Emissions by Sector, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	5.97	5.54	4.97	45.7	0.11	0.09	8.87	8.95	0.08	2.26	2.34	—	10,816	10,816	0.42	0.49	37.5	11,010
Area	8.55	10.3	1.84	43.4	0.12	4.81	—	4.81	4.63	—	4.63	793	1,566	2,360	3.74	< 0.005	—	2,454
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	684	684	0.11	0.01	—	691
Water	—	—	—	—	—	—	—	—	—	—	—	11.4	30.0	41.4	1.17	0.03	—	79.1
Waste	—	—	—	—	—	—	—	—	—	—	—	65.9	0.00	65.9	6.59	0.00	—	231
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.73	1.73
Total	14.5	15.8	6.81	89.1	0.22	4.90	8.87	13.8	4.71	2.26	6.97	871	13,096	13,967	12.0	0.53	39.2	14,466
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	5.55	5.09	5.74	40.0	0.10	0.09	8.87	8.95	0.08	2.26	2.34	—	10,036	10,036	0.48	0.53	0.97	10,207
Area	7.48	9.30	1.75	33.5	0.12	4.80	—	4.80	4.63	—	4.63	793	1,537	2,331	3.74	< 0.005	—	2,425
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	684	684	0.11	0.01	—	691
Water	—	—	—	—	—	—	—	—	—	—	—	11.4	30.0	41.4	1.17	0.03	—	79.1
Waste	—	—	—	—	—	—	—	—	—	—	—	65.9	0.00	65.9	6.59	0.00	—	231
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.73	1.73
Total	13.0	14.4	7.49	73.5	0.21	4.89	8.87	13.8	4.71	2.26	6.96	871	12,287	13,158	12.1	0.57	2.70	13,634
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Mobile	5.55	5.11	5.41	39.9	0.10	0.09	8.82	8.90	0.08	2.24	2.32	—	10,219	10,219	0.45	0.51	16.2	10,398
Area	2.21	6.93	0.44	12.4	0.03	1.08	—	1.08	1.04	—	1.04	178	360	538	0.84	< 0.005	—	559
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	684	684	0.11	0.01	—	691
Water	—	—	—	—	—	—	—	—	—	—	—	11.4	30.0	41.4	1.17	0.03	—	79.1
Waste	—	—	—	—	—	—	—	—	—	—	—	65.9	0.00	65.9	6.59	0.00	—	231
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.73	1.73
Total	7.76	12.0	5.85	52.3	0.13	1.17	8.82	9.99	1.12	2.24	3.37	256	11,292	11,548	9.16	0.55	17.9	11,960
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.01	0.93	0.99	7.28	0.02	0.02	1.61	1.62	0.01	0.41	0.42	—	1,692	1,692	0.07	0.08	2.68	1,722
Area	0.40	1.26	0.08	2.27	< 0.005	0.20	—	0.20	0.19	—	0.19	29.5	59.5	89.1	0.14	< 0.005	—	92.6
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	113	113	0.02	< 0.005	—	114
Water	—	—	—	—	—	—	—	—	—	—	—	1.88	4.96	6.85	0.19	< 0.005	—	13.1
Waste	—	—	—	—	—	—	—	—	—	—	—	10.9	0.00	10.9	1.09	0.00	—	38.2
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.29	0.29
Total	1.42	2.20	1.07	9.55	0.02	0.21	1.61	1.82	0.21	0.41	0.61	42.3	1,870	1,912	1.52	0.09	2.96	1,980

3. Construction Emissions Details

3.1. Site Preparation (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.64	0.64	14.7	28.3	0.05	0.10	—	0.10	0.10	—	0.10	—	5,295	5,295	0.21	0.04	—	5,314

Dust From Material Movement	—	—	—	—	—	—	19.7	19.7	—	10.1	10.1	—	—	—	—	—	—	—
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.11	2.42	4.65	0.01	0.02	—	0.02	0.02	—	0.02	—	870	870	0.04	0.01	—	873
Dust From Material Movement	—	—	—	—	—	—	3.23	3.23	—	1.66	1.66	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.44	0.85	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	144	144	0.01	< 0.005	—	145
Dust From Material Movement	—	—	—	—	—	—	0.59	0.59	—	0.30	0.30	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.05	0.91	0.00	0.00	0.15	0.15	0.00	0.03	0.03	—	162	162	0.01	0.01	0.60	165
Vendor	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	0.00
Hauling	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	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.12	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	24.6	24.6	< 0.005	< 0.005	0.04	25.0
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.08	4.08	< 0.005	< 0.005	0.01	4.14
Vendor	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	0.00
Hauling	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	0.00

3.2. Site Preparation (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.64	0.64	14.7	28.3	0.05	0.10	—	0.10	0.10	—	0.10	—	5,295	5,295	0.21	0.04	—	5,314
Dust From Material Movement	—	—	—	—	—	—	19.7	19.7	—	10.1	10.1	—	—	—	—	—	—	—
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.11	2.42	4.65	0.01	0.02	—	0.02	0.02	—	0.02	—	870	870	0.04	0.01	—	873
Dust From Material Movement	—	—	—	—	—	—	3.23	3.23	—	1.66	1.66	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.44	0.85	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	144	144	0.01	< 0.005	—	145
Dust From Material Movement	—	—	—	—	—	—	0.59	0.59	—	0.30	0.30	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.05	0.91	0.00	0.00	0.15	0.15	0.00	0.03	0.03	—	162	162	0.01	0.01	0.60	165
Vendor	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	0.00
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.12	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	24.6	24.6	< 0.005	< 0.005	0.04	25.0
Vendor	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	0.00

Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.08	4.08	< 0.005	< 0.005	0.01	4.14
Vendor	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	0.00
Hauling	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	0.00

3.3. Grading (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.80	0.80	19.4	35.3	0.06	0.18	—	0.18	0.18	—	0.18	—	6,599	6,599	0.27	0.05	—	6,622
Dust From Material Movement	—	—	—	—	—	—	9.22	9.22	—	3.66	3.66	—	—	—	—	—	—	—
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.13	3.19	5.81	0.01	0.03	—	0.03	0.03	—	0.03	—	1,085	1,085	0.04	0.01	—	1,088
Dust From Material Movement	—	—	—	—	—	—	1.51	1.51	—	0.60	0.60	—	—	—	—	—	—	—

Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.58	1.06	< 0.005	0.01	—	0.01	0.01	—	0.01	—	180	180	0.01	< 0.005	—	180
Dust From Material Movement	—	—	—	—	—	—	0.28	0.28	—	0.11	0.11	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.08	0.06	1.04	0.00	0.00	0.17	0.17	0.00	0.04	0.04	—	185	185	0.01	0.01	0.69	188
Vendor	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	0.00
Hauling	0.05	0.03	1.57	0.38	0.01	0.02	0.35	0.37	0.02	0.10	0.12	—	1,315	1,315	0.03	0.20	3.19	1,380
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.14	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	28.2	28.2	< 0.005	< 0.005	0.05	28.6
Vendor	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	0.00
Hauling	0.01	< 0.005	0.27	0.06	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	216	216	< 0.005	0.03	0.23	227
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	4.66	4.66	< 0.005	< 0.005	0.01	4.73
Vendor	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	0.00
Hauling	< 0.005	< 0.005	0.05	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	35.8	35.8	< 0.005	0.01	0.04	37.5

3.4. Grading (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.80	0.80	19.4	35.3	0.06	0.18	—	0.18	0.18	—	0.18	—	6,599	6,599	0.27	0.05	—	6,622
Dust From Material Movement	—	—	—	—	—	—	9.22	9.22	—	3.66	3.66	—	—	—	—	—	—	—
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.13	3.19	5.81	0.01	0.03	—	0.03	0.03	—	0.03	—	1,085	1,085	0.04	0.01	—	1,088
Dust From Material Movement	—	—	—	—	—	—	1.51	1.51	—	0.60	0.60	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.58	1.06	< 0.005	0.01	—	0.01	0.01	—	0.01	—	180	180	0.01	< 0.005	—	180

Dust From Material Movement	—	—	—	—	—	—	0.28	0.28	—	0.11	0.11	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.08	0.06	1.04	0.00	0.00	0.17	0.17	0.00	0.04	0.04	—	185	185	0.01	0.01	0.69	188
Vendor	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	0.00
Hauling	0.05	0.03	1.57	0.38	0.01	0.02	0.35	0.37	0.02	0.10	0.12	—	1,315	1,315	0.03	0.20	3.19	1,380
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.14	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	28.2	28.2	< 0.005	< 0.005	0.05	28.6
Vendor	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	0.00
Hauling	0.01	< 0.005	0.27	0.06	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	216	216	< 0.005	0.03	0.23	227
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	4.66	4.66	< 0.005	< 0.005	0.01	4.73
Vendor	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	0.00
Hauling	< 0.005	< 0.005	0.05	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	35.8	35.8	< 0.005	0.01	0.04	37.5

3.5. Utilities (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.80	0.80	19.4	35.3	0.06	0.18	—	0.18	0.18	—	0.18	—	6,599	6,599	0.27	0.05	—	6,622
Dust From Material Movement	—	—	—	—	—	—	9.20	9.20	—	3.65	3.65	—	—	—	—	—	—	—
Architectural Coatings	—	16.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.80	0.80	19.4	35.3	0.06	0.18	—	0.18	0.18	—	0.18	—	6,599	6,599	0.27	0.05	—	6,622
Dust From Material Movement	—	—	—	—	—	—	9.20	9.20	—	3.65	3.65	—	—	—	—	—	—	—
Architectural Coatings	—	16.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.20	0.20	4.84	8.81	0.02	0.05	—	0.05	0.04	—	0.04	—	1,645	1,645	0.07	0.01	—	1,651
Dust From Material Movement	—	—	—	—	—	—	2.29	2.29	—	0.91	0.91	—	—	—	—	—	—	—

Architect Coatings	—	4.19	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.04	0.88	1.61	< 0.005	0.01	—	0.01	0.01	—	0.01	—	272	272	0.01	< 0.005	—	273
Dust From Material Movement	—	—	—	—	—	—	0.42	0.42	—	0.17	0.17	—	—	—	—	—	—	—
Architectural Coatings	—	0.76	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.08	0.06	1.04	0.00	0.00	0.17	0.17	0.00	0.04	0.04	—	185	185	0.01	0.01	0.69	188
Vendor	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	0.00
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.08	0.08	0.83	0.00	0.00	0.17	0.17	0.00	0.04	0.04	—	167	167	< 0.005	0.01	0.02	169
Vendor	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	0.00
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.21	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	42.7	42.7	< 0.005	< 0.005	0.07	43.3
Vendor	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	0.00

Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.07	7.07	< 0.005	< 0.005	0.01	7.18
Vendor	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	0.00
Hauling	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	0.00

3.6. Utilities (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.80	0.80	19.4	35.3	0.06	0.18	—	0.18	0.18	—	0.18	—	6,599	6,599	0.27	0.05	—	6,622
Dust From Material Movement	—	—	—	—	—	—	9.20	9.20	—	3.65	3.65	—	—	—	—	—	—	—
Architectural Coatings	—	16.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.80	0.80	19.4	35.3	0.06	0.18	—	0.18	0.18	—	0.18	—	6,599	6,599	0.27	0.05	—	6,622
Dust From Material Movement	—	—	—	—	—	—	9.20	9.20	—	3.65	3.65	—	—	—	—	—	—	—

Architect Coatings	—	16.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.20	0.20	4.84	8.81	0.02	0.05	—	0.05	0.04	—	0.04	—	1,645	1,645	0.07	0.01	—	1,651
Dust From Material Movement	—	—	—	—	—	—	2.29	2.29	—	0.91	0.91	—	—	—	—	—	—	—
Architectural Coatings	—	4.19	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.04	0.88	1.61	< 0.005	0.01	—	0.01	0.01	—	0.01	—	272	272	0.01	< 0.005	—	273
Dust From Material Movement	—	—	—	—	—	—	0.42	0.42	—	0.17	0.17	—	—	—	—	—	—	—
Architectural Coatings	—	0.76	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.08	0.06	1.04	0.00	0.00	0.17	0.17	0.00	0.04	0.04	—	185	185	0.01	0.01	0.69	188
Vendor	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	0.00

Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.08	0.08	0.83	0.00	0.00	0.17	0.17	0.00	0.04	0.04	—	167	167	< 0.005	0.01	0.02	169
Vendor	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	0.00
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.21	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	42.7	42.7	< 0.005	< 0.005	0.07	43.3
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.07	7.07	< 0.005	< 0.005	0.01	7.18
Vendor	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	0.00
Hauling	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	0.00

3.7. Building Construction (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.34	0.34	10.2	15.6	0.03	0.13	—	0.13	0.12	—	0.12	—	2,576	2,576	0.10	0.02	—	2,585

Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.03	0.93	1.43	< 0.005	0.01	—	0.01	0.01	—	0.01	—	237	237	0.01	< 0.005	—	238
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.17	0.26	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	39.2	39.2	< 0.005	< 0.005	—	39.4
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.85	0.77	0.75	8.28	0.00	0.00	1.68	1.68	0.00	0.39	0.39	—	1,672	1,672	0.05	0.07	0.18	1,694
Vendor	0.03	0.02	0.82	0.27	< 0.005	0.01	0.17	0.18	0.01	0.05	0.05	—	621	621	0.01	0.09	0.04	648
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.06	0.78	0.00	0.00	0.15	0.15	0.00	0.04	0.04	—	158	158	< 0.005	0.01	0.27	160
Vendor	< 0.005	< 0.005	0.07	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	57.1	57.1	< 0.005	0.01	0.07	59.7
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.14	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	26.1	26.1	< 0.005	< 0.005	0.05	26.5
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	9.45	9.45	< 0.005	< 0.005	0.01	9.88
Hauling	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	0.00

3.8. Building Construction (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.34	0.34	10.2	15.6	0.03	0.13	—	0.13	0.12	—	0.12	—	2,576	2,576	0.10	0.02	—	2,585
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.03	0.93	1.43	< 0.005	0.01	—	0.01	0.01	—	0.01	—	237	237	0.01	< 0.005	—	238
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.17	0.26	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	39.2	39.2	< 0.005	< 0.005	—	39.4
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.85	0.77	0.75	8.28	0.00	0.00	1.68	1.68	0.00	0.39	0.39	—	1,672	1,672	0.05	0.07	0.18	1,694
Vendor	0.03	0.02	0.82	0.27	< 0.005	0.01	0.17	0.18	0.01	0.05	0.05	—	621	621	0.01	0.09	0.04	648
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.06	0.78	0.00	0.00	0.15	0.15	0.00	0.04	0.04	—	158	158	< 0.005	0.01	0.27	160
Vendor	< 0.005	< 0.005	0.07	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	57.1	57.1	< 0.005	0.01	0.07	59.7
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.14	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	26.1	26.1	< 0.005	< 0.005	0.05	26.5
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	9.45	9.45	< 0.005	< 0.005	0.01	9.88
Hauling	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	0.00

3.9. Building Construction (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.34	0.34	10.2	15.6	0.03	0.13	—	0.13	0.12	—	0.12	—	2,575	2,575	0.10	0.02	—	2,584
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.34	0.34	10.2	15.6	0.03	0.13	—	0.13	0.12	—	0.12	—	2,575	2,575	0.10	0.02	—	2,584

Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.25	0.25	7.26	11.1	0.02	0.09	—	0.09	0.09	—	0.09	—	1,839	1,839	0.07	0.01	—	1,846
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.04	1.33	2.03	< 0.005	0.02	—	0.02	0.02	—	0.02	—	305	305	0.01	< 0.005	—	306
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.85	0.78	0.50	9.63	0.00	0.00	1.68	1.68	0.00	0.39	0.39	—	1,811	1,811	0.04	0.07	6.21	1,838
Vendor	0.03	0.02	0.74	0.25	< 0.005	0.01	0.17	0.18	0.01	0.05	0.05	—	609	609	0.01	0.09	1.50	638
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.80	0.73	0.63	7.63	0.00	0.00	1.68	1.68	0.00	0.39	0.39	—	1,637	1,637	0.04	0.07	0.16	1,659
Vendor	0.03	0.02	0.78	0.26	< 0.005	0.01	0.17	0.18	0.01	0.05	0.05	—	609	609	0.01	0.09	0.04	637
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.57	0.52	0.41	5.58	0.00	0.00	1.19	1.19	0.00	0.28	0.28	—	1,199	1,199	0.03	0.05	1.92	1,216
Vendor	0.02	0.01	0.55	0.18	< 0.005	0.01	0.12	0.13	0.01	0.03	0.04	—	435	435	0.01	0.07	0.46	455
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.10	0.09	0.07	1.02	0.00	0.00	0.22	0.22	0.00	0.05	0.05	—	198	198	< 0.005	0.01	0.32	201
Vendor	< 0.005	< 0.005	0.10	0.03	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	72.0	72.0	< 0.005	0.01	0.08	75.4
Hauling	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	0.00

3.10. Building Construction (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.34	0.34	10.2	15.6	0.03	0.13	—	0.13	0.12	—	0.12	—	2,575	2,575	0.10	0.02	—	2,584
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.34	0.34	10.2	15.6	0.03	0.13	—	0.13	0.12	—	0.12	—	2,575	2,575	0.10	0.02	—	2,584
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.25	0.25	7.26	11.1	0.02	0.09	—	0.09	0.09	—	0.09	—	1,839	1,839	0.07	0.01	—	1,846
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.04	1.33	2.03	< 0.005	0.02	—	0.02	0.02	—	0.02	—	305	305	0.01	< 0.005	—	306

Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.85	0.78	0.50	9.63	0.00	0.00	1.68	1.68	0.00	0.39	0.39	—	1,811	1,811	0.04	0.07	6.21	1,838
Vendor	0.03	0.02	0.74	0.25	< 0.005	0.01	0.17	0.18	0.01	0.05	0.05	—	609	609	0.01	0.09	1.50	638
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.80	0.73	0.63	7.63	0.00	0.00	1.68	1.68	0.00	0.39	0.39	—	1,637	1,637	0.04	0.07	0.16	1,659
Vendor	0.03	0.02	0.78	0.26	< 0.005	0.01	0.17	0.18	0.01	0.05	0.05	—	609	609	0.01	0.09	0.04	637
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.57	0.52	0.41	5.58	0.00	0.00	1.19	1.19	0.00	0.28	0.28	—	1,199	1,199	0.03	0.05	1.92	1,216
Vendor	0.02	0.01	0.55	0.18	< 0.005	0.01	0.12	0.13	0.01	0.03	0.04	—	435	435	0.01	0.07	0.46	455
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	0.07	1.02	0.00	0.00	0.22	0.22	0.00	0.05	0.05	—	198	198	< 0.005	0.01	0.32	201
Vendor	< 0.005	< 0.005	0.10	0.03	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	72.0	72.0	< 0.005	0.01	0.08	75.4
Hauling	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	0.00

3.11. Building Construction (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.34	0.34	10.2	15.6	0.03	0.13	—	0.13	0.12	—	0.12	—	2,575	2,575	0.10	0.02	—	2,584
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.34	0.34	10.2	15.6	0.03	0.13	—	0.13	0.12	—	0.12	—	2,575	2,575	0.10	0.02	—	2,584
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.20	0.20	5.77	8.85	0.01	0.07	—	0.07	0.07	—	0.07	—	1,461	1,461	0.06	0.01	—	1,466
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.04	1.05	1.61	< 0.005	0.01	—	0.01	0.01	—	0.01	—	242	242	0.01	< 0.005	—	243
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.81	0.74	0.44	8.95	0.00	0.00	1.68	1.68	0.00	0.39	0.39	—	1,783	1,783	0.03	0.07	5.59	1,809
Vendor	0.03	0.02	0.70	0.24	< 0.005	0.01	0.17	0.18	0.01	0.05	0.05	—	596	596	0.01	0.09	1.31	625
Hauling	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	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.70	0.69	0.57	7.05	0.00	0.00	1.68	1.68	0.00	0.39	0.39	—	1,612	1,612	0.04	0.07	0.14	1,634
Vendor	0.03	0.02	0.75	0.25	< 0.005	0.01	0.17	0.18	0.01	0.05	0.05	—	597	597	0.01	0.09	0.03	624
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.40	0.39	0.29	4.12	0.00	0.00	0.95	0.95	0.00	0.22	0.22	—	938	938	0.02	0.04	1.37	951
Vendor	0.02	0.01	0.42	0.14	< 0.005	< 0.005	0.09	0.10	< 0.005	0.03	0.03	—	338	338	0.01	0.05	0.32	354
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.07	0.05	0.75	0.00	0.00	0.17	0.17	0.00	0.04	0.04	—	155	155	< 0.005	0.01	0.23	157
Vendor	< 0.005	< 0.005	0.08	0.03	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	56.0	56.0	< 0.005	0.01	0.05	58.7
Hauling	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	0.00

3.12. Building Construction (2027) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.34	0.34	10.2	15.6	0.03	0.13	—	0.13	0.12	—	0.12	—	2,575	2,575	0.10	0.02	—	2,584
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.34	0.34	10.2	15.6	0.03	0.13	—	0.13	0.12	—	0.12	—	2,575	2,575	0.10	0.02	—	2,584
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.20	0.20	5.77	8.85	0.01	0.07	—	0.07	0.07	—	0.07	—	1,461	1,461	0.06	0.01	—	1,466
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.04	1.05	1.61	< 0.005	0.01	—	0.01	0.01	—	0.01	—	242	242	0.01	< 0.005	—	243
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.81	0.74	0.44	8.95	0.00	0.00	1.68	1.68	0.00	0.39	0.39	—	1,783	1,783	0.03	0.07	5.59	1,809
Vendor	0.03	0.02	0.70	0.24	< 0.005	0.01	0.17	0.18	0.01	0.05	0.05	—	596	596	0.01	0.09	1.31	625
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.70	0.69	0.57	7.05	0.00	0.00	1.68	1.68	0.00	0.39	0.39	—	1,612	1,612	0.04	0.07	0.14	1,634
Vendor	0.03	0.02	0.75	0.25	< 0.005	0.01	0.17	0.18	0.01	0.05	0.05	—	597	597	0.01	0.09	0.03	624
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.40	0.39	0.29	4.12	0.00	0.00	0.95	0.95	0.00	0.22	0.22	—	938	938	0.02	0.04	1.37	951
Vendor	0.02	0.01	0.42	0.14	< 0.005	< 0.005	0.09	0.10	< 0.005	0.03	0.03	—	338	338	0.01	0.05	0.32	354

Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.07	0.05	0.75	0.00	0.00	0.17	0.17	0.00	0.04	0.04	—	155	155	< 0.005	0.01	0.23	157
Vendor	< 0.005	< 0.005	0.08	0.03	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	56.0	56.0	< 0.005	0.01	0.05	58.7
Hauling	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	0.00

3.13. Paving (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.23	0.23	7.21	10.6	0.01	0.09	—	0.09	0.08	—	0.08	—	1,511	1,511	0.06	0.01	—	1,517
Paving	—	0.45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.10	0.15	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	20.7	20.7	< 0.005	< 0.005	—	20.8
Paving	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.43	3.43	< 0.005	< 0.005	—	3.44

Paving	—	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.06	0.62	0.00	0.00	0.13	0.13	0.00	0.03	0.03	—	125	125	< 0.005	0.01	0.01	127
Vendor	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	0.00
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.76	1.76	< 0.005	< 0.005	< 0.005	1.79
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.29	0.29	< 0.005	< 0.005	< 0.005	0.30
Vendor	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	0.00
Hauling	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	0.00

3.14. Paving (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.23	0.23	7.21	10.6	0.01	0.09	—	0.09	0.08	—	0.08	—	1,511	1,511	0.06	0.01	—	1,517
Paving	—	0.45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.10	0.15	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	20.7	20.7	< 0.005	< 0.005	—	20.8
Paving	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.43	3.43	< 0.005	< 0.005	—	3.44
Paving	—	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.06	0.62	0.00	0.00	0.13	0.13	0.00	0.03	0.03	—	125	125	< 0.005	0.01	0.01	127
Vendor	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	0.00
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.76	1.76	< 0.005	< 0.005	< 0.005	1.79
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.29	0.29	< 0.005	< 0.005	< 0.005	0.30
Vendor	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	0.00
Hauling	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	0.00

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Enclosed Parking Structure	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	0.00
Condo/Townhouse	1.96	1.82	1.63	15.0	0.03	0.03	2.92	2.94	0.03	0.74	0.77	—	3,556	3,556	0.14	0.16	12.3	3,620
Single Family Housing	4.01	3.72	3.33	30.7	0.07	0.06	5.95	6.01	0.06	1.51	1.57	—	7,260	7,260	0.28	0.33	25.1	7,390
Total	5.97	5.54	4.97	45.7	0.11	0.09	8.87	8.95	0.08	2.26	2.34	—	10,816	10,816	0.42	0.49	37.5	11,010
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Enclosed Parking Structure	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	0.00
Condo/Townhouse	1.82	1.67	1.89	13.2	0.03	0.03	2.92	2.94	0.03	0.74	0.77	—	3,300	3,300	0.16	0.17	0.32	3,356
Single Family Housing	3.72	3.42	3.86	26.9	0.07	0.06	5.95	6.01	0.06	1.51	1.57	—	6,737	6,737	0.32	0.36	0.65	6,851
Total	5.55	5.09	5.74	40.0	0.10	0.09	8.87	8.95	0.08	2.26	2.34	—	10,036	10,036	0.48	0.53	0.97	10,207
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Enclosed Parking Structure	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	0.00
Condo/Townhouse	0.33	0.31	0.32	2.39	0.01	0.01	0.53	0.53	< 0.005	0.13	0.14	—	556	556	0.02	0.03	0.88	566
Single Family Housing	0.68	0.63	0.66	4.89	0.01	0.01	1.08	1.09	0.01	0.27	0.28	—	1,136	1,136	0.05	0.06	1.80	1,156
Total	1.01	0.93	0.99	7.28	0.02	0.02	1.61	1.62	0.01	0.41	0.42	—	1,692	1,692	0.07	0.08	2.68	1,722

4.1.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Enclosed Parking Structure	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	0.00

Condo/Townhouse	1.96	1.82	1.63	15.0	0.03	0.03	2.92	2.94	0.03	0.74	0.77	—	3,556	3,556	0.14	0.16	12.3	3,620
Single Family Housing	4.01	3.72	3.33	30.7	0.07	0.06	5.95	6.01	0.06	1.51	1.57	—	7,260	7,260	0.28	0.33	25.1	7,390
Total	5.97	5.54	4.97	45.7	0.11	0.09	8.87	8.95	0.08	2.26	2.34	—	10,816	10,816	0.42	0.49	37.5	11,010
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Enclosed Parking Structure	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	0.00
Condo/Townhouse	1.82	1.67	1.89	13.2	0.03	0.03	2.92	2.94	0.03	0.74	0.77	—	3,300	3,300	0.16	0.17	0.32	3,356
Single Family Housing	3.72	3.42	3.86	26.9	0.07	0.06	5.95	6.01	0.06	1.51	1.57	—	6,737	6,737	0.32	0.36	0.65	6,851
Total	5.55	5.09	5.74	40.0	0.10	0.09	8.87	8.95	0.08	2.26	2.34	—	10,036	10,036	0.48	0.53	0.97	10,207
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Enclosed Parking Structure	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	0.00
Condo/Townhouse	0.33	0.31	0.32	2.39	0.01	0.01	0.53	0.53	< 0.005	0.13	0.14	—	556	556	0.02	0.03	0.88	566
Single Family Housing	0.68	0.63	0.66	4.89	0.01	0.01	1.08	1.09	0.01	0.27	0.28	—	1,136	1,136	0.05	0.06	1.80	1,156
Total	1.01	0.93	0.99	7.28	0.02	0.02	1.61	1.62	0.01	0.41	0.42	—	1,692	1,692	0.07	0.08	2.68	1,722

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Enclosed Parking Structure	—	—	—	—	—	—	—	—	—	—	—	—	75.1	75.1	0.01	< 0.005	—	75.9
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	138	138	0.02	< 0.005	—	140
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	467	467	0.08	0.01	—	472
Total	—	—	—	—	—	—	—	—	—	—	—	—	680	680	0.11	0.01	—	687
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Enclosed Parking Structure	—	—	—	—	—	—	—	—	—	—	—	—	75.1	75.1	0.01	< 0.005	—	75.9
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	138	138	0.02	< 0.005	—	140
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	467	467	0.08	0.01	—	472
Total	—	—	—	—	—	—	—	—	—	—	—	—	680	680	0.11	0.01	—	687
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Enclosed Parking Structure	—	—	—	—	—	—	—	—	—	—	—	—	12.4	12.4	< 0.005	< 0.005	—	12.6

Condo/T	—	—	—	—	—	—	—	—	—	—	—	—	22.9	22.9	< 0.005	< 0.005	—	23.1
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	77.3	77.3	0.01	< 0.005	—	78.1
Total	—	—	—	—	—	—	—	—	—	—	—	—	113	113	0.02	< 0.005	—	114

4.2.2. Electricity Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Enclosed Parking Structure	—	—	—	—	—	—	—	—	—	—	—	—	75.1	75.1	0.01	< 0.005	—	75.9
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	140	140	0.02	< 0.005	—	141
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	469	469	0.08	0.01	—	474
Total	—	—	—	—	—	—	—	—	—	—	—	—	684	684	0.11	0.01	—	691
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Enclosed Parking Structure	—	—	—	—	—	—	—	—	—	—	—	—	75.1	75.1	0.01	< 0.005	—	75.9
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	140	140	0.02	< 0.005	—	141

Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	469	469	0.08	0.01	—	474
Total	—	—	—	—	—	—	—	—	—	—	—	—	684	684	0.11	0.01	—	691
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Enclosed Parking Structure	—	—	—	—	—	—	—	—	—	—	—	—	12.4	12.4	< 0.005	< 0.005	—	12.6
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	23.1	23.1	< 0.005	< 0.005	—	23.3
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	77.7	77.7	0.01	< 0.005	—	78.5
Total	—	—	—	—	—	—	—	—	—	—	—	—	113	113	0.02	< 0.005	—	114

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Enclosed Parking Structure	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
Condo/Townhouse	0.03	0.02	0.28	0.12	< 0.005	0.02	—	0.02	0.02	—	0.02	—	357	357	0.03	< 0.005	—	358
Single Family Housing	0.08	0.04	0.72	0.31	< 0.005	0.06	—	0.06	0.06	—	0.06	—	914	914	0.08	< 0.005	—	916
Total	0.12	0.06	1.00	0.43	0.01	0.08	—	0.08	0.08	—	0.08	—	1,271	1,271	0.11	< 0.005	—	1,274

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Enclosed Parking Structure	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
Condo/Townhouse	0.03	0.02	0.28	0.12	< 0.005	0.02	—	0.02	0.02	—	0.02	—	357	357	0.03	< 0.005	—	358
Single Family Housing	0.08	0.04	0.72	0.31	< 0.005	0.06	—	0.06	0.06	—	0.06	—	914	914	0.08	< 0.005	—	916
Total	0.12	0.06	1.00	0.43	0.01	0.08	—	0.08	0.08	—	0.08	—	1,271	1,271	0.11	< 0.005	—	1,274
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Enclosed Parking Structure	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
Condo/Townhouse	0.01	< 0.005	0.05	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	59.1	59.1	0.01	< 0.005	—	59.3
Single Family Housing	0.02	0.01	0.13	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01	—	151	151	0.01	< 0.005	—	152
Total	0.02	0.01	0.18	0.08	< 0.005	0.01	—	0.01	0.01	—	0.01	—	210	210	0.02	< 0.005	—	211

4.2.4. Natural Gas Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Enclosed Parking Structure	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
Condo/Townhouse	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
Single Family Housing	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
Total	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Enclosed Parking Structure	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
Condo/Townhouse	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
Single Family Housing	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
Total	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Enclosed Parking Structure	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
Condo/Townhouse	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
Single Family Housing	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
Total	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

4.3. Area Emissions by Source

4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	7.48	3.70	1.75	33.5	0.12	4.80	—	4.80	4.63	—	4.63	793	1,537	2,331	3.74	< 0.005	—	2,425
Consumer Products	—	5.18	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.42	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	1.07	1.01	0.09	9.95	< 0.005	0.01	—	0.01	0.01	—	0.01	—	29.0	29.0	< 0.005	< 0.005	—	29.1
Total	8.55	10.3	1.84	43.4	0.12	4.81	—	4.81	4.63	—	4.63	793	1,566	2,360	3.74	< 0.005	—	2,454
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	7.48	3.70	1.75	33.5	0.12	4.80	—	4.80	4.63	—	4.63	793	1,537	2,331	3.74	< 0.005	—	2,425
Consumer Products	—	5.18	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.42	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	7.48	9.30	1.75	33.5	0.12	4.80	—	4.80	4.63	—	4.63	793	1,537	2,331	3.74	< 0.005	—	2,425
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.31	0.15	0.07	1.37	< 0.005	0.20	—	0.20	0.19	—	0.19	29.5	57.2	86.7	0.14	< 0.005	—	90.2

Consum Products	—	0.95	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.08	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.10	0.09	0.01	0.90	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.37	2.37	< 0.005	< 0.005	—	2.38
Total	0.40	1.26	0.08	2.27	< 0.005	0.20	—	0.20	0.19	—	0.19	29.5	59.5	89.1	0.14	< 0.005	—	92.6

4.3.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	7.48	3.70	1.75	33.5	0.12	4.80	—	4.80	4.63	—	4.63	793	1,537	2,331	3.74	< 0.005	—	2,425
Consumer Products	—	5.18	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.42	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	1.07	1.01	0.09	9.95	< 0.005	0.01	—	0.01	0.01	—	0.01	—	29.0	29.0	< 0.005	< 0.005	—	29.1
Total	8.55	10.3	1.84	43.4	0.12	4.81	—	4.81	4.63	—	4.63	793	1,566	2,360	3.74	< 0.005	—	2,454
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	7.48	3.70	1.75	33.5	0.12	4.80	—	4.80	4.63	—	4.63	793	1,537	2,331	3.74	< 0.005	—	2,425

Consumer	—	5.18	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.42	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	7.48	9.30	1.75	33.5	0.12	4.80	—	4.80	4.63	—	4.63	793	1,537	2,331	3.74	< 0.005	—	2,425
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.31	0.15	0.07	1.37	< 0.005	0.20	—	0.20	0.19	—	0.19	29.5	57.2	86.7	0.14	< 0.005	—	90.2
Consumer Products	—	0.95	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.08	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.10	0.09	0.01	0.90	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.37	2.37	< 0.005	< 0.005	—	2.38
Total	0.40	1.26	0.08	2.27	< 0.005	0.20	—	0.20	0.19	—	0.19	29.5	59.5	89.1	0.14	< 0.005	—	92.6

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Enclosed Parking Structure	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

Condo/Townhous	—	—	—	—	—	—	—	—	—	—	—	3.74	3.56	7.30	0.38	0.01	—	19.6
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	7.64	26.4	34.1	0.79	0.02	—	59.4
Total	—	—	—	—	—	—	—	—	—	—	—	11.4	30.0	41.4	1.17	0.03	—	79.1
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Enclosed Parking Structure	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	3.74	3.56	7.30	0.38	0.01	—	19.6
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	7.64	26.4	34.1	0.79	0.02	—	59.4
Total	—	—	—	—	—	—	—	—	—	—	—	11.4	30.0	41.4	1.17	0.03	—	79.1
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Enclosed Parking Structure	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	0.62	0.59	1.21	0.06	< 0.005	—	3.25
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	1.26	4.37	5.64	0.13	< 0.005	—	9.84
Total	—	—	—	—	—	—	—	—	—	—	—	1.88	4.96	6.85	0.19	< 0.005	—	13.1

4.4.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Enclosed Parking Structure	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	3.74	3.56	7.30	0.38	0.01	—	19.6
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	7.64	26.4	34.1	0.79	0.02	—	59.4
Total	—	—	—	—	—	—	—	—	—	—	—	11.4	30.0	41.4	1.17	0.03	—	79.1
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Enclosed Parking Structure	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	3.74	3.56	7.30	0.38	0.01	—	19.6
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	7.64	26.4	34.1	0.79	0.02	—	59.4
Total	—	—	—	—	—	—	—	—	—	—	—	11.4	30.0	41.4	1.17	0.03	—	79.1
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Enclosed Parking Structure	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	0.62	0.59	1.21	0.06	< 0.005	—	3.25

Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	1.26	4.37	5.64	0.13	< 0.005	—	9.84
Total	—	—	—	—	—	—	—	—	—	—	—	1.88	4.96	6.85	0.19	< 0.005	—	13.1

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Enclosed Parking Structure	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	19.1	0.00	19.1	1.91	0.00	—	66.9
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	46.8	0.00	46.8	4.67	0.00	—	164
Total	—	—	—	—	—	—	—	—	—	—	—	65.9	0.00	65.9	6.59	0.00	—	231
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Enclosed Parking Structure	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	19.1	0.00	19.1	1.91	0.00	—	66.9

Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	46.8	0.00	46.8	4.67	0.00	—	164
Total	—	—	—	—	—	—	—	—	—	—	—	65.9	0.00	65.9	6.59	0.00	—	231
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Enclosed Parking Structure	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	3.17	0.00	3.17	0.32	0.00	—	11.1
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	7.74	0.00	7.74	0.77	0.00	—	27.1
Total	—	—	—	—	—	—	—	—	—	—	—	10.9	0.00	10.9	1.09	0.00	—	38.2

4.5.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Enclosed Parking Structure	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	19.1	0.00	19.1	1.91	0.00	—	66.9
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	46.8	0.00	46.8	4.67	0.00	—	164
Total	—	—	—	—	—	—	—	—	—	—	—	65.9	0.00	65.9	6.59	0.00	—	231

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Enclosed Parking Structure	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	19.1	0.00	19.1	1.91	0.00	—	66.9
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	46.8	0.00	46.8	4.67	0.00	—	164
Total	—	—	—	—	—	—	—	—	—	—	—	65.9	0.00	65.9	6.59	0.00	—	231
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Enclosed Parking Structure	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	3.17	0.00	3.17	0.32	0.00	—	11.1
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	7.74	0.00	7.74	0.77	0.00	—	27.1
Total	—	—	—	—	—	—	—	—	—	—	—	10.9	0.00	10.9	1.09	0.00	—	38.2

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Condo/T	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.36	0.36
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.37	1.37
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.73	1.73
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/T ownhouse	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.36	0.36
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.37	1.37
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.73	1.73
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/T ownhouse	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.06	0.06
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.23	0.23
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.29	0.29

4.6.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/T ownhouse	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.36	0.36

Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.37	1.37
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.73	1.73
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.36	0.36
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.37	1.37
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.73	1.73
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.06	0.06
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.23	0.23
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.29	0.29

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.7.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Sequest	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Site Preparation	Site Preparation	7/1/2025	9/22/2025	5.00	60.0	—
Grading	Grading	7/1/2025	9/22/2025	5.00	60.0	—
Utilities	Grading	8/1/2025	12/5/2025	5.00	91.0	—
Building Construction	Building Construction	11/15/2025	10/17/2027	5.00	500	—
Paving	Paving	11/1/2025	11/8/2025	5.00	5.00	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Rubber Tired Dozers	Diesel	Tier 4 Interim	3.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	4.00	8.00	84.0	0.37
Grading	Graders	Diesel	Tier 4 Interim	1.00	8.00	148	0.41
Grading	Excavators	Diesel	Tier 4 Interim	2.00	8.00	36.0	0.38
Grading	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	2.00	8.00	84.0	0.37
Grading	Scrapers	Diesel	Tier 4 Interim	2.00	8.00	423	0.48
Grading	Rubber Tired Dozers	Diesel	Tier 4 Interim	1.00	8.00	367	0.40
Utilities	Graders	Diesel	Tier 4 Interim	1.00	8.00	148	0.41
Utilities	Excavators	Diesel	Tier 4 Interim	2.00	8.00	36.0	0.38
Utilities	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	2.00	8.00	84.0	0.37
Utilities	Scrapers	Diesel	Tier 4 Interim	2.00	8.00	423	0.48
Utilities	Rubber Tired Dozers	Diesel	Tier 4 Interim	1.00	8.00	367	0.40
Building Construction	Forklifts	Diesel	Tier 4 Interim	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Tier 4 Interim	1.00	8.00	14.0	0.74
Building Construction	Cranes	Diesel	Tier 4 Interim	1.00	7.00	367	0.29
Building Construction	Welders	Diesel	Tier 4 Interim	1.00	8.00	46.0	0.45
Building Construction	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	3.00	7.00	84.0	0.37
Building Construction	Air Compressors	Diesel	Tier 4 Interim	1.00	8.00	37.0	0.48
Paving	Pavers	Diesel	Tier 4 Interim	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Tier 4 Interim	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Tier 4 Interim	2.00	8.00	36.0	0.38

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Rubber Tired Dozers	Diesel	Tier 4 Interim	3.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	4.00	8.00	84.0	0.37
Grading	Graders	Diesel	Tier 4 Interim	1.00	8.00	148	0.41
Grading	Excavators	Diesel	Tier 4 Interim	2.00	8.00	36.0	0.38
Grading	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	2.00	8.00	84.0	0.37
Grading	Scrapers	Diesel	Tier 4 Interim	2.00	8.00	423	0.48
Grading	Rubber Tired Dozers	Diesel	Tier 4 Interim	1.00	8.00	367	0.40
Utilities	Graders	Diesel	Tier 4 Interim	1.00	8.00	148	0.41
Utilities	Excavators	Diesel	Tier 4 Interim	2.00	8.00	36.0	0.38
Utilities	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	2.00	8.00	84.0	0.37
Utilities	Scrapers	Diesel	Tier 4 Interim	2.00	8.00	423	0.48
Utilities	Rubber Tired Dozers	Diesel	Tier 4 Interim	1.00	8.00	367	0.40
Building Construction	Forklifts	Diesel	Tier 4 Interim	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Tier 4 Interim	1.00	8.00	14.0	0.74
Building Construction	Cranes	Diesel	Tier 4 Interim	1.00	7.00	367	0.29
Building Construction	Welders	Diesel	Tier 4 Interim	1.00	8.00	46.0	0.45
Building Construction	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	3.00	7.00	84.0	0.37
Building Construction	Air Compressors	Diesel	Tier 4 Interim	1.00	8.00	37.0	0.48
Paving	Pavers	Diesel	Tier 4 Interim	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Tier 4 Interim	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Tier 4 Interim	2.00	8.00	36.0	0.38

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	17.5	11.9	LDA,LDT1,LDT2
Site Preparation	Vendor	—	9.10	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	20.0	11.9	LDA,LDT1,LDT2
Grading	Vendor	—	9.10	HHDT,MHDT
Grading	Hauling	18.8	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	200	11.9	LDA,LDT1,LDT2
Building Construction	Vendor	21.9	9.10	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	11.9	LDA,LDT1,LDT2
Paving	Vendor	—	9.10	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Utilities	—	—	—	—
Utilities	Worker	20.0	11.9	LDA,LDT1,LDT2
Utilities	Vendor	—	9.10	HHDT,MHDT
Utilities	Hauling	0.00	20.0	HHDT
Utilities	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	17.5	11.9	LDA,LDT1,LDT2
Site Preparation	Vendor	—	9.10	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	20.0	11.9	LDA,LDT1,LDT2
Grading	Vendor	—	9.10	HHDT,MHDT
Grading	Hauling	18.8	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	200	11.9	LDA,LDT1,LDT2
Building Construction	Vendor	21.9	9.10	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	11.9	LDA,LDT1,LDT2
Paving	Vendor	—	9.10	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Utilities	—	—	—	—
Utilities	Worker	20.0	11.9	LDA,LDT1,LDT2
Utilities	Vendor	—	9.10	HHDT,MHDT
Utilities	Hauling	0.00	20.0	HHDT
Utilities	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Utilities	490,010	163,337	1,694	188	2,258

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Site Preparation	—	—	90.0	0.00	—
Grading	9,009	—	180	0.00	—
Utilities	—	—	273	0.00	—
Paving	0.00	0.00	0.00	0.00	1.94

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Enclosed Parking Structure	0.86	100%
Condo/Townhouse	—	0%
Single Family Housing	1.08	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2025	0.00	204	0.03	< 0.005
2026	0.00	204	0.03	< 0.005
2027	0.00	204	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Enclosed Parking Structure	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Condo/Townhouse	453	453	453	165,214	4,094	4,094	4,094	1,494,161
Single Family Housing	924	924	924	337,311	8,358	8,358	8,358	3,050,580

5.9.2. Mitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Enclosed Parking Structure	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Condo/Townhouse	453	453	453	165,214	4,094	4,094	4,094	1,494,161
Single Family Housing	924	924	924	337,311	8,358	8,358	8,358	3,050,580

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

Hearth Type	Unmitigated (number)
Condo/Townhouse	—
Wood Fireplaces	0
Gas Fireplaces	24
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	24
Conventional Wood Stoves	0
Catalytic Wood Stoves	2
Non-Catalytic Wood Stoves	2
Pellet Wood Stoves	0
Single Family Housing	—
Wood Fireplaces	0
Gas Fireplaces	49
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	49
Conventional Wood Stoves	0
Catalytic Wood Stoves	5
Non-Catalytic Wood Stoves	5
Pellet Wood Stoves	0

5.10.1.2. Mitigated

Hearth Type	Unmitigated (number)
Condo/Townhouse	—

Wood Fireplaces	0
Gas Fireplaces	24
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	24
Conventional Wood Stoves	0
Catalytic Wood Stoves	2
Non-Catalytic Wood Stoves	2
Pellet Wood Stoves	0
Single Family Housing	—
Wood Fireplaces	0
Gas Fireplaces	49
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	49
Conventional Wood Stoves	0
Catalytic Wood Stoves	5
Non-Catalytic Wood Stoves	5
Pellet Wood Stoves	0

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
490009.5	163,337	1,694	188	2,258

5.10.3. Landscape Equipment

Season	Unit	Value

Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.10.4. Landscape Equipment - Mitigated

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Enclosed Parking Structure	134,455	204	0.0330	0.0040	0.00
Condo/Townhouse	247,640	204	0.0330	0.0040	1,114,557
Single Family Housing	835,520	204	0.0330	0.0040	2,850,822

5.11.2. Mitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Enclosed Parking Structure	134,455	204	0.0330	0.0040	0.00
Condo/Townhouse	249,786	204	0.0330	0.0040	0.00
Single Family Housing	839,636	204	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Enclosed Parking Structure	0.00	0.00
Condo/Townhouse	1,952,341	0.00
Single Family Housing	3,986,030	19,691,743

5.12.2. Mitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Enclosed Parking Structure	0.00	0.00
Condo/Townhouse	1,952,341	0.00
Single Family Housing	3,986,030	19,691,743

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Enclosed Parking Structure	0.00	—
Condo/Townhouse	35.5	—
Single Family Housing	86.8	—

5.13.2. Mitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Enclosed Parking Structure	0.00	—
Condo/Townhouse	35.5	—
Single Family Housing	86.8	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Condo/Townhouse	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Condo/Townhouse	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00
Single Family Housing	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Single Family Housing	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00

5.14.2. Mitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Condo/Townhouse	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Condo/Townhouse	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00
Single Family Housing	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Single Family Housing	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.15.2. Mitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

5.18.2.2. Mitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	20.4	annual days of extreme heat
Extreme Precipitation	1.60	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	0.00	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	1	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	0	0	0	N/A
Drought	0	0	0	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	1	1	1	2
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A

Flooding	1	1	1	2
Drought	1	1	1	2
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	59.7
AQ-PM	54.7
AQ-DPM	72.6
Drinking Water	99.0
Lead Risk Housing	11.8
Pesticides	94.2
Toxic Releases	43.0
Traffic	62.5
Effect Indicators	—
CleanUp Sites	81.4
Groundwater	59.6

Haz Waste Facilities/Generators	78.4
Impaired Water Bodies	0.00
Solid Waste	86.5
Sensitive Population	—
Asthma	83.6
Cardio-vascular	91.0
Low Birth Weights	28.4
Socioeconomic Factor Indicators	—
Education	42.3
Housing	15.1
Linguistic	34.6
Poverty	22.5
Unemployment	36.4

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	56.89721545
Employed	56.93571154
Median HI	74.2846144
Education	—
Bachelor's or higher	33.29911459
High school enrollment	100
Preschool enrollment	58.59104324
Transportation	—
Auto Access	88.68215065

Active commuting	17.60554344
Social	—
2-parent households	95.0468369
Voting	64.72475298
Neighborhood	—
Alcohol availability	93.5711536
Park access	81.35506224
Retail density	23.46978057
Supermarket access	19.32503529
Tree canopy	48.95418966
Housing	—
Homeownership	70.64031823
Housing habitability	66.84203773
Low-inc homeowner severe housing cost burden	56.25561401
Low-inc renter severe housing cost burden	47.45284229
Uncrowded housing	40.20274605
Health Outcomes	—
Insured adults	85.66662389
Arthritis	71.8
Asthma ER Admissions	14.4
High Blood Pressure	56.0
Cancer (excluding skin)	68.9
Asthma	37.3
Coronary Heart Disease	83.6
Chronic Obstructive Pulmonary Disease	59.8
Diagnosed Diabetes	76.6
Life Expectancy at Birth	39.0

Cognitively Disabled	43.0
Physically Disabled	93.4
Heart Attack ER Admissions	7.2
Mental Health Not Good	43.4
Chronic Kidney Disease	85.5
Obesity	38.6
Pedestrian Injuries	19.6
Physical Health Not Good	57.2
Stroke	80.6
Health Risk Behaviors	—
Binge Drinking	21.6
Current Smoker	35.6
No Leisure Time for Physical Activity	47.2
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	31.0
Elderly	87.4
English Speaking	63.7
Foreign-born	34.9
Outdoor Workers	27.0
Climate Change Adaptive Capacity	—
Impervious Surface Cover	55.7
Traffic Density	68.1
Traffic Access	0.0
Other Indices	—
Hardship	51.8

Other Decision Support	—
2016 Voting	53.6

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	73.0
Healthy Places Index Score for Project Location (b)	66.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	Yes
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Construction: Construction Phases	Project construction duration provided
Construction: Trips and VMT	construction worker numbers for building construction from the project applicant
Operations: Vehicle Data	Operational trip rates provided by Stantec Consulting Services Inc.
Construction: Off-Road Equipment	Tier 4 equipment to be used as part of Project construction

Manteca Phase B Detailed Report

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4.1.1. Unmitigated

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4.4.1. Unmitigated

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4.5.1. Unmitigated

4.5.2. Mitigated

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

4.6.2. Mitigated

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

4.7.2. Mitigated

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

4.8.2. Mitigated

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

4.9.2. Mitigated

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

5. Activity Data

5.1. Construction Schedule

5.2. Off-Road Equipment

5.2.1. Unmitigated

5.2.2. Mitigated

5.3. Construction Vehicles

5.3.1. Unmitigated

5.3.2. Mitigated

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

5.5. Architectural Coatings

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

5.6.2. Construction Earthmoving Control Strategies

5.7. Construction Paving

5.8. Construction Electricity Consumption and Emissions Factors

5.9. Operational Mobile Sources

5.9.1. Unmitigated

5.9.2. Mitigated

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.1.2. Mitigated

5.10.2. Architectural Coatings

5.10.3. Landscape Equipment

5.10.4. Landscape Equipment - Mitigated

5.11. Operational Energy Consumption

5.11.1. Unmitigated

5.11.2. Mitigated

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

5.12.2. Mitigated

5.13. Operational Waste Generation

5.13.1. Unmitigated

5.13.2. Mitigated

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

5.14.2. Mitigated

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

5.15.2. Mitigated

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

5.16.2. Process Boilers

5.17. User Defined

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

5.18.1.2. Mitigated

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

5.18.1.2. Mitigated

5.18.2. Sequestration

5.18.2.1. Unmitigated

5.18.2.2. Mitigated

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

6.2. Initial Climate Risk Scores

6.3. Adjusted Climate Risk Scores

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

7.2. Healthy Places Index Scores

7.3. Overall Health & Equity Scores

7.4. Health & Equity Measures

7.5. Evaluation Scorecard

7.6. Health & Equity Custom Measures

8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Manteca Phase B
Construction Start Date	7/1/2025
Operational Year	2028
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.40
Precipitation (days)	9.00
Location	Quintal Rd, Manteca, CA 95337, USA
County	San Joaquin
City	Manteca
Air District	San Joaquin Valley APCD
Air Basin	San Joaquin Valley
TAZ	2162
EDFZ	4
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.22

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description

Apartments Mid Rise	672	Dwelling Unit	20.6	645,120	5,500	32,000	2,171	—
Parking Lot	728	Space	6.55	0.00	0.00	—	—	—
Enclosed Parking with Elevator	180	Space	1.62	72,000	0.00	—	—	—
Unenclosed Parking Structure	257	Space	2.31	102,800	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Energy	E-15	Require All-Electric Development

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.55	2.51	55.0	102	0.18	0.48	38.8	39.3	0.47	17.6	18.1	—	20,063	20,063	0.80	0.54	16.2	20,187
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.57	5.08	55.1	102	0.18	0.48	38.8	39.3	0.47	17.6	18.1	—	20,013	20,013	0.79	0.61	0.44	20,131
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.20	1.17	11.7	22.6	0.04	0.13	8.11	8.22	0.13	3.68	3.78	—	5,888	5,888	0.17	0.39	4.60	6,006
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Unmit.	0.22	0.21	2.13	4.12	0.01	0.02	1.48	1.50	0.02	0.67	0.69	—	975	975	0.03	0.06	0.76	994

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	2.55	2.51	55.0	102	0.18	0.48	38.8	39.3	0.47	17.6	18.1	—	20,063	20,063	0.80	0.33	4.49	20,187
2026	1.77	1.61	14.3	31.2	0.05	0.17	3.29	3.46	0.16	0.80	0.96	—	8,086	8,086	0.21	0.54	16.2	8,268
2027	1.71	1.55	14.1	30.1	0.05	0.17	3.29	3.46	0.16	0.80	0.96	—	7,984	7,984	0.20	0.54	14.4	8,165
2028	1.55	1.49	13.9	29.1	0.05	0.17	3.29	3.46	0.16	0.80	0.96	—	7,867	7,867	0.20	0.52	12.7	8,039
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	2.53	2.48	55.1	102	0.18	0.48	38.8	39.3	0.47	17.6	18.1	—	20,013	20,013	0.79	0.33	0.12	20,131
2026	2.57	5.08	34.2	64.3	0.11	0.35	12.7	13.0	0.34	4.50	4.83	—	14,589	14,589	0.50	0.61	0.44	14,783
2027	1.54	1.46	14.5	27.3	0.05	0.17	3.29	3.46	0.16	0.80	0.96	—	7,731	7,731	0.22	0.55	0.37	7,899
2028	1.47	1.33	14.2	26.6	0.05	0.17	3.29	3.46	0.16	0.80	0.96	—	7,618	7,618	0.22	0.53	0.33	7,781
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.53	0.52	11.5	21.3	0.04	0.10	8.11	8.22	0.10	3.68	3.78	—	4,191	4,191	0.16	0.07	0.40	4,216
2026	1.20	1.17	11.7	22.6	0.04	0.13	3.11	3.24	0.13	0.91	1.03	—	5,888	5,888	0.17	0.36	4.60	6,006
2027	1.10	1.04	10.2	19.7	0.03	0.12	2.33	2.45	0.12	0.57	0.69	—	5,564	5,564	0.15	0.39	4.44	5,688
2028	0.56	0.51	5.40	10.2	0.02	0.06	1.25	1.31	0.06	0.30	0.37	—	2,929	2,929	0.08	0.20	2.10	2,992
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.10	0.09	2.10	3.89	0.01	0.02	1.48	1.50	0.02	0.67	0.69	—	694	694	0.03	0.01	0.07	698
2026	0.22	0.21	2.13	4.12	0.01	0.02	0.57	0.59	0.02	0.17	0.19	—	975	975	0.03	0.06	0.76	994
2027	0.20	0.19	1.86	3.59	0.01	0.02	0.43	0.45	0.02	0.10	0.13	—	921	921	0.02	0.06	0.74	942

2028	0.10	0.09	0.99	1.86	< 0.005	0.01	0.23	0.24	0.01	0.06	0.07	—	485	485	0.01	0.03	0.35	495

2.3. Construction Emissions by Year, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	2.55	2.51	55.0	102	0.18	0.48	38.8	39.3	0.47	17.6	18.1	—	20,063	20,063	0.80	0.33	4.49	20,187
2026	1.77	1.61	14.3	31.2	0.05	0.17	3.29	3.46	0.16	0.80	0.96	—	8,086	8,086	0.21	0.54	16.2	8,268
2027	1.71	1.55	14.1	30.1	0.05	0.17	3.29	3.46	0.16	0.80	0.96	—	7,984	7,984	0.20	0.54	14.4	8,165
2028	1.55	1.49	13.9	29.1	0.05	0.17	3.29	3.46	0.16	0.80	0.96	—	7,867	7,867	0.20	0.52	12.7	8,039
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	2.53	2.48	55.1	102	0.18	0.48	38.8	39.3	0.47	17.6	18.1	—	20,013	20,013	0.79	0.33	0.12	20,131
2026	2.57	5.08	34.2	64.3	0.11	0.35	12.7	13.0	0.34	4.50	4.83	—	14,589	14,589	0.50	0.61	0.44	14,783
2027	1.54	1.46	14.5	27.3	0.05	0.17	3.29	3.46	0.16	0.80	0.96	—	7,731	7,731	0.22	0.55	0.37	7,899
2028	1.47	1.33	14.2	26.6	0.05	0.17	3.29	3.46	0.16	0.80	0.96	—	7,618	7,618	0.22	0.53	0.33	7,781
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.53	0.52	11.5	21.3	0.04	0.10	8.11	8.22	0.10	3.68	3.78	—	4,191	4,191	0.16	0.07	0.40	4,216
2026	1.20	1.17	11.7	22.6	0.04	0.13	3.11	3.24	0.13	0.91	1.03	—	5,888	5,888	0.17	0.36	4.60	6,006
2027	1.10	1.04	10.2	19.7	0.03	0.12	2.33	2.45	0.12	0.57	0.69	—	5,564	5,564	0.15	0.39	4.44	5,688
2028	0.56	0.51	5.40	10.2	0.02	0.06	1.25	1.31	0.06	0.30	0.37	—	2,929	2,929	0.08	0.20	2.10	2,992
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.10	0.09	2.10	3.89	0.01	0.02	1.48	1.50	0.02	0.67	0.69	—	694	694	0.03	0.01	0.07	698
2026	0.22	0.21	2.13	4.12	0.01	0.02	0.57	0.59	0.02	0.17	0.19	—	975	975	0.03	0.06	0.76	994
2027	0.20	0.19	1.86	3.59	0.01	0.02	0.43	0.45	0.02	0.10	0.13	—	921	921	0.02	0.06	0.74	942

2028	0.10	0.09	0.99	1.86	< 0.005	0.01	0.23	0.24	0.01	0.06	0.07	—	485	485	0.01	0.03	0.35	495

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	57.0	53.0	24.5	331	0.87	22.6	27.6	50.2	21.7	7.03	28.8	3,972	44,799	48,771	51.2	1.63	97.6	50,636
Mit.	56.8	52.8	22.2	330	0.85	22.4	27.6	50.0	21.6	7.03	28.6	3,972	41,830	45,802	50.9	1.63	97.6	47,658
% Reduced	< 0.5%	< 0.5%	10%	< 0.5%	2%	1%	—	< 0.5%	1%	—	1%	—	7%	6%	1%	< 0.5%	—	6%
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	51.0	47.1	26.2	269	0.84	22.5	27.6	50.2	21.7	7.03	28.7	3,972	42,331	46,304	51.4	1.75	7.03	48,116
Mit.	50.7	47.0	23.9	268	0.83	22.3	27.6	50.0	21.5	7.03	28.6	3,972	39,362	43,334	51.1	1.74	7.03	45,139
% Reduced	1%	< 0.5%	9%	< 0.5%	2%	1%	—	< 0.5%	1%	—	1%	—	7%	6%	1%	< 0.5%	—	6%
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	26.7	36.2	19.3	172	0.44	5.42	27.5	32.9	5.22	6.99	12.2	1,141	37,458	38,599	37.9	1.69	44.8	40,094
Mit.	26.4	36.1	16.9	171	0.42	5.23	27.5	32.7	5.03	6.99	12.0	1,141	34,489	35,630	37.7	1.68	44.8	37,117
% Reduced	1%	< 0.5%	12%	1%	3%	3%	—	1%	4%	—	2%	—	8%	8%	1%	< 0.5%	—	7%
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	4.87	6.61	3.51	31.4	0.08	0.99	5.02	6.01	0.95	1.28	2.23	189	6,202	6,390	6.28	0.28	7.41	6,638
Mit.	4.82	6.58	3.09	31.2	0.08	0.95	5.02	5.97	0.92	1.28	2.19	189	5,710	5,899	6.24	0.28	7.41	6,145

% Reduced	1%	< 0.5%	12%	1%	3%	3%	—	1%	4%	—	2%	—	8%	8%	1%	< 0.5%	—	7%

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	17.5	16.2	13.7	130	0.32	0.25	27.6	27.9	0.23	7.03	7.26	—	32,434	32,434	1.23	1.44	93.0	32,988
Area	39.3	36.6	8.47	200	0.53	22.1	—	22.1	21.3	—	21.3	3,652	7,208	10,860	17.2	0.01	—	11,295
Energy	0.27	0.14	2.34	1.00	0.01	0.19	—	0.19	0.19	—	0.19	—	5,106	5,106	0.61	0.05	—	5,136
Water	—	—	—	—	—	—	—	—	—	—	—	52.4	50.3	103	5.38	0.13	—	275
Waste	—	—	—	—	—	—	—	—	—	—	—	268	0.00	268	26.8	0.00	—	937
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.62	4.62
Total	57.0	53.0	24.5	331	0.87	22.6	27.6	50.2	21.7	7.03	28.8	3,972	44,799	48,771	51.2	1.63	97.6	50,636
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	16.3	15.0	15.8	114	0.29	0.25	27.6	27.9	0.23	7.03	7.26	—	30,100	30,100	1.39	1.56	2.41	30,602
Area	34.4	32.0	8.05	154	0.53	22.1	—	22.1	21.3	—	21.3	3,652	7,075	10,727	17.2	0.01	—	11,161
Energy	0.27	0.14	2.34	1.00	0.01	0.19	—	0.19	0.19	—	0.19	—	5,106	5,106	0.61	0.05	—	5,136
Water	—	—	—	—	—	—	—	—	—	—	—	52.4	50.3	103	5.38	0.13	—	275
Waste	—	—	—	—	—	—	—	—	—	—	—	268	0.00	268	26.8	0.00	—	937
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.62	4.62
Total	51.0	47.1	26.2	269	0.84	22.5	27.6	50.2	21.7	7.03	28.7	3,972	42,331	46,304	51.4	1.75	7.03	48,116
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	16.3	15.0	14.9	114	0.30	0.25	27.5	27.7	0.23	6.99	7.22	—	30,646	30,646	1.31	1.51	40.1	31,168

Area	10.1	21.1	2.02	57.2	0.12	4.98	—	4.98	4.80	—	4.80	820	1,655	2,476	3.87	< 0.005	—	2,573
Energy	0.27	0.14	2.34	1.00	0.01	0.19	—	0.19	0.19	—	0.19	—	5,106	5,106	0.61	0.05	—	5,136
Water	—	—	—	—	—	—	—	—	—	—	—	52.4	50.3	103	5.38	0.13	—	275
Waste	—	—	—	—	—	—	—	—	—	—	—	268	0.00	268	26.8	0.00	—	937
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.62	4.62
Total	26.7	36.2	19.3	172	0.44	5.42	27.5	32.9	5.22	6.99	12.2	1,141	37,458	38,599	37.9	1.69	44.8	40,094
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	2.97	2.74	2.72	20.8	0.05	0.04	5.02	5.06	0.04	1.28	1.32	—	5,074	5,074	0.22	0.25	6.65	5,160
Area	1.85	3.84	0.37	10.4	0.02	0.91	—	0.91	0.88	—	0.88	136	274	410	0.64	< 0.005	—	426
Energy	0.05	0.02	0.43	0.18	< 0.005	0.03	—	0.03	0.03	—	0.03	—	845	845	0.10	0.01	—	850
Water	—	—	—	—	—	—	—	—	—	—	—	8.67	8.33	17.0	0.89	0.02	—	45.6
Waste	—	—	—	—	—	—	—	—	—	—	—	44.3	0.00	44.3	4.43	0.00	—	155
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.76	0.76
Total	4.87	6.61	3.51	31.4	0.08	0.99	5.02	6.01	0.95	1.28	2.23	189	6,202	6,390	6.28	0.28	7.41	6,638

2.6. Operations Emissions by Sector, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	17.5	16.2	13.7	130	0.32	0.25	27.6	27.9	0.23	7.03	7.26	—	32,434	32,434	1.23	1.44	93.0	32,988
Area	39.3	36.6	8.47	200	0.53	22.1	—	22.1	21.3	—	21.3	3,652	7,208	10,860	17.2	0.01	—	11,295
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	2,137	2,137	0.35	0.04	—	2,158
Water	—	—	—	—	—	—	—	—	—	—	—	52.4	50.3	103	5.38	0.13	—	275
Waste	—	—	—	—	—	—	—	—	—	—	—	268	0.00	268	26.8	0.00	—	937
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.62	4.62
Total	56.8	52.8	22.2	330	0.85	22.4	27.6	50.0	21.6	7.03	28.6	3,972	41,830	45,802	50.9	1.63	97.6	47,658

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	16.3	15.0	15.8	114	0.29	0.25	27.6	27.9	0.23	7.03	7.26	—	30,100	30,100	1.39	1.56	2.41	30,602
Area	34.4	32.0	8.05	154	0.53	22.1	—	22.1	21.3	—	21.3	3,652	7,075	10,727	17.2	0.01	—	11,161
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	2,137	2,137	0.35	0.04	—	2,158
Water	—	—	—	—	—	—	—	—	—	—	—	52.4	50.3	103	5.38	0.13	—	275
Waste	—	—	—	—	—	—	—	—	—	—	—	268	0.00	268	26.8	0.00	—	937
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.62	4.62
Total	50.7	47.0	23.9	268	0.83	22.3	27.6	50.0	21.5	7.03	28.6	3,972	39,362	43,334	51.1	1.74	7.03	45,139
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	16.3	15.0	14.9	114	0.30	0.25	27.5	27.7	0.23	6.99	7.22	—	30,646	30,646	1.31	1.51	40.1	31,168
Area	10.1	21.1	2.02	57.2	0.12	4.98	—	4.98	4.80	—	4.80	820	1,655	2,476	3.87	< 0.005	—	2,573
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	2,137	2,137	0.35	0.04	—	2,158
Water	—	—	—	—	—	—	—	—	—	—	—	52.4	50.3	103	5.38	0.13	—	275
Waste	—	—	—	—	—	—	—	—	—	—	—	268	0.00	268	26.8	0.00	—	937
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.62	4.62
Total	26.4	36.1	16.9	171	0.42	5.23	27.5	32.7	5.03	6.99	12.0	1,141	34,489	35,630	37.7	1.68	44.8	37,117
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	2.97	2.74	2.72	20.8	0.05	0.04	5.02	5.06	0.04	1.28	1.32	—	5,074	5,074	0.22	0.25	6.65	5,160
Area	1.85	3.84	0.37	10.4	0.02	0.91	—	0.91	0.88	—	0.88	136	274	410	0.64	< 0.005	—	426
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	354	354	0.06	0.01	—	357
Water	—	—	—	—	—	—	—	—	—	—	—	8.67	8.33	17.0	0.89	0.02	—	45.6
Waste	—	—	—	—	—	—	—	—	—	—	—	44.3	0.00	44.3	4.43	0.00	—	155
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.76	0.76
Total	4.82	6.58	3.09	31.2	0.08	0.95	5.02	5.97	0.92	1.28	2.19	189	5,710	5,899	6.24	0.28	7.41	6,145

3. Construction Emissions Details

3.1. Site Preparation (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.64	0.64	14.7	28.3	0.05	0.10	—	0.10	0.10	—	0.10	—	5,295	5,295	0.21	0.04	—	5,314
Dust From Material Movement	—	—	—	—	—	—	19.7	19.7	—	10.1	10.1	—	—	—	—	—	—	—
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.64	0.64	14.7	28.3	0.05	0.10	—	0.10	0.10	—	0.10	—	5,295	5,295	0.21	0.04	—	5,314
Dust From Material Movement	—	—	—	—	—	—	19.7	19.7	—	10.1	10.1	—	—	—	—	—	—	—
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.13	3.07	5.89	0.01	0.02	—	0.02	0.02	—	0.02	—	1,103	1,103	0.04	0.01	—	1,106

Dust From Material Movement	—	—	—	—	—	—	4.09	4.09	—	2.10	2.10	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.56	1.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	183	183	0.01	< 0.005	—	183
Dust From Material Movement	—	—	—	—	—	—	0.75	0.75	—	0.38	0.38	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.05	0.91	0.00	0.00	0.15	0.15	0.00	0.03	0.03	—	162	162	0.01	0.01	0.60	165
Vendor	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	0.00
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.07	0.07	0.72	0.00	0.00	0.15	0.15	0.00	0.03	0.03	—	146	146	< 0.005	0.01	0.02	148
Vendor	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	0.00
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.01	0.15	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	31.2	31.2	< 0.005	< 0.005	0.05	31.7
Vendor	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	0.00
Hauling	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	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.17	5.17	< 0.005	< 0.005	0.01	5.24
Vendor	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	0.00
Hauling	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	0.00

3.2. Site Preparation (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.64	0.64	14.7	28.3	0.05	0.10	—	0.10	0.10	—	0.10	—	5,295	5,295	0.21	0.04	—	5,314
Dust From Material Movement	—	—	—	—	—	—	19.7	19.7	—	10.1	10.1	—	—	—	—	—	—	—
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.64	0.64	14.7	28.3	0.05	0.10	—	0.10	0.10	—	0.10	—	5,295	5,295	0.21	0.04	—	5,314
Dust From Material Movement	—	—	—	—	—	—	19.7	19.7	—	10.1	10.1	—	—	—	—	—	—	—
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.13	0.13	3.07	5.89	0.01	0.02	—	0.02	0.02	—	0.02	—	1,103	1,103	0.04	0.01	—	1,106
Dust From Material Movement	—	—	—	—	—	—	4.09	4.09	—	2.10	2.10	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.56	1.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	183	183	0.01	< 0.005	—	183
Dust From Material Movement	—	—	—	—	—	—	0.75	0.75	—	0.38	0.38	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.05	0.91	0.00	0.00	0.15	0.15	0.00	0.03	0.03	—	162	162	0.01	0.01	0.60	165
Vendor	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	0.00
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.07	0.07	0.72	0.00	0.00	0.15	0.15	0.00	0.03	0.03	—	146	146	< 0.005	0.01	0.02	148
Vendor	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	0.00
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.01	0.15	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	31.2	31.2	< 0.005	< 0.005	0.05	31.7

Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.17	5.17	< 0.005	< 0.005	0.01	5.24
Vendor	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	0.00
Hauling	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	0.00

3.3. Grading (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.80	0.80	19.4	35.3	0.06	0.18	—	0.18	0.18	—	0.18	—	6,599	6,599	0.27	0.05	—	6,622
Dust From Material Movement	—	—	—	—	—	—	9.21	9.21	—	3.66	3.66	—	—	—	—	—	—	—
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.80	0.80	19.4	35.3	0.06	0.18	—	0.18	0.18	—	0.18	—	6,599	6,599	0.27	0.05	—	6,622
Dust From Material Movement	—	—	—	—	—	—	9.21	9.21	—	3.66	3.66	—	—	—	—	—	—	—

Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.17	0.17	4.05	7.36	0.01	0.04	—	0.04	0.04	—	0.04	—	1,374	1,374	0.06	0.01	—	1,379
Dust From Material Movement	—	—	—	—	—	—	1.92	1.92	—	0.76	0.76	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.03	0.74	1.34	< 0.005	0.01	—	0.01	0.01	—	0.01	—	227	227	0.01	< 0.005	—	228
Dust From Material Movement	—	—	—	—	—	—	0.35	0.35	—	0.14	0.14	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.08	0.06	1.04	0.00	0.00	0.17	0.17	0.00	0.04	0.04	—	185	185	0.01	0.01	0.69	188
Vendor	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	0.00
Hauling	0.04	0.02	1.24	0.30	0.01	0.02	0.27	0.29	0.02	0.08	0.09	—	1,038	1,038	0.02	0.16	2.52	1,089
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.08	0.08	0.83	0.00	0.00	0.17	0.17	0.00	0.04	0.04	—	167	167	< 0.005	0.01	0.02	169
Vendor	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	0.00

Hauling	0.04	0.02	1.33	0.30	0.01	0.02	0.27	0.29	0.02	0.08	0.09	—	1,039	1,039	0.02	0.16	0.07	1,088
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.01	0.18	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	35.7	35.7	< 0.005	< 0.005	0.06	36.2
Vendor	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	0.00
Hauling	0.01	< 0.005	0.27	0.06	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	216	216	< 0.005	0.03	0.23	227
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.91	5.91	< 0.005	< 0.005	0.01	5.99
Vendor	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	0.00
Hauling	< 0.005	< 0.005	0.05	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	35.8	35.8	< 0.005	0.01	0.04	37.5

3.4. Grading (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.80	0.80	19.4	35.3	0.06	0.18	—	0.18	0.18	—	0.18	—	6,599	6,599	0.27	0.05	—	6,622
Dust From Material Movement	—	—	—	—	—	—	9.21	9.21	—	3.66	3.66	—	—	—	—	—	—	—
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.80	0.80	19.4	35.3	0.06	0.18	—	0.18	0.18	—	0.18	—	6,599	6,599	0.27	0.05	—	6,622

Dust From Material Movement	—	—	—	—	—	—	9.21	9.21	—	3.66	3.66	—	—	—	—	—	—	—
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.17	0.17	4.05	7.36	0.01	0.04	—	0.04	0.04	—	0.04	—	1,374	1,374	0.06	0.01	—	1,379
Dust From Material Movement	—	—	—	—	—	—	1.92	1.92	—	0.76	0.76	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.03	0.74	1.34	< 0.005	0.01	—	0.01	0.01	—	0.01	—	227	227	0.01	< 0.005	—	228
Dust From Material Movement	—	—	—	—	—	—	0.35	0.35	—	0.14	0.14	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.08	0.06	1.04	0.00	0.00	0.17	0.17	0.00	0.04	0.04	—	185	185	0.01	0.01	0.69	188
Vendor	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	0.00
Hauling	0.04	0.02	1.24	0.30	0.01	0.02	0.27	0.29	0.02	0.08	0.09	—	1,038	1,038	0.02	0.16	2.52	1,089
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.08	0.08	0.08	0.83	0.00	0.00	0.17	0.17	0.00	0.04	0.04	—	167	167	< 0.005	0.01	0.02	169
Vendor	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	0.00
Hauling	0.04	0.02	1.33	0.30	0.01	0.02	0.27	0.29	0.02	0.08	0.09	—	1,039	1,039	0.02	0.16	0.07	1,088
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.01	0.18	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	35.7	35.7	< 0.005	< 0.005	0.06	36.2
Vendor	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	0.00
Hauling	0.01	< 0.005	0.27	0.06	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	216	216	< 0.005	0.03	0.23	227
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.91	5.91	< 0.005	< 0.005	0.01	5.99
Vendor	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	0.00
Hauling	< 0.005	< 0.005	0.05	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	35.8	35.8	< 0.005	0.01	0.04	37.5

3.5. Utilities (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.80	0.80	19.4	35.3	0.06	0.18	—	0.18	0.18	—	0.18	—	6,599	6,599	0.27	0.05	—	6,622
Dust From Material Movement	—	—	—	—	—	—	9.20	9.20	—	3.65	3.65	—	—	—	—	—	—	—
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.80	0.80	19.4	35.3	0.06	0.18	—	0.18	0.18	—	0.18	—	6,599	6,599	0.27	0.05	—	6,622
Dust From Material Movement	—	—	—	—	—	—	9.20	9.20	—	3.65	3.65	—	—	—	—	—	—	—
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.17	0.17	4.11	7.47	0.01	0.04	—	0.04	0.04	—	0.04	—	1,395	1,395	0.06	0.01	—	1,399
Dust From Material Movement	—	—	—	—	—	—	1.95	1.95	—	0.77	0.77	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.03	0.75	1.36	< 0.005	0.01	—	0.01	0.01	—	0.01	—	231	231	0.01	< 0.005	—	232
Dust From Material Movement	—	—	—	—	—	—	0.35	0.35	—	0.14	0.14	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.08	0.06	1.04	0.00	0.00	0.17	0.17	0.00	0.04	0.04	—	185	185	0.01	0.01	0.69	188
Vendor	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	0.00
Hauling	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	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.08	0.08	0.83	0.00	0.00	0.17	0.17	0.00	0.04	0.04	—	167	167	< 0.005	0.01	0.02	169
Vendor	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	0.00
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.01	0.18	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	36.2	36.2	< 0.005	< 0.005	0.06	36.7
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.00	6.00	< 0.005	< 0.005	0.01	6.08
Vendor	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	0.00
Hauling	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	0.00

3.6. Utilities (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.80	0.80	19.4	35.3	0.06	0.18	—	0.18	0.18	—	0.18	—	6,599	6,599	0.27	0.05	—	6,622
Dust From Material Movement	—	—	—	—	—	—	9.20	9.20	—	3.65	3.65	—	—	—	—	—	—	—
Onsite truck	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	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.80	0.80	19.4	35.3	0.06	0.18	—	0.18	0.18	—	0.18	—	6,599	6,599	0.27	0.05	—	6,622
Dust From Material Movement	—	—	—	—	—	—	9.20	9.20	—	3.65	3.65	—	—	—	—	—	—	—
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.17	0.17	4.11	7.47	0.01	0.04	—	0.04	0.04	—	0.04	—	1,395	1,395	0.06	0.01	—	1,399
Dust From Material Movement	—	—	—	—	—	—	1.95	1.95	—	0.77	0.77	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.03	0.75	1.36	< 0.005	0.01	—	0.01	0.01	—	0.01	—	231	231	0.01	< 0.005	—	232
Dust From Material Movement	—	—	—	—	—	—	0.35	0.35	—	0.14	0.14	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.08	0.06	1.04	0.00	0.00	0.17	0.17	0.00	0.04	0.04	—	185	185	0.01	0.01	0.69	188

Vendor	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	0.00
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.08	0.08	0.83	0.00	0.00	0.17	0.17	0.00	0.04	0.04	—	167	167	< 0.005	0.01	0.02	169
Vendor	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	0.00
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.01	0.18	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	36.2	36.2	< 0.005	< 0.005	0.06	36.7
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.00	6.00	< 0.005	< 0.005	0.01	6.08
Vendor	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	0.00
Hauling	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	0.00

3.7. Utilities (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.80	0.80	19.4	35.3	0.06	0.18	—	0.18	0.18	—	0.18	—	6,599	6,599	0.27	0.05	—	6,621

Dust From Material Movement	—	—	—	—	—	—	9.20	9.20	—	3.65	3.65	—	—	—	—	—	—	—
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.08	2.02	3.67	0.01	0.02	—	0.02	0.02	—	0.02	—	684	684	0.03	0.01	—	687
Dust From Material Movement	—	—	—	—	—	—	0.95	0.95	—	0.38	0.38	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.37	0.67	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	113	113	< 0.005	< 0.005	—	114
Dust From Material Movement	—	—	—	—	—	—	0.17	0.17	—	0.07	0.07	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.06	0.76	0.00	0.00	0.17	0.17	0.00	0.04	0.04	—	164	164	< 0.005	0.01	0.02	166
Vendor	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	0.00
Hauling	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	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.08	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	17.4	17.4	< 0.005	< 0.005	0.03	17.7
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.88	2.88	< 0.005	< 0.005	< 0.005	2.92
Vendor	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	0.00
Hauling	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	0.00

3.8. Utilities (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.80	0.80	19.4	35.3	0.06	0.18	—	0.18	0.18	—	0.18	—	6,599	6,599	0.27	0.05	—	6,621
Dust From Material Movement	—	—	—	—	—	—	9.20	9.20	—	3.65	3.65	—	—	—	—	—	—	—
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.08	2.02	3.67	0.01	0.02	—	0.02	0.02	—	0.02	—	684	684	0.03	0.01	—	687

Dust From Material Movement	—	—	—	—	—	—	0.95	0.95	—	0.38	0.38	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.37	0.67	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	113	113	< 0.005	< 0.005	—	114
Dust From Material Movement	—	—	—	—	—	—	0.17	0.17	—	0.07	0.07	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.06	0.76	0.00	0.00	0.17	0.17	0.00	0.04	0.04	—	164	164	< 0.005	0.01	0.02	166
Vendor	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	0.00
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.08	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	17.4	17.4	< 0.005	< 0.005	0.03	17.7
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.88	2.88	< 0.005	< 0.005	< 0.005	2.92
Vendor	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	0.00

Hauling	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	0.00

3.9. Building Construction (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.34	0.34	10.2	15.6	0.03	0.13	—	0.13	0.12	—	0.12	—	2,575	2,575	0.10	0.02	—	2,584
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.34	0.34	10.2	15.6	0.03	0.13	—	0.13	0.12	—	0.12	—	2,575	2,575	0.10	0.02	—	2,584
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.22	0.22	6.64	10.2	0.02	0.08	—	0.08	0.08	—	0.08	—	1,683	1,683	0.07	0.01	—	1,689
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.04	1.21	1.86	< 0.005	0.02	—	0.02	0.01	—	0.01	—	279	279	0.01	< 0.005	—	280
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.27	1.18	0.76	14.5	0.00	0.00	2.52	2.52	0.00	0.59	0.59	—	2,717	2,717	0.05	0.10	9.32	2,757
Vendor	0.15	0.09	3.38	1.14	0.02	0.04	0.77	0.81	0.04	0.21	0.25	—	2,794	2,794	0.05	0.42	6.86	2,927
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.20	1.09	0.95	11.4	0.00	0.00	2.52	2.52	0.00	0.59	0.59	—	2,456	2,456	0.07	0.11	0.24	2,489
Vendor	0.14	0.08	3.60	1.18	0.02	0.04	0.77	0.81	0.04	0.21	0.25	—	2,796	2,796	0.05	0.42	0.18	2,923
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.78	0.71	0.56	7.65	0.00	0.00	1.64	1.64	0.00	0.38	0.38	—	1,645	1,645	0.04	0.07	2.63	1,669
Vendor	0.09	0.06	2.31	0.75	0.01	0.03	0.50	0.53	0.03	0.14	0.16	—	1,827	1,827	0.04	0.28	1.94	1,911
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.14	0.13	0.10	1.40	0.00	0.00	0.30	0.30	0.00	0.07	0.07	—	272	272	0.01	0.01	0.44	276
Vendor	0.02	0.01	0.42	0.14	< 0.005	< 0.005	0.09	0.10	< 0.005	0.03	0.03	—	302	302	0.01	0.05	0.32	316
Hauling	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	0.00

3.10. Building Construction (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.34	0.34	10.2	15.6	0.03	0.13	—	0.13	0.12	—	0.12	—	2,575	2,575	0.10	0.02	—	2,584
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.34	0.34	10.2	15.6	0.03	0.13	—	0.13	0.12	—	0.12	—	2,575	2,575	0.10	0.02	—	2,584
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.22	0.22	6.64	10.2	0.02	0.08	—	0.08	0.08	—	0.08	—	1,683	1,683	0.07	0.01	—	1,689
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.04	1.21	1.86	< 0.005	0.02	—	0.02	0.01	—	0.01	—	279	279	0.01	< 0.005	—	280
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.27	1.18	0.76	14.5	0.00	0.00	2.52	2.52	0.00	0.59	0.59	—	2,717	2,717	0.05	0.10	9.32	2,757
Vendor	0.15	0.09	3.38	1.14	0.02	0.04	0.77	0.81	0.04	0.21	0.25	—	2,794	2,794	0.05	0.42	6.86	2,927
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.20	1.09	0.95	11.4	0.00	0.00	2.52	2.52	0.00	0.59	0.59	—	2,456	2,456	0.07	0.11	0.24	2,489

Vendor	0.14	0.08	3.60	1.18	0.02	0.04	0.77	0.81	0.04	0.21	0.25	—	2,796	2,796	0.05	0.42	0.18	2,923
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.78	0.71	0.56	7.65	0.00	0.00	1.64	1.64	0.00	0.38	0.38	—	1,645	1,645	0.04	0.07	2.63	1,669
Vendor	0.09	0.06	2.31	0.75	0.01	0.03	0.50	0.53	0.03	0.14	0.16	—	1,827	1,827	0.04	0.28	1.94	1,911
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.14	0.13	0.10	1.40	0.00	0.00	0.30	0.30	0.00	0.07	0.07	—	272	272	0.01	0.01	0.44	276
Vendor	0.02	0.01	0.42	0.14	< 0.005	< 0.005	0.09	0.10	< 0.005	0.03	0.03	—	302	302	0.01	0.05	0.32	316
Hauling	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	0.00

3.11. Building Construction (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.34	0.34	10.2	15.6	0.03	0.13	—	0.13	0.12	—	0.12	—	2,575	2,575	0.10	0.02	—	2,584
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.34	0.34	10.2	15.6	0.03	0.13	—	0.13	0.12	—	0.12	—	2,575	2,575	0.10	0.02	—	2,584
Onsite truck	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	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.25	0.25	7.26	11.1	0.02	0.09	—	0.09	0.09	—	0.09	—	1,839	1,839	0.07	0.01	—	1,846
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.04	1.33	2.03	< 0.005	0.02	—	0.02	0.02	—	0.02	—	305	305	0.01	< 0.005	—	306
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.21	1.12	0.66	13.4	0.00	0.00	2.52	2.52	0.00	0.59	0.59	—	2,674	2,674	0.05	0.10	8.39	2,713
Vendor	0.15	0.09	3.23	1.09	0.02	0.04	0.77	0.81	0.04	0.21	0.25	—	2,735	2,735	0.05	0.42	6.03	2,868
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.06	1.03	0.86	10.6	0.00	0.00	2.52	2.52	0.00	0.59	0.59	—	2,418	2,418	0.07	0.11	0.22	2,451
Vendor	0.14	0.08	3.45	1.13	0.02	0.04	0.77	0.81	0.04	0.21	0.25	—	2,738	2,738	0.05	0.42	0.16	2,865
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.75	0.74	0.54	7.77	0.00	0.00	1.79	1.79	0.00	0.42	0.42	—	1,770	1,770	0.04	0.08	2.59	1,796
Vendor	0.10	0.06	2.41	0.79	0.01	0.03	0.55	0.57	0.03	0.15	0.18	—	1,954	1,954	0.04	0.30	1.85	2,047
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.14	0.13	0.10	1.42	0.00	0.00	0.33	0.33	0.00	0.08	0.08	—	293	293	0.01	0.01	0.43	297

Vendor	0.02	0.01	0.44	0.14	< 0.005	0.01	0.10	0.10	0.01	0.03	0.03	—	324	324	0.01	0.05	0.31	339
Hauling	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	0.00

3.12. Building Construction (2027) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.34	0.34	10.2	15.6	0.03	0.13	—	0.13	0.12	—	0.12	—	2,575	2,575	0.10	0.02	—	2,584
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.34	0.34	10.2	15.6	0.03	0.13	—	0.13	0.12	—	0.12	—	2,575	2,575	0.10	0.02	—	2,584
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.25	0.25	7.26	11.1	0.02	0.09	—	0.09	0.09	—	0.09	—	1,839	1,839	0.07	0.01	—	1,846
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.04	1.33	2.03	< 0.005	0.02	—	0.02	0.02	—	0.02	—	305	305	0.01	< 0.005	—	306
Onsite truck	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	0.00

Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.21	1.12	0.66	13.4	0.00	0.00	2.52	2.52	0.00	0.59	0.59	—	2,674	2,674	0.05	0.10	8.39	2,713
Vendor	0.15	0.09	3.23	1.09	0.02	0.04	0.77	0.81	0.04	0.21	0.25	—	2,735	2,735	0.05	0.42	6.03	2,868
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.06	1.03	0.86	10.6	0.00	0.00	2.52	2.52	0.00	0.59	0.59	—	2,418	2,418	0.07	0.11	0.22	2,451
Vendor	0.14	0.08	3.45	1.13	0.02	0.04	0.77	0.81	0.04	0.21	0.25	—	2,738	2,738	0.05	0.42	0.16	2,865
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.75	0.74	0.54	7.77	0.00	0.00	1.79	1.79	0.00	0.42	0.42	—	1,770	1,770	0.04	0.08	2.59	1,796
Vendor	0.10	0.06	2.41	0.79	0.01	0.03	0.55	0.57	0.03	0.15	0.18	—	1,954	1,954	0.04	0.30	1.85	2,047
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.14	0.13	0.10	1.42	0.00	0.00	0.33	0.33	0.00	0.08	0.08	—	293	293	0.01	0.01	0.43	297
Vendor	0.02	0.01	0.44	0.14	< 0.005	0.01	0.10	0.10	0.01	0.03	0.03	—	324	324	0.01	0.05	0.31	339
Hauling	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	0.00

3.13. Building Construction (2028) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.34	0.34	10.2	15.6	0.03	0.13	—	0.13	0.12	—	0.12	—	2,575	2,575	0.10	0.02	—	2,584
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.34	0.34	10.2	15.6	0.03	0.13	—	0.13	0.12	—	0.12	—	2,575	2,575	0.10	0.02	—	2,584
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.13	3.88	5.95	0.01	0.05	—	0.05	0.05	—	0.05	—	983	983	0.04	0.01	—	986
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.71	1.09	< 0.005	0.01	—	0.01	0.01	—	0.01	—	163	163	0.01	< 0.005	—	163
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.08	1.06	0.65	12.5	0.00	0.00	2.52	2.52	0.00	0.59	0.59	—	2,622	2,622	0.05	0.10	7.50	2,660
Vendor	0.12	0.09	3.11	1.04	0.02	0.04	0.77	0.81	0.04	0.21	0.25	—	2,669	2,669	0.05	0.40	5.25	2,794
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.00	0.90	0.77	9.88	0.00	0.00	2.52	2.52	0.00	0.59	0.59	—	2,371	2,371	0.06	0.11	0.19	2,404

Vendor	0.12	0.08	3.31	1.08	0.02	0.04	0.77	0.81	0.04	0.21	0.25	—	2,672	2,672	0.05	0.40	0.14	2,792
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.39	0.35	0.29	3.84	0.00	0.00	0.96	0.96	0.00	0.22	0.22	—	927	927	0.02	0.04	1.24	940
Vendor	0.05	0.03	1.24	0.40	0.01	0.02	0.29	0.31	0.02	0.08	0.10	—	1,019	1,019	0.02	0.15	0.86	1,066
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.05	0.70	0.00	0.00	0.17	0.17	0.00	0.04	0.04	—	154	154	< 0.005	0.01	0.20	156
Vendor	0.01	0.01	0.23	0.07	< 0.005	< 0.005	0.05	0.06	< 0.005	0.01	0.02	—	169	169	< 0.005	0.03	0.14	176
Hauling	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	0.00

3.14. Building Construction (2028) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.34	0.34	10.2	15.6	0.03	0.13	—	0.13	0.12	—	0.12	—	2,575	2,575	0.10	0.02	—	2,584
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.34	0.34	10.2	15.6	0.03	0.13	—	0.13	0.12	—	0.12	—	2,575	2,575	0.10	0.02	—	2,584
Onsite truck	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	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.13	3.88	5.95	0.01	0.05	—	0.05	0.05	—	0.05	—	983	983	0.04	0.01	—	986
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.71	1.09	< 0.005	0.01	—	0.01	0.01	—	0.01	—	163	163	0.01	< 0.005	—	163
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.08	1.06	0.65	12.5	0.00	0.00	2.52	2.52	0.00	0.59	0.59	—	2,622	2,622	0.05	0.10	7.50	2,660
Vendor	0.12	0.09	3.11	1.04	0.02	0.04	0.77	0.81	0.04	0.21	0.25	—	2,669	2,669	0.05	0.40	5.25	2,794
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.00	0.90	0.77	9.88	0.00	0.00	2.52	2.52	0.00	0.59	0.59	—	2,371	2,371	0.06	0.11	0.19	2,404
Vendor	0.12	0.08	3.31	1.08	0.02	0.04	0.77	0.81	0.04	0.21	0.25	—	2,672	2,672	0.05	0.40	0.14	2,792
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.39	0.35	0.29	3.84	0.00	0.00	0.96	0.96	0.00	0.22	0.22	—	927	927	0.02	0.04	1.24	940
Vendor	0.05	0.03	1.24	0.40	0.01	0.02	0.29	0.31	0.02	0.08	0.10	—	1,019	1,019	0.02	0.15	0.86	1,066
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.05	0.70	0.00	0.00	0.17	0.17	0.00	0.04	0.04	—	154	154	< 0.005	0.01	0.20	156

Vendor	0.01	0.01	0.23	0.07	< 0.005	< 0.005	0.05	0.06	< 0.005	0.01	0.02	—	169	169	< 0.005	0.03	0.14	176
Hauling	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	0.00

3.15. Paving (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.23	0.23	7.21	10.6	0.01	0.09	—	0.09	0.08	—	0.08	—	1,511	1,511	0.06	0.01	—	1,516
Paving	—	3.92	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.14	0.20	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	29.0	29.0	< 0.005	< 0.005	—	29.1
Paving	—	0.08	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.03	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.80	4.80	< 0.005	< 0.005	—	4.81
Paving	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00

Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.05	0.05	0.57	0.00	0.00	0.13	0.13	0.00	0.03	0.03	—	123	123	< 0.005	0.01	0.01	124
Vendor	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	0.00
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.41	2.41	< 0.005	< 0.005	< 0.005	2.45
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.40	0.40	< 0.005	< 0.005	< 0.005	0.41
Vendor	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	0.00
Hauling	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	0.00

3.16. Paving (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.23	0.23	7.21	10.6	0.01	0.09	—	0.09	0.08	—	0.08	—	1,511	1,511	0.06	0.01	—	1,516
Paving	—	3.92	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.14	0.20	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	29.0	29.0	< 0.005	< 0.005	—	29.1
Paving	—	0.08	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.03	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.80	4.80	< 0.005	< 0.005	—	4.81
Paving	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.05	0.05	0.57	0.00	0.00	0.13	0.13	0.00	0.03	0.03	—	123	123	< 0.005	0.01	0.01	124
Vendor	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	0.00
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.41	2.41	< 0.005	< 0.005	< 0.005	2.45
Vendor	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	0.00

Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.40	0.40	< 0.005	< 0.005	< 0.005	0.41
Vendor	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	0.00
Hauling	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	0.00

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	17.5	16.2	13.7	130	0.32	0.25	27.6	27.9	0.23	7.03	7.26	—	32,434	32,434	1.23	1.44	93.0	32,988
Parking Lot	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	0.00
Enclosed Parking with Elevator	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	0.00
Unenclosed Parking Structure	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	0.00
Total	17.5	16.2	13.7	130	0.32	0.25	27.6	27.9	0.23	7.03	7.26	—	32,434	32,434	1.23	1.44	93.0	32,988

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	16.3	15.0	15.8	114	0.29	0.25	27.6	27.9	0.23	7.03	7.26	—	30,100	30,100	1.39	1.56	2.41	30,602
Parking Lot	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	0.00
Enclosed Parking with Elevator	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	0.00
Unenclosed Parking Structure	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	0.00
Total	16.3	15.0	15.8	114	0.29	0.25	27.6	27.9	0.23	7.03	7.26	—	30,100	30,100	1.39	1.56	2.41	30,602
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	2.97	2.74	2.72	20.8	0.05	0.04	5.02	5.06	0.04	1.28	1.32	—	5,074	5,074	0.22	0.25	6.65	5,160
Parking Lot	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	0.00
Enclosed Parking with Elevator	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	0.00
Unenclosed Parking Structure	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	0.00
Total	2.97	2.74	2.72	20.8	0.05	0.04	5.02	5.06	0.04	1.28	1.32	—	5,074	5,074	0.22	0.25	6.65	5,160

4.1.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	17.5	16.2	13.7	130	0.32	0.25	27.6	27.9	0.23	7.03	7.26	—	32,434	32,434	1.23	1.44	93.0	32,988
Parking Lot	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	0.00
Enclosed Parking with Elevator	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	0.00
Unenclosed Parking Structure	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	0.00
Total	17.5	16.2	13.7	130	0.32	0.25	27.6	27.9	0.23	7.03	7.26	—	32,434	32,434	1.23	1.44	93.0	32,988
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	16.3	15.0	15.8	114	0.29	0.25	27.6	27.9	0.23	7.03	7.26	—	30,100	30,100	1.39	1.56	2.41	30,602
Parking Lot	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	0.00
Enclosed Parking with Elevator	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	0.00
Unenclosed Parking Structure	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	0.00
Total	16.3	15.0	15.8	114	0.29	0.25	27.6	27.9	0.23	7.03	7.26	—	30,100	30,100	1.39	1.56	2.41	30,602

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	2.97	2.74	2.72	20.8	0.05	0.04	5.02	5.06	0.04	1.28	1.32	—	5,074	5,074	0.22	0.25	6.65	5,160
Parking Lot	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	0.00
Enclosed Parking with Elevator	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	0.00
Unenclosed Parking Structure	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	0.00
Total	2.97	2.74	2.72	20.8	0.05	0.04	5.02	5.06	0.04	1.28	1.32	—	5,074	5,074	0.22	0.25	6.65	5,160

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	1,697	1,697	0.27	0.03	—	1,713
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	140	140	0.02	< 0.005	—	141
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	—	—	—	—	149	149	0.02	< 0.005	—	150

Unenclos Parking Structure	—	—	—	—	—	—	—	—	—	—	—	—	151	151	0.02	< 0.005	—	152
Total	—	—	—	—	—	—	—	—	—	—	—	—	2,136	2,136	0.35	0.04	—	2,157
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartme nts Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	1,697	1,697	0.27	0.03	—	1,713
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	140	140	0.02	< 0.005	—	141
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	—	—	—	—	149	149	0.02	< 0.005	—	150
Unenclos ed Parking Structure	—	—	—	—	—	—	—	—	—	—	—	—	151	151	0.02	< 0.005	—	152
Total	—	—	—	—	—	—	—	—	—	—	—	—	2,136	2,136	0.35	0.04	—	2,157
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartme nts Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	281	281	0.05	0.01	—	284
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	23.1	23.1	< 0.005	< 0.005	—	23.4
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	—	—	—	—	24.6	24.6	< 0.005	< 0.005	—	24.8
Unenclos ed Parking Structure	—	—	—	—	—	—	—	—	—	—	—	—	25.0	25.0	< 0.005	< 0.005	—	25.2
Total	—	—	—	—	—	—	—	—	—	—	—	—	354	354	0.06	0.01	—	357

4.2.2. Electricity Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	1,698	1,698	0.27	0.03	—	1,715
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	140	140	0.02	< 0.005	—	141
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	—	—	—	—	149	149	0.02	< 0.005	—	150
Unenclosed Parking Structure	—	—	—	—	—	—	—	—	—	—	—	—	151	151	0.02	< 0.005	—	152
Total	—	—	—	—	—	—	—	—	—	—	—	—	2,137	2,137	0.35	0.04	—	2,158
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	1,698	1,698	0.27	0.03	—	1,715
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	140	140	0.02	< 0.005	—	141
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	—	—	—	—	149	149	0.02	< 0.005	—	150

Unenclosed Parking Structure	—	—	—	—	—	—	—	—	—	—	—	—	151	151	0.02	< 0.005	—	152
Total	—	—	—	—	—	—	—	—	—	—	—	—	2,137	2,137	0.35	0.04	—	2,158
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	281	281	0.05	0.01	—	284
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	23.1	23.1	< 0.005	< 0.005	—	23.4
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	—	—	—	—	24.6	24.6	< 0.005	< 0.005	—	24.8
Unenclosed Parking Structure	—	—	—	—	—	—	—	—	—	—	—	—	25.0	25.0	< 0.005	< 0.005	—	25.2
Total	—	—	—	—	—	—	—	—	—	—	—	—	354	354	0.06	0.01	—	357

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	0.27	0.14	2.34	1.00	0.01	0.19	—	0.19	0.19	—	0.19	—	2,970	2,970	0.26	0.01	—	2,979
Parking Lot	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

Enclosed Parking with Elevator	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
Unenclosed Parking Structure	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
Total	0.27	0.14	2.34	1.00	0.01	0.19	—	0.19	0.19	—	0.19	—	2,970	2,970	0.26	0.01	—	2,979
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	0.27	0.14	2.34	1.00	0.01	0.19	—	0.19	0.19	—	0.19	—	2,970	2,970	0.26	0.01	—	2,979
Parking Lot	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
Enclosed Parking with Elevator	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
Unenclosed Parking Structure	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
Total	0.27	0.14	2.34	1.00	0.01	0.19	—	0.19	0.19	—	0.19	—	2,970	2,970	0.26	0.01	—	2,979
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	0.05	0.02	0.43	0.18	< 0.005	0.03	—	0.03	0.03	—	0.03	—	492	492	0.04	< 0.005	—	493
Parking Lot	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
Enclosed Parking with Elevator	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

Unenclos Parking Structure	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
Total	0.05	0.02	0.43	0.18	< 0.005	0.03	—	0.03	0.03	—	0.03	—	492	492	0.04	< 0.005	—	493

4.2.4. Natural Gas Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	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
Parking Lot	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
Enclosed Parking with Elevator	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
Unenclosed Parking Structure	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
Total	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	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
Parking Lot	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

Enclosed Parking with Elevator	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
Unenclosed Parking Structure	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
Total	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	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
Parking Lot	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
Enclosed Parking with Elevator	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
Unenclosed Parking Structure	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
Total	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

4.3. Area Emissions by Source

4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	34.4	17.0	8.05	154	0.53	22.1	—	22.1	21.3	—	21.3	3,652	7,075	10,727	17.2	0.01	—	11,161

Consum Products	—	13.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	1.15	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	4.86	4.57	0.42	45.8	< 0.005	0.03	—	0.03	0.02	—	0.02	—	133	133	0.01	< 0.005	—	134
Total	39.3	36.6	8.47	200	0.53	22.1	—	22.1	21.3	—	21.3	3,652	7,208	10,860	17.2	0.01	—	11,295
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	34.4	17.0	8.05	154	0.53	22.1	—	22.1	21.3	—	21.3	3,652	7,075	10,727	17.2	0.01	—	11,161
Consumer Products	—	13.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	1.15	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	34.4	32.0	8.05	154	0.53	22.1	—	22.1	21.3	—	21.3	3,652	7,075	10,727	17.2	0.01	—	11,161
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	1.41	0.70	0.33	6.32	0.02	0.91	—	0.91	0.87	—	0.87	136	263	399	0.64	< 0.005	—	415
Consumer Products	—	2.53	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.21	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.44	0.41	0.04	4.12	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	10.9	10.9	< 0.005	< 0.005	—	10.9
Total	1.85	3.84	0.37	10.4	0.02	0.91	—	0.91	0.88	—	0.88	136	274	410	0.64	< 0.005	—	426

4.3.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	34.4	17.0	8.05	154	0.53	22.1	—	22.1	21.3	—	21.3	3,652	7,075	10,727	17.2	0.01	—	11,161
Consumer Products	—	13.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	1.15	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	4.86	4.57	0.42	45.8	< 0.005	0.03	—	0.03	0.02	—	0.02	—	133	133	0.01	< 0.005	—	134
Total	39.3	36.6	8.47	200	0.53	22.1	—	22.1	21.3	—	21.3	3,652	7,208	10,860	17.2	0.01	—	11,295
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	34.4	17.0	8.05	154	0.53	22.1	—	22.1	21.3	—	21.3	3,652	7,075	10,727	17.2	0.01	—	11,161
Consumer Products	—	13.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	1.15	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	34.4	32.0	8.05	154	0.53	22.1	—	22.1	21.3	—	21.3	3,652	7,075	10,727	17.2	0.01	—	11,161
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	1.41	0.70	0.33	6.32	0.02	0.91	—	0.91	0.87	—	0.87	136	263	399	0.64	< 0.005	—	415

Consumer Products	—	2.53	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.21	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.44	0.41	0.04	4.12	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	10.9	10.9	< 0.005	< 0.005	—	10.9
Total	1.85	3.84	0.37	10.4	0.02	0.91	—	0.91	0.88	—	0.88	136	274	410	0.64	< 0.005	—	426

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	52.4	50.3	103	5.38	0.13	—	275
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Unenclosed Parking Structure	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	52.4	50.3	103	5.38	0.13	—	275

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	52.4	50.3	103	5.38	0.13	—	275
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Unenclosed Parking Structure	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	52.4	50.3	103	5.38	0.13	—	275
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	8.67	8.33	17.0	0.89	0.02	—	45.6
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Unenclosed Parking Structure	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	8.67	8.33	17.0	0.89	0.02	—	45.6

4.4.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	52.4	50.3	103	5.38	0.13	—	275
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Unenclosed Parking Structure	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	52.4	50.3	103	5.38	0.13	—	275
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	52.4	50.3	103	5.38	0.13	—	275
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Unenclosed Parking Structure	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	52.4	50.3	103	5.38	0.13	—	275

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	8.67	8.33	17.0	0.89	0.02	—	45.6
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Unenclosed Parking Structure	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	8.67	8.33	17.0	0.89	0.02	—	45.6

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	268	0.00	268	26.8	0.00	—	937
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

Unenclos Parking Structure	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	268	0.00	268	26.8	0.00	—	937
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartme nts Mid Rise	—	—	—	—	—	—	—	—	—	—	—	268	0.00	268	26.8	0.00	—	937
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Unenclos ed Parking Structure	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	268	0.00	268	26.8	0.00	—	937
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartme nts Mid Rise	—	—	—	—	—	—	—	—	—	—	—	44.3	0.00	44.3	4.43	0.00	—	155
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Unenclos ed Parking Structure	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	44.3	0.00	44.3	4.43	0.00	—	155

4.5.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	268	0.00	268	26.8	0.00	—	937
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Unenclosed Parking Structure	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	268	0.00	268	26.8	0.00	—	937
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	268	0.00	268	26.8	0.00	—	937
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

Unenclosed Parking Structure	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	268	0.00	268	26.8	0.00	—	937
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	44.3	0.00	44.3	4.43	0.00	—	155
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Unenclosed Parking Structure	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	44.3	0.00	44.3	4.43	0.00	—	155

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.62	4.62
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.62	4.62

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.62	4.62
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.62	4.62
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.76	0.76
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.76	0.76

4.6.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.62	4.62
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.62	4.62
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.62	4.62
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.62	4.62
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Apartments	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.76	0.76
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.76	0.76

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.7.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipme Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Sequest	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Remove d	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequest ered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Remove d	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequest ered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Remove d	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Site Preparation	Site Preparation	7/1/2025	10/14/2025	5.00	76.0	—
Grading	Grading	7/1/2025	10/14/2025	5.00	76.0	—
Utilities	Grading	9/15/2025	2/22/2026	5.00	115	—
Building Construction	Building Construction	2/1/2026	7/13/2028	5.00	639	—
Paving	Paving	1/1/2026	1/9/2026	5.00	7.00	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Rubber Tired Dozers	Diesel	Tier 4 Interim	3.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	4.00	8.00	84.0	0.37
Grading	Graders	Diesel	Tier 4 Interim	1.00	8.00	148	0.41
Grading	Excavators	Diesel	Tier 4 Interim	2.00	8.00	36.0	0.38
Grading	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	2.00	8.00	84.0	0.37
Grading	Scrapers	Diesel	Tier 4 Interim	2.00	8.00	423	0.48
Grading	Rubber Tired Dozers	Diesel	Tier 4 Interim	1.00	8.00	367	0.40
Utilities	Graders	Diesel	Tier 4 Interim	1.00	8.00	148	0.41
Utilities	Excavators	Diesel	Tier 4 Interim	2.00	8.00	36.0	0.38
Utilities	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	2.00	8.00	84.0	0.37
Utilities	Scrapers	Diesel	Tier 4 Interim	2.00	8.00	423	0.48

Utilities	Rubber Tired Dozers	Diesel	Tier 4 Interim	1.00	8.00	367	0.40
Building Construction	Forklifts	Diesel	Tier 4 Interim	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Tier 4 Interim	1.00	8.00	14.0	0.74
Building Construction	Cranes	Diesel	Tier 4 Interim	1.00	7.00	367	0.29
Building Construction	Welders	Diesel	Tier 4 Interim	1.00	8.00	46.0	0.45
Building Construction	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	3.00	7.00	84.0	0.37
Building Construction	Air Compressors	Diesel	Tier 4 Interim	1.00	8.00	37.0	0.48
Paving	Pavers	Diesel	Tier 4 Interim	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Tier 4 Interim	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Tier 4 Interim	2.00	8.00	36.0	0.38

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Rubber Tired Dozers	Diesel	Tier 4 Interim	3.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	4.00	8.00	84.0	0.37
Grading	Graders	Diesel	Tier 4 Interim	1.00	8.00	148	0.41
Grading	Excavators	Diesel	Tier 4 Interim	2.00	8.00	36.0	0.38
Grading	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	2.00	8.00	84.0	0.37
Grading	Scrapers	Diesel	Tier 4 Interim	2.00	8.00	423	0.48
Grading	Rubber Tired Dozers	Diesel	Tier 4 Interim	1.00	8.00	367	0.40
Utilities	Graders	Diesel	Tier 4 Interim	1.00	8.00	148	0.41
Utilities	Excavators	Diesel	Tier 4 Interim	2.00	8.00	36.0	0.38
Utilities	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	2.00	8.00	84.0	0.37
Utilities	Scrapers	Diesel	Tier 4 Interim	2.00	8.00	423	0.48
Utilities	Rubber Tired Dozers	Diesel	Tier 4 Interim	1.00	8.00	367	0.40

Building Construction	Forklifts	Diesel	Tier 4 Interim	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Tier 4 Interim	1.00	8.00	14.0	0.74
Building Construction	Cranes	Diesel	Tier 4 Interim	1.00	7.00	367	0.29
Building Construction	Welders	Diesel	Tier 4 Interim	1.00	8.00	46.0	0.45
Building Construction	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	3.00	7.00	84.0	0.37
Building Construction	Air Compressors	Diesel	Tier 4 Interim	1.00	8.00	37.0	0.48
Paving	Pavers	Diesel	Tier 4 Interim	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Tier 4 Interim	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Tier 4 Interim	2.00	8.00	36.0	0.38

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	17.5	11.9	LDA,LDT1,LDT2
Site Preparation	Vendor	—	9.10	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	20.0	11.9	LDA,LDT1,LDT2
Grading	Vendor	—	9.10	HHDT,MHDT
Grading	Hauling	14.8	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	300	11.9	LDA,LDT1,LDT2
Building Construction	Vendor	100	9.10	HHDT,MHDT

Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	11.9	LDA,LDT1,LDT2
Paving	Vendor	—	9.10	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Utilities	—	—	—	—
Utilities	Worker	20.0	11.9	LDA,LDT1,LDT2
Utilities	Vendor	—	9.10	HHDT,MHDT
Utilities	Hauling	0.00	20.0	HHDT
Utilities	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	17.5	11.9	LDA,LDT1,LDT2
Site Preparation	Vendor	—	9.10	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	20.0	11.9	LDA,LDT1,LDT2
Grading	Vendor	—	9.10	HHDT,MHDT
Grading	Hauling	14.8	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	300	11.9	LDA,LDT1,LDT2

Building Construction	Vendor	100	9.10	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	11.9	LDA,LDT1,LDT2
Paving	Vendor	—	9.10	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Utilities	—	—	—	—
Utilities	Worker	20.0	11.9	LDA,LDT1,LDT2
Utilities	Vendor	—	9.10	HHDT,MHDT
Utilities	Hauling	0.00	20.0	HHDT
Utilities	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Site Preparation	—	—	114	0.00	—

Grading	9,009	—	228	0.00	—
Utilities	—	—	345	0.00	—
Paving	0.00	0.00	0.00	0.00	10.5

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Apartments Mid Rise	—	0%
Parking Lot	6.55	100%
Enclosed Parking with Elevator	1.62	100%
Unenclosed Parking Structure	2.31	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2025	0.00	204	0.03	< 0.005
2026	0.00	204	0.03	< 0.005
2027	0.00	204	0.03	< 0.005
2028	0.00	204	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Apartments Mid Rise	4,529	4,529	4,529	1,653,187	38,831	38,831	38,831	14,173,268

Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Enclosed Parking with Elevator	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unenclosed Parking Structure	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.9.2. Mitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Apartments Mid Rise	4,529	4,529	4,529	1,653,187	38,831	38,831	38,831	14,173,268
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Enclosed Parking with Elevator	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unenclosed Parking Structure	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

Hearth Type	Unmitigated (number)
Apartments Mid Rise	—
Wood Fireplaces	0
Gas Fireplaces	336
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	336
Conventional Wood Stoves	0
Catalytic Wood Stoves	34

Non-Catalytic Wood Stoves	34
Pellet Wood Stoves	0

5.10.1.2. Mitigated

Hearth Type	Unmitigated (number)
Apartments Mid Rise	—
Wood Fireplaces	0
Gas Fireplaces	336
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	336
Conventional Wood Stoves	0
Catalytic Wood Stoves	34
Non-Catalytic Wood Stoves	34
Pellet Wood Stoves	0

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
1306368	435,456	7,709	857	27,404

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.10.4. Landscape Equipment - Mitigated

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Apartments Mid Rise	3,035,969	204	0.0330	0.0040	9,268,555
Parking Lot	250,015	204	0.0330	0.0040	0.00
Enclosed Parking with Elevator	265,783	204	0.0330	0.0040	0.00
Unenclosed Parking Structure	270,158	204	0.0330	0.0040	0.00

5.11.2. Mitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Apartments Mid Rise	3,038,186	204	0.0330	0.0040	0.00
Parking Lot	250,015	204	0.0330	0.0040	0.00
Enclosed Parking with Elevator	265,783	204	0.0330	0.0040	0.00
Unenclosed Parking Structure	270,158	204	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Apartments Mid Rise	27,332,777	543,507
Parking Lot	0.00	0.00
Enclosed Parking with Elevator	0.00	0.00
Unenclosed Parking Structure	0.00	0.00

5.12.2. Mitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Apartments Mid Rise	27,332,777	543,507
Parking Lot	0.00	0.00
Enclosed Parking with Elevator	0.00	0.00
Unenclosed Parking Structure	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Apartments Mid Rise	497	—
Parking Lot	0.00	—
Enclosed Parking with Elevator	0.00	—
Unenclosed Parking Structure	0.00	—

5.13.2. Mitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Apartments Mid Rise	497	—
Parking Lot	0.00	—

Enclosed Parking with Elevator	0.00	—
Unenclosed Parking Structure	0.00	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Apartments Mid Rise	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Apartments Mid Rise	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00

5.14.2. Mitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Apartments Mid Rise	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Apartments Mid Rise	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.15.2. Mitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

5.18.2.2. Mitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	20.4	annual days of extreme heat
Extreme Precipitation	1.60	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	0.00	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters

Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	1	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	0	0	0	N/A
Drought	0	0	0	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	1	1	1	2
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	1	1	1	2
Drought	1	1	1	2
Snowpack Reduction	N/A	N/A	N/A	N/A

Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	59.7
AQ-PM	54.7
AQ-DPM	72.6
Drinking Water	99.0
Lead Risk Housing	11.8
Pesticides	94.2
Toxic Releases	43.0
Traffic	62.5
Effect Indicators	—
CleanUp Sites	81.4
Groundwater	59.6
Haz Waste Facilities/Generators	78.4
Impaired Water Bodies	0.00
Solid Waste	86.5

Sensitive Population	—
Asthma	83.6
Cardio-vascular	91.0
Low Birth Weights	28.4
Socioeconomic Factor Indicators	—
Education	42.3
Housing	15.1
Linguistic	34.6
Poverty	22.5
Unemployment	36.4

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	56.89721545
Employed	56.93571154
Median HI	74.2846144
Education	—
Bachelor's or higher	33.29911459
High school enrollment	100
Preschool enrollment	58.59104324
Transportation	—
Auto Access	88.68215065
Active commuting	17.60554344
Social	—
2-parent households	95.0468369

Voting	64.72475298
Neighborhood	—
Alcohol availability	93.5711536
Park access	81.35506224
Retail density	23.46978057
Supermarket access	19.32503529
Tree canopy	48.95418966
Housing	—
Homeownership	70.64031823
Housing habitability	66.84203773
Low-inc homeowner severe housing cost burden	56.25561401
Low-inc renter severe housing cost burden	47.45284229
Uncrowded housing	40.20274605
Health Outcomes	—
Insured adults	85.66662389
Arthritis	71.8
Asthma ER Admissions	14.4
High Blood Pressure	56.0
Cancer (excluding skin)	68.9
Asthma	37.3
Coronary Heart Disease	83.6
Chronic Obstructive Pulmonary Disease	59.8
Diagnosed Diabetes	76.6
Life Expectancy at Birth	39.0
Cognitively Disabled	43.0
Physically Disabled	93.4
Heart Attack ER Admissions	7.2

Mental Health Not Good	43.4
Chronic Kidney Disease	85.5
Obesity	38.6
Pedestrian Injuries	19.6
Physical Health Not Good	57.2
Stroke	80.6
Health Risk Behaviors	—
Binge Drinking	21.6
Current Smoker	35.6
No Leisure Time for Physical Activity	47.2
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	31.0
Elderly	87.4
English Speaking	63.7
Foreign-born	34.9
Outdoor Workers	27.0
Climate Change Adaptive Capacity	—
Impervious Surface Cover	55.7
Traffic Density	68.1
Traffic Access	0.0
Other Indices	—
Hardship	51.8
Other Decision Support	—
2016 Voting	53.6

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	73.0
Healthy Places Index Score for Project Location (b)	66.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	Yes
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	special landscape area accounts for orchard
Construction: Construction Phases	construction schedule provided
Construction: Off-Road Equipment	air compressor added because architectural coatings would occur during building construction
Construction: Trips and VMT	150 maximum workers required
Operations: Vehicle Data	trip rates provided in Stantec Consulting Services TIA

Road Construction Emissions Model, Version 9.0.0

Daily Emission Estimates for -> LMC Manteca - Offsite Improvements

Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	0.67	13.99	2.85	21.16	0.16	21.00	4.50	0.14	4.37	0.02	2,169.76	0.59	0.04	2,197.14
Grading/Excavation	2.97	58.61	8.45	21.46	0.46	21.00	4.74	0.37	4.37	0.10	9,971.09	2.87	0.20	10,101.32
Drainage/Utilities/Sub-Grade	1.65	34.54	5.06	21.30	0.30	21.00	4.61	0.25	4.37	0.06	5,549.01	1.18	0.07	5,600.07
Paving	0.85	19.86	3.18	0.19	0.19	0.00	0.16	0.16	0.00	0.03	2,748.92	0.75	0.05	2,782.30
Maximum (pounds/day)	2.97	58.61	8.45	21.46	0.46	21.00	4.74	0.37	4.37	0.10	9,971.09	2.87	0.20	10,101.32
Total (tons/construction project)	0.17	3.51	0.52	1.60	0.03	1.57	0.35	0.02	0.33	0.01	577.27	0.15	0.01	584.11

Notes:

Project Start Year ->	2027
Project Length (months) ->	8
Total Project Area (acres) ->	8
Maximum Area Disturbed/Day (acres) ->	2
Water Truck Used? ->	Yes

	Total Material Imported/Exported Volume (yd^3/day)		Daily VMT (miles/day)			
Phase	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	192	40
Grading/Excavation	95	0	150	0	552	40
Drainage/Utilities/Sub-Grade	0	0	0	0	408	40
Paving	0	0	0	0	312	40

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> LMC Manteca - Offsite Improvements

Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.01	0.12	0.03	0.19	0.00	0.18	0.04	0.00	0.04	0.00	19.09	0.01	0.00	17.54
Grading/Excavation	0.10	2.06	0.30	0.76	0.02	0.74	0.17	0.01	0.15	0.00	350.98	0.10	0.01	322.57
Drainage/Utilities/Sub-Grade	0.05	1.06	0.16	0.66	0.01	0.65	0.14	0.01	0.13	0.00	170.91	0.04	0.00	156.47
Paving	0.01	0.26	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36.29	0.01	0.00	33.32
Maximum (tons/phase)	0.10	2.06	0.30	0.76	0.02	0.74	0.17	0.01	0.15	0.00	350.98	0.10	0.01	322.57
Total (tons/construction project)	0.17	3.51	0.52	1.60	0.03	1.57	0.35	0.02	0.33	0.01	577.27	0.15	0.01	529.90

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

Road Construction Emissions Model **Version 9.0.0**
Data Entry Worksheet

Note: Required data input sections have a yellow background.
Optional data input sections have a blue background. Only areas with a
yellow or blue background can be modified. Program defaults have a white background.
The user is required to enter information in cells D10 through D24, E28 through G35, and D38 through D41 for all project types.
Please use "Clear Data Input & User Overrides" button first before changing the Project Type or begin a new project.

To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

Input Type

Project Name	LMC Manteca - Offsite Improvements	
Construction Start Year	2027	Enter a Year between 2014 and 2040 (inclusive)
Project Type	2	1) New Road Construction : Project to build a roadway from bare ground, which generally requires more site preparation than widening an existing roadway 2) Road Widening : Project to add a new lane to an existing roadway 3) Bridge/Overpass Construction : Project to build an elevated roadway, which generally requires some different equipment than a new roadway, such as a crane 4) Other Linear Project Type: Non-roadway project such as a pipeline, transmission line, or levee construction
Project Construction Time	8.00	months
Working Days per Month	22.00	days (assume 22 if unknown)
Predominant Soil/Site Type: Enter 1, 2, or 3 (for project within "Sacramento County", follow soil type selection instructions in cells E18 to E20 otherwise see instructions provided in cells J18 to J22)	1	1) Sand Gravel : Use for quaternary deposits (Delta/West County) 2) Weathered Rock-Earth : Use for Laguna formation (Jackson Highway area) or the lone formation (Scott Road, Rancho Murieta) 3) Blasted Rock : Use for Salt Springs Slate or Copper Hill Volcanics (Folsom South of Highway 50, Rancho Murieta)
Project Length	1.05	miles
Total Project Area	8.38	acres
Maximum Area Disturbed/Day	2.10	acres
Water Trucks Used?	1	1. Yes 2. No

Please note that the soil type instructions provided in cells E18 to E20 are specific to Sacramento County. Maps available from the California Geologic Survey (see weblink below) can be used to determine soil type outside Sacramento County.

http://www.conservation.ca.gov/cgs/information/geologic_mapping/Pages/googlemaps.aspx#regionalseries

Material Hauling Quantity Input

Material Type	Phase	Haul Truck Capacity (yd^3) (assume 20 if unknown)	Import Volume (yd^3/day)	Export Volume (yd^3/day)
Soil	Grubbing/Land Clearing	20.00		
	Grading/Excavation	20.00	95.21	
	Drainage/Utilities/Sub-Grade	20.00		
	Paving	20.00		
Asphalt	Grubbing/Land Clearing	20.00		
	Grading/Excavation	20.00		
	Drainage/Utilities/Sub-Grade	20.00		
	Paving	20.00		

Mitigation Options

On-road Fleet Emissions Mitigation		Select "2010 and Newer On-road Vehicles Fleet" option when the on-road heavy-duty truck fleet for the project will be limited to vehicles of model year 2010 or newer
Off-road Equipment Emissions Mitigation	Tier 4 Equipment	Select "20% NOx and 45% Exhaust PM reduction" option if the project will be required to use a lower emitting off-road construction fleet. The SMAQMD Construction Mitigation Calculator can be used to confirm compliance with this mitigation measure (http://www.airquality.org/Businesses/CEQA-Land-Use-Planning/Mitigation).
Will all off-road equipment be tier 4?	All Tier 4 Equipment	Select "Tier 4 Equipment" option if some or all off-road equipment used for the project meets CARB Tier 4 Standard

The remaining sections of this sheet contain areas that can be modified by the user, although those modifications are optional.

Note: The program's estimates of construction period phase length can be overridden in cells D50 through D53, and F50 through F53.

Construction Periods	User Override of Construction Months	Program Calculated Months	User Override of Phase Starting Date	Program Default Phase Starting Date
Grubbing/Land Clearing		0.80		1/1/2027
Grading/Excavation		3.20		1/26/2027
Drainage/Utilities/Sub-Grade		2.80		5/4/2027
Paving		1.20		7/29/2027
Totals (Months)	8			

Note: Soil Hauling emission default values can be overridden in cells D61 through D64, and F61 through F64.

Soil Hauling Emissions User Input	User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT
Miles/round trip: Grubbing/Land Clearing		30.00		0	0.00
Miles/round trip: Grading/Excavation		30.00		5	150.00
Miles/round trip: Drainage/Utilities/Sub-Grade		30.00		0	0.00
Miles/round trip: Paving		30.00		0	0.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.03	0.42	3.12	0.11	0.05	0.02	1,629.11	0.00	0.26	1,705.46
Grading/Excavation (grams/mile)	0.03	0.42	3.12	0.11	0.05	0.02	1,629.11	0.00	0.26	1,705.46
Draining/Utilities/Sub-Grade (grams/mile)	0.03	0.42	3.12	0.11	0.05	0.02	1,629.11	0.00	0.26	1,705.46
Paving (grams/mile)	0.03	0.42	3.12	0.11	0.05	0.02	1,629.11	0.00	0.26	1,705.46
Grubbing/Land Clearing (grams/trip)	0.00	0.00	4.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	4.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	4.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	4.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.01	0.14	1.08	0.04	0.02	0.01	538.74	0.00	0.08	563.98
Tons per const. Period - Grading/Excavation	0.00	0.00	0.04	0.00	0.00	0.00	18.96	0.00	0.00	19.85
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.00	0.00	0.04	0.00	0.00	0.00	18.96	0.00	0.00	19.85

Note: Asphalt Hauling emission default values can be overridden in cells D91 through D94, and F91 through F94.

Asphalt Hauling Emissions User Input	User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT
Miles/round trip: Grubbing/Land Clearing		30.00		0	0.00
Miles/round trip: Grading/Excavation		30.00		0	0.00
Miles/round trip: Drainage/Utilities/Sub-Grade		30.00		0	0.00
Miles/round trip: Paving		30.00		0	0.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.03	0.42	3.12	0.11	0.05	0.02	1,629.11	0.00	0.26	1,705.46
Grading/Excavation (grams/mile)	0.03	0.42	3.12	0.11	0.05	0.02	1,629.11	0.00	0.26	1,705.46
Draining/Utilities/Sub-Grade (grams/mile)	0.03	0.42	3.12	0.11	0.05	0.02	1,629.11	0.00	0.26	1,705.46
Paving (grams/mile)	0.03	0.42	3.12	0.11	0.05	0.02	1,629.11	0.00	0.26	1,705.46
Grubbing/Land Clearing (grams/trip)	0.00	0.00	4.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	4.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	4.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	4.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Note: Worker commute default values can be overridden in cells D121 through D126.

Worker Commute Emissions User Input	User Override of Worker Commute Default Values	Default Values		
Miles/ one-way trip	12	20		
One-way trips/day		2	Calculated Daily Trips	Calculated Daily VMT
No. of employees: Grubbing/Land Clearing		8	16	192.00
No. of employees: Grading/Excavation		23	46	552.00
No. of employees: Drainage/Utilities/Sub-Grade		17	34	408.00
No. of employees: Paving		13	26	312.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.01	0.68	0.04	0.05	0.02	0.00	276.66	0.00	0.00	278.11
Grading/Excavation (grams/mile)	0.01	0.68	0.04	0.05	0.02	0.00	276.66	0.00	0.00	278.11
Draining/Utilities/Sub-Grade (grams/mile)	0.01	0.68	0.04	0.05	0.02	0.00	276.66	0.00	0.00	278.11
Paving (grams/mile)	0.01	0.68	0.04	0.05	0.02	0.00	276.66	0.00	0.00	278.11
Grubbing/Land Clearing (grams/trip)	0.83	2.39	0.21	0.00	0.00	0.00	59.60	0.05	0.03	68.64
Grading/Excavation (grams/trip)	0.83	2.39	0.21	0.00	0.00	0.00	59.60	0.05	0.03	68.64
Draining/Utilities/Sub-Grade (grams/trip)	0.83	2.39	0.21	0.00	0.00	0.00	59.60	0.05	0.03	68.64
Paving (grams/trip)	0.83	2.39	0.21	0.00	0.00	0.00	59.60	0.05	0.03	68.64

Emissions	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Pounds per day - Grubbing/Land Clearing	0.03	0.37	0.03	0.02	0.01	0.00	119.21	0.00	0.00	120.14
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	1.05	0.00	0.00	1.06
Pounds per day - Grading/Excavation	0.09	1.07	0.07	0.06	0.02	0.00	342.72	0.01	0.01	345.40
Tons per const. Period - Grading/Excavation	0.00	0.04	0.00	0.00	0.00	0.00	12.06	0.00	0.00	12.16
Pounds per day - Drainage/Utilities/Sub-Grade	0.07	0.79	0.06	0.04	0.02	0.00	253.32	0.01	0.01	255.30
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.02	0.00	0.00	0.00	0.00	7.80	0.00	0.00	7.86
Pounds per day - Paving	0.05	0.60	0.04	0.03	0.01	0.00	193.71	0.00	0.00	195.23
Tons per const. Period - Paving	0.00	0.01	0.00	0.00	0.00	0.00	2.56	0.00	0.00	2.58
Total tons per construction project	0.01	0.07	0.01	0.00	0.00	0.00	23.47	0.00	0.00	23.66

Note: Water Truck default values can be overridden in cells D153 through D156, I153 through I156, and F153 through F156.

Water Truck Emissions User Input	User Override of Default # Water Trucks	Program Estimate of Number of Water Trucks	User Override of Truck Round Trips/Vehicle/Day	Default Values Round Trips/Vehicle/Day	Calculated Trips/day	User Override of Miles/Round Trip	Default Values Miles/Round Trip	Calculated Daily VMT
Grubbing/Land Clearing - Exhaust		1		5	5		8.00	40.00
Grading/Excavation - Exhaust		1		5	5		8.00	40.00
Drainage/Utilities/Subgrade		1		5	5		8.00	40.00
Paving		1		5	5		8.00	40.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.03	0.42	3.12	0.11	0.05	0.02	1,629.11	0.00	0.26	1,705.46
Grading/Excavation (grams/mile)	0.03	0.42	3.12	0.11	0.05	0.02	1,629.11	0.00	0.26	1,705.46
Draining/Utilities/Sub-Grade (grams/mile)	0.03	0.42	3.12	0.11	0.05	0.02	1,629.11	0.00	0.26	1,705.46
Paving (grams/mile)	0.03	0.42	3.12	0.11	0.05	0.02	1,629.11	0.00	0.26	1,705.46
Grubbing/Land Clearing (grams/trip)	0.00	0.00	4.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	4.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	4.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	4.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.04	0.32	0.01	0.00	0.00	143.66	0.00	0.02	150.40
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	1.26	0.00	0.00	1.32
Pounds per day - Grading/Excavation	0.00	0.04	0.32	0.01	0.00	0.00	143.66	0.00	0.02	150.40
Tons per const. Period - Grading/Excavation	0.00	0.00	0.01	0.00	0.00	0.00	5.06	0.00	0.00	5.29
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.04	0.32	0.01	0.00	0.00	143.66	0.00	0.02	150.40
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.01	0.00	0.00	0.00	4.42	0.00	0.00	4.63
Pounds per day - Paving	0.00	0.04	0.32	0.01	0.00	0.00	143.66	0.00	0.02	150.40
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	1.90	0.00	0.00	1.99
Total tons per construction project	0.00	0.00	0.03	0.00	0.00	0.00	12.64	0.00	0.00	13.23

Note: Fugitive dust default values can be overridden in cells D183 through D185.

Fugitive Dust	User Override of Max Acreage Disturbed/Day	Default Maximum Acreage/Day	PM10 pounds/day	PM10 tons/per period	PM2.5 pounds/day	PM2.5 tons/per period
Fugitive Dust - Grubbing/Land Clearing		2.10	21.00	0.18	4.37	0.04
Fugitive Dust - Grading/Excavation		2.10	21.00	0.74	4.37	0.15
Fugitive Dust - Drainage/Utilities/Subgrade		2.10	21.00	0.65	4.37	0.13

Off-Road Equipment Emissions

Grubbing/Land Clearing

Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*	Mitigation Option: Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	N2O pounds/day	CO2e pounds/day
			Tier 4	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Tier 4	Crawler Tractors	0.24	4.18	0.48	0.02	0.02	0.01	758.27	0.25	0.01	766.45
			Tier 4	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2		Tier 4	Excavators	0.32	7.84	0.64	0.03	0.03	0.01	1,000.68	0.32	0.01	1,011.46
			Tier 4	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Other General Industrial Equipn	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3		Tier 4	Signal Boards	0.08	1.56	1.38	0.08	0.07	0.00	147.94	0.02	0.00	148.69
			Tier 4	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab

Number of Vehicles	Equipment Tier	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	N2O pounds/day	CO2e pounds/day
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing	pounds per day	0.64	13.58	2.50	0.13	0.12	0.02	1,906.89	0.58	0.02	1,926.60
Grubbing/Land Clearing	tons per phase	0.01	0.12	0.02	0.00	0.00	0.00	16.78	0.01	0.00	16.95

Grading/Excavation

Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*	Mitigation Option: Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	N2O pounds/day	CO2e pounds/day
			Tier 4	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0		Tier 4	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Tier 4	Crawler Tractors	0.24	4.18	0.48	0.02	0.02	0.01	758.27	0.25	0.01	766.45
			Tier 4	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3		Tier 4	Excavators	0.48	11.75	0.95	0.05	0.04	0.02	1,501.02	0.49	0.01	1,517.20
			Tier 4	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2		Tier 4	Graders	0.41	7.03	0.81	0.04	0.04	0.01	1,280.48	0.41	0.01	1,294.28
			Tier 4	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Other General Industrial Equipn	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2		Tier 4	Rollers	0.16	3.97	0.32	0.02	0.01	0.01	508.12	0.16	0.00	513.60
			Tier 4	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Tier 4	Rubber Tired Loaders	0.19	3.35	0.39	0.02	0.02	0.01	605.62	0.20	0.01	612.16
	2		Tier 4	Scrapers	0.93	16.16	1.86	0.09	0.09	0.03	2,936.30	0.95	0.03	2,967.95
	3		Tier 4	Signal Boards	0.08	1.56	1.38	0.08	0.07	0.00	147.94	0.02	0.00	148.69
			Tier 4	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	4		Tier 4	Tractors/Loaders/Backhoes	0.38	9.37	0.76	0.04	0.03	0.01	1,208.22	0.39	0.01	1,221.22
			Tier 4	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment	If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab			ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Number of Vehicles		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Grading/Excavation		pounds per day	2.86	57.37	6.96	0.36	0.33	0.09	8,945.97	2.86	0.08	9,041.54
	Grading/Excavation		tons per phase	0.10	2.02	0.25	0.01	0.01	0.00	314.90	0.10	0.00	318.26

Drainage/Utilities/Subgrade	Default Number of Vehicles	Mitigation Option: Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)			ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Override of Default Number of Vehicles	*Program-estimate*		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
			Tier 4	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Tier 4	Air Compressors	0.10	2.44	0.20	0.01	0.01	0.00	375.26	0.02	0.00	376.62
			Tier 4	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Tier 4	Generator Sets	0.16	4.06	0.33	0.02	0.02	0.01	623.04	0.02	0.00	625.01
	1		Tier 4	Graders	0.20	3.52	0.41	0.02	0.02	0.01	640.24	0.21	0.01	647.14
			Tier 4	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Other General Industrial Equipn	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Tier 4	Plate Compactors	0.02	0.36	0.32	0.02	0.02	0.00	34.48	0.00	0.00	34.65
			Tier 4	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Tier 4	Pumps	0.16	4.06	0.33	0.02	0.02	0.01	623.04	0.03	0.00	625.06
			Tier 4	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Tier 4	Rough Terrain Forklifts	0.11	2.61	0.21	0.01	0.01	0.00	333.72	0.11	0.00	337.31
			Tier 4	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Tier 4	Scrapers	0.47	8.08	0.93	0.05	0.04	0.02	1,468.15	0.47	0.01	1,483.97
	3		Tier 4	Signal Boards	0.08	1.56	1.38	0.08	0.07	0.00	147.94	0.02	0.00	148.69
			Tier 4	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3		Tier 4	Tractors/Loaders/Backhoes	0.28	7.03	0.57	0.03	0.03	0.01	906.17	0.29	0.01	915.91
			Tier 4	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment	If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab			ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Number of Vehicles		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Drainage/Utilities/Sub-Grade		pounds per day	1.58	33.71	4.68	0.25	0.23	0.05	5,152.03	1.17	0.04	5,194.37
	Drainage/Utilities/Sub-Grade		tons per phase	0.05	1.04	0.14	0.01	0.01	0.00	158.68	0.04	0.00	159.99

Paving	Default Number of Vehicles	Mitigation Option: Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)			ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Override of Default Number of Vehicles	*Program-estimate*		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
			Tier 4	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Other General Industrial Equipn	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Tier 4	Pavers	0.14	3.56	0.29	0.01	0.01	0.00	454.99	0.15	0.00	459.90
	1		Tier 4	Paving Equipment	0.13	3.10	0.25	0.01	0.01	0.00	394.32	0.13	0.00	398.57
			Tier 4	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2		Tier 4	Rollers	0.16	3.97	0.32	0.02	0.01	0.01	508.12	0.16	0.00	513.60
			Tier 4	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

			Tier 4	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3		Tier 4	Signal Boards	0.08	1.56	1.38	0.08	0.07	0.00	147.94	0.02	0.00	148.69
			Tier 4	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3		Tier 4	Tractors/Loaders/Backhoes	0.28	7.03	0.57	0.03	0.03	0.01	906.17	0.29	0.01	915.91
			Tier 4	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab

Number of Vehicles	Equipment Tier	Type		ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	N2O pounds/day	CO2e pounds/day
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Paving	pounds per day		0.79	19.22	2.82	0.15	0.14	0.03	2,411.54	0.75	0.02	2,436.68
	Paving	tons per phase		0.01	0.25	0.04	0.00	0.00	0.00	31.83	0.01	0.00	32.16
Total Emissions all Phases (tons per construction period) =>				0.17	3.43	0.45	0.02	0.02	0.01	522.19	0.15	0.00	527.37

Equipment default values for horsepower and hours/day can be overridden in cells D403 through D436 and F403 through F436.

Equipment	User Override of Horsepower	Default Values Horsepower	User Override of Hours/day	Default Values Hours/day
Aerial Lifts		63		8
Air Compressors		78		8
Bore/Drill Rigs		221		8
Cement and Mortar Mixers		9		8
Concrete/Industrial Saws		81		8
Cranes		231		8
Crawler Tractors		212		8
Crushing/Proc. Equipment		85		8
Excavators		158		8
Forklifts		89		8
Generator Sets		84		8
Graders		187		8
Off-Highway Tractors		124		8
Off-Highway Trucks		402		8
Other Construction Equipment		172		8
Other General Industrial Equipment		88		8
Other Material Handling Equipment		168		8
Pavers		130		8
Paving Equipment		132		8
Plate Compactors		8		8
Pressure Washers		13		8
Pumps		84		8
Rollers		80		8
Rough Terrain Forklifts		100		8
Rubber Tired Dozers		247		8
Rubber Tired Loaders		203		8
Scrapers		367		8
Signal Boards		6		8
Skid Steer Loaders		65		8
Surfacing Equipment		263		8
Sweepers/Scrubbers		64		8
Tractors/Loaders/Backhoes		97		8
Trenchers		78		8
Welders		46		8

END OF DATA ENTRY SHEET

Road Construction Emissions Model, Version 9.0.0

Daily Emission Estimates for -> On-Site Utility Lines

Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	0.65	13.06	1.20	10.10	0.10	10.00	2.15	0.07	2.08	0.02	2,077.63	0.58	0.02	2,099.26
Grading/Excavation	2.97	58.16	15.86	10.68	0.68	10.00	2.51	0.43	2.08	0.14	14,427.55	2.86	0.92	14,773.91
Drainage/Utilities/Sub-Grade	1.60	33.20	3.38	10.22	0.22	10.00	2.25	0.17	2.08	0.06	5,322.77	1.16	0.05	5,367.03
Paving	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
Maximum (pounds/day)	2.97	58.16	15.86	10.68	0.68	10.00	2.51	0.43	2.08	0.14	14,427.55	2.86	0.92	14,773.91
Total (tons/construction project)	0.05	0.91	0.18	0.23	0.01	0.22	0.05	0.01	0.05	0.00	190.08	0.04	0.01	193.67

Notes:

Project Start Year ->	2025
Project Length (months) ->	2
Total Project Area (acres) ->	4
Maximum Area Disturbed/Day (acres) ->	0
Water Truck Used? ->	No

	Total Material Imported/Exported Volume (yd^3/day)		Daily VMT (miles/day)			
Phase	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	480	0
Grading/Excavation	943	0	1,440	0	480	0
Drainage/Utilities/Sub-Grade	0	0	0	0	480	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> On-Site Utility Lines

Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.00	0.03	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.00	4.57	0.00	0.00	4.19
Grading/Excavation	0.03	0.51	0.14	0.09	0.01	0.09	0.02	0.00	0.02	0.00	126.96	0.03	0.01	117.94
Drainage/Utilities/Sub-Grade	0.02	0.37	0.04	0.11	0.00	0.11	0.02	0.00	0.02	0.00	58.55	0.01	0.00	53.56
Paving	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
Maximum (tons/phase)	0.03	0.51	0.14	0.11	0.01	0.11	0.02	0.00	0.02	0.00	126.96	0.03	0.01	117.94
Total (tons/construction project)	0.05	0.91	0.18	0.23	0.01	0.22	0.05	0.01	0.05	0.00	190.08	0.04	0.01	175.69

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

Road Construction Emissions Model **Version 9.0.0**
Data Entry Worksheet

Note: Required data input sections have a yellow background.
Optional data input sections have a blue background. Only areas with a
yellow or blue background can be modified. Program defaults have a white background.
The user is required to enter information in cells D10 through D24, E28 through G35, and D38 through D41 for all project types.
Please use "Clear Data Input & User Overrides" button first before changing the Project Type or begin a new project.

To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

Input Type

Project Name	On-Site Utility Lines	
Construction Start Year	2025	Enter a Year between 2014 and 2040 (inclusive)
Project Type For 4: Other Linear Project Type, please provide project specific off-road equipment population and vehicle trip data	4	1) New Road Construction : Project to build a roadway from bare ground, which generally requires more site preparation than widening an existing roadway 2) Road Widening : Project to add a new lane to an existing roadway 3) Bridge/Overpass Construction : Project to build an elevated roadway, which generally requires some different equipment than a new roadway, such as a crane 4) Other Linear Project Type: Non-roadway project such as a pipeline, transmission line, or levee construction
Project Construction Time	2.00	months
Working Days per Month	22.00	days (assume 22 if unknown)
Predominant Soil/Site Type: Enter 1, 2, or 3 (for project within "Sacramento County", follow soil type selection instructions in cells E18 to E20 otherwise see instructions provided in cells J18 to J22)	1	1) Sand Gravel : Use for quaternary deposits (Delta/West County) 2) Weathered Rock-Earth : Use for Laguna formation (Jackson Highway area) or the lone formation (Scott Road, Rancho Murieta) 3) Blasted Rock : Use for Salt Springs Slate or Copper Hill Volcanics (Folsom South of Highway 50, Rancho Murieta)
Project Length	11.55	miles
Total Project Area	4.36	acres
Maximum Area Disturbed/Day	0.25	acres
Water Trucks Used?	2	1. Yes 2. No

Please note that the soil type instructions provided in cells E18 to E20 are specific to Sacramento County. Maps available from the California Geologic Survey (see weblink below) can be used to determine soil type outside Sacramento County.

http://www.conservation.ca.gov/cgs/information/geologic_mapping/Pages/googlemaps.aspx#regionalseries

Material Hauling Quantity Input

Material Type	Phase	Haul Truck Capacity (yd^3) (assume 20 if unknown)	Import Volume (yd^3/day)	Export Volume (yd^3/day)
Soil	Grubbing/Land Clearing	20.00		
	Grading/Excavation	20.00	942.83	
	Drainage/Utilities/Sub-Grade	20.00		
	Paving	20.00		
Asphalt	Grubbing/Land Clearing	20.00		
	Grading/Excavation	20.00		
	Drainage/Utilities/Sub-Grade	20.00		
	Paving	20.00		

Mitigation Options

On-road Fleet Emissions Mitigation		Select "2010 and Newer On-road Vehicles Fleet" option when the on-road heavy-duty truck fleet for the project will be limited to vehicles of model year 2010 or newer
Off-road Equipment Emissions Mitigation	Tier 4 Equipment	Select "20% NOx and 45% Exhaust PM reduction" option if the project will be required to use a lower emitting off-road construction fleet. The SMAQMD Construction Mitigation Calculator can be used to confirm compliance with this mitigation measure (http://www.airquality.org/Businesses/CEQA-Land-Use-Planning/Mitigation).
Will all off-road equipment be tier 4?	All Tier 4 Equipment	Select "Tier 4 Equipment" option if some or all off-road equipment used for the project meets CARB Tier 4 Standard

The remaining sections of this sheet contain areas that require modification when 'Other Project Type' is selected.

Note: The program's estimates of construction period phase length can be overridden in cells D50 through D53, and F50 through F53.

Construction Periods	User Override of Construction Months	Program Calculated Months	User Override of Phase Starting Date	Program Default Phase Starting Date
Grubbing/Land Clearing		0.20		1/1/2025
Grading/Excavation		0.80		1/8/2025
Drainage/Utilities/Sub-Grade	1.00	0.70		2/2/2025
Paving	0.00	0.30		3/5/2025
Totals (Months)		2		

Note: Soil Hauling emission default values can be overridden in cells D61 through D64, and F61 through F64.

Soil Hauling Emissions User Input	User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT
Miles/round trip: Grubbing/Land Clearing				0	0.00
Miles/round trip: Grading/Excavation	30.00			48	1440.00
Miles/round trip: Drainage/Utilities/Sub-Grade				0	0.00
Miles/round trip: Paving				0	0.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.03	0.41	3.06	0.11	0.05	0.02	1,672.88	0.00	0.26	1,751.28
Grading/Excavation (grams/mile)	0.03	0.41	3.06	0.11	0.05	0.02	1,672.88	0.00	0.26	1,751.28
Draining/Utilities/Sub-Grade (grams/mile)	0.03	0.41	3.06	0.11	0.05	0.02	1,672.88	0.00	0.26	1,751.28
Paving (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grubbing/Land Clearing (grams/trip)	0.00	0.00	4.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	4.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	4.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.09	1.31	10.20	0.35	0.16	0.05	5,310.84	0.00	0.83	5,559.71
Tons per const. Period - Grading/Excavation	0.00	0.01	0.09	0.00	0.00	0.00	46.74	0.00	0.01	48.93
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.00	0.01	0.09	0.00	0.00	0.00	46.74	0.00	0.01	48.93

Note: Asphalt Hauling emission default values can be overridden in cells D91 through D94, and F91 through F94.

Asphalt Hauling Emissions User Input	User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT
Miles/round trip: Grubbing/Land Clearing				0	0.00
Miles/round trip: Grading/Excavation				0	0.00
Miles/round trip: Drainage/Utilities/Sub-Grade				0	0.00
Miles/round trip: Paving				0	0.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.03	0.41	3.06	0.11	0.05	0.02	1,672.88	0.00	0.26	1,751.28
Grading/Excavation (grams/mile)	0.03	0.41	3.06	0.11	0.05	0.02	1,672.88	0.00	0.26	1,751.28
Draining/Utilities/Sub-Grade (grams/mile)	0.03	0.41	3.06	0.11	0.05	0.02	1,672.88	0.00	0.26	1,751.28
Paving (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grubbing/Land Clearing (grams/trip)	0.00	0.00	4.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	4.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	4.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Note: Worker commute default values can be overridden in cells D121 through D126.

Worker Commute Emissions User Input	User Override of Worker Commute Default Values	Default Values	Calculated Daily Trips	Calculated Daily VMT
Miles/ one-way trip	12			
One-way trips/day	2			
No. of employees: Grubbing/Land Clearing	20		40	480.00
No. of employees: Grading/Excavation	20		40	480.00
No. of employees: Drainage/Utilities/Sub-Grade	20		40	480.00
No. of employees: Paving	0		0	0.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.01	0.78	0.06	0.05	0.02	0.00	295.84	0.00	0.01	297.52
Grading/Excavation (grams/mile)	0.01	0.78	0.06	0.05	0.02	0.00	295.84	0.00	0.01	297.52
Draining/Utilities/Sub-Grade (grams/mile)	0.01	0.78	0.06	0.05	0.02	0.00	295.84	0.00	0.01	297.52
Paving (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grubbing/Land Clearing (grams/trip)	0.93	2.56	0.25	0.00	0.00	0.00	63.73	0.06	0.03	73.77
Grading/Excavation (grams/trip)	0.93	2.56	0.25	0.00	0.00	0.00	63.73	0.06	0.03	73.77
Draining/Utilities/Sub-Grade (grams/trip)	0.93	2.56	0.25	0.00	0.00	0.00	63.73	0.06	0.03	73.77
Paving (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Emissions	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Pounds per day - Grubbing/Land Clearing	0.09	1.05	0.08	0.05	0.02	0.00	318.68	0.01	0.01	321.35
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.70	0.00	0.00	0.71
Pounds per day - Grading/Excavation	0.09	1.05	0.08	0.05	0.02	0.00	318.68	0.01	0.01	321.35
Tons per const. Period - Grading/Excavation	0.00	0.01	0.00	0.00	0.00	0.00	2.80	0.00	0.00	2.83
Pounds per day - Drainage/Utilities/Sub-Grade	0.09	1.05	0.08	0.05	0.02	0.00	318.68	0.01	0.01	321.35
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.01	0.00	0.00	0.00	0.00	3.51	0.00	0.00	3.53
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.00	0.02	0.00	0.00	0.00	0.00	7.01	0.00	0.00	7.07

Note: Water Truck default values can be overridden in cells D153 through D156, I153 through I156, and F153 through F156.

Water Truck Emissions User Input	User Override of Default # Water Trucks	Program Estimate of Number of Water Trucks	User Override of Truck Round Trips/Vehicle/Day	Default Values Round Trips/Vehicle/Day	Calculated Trips/day	User Override of Miles/Round Trip	Default Values Miles/Round Trip	Calculated Daily VMT
Grubbing/Land Clearing - Exhaust								0.00
Grading/Excavation - Exhaust								0.00
Drainage/Utilities/Subgrade								0.00
Paving								0.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.03	0.41	3.06	0.11	0.05	0.02	1,672.88	0.00	0.26	1,751.28
Grading/Excavation (grams/mile)	0.03	0.41	3.06	0.11	0.05	0.02	1,672.88	0.00	0.26	1,751.28
Draining/Utilities/Sub-Grade (grams/mile)	0.03	0.41	3.06	0.11	0.05	0.02	1,672.88	0.00	0.26	1,751.28
Paving (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grubbing/Land Clearing (grams/trip)	0.00	0.00	4.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	4.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	4.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Note: Fugitive dust default values can be overridden in cells D183 through D185.

Fugitive Dust	User Override of Max Acreage Disturbed/Day	Default Maximum Acreage/Day	PM10 pounds/day	PM10 tons/per period	PM2.5 pounds/day	PM2.5 tons/per period
Fugitive Dust - Grubbing/Land Clearing	0.50		10.00	0.02	2.08	0.00
Fugitive Dust - Grading/Excavation	0.50		10.00	0.09	2.08	0.02
Fugitive Dust - Drainage/Utilities/Subgrade	0.50		10.00	0.11	2.08	0.02

Values in cells D195 through D228, D246 through D279, D297 through D330, and D348 through D381 are required when 'Other Project Type' is selected.

Off-Road Equipment Emissions

Grubbing/Land Clearing

Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*	Mitigation Option: Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	N2O pounds/day	CO2e pounds/day
			Tier 4	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Tier 4	Crawler Tractors	0.24	4.18	0.48	0.02	0.02	0.01	758.27	0.25	0.01	766.45
			Tier 4	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Tier 4	Excavators	0.32	7.84	0.64	0.03	0.03	0.01	1,000.68	0.32	0.01	1,011.46
			Tier 4	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Other General Industrial Equipn	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab

Number of Vehicles	Equipment Tier	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	N2O pounds/day	CO2e pounds/day
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing	pounds per day	0.56	12.02	1.12	0.06	0.05	0.02	1,758.95	0.57	0.02	1,777.91
Grubbing/Land Clearing	tons per phase	0.00	0.03	0.00	0.00	0.00	0.00	3.87	0.00	0.00	3.91

Grading/Excavation

Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*	Mitigation Option: Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	N2O pounds/day	CO2e pounds/day
			Tier 4	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Tier 4	Crawler Tractors	0.24	4.18	0.48	0.02	0.02	0.01	758.27	0.25	0.01	766.45
			Tier 4	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3.00			Tier 4	Excavators	0.48	11.75	0.95	0.05	0.04	0.02	1,501.02	0.49	0.01	1,517.20
			Tier 4	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Tier 4	Graders	0.41	7.03	0.81	0.04	0.04	0.01	1,280.48	0.41	0.01	1,294.28
			Tier 4	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Other General Industrial Equipn	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Tier 4	Rollers	0.16	3.97	0.32	0.02	0.01	0.01	508.12	0.16	0.00	513.60
			Tier 4	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Tier 4	Rubber Tired Loaders	0.19	3.35	0.39	0.02	0.02	0.01	605.62	0.20	0.01	612.16
2.00			Tier 4	Scrapers	0.93	16.16	1.86	0.09	0.09	0.03	2,936.30	0.95	0.03	2,967.95
			Tier 4	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4.00			Tier 4	Tractors/Loaders/Backhoes	0.38	9.37	0.76	0.04	0.03	0.01	1,208.22	0.39	0.01	1,221.22
			Tier 4	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment	If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab			ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Number of Vehicles		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Grading/Excavation		pounds per day	2.79	55.81	5.58	0.28	0.26	0.09	8,798.03	2.85	0.08	8,892.84
	Grading/Excavation		tons per phase	0.02	0.49	0.05	0.00	0.00	0.00	77.42	0.03	0.00	78.26

Drainage/Utilities/Subgrade	Default Number of Vehicles	Mitigation Option: Override of	Default		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Override of Default Number of Vehicles	*Program-estimate*	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
			Tier 4	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Tier 4	Air Compressors	0.10	2.44	0.20	0.01	0.01	0.00	375.26	0.02	0.00	376.62
			Tier 4	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Tier 4	Generator Sets	0.16	4.06	0.33	0.02	0.02	0.01	623.04	0.02	0.00	625.01
1.00			Tier 4	Graders	0.20	3.52	0.41	0.02	0.02	0.01	640.24	0.21	0.01	647.14
			Tier 4	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Other General Industrial Equipn	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Tier 4	Plate Compactors	0.02	0.36	0.32	0.02	0.02	0.00	34.48	0.00	0.00	34.65
			Tier 4	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Tier 4	Pumps	0.16	4.06	0.33	0.02	0.02	0.01	623.04	0.03	0.00	625.06
			Tier 4	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Tier 4	Rough Terrain Forklifts	0.11	2.61	0.21	0.01	0.01	0.00	333.72	0.11	0.00	337.31
			Tier 4	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Tier 4	Scrapers	0.47	8.08	0.93	0.05	0.04	0.02	1,468.15	0.47	0.01	1,483.97
0.00			Tier 4	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3.00			Tier 4	Tractors/Loaders/Backhoes	0.28	7.03	0.57	0.03	0.03	0.01	906.17	0.29	0.01	915.91
			Tier 4	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment	If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab			ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Number of Vehicles		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Drainage/Utilities/Sub-Grade		pounds per day	1.50	32.15	3.30	0.17	0.15	0.05	5,004.09	1.16	0.04	5,045.68
	Drainage/Utilities/Sub-Grade		tons per phase	0.02	0.35	0.04	0.00	0.00	0.00	55.04	0.01	0.00	55.50

Paving	Default Number of Vehicles	Mitigation Option: Override of	Default		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Override of Default Number of Vehicles	*Program-estimate*	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
			Tier 4	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Other General Industrial Equipn	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

			Tier 4	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab

Number of Vehicles	Equipment Tier	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	N2O pounds/day	CO2e pounds/day
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Paving	pounds per day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	tons per phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Emissions all Phases (tons per construction period) =>		0.04	0.87	0.09	0.00	0.00	0.00	136.34	0.04	0.00	137.67

Equipment default values for horsepower and hours/day can be overridden in cells D403 through D436 and F403 through F436.

Equipment	User Override of Horsepower	Default Values Horsepower	User Override of Hours/day	Default Values Hours/day
Aerial Lifts		63		8
Air Compressors		78		8
Bore/Drill Rigs		221		8
Cement and Mortar Mixers		9		8
Concrete/Industrial Saws		81		8
Cranes		231		8
Crawler Tractors		212		8
Crushing/Proc. Equipment		85		8
Excavators		158		8
Forklifts		89		8
Generator Sets		84		8
Graders		187		8
Off-Highway Tractors		124		8
Off-Highway Trucks		402		8
Other Construction Equipment		172		8
Other General Industrial Equipment		88		8
Other Material Handling Equipment		168		8
Pavers		130		8
Paving Equipment		132		8
Plate Compactors		8		8
Pressure Washers		13		8
Pumps		84		8
Rollers		80		8
Rough Terrain Forklifts		100		8
Rubber Tired Dozers		247		8
Rubber Tired Loaders		203		8
Scrapers		367		8
Signal Boards		6		8
Skid Steer Loaders		65		8
Surfacing Equipment		263		8
Sweepers/Scrubbers		64		8
Tractors/Loaders/Backhoes		97		8
Trenchers		78		8
Welders		46		8

END OF DATA ENTRY SHEET

ATTACHMENT B:
HRA MODELING INPUT AND OUTPUT FILES

Preconstruction
Utilities HRA

```
**
**************************************
**
** AERMOD Input Produced by:
** AERMOD View Ver. 10.0.0
** Lakes Environmental Software Inc.
** Date: 3/22/2024
** File: C:\Lakes\AERMOD
View\MantecaQuintal_offsite_Road\MantecaQuintal_offsite_Road.ADI
**
**************************************
**
**
**************************************
** AERMOD Control Pathway
**************************************
**
**
CO STARTING
   TITLEONE C:\Lakes\AERMOD View\MantecaQuinta_onsite_mitigated\MantecaQuinta_on
   MODELOPT DFAULT CONC
   AVERTIME 1 ANNUAL
   POLLUTID PM_10
   RUNORNOT RUN
   ERRORFIL MantecaQuintal_offsite_Road.err
CO FINISHED
**
**************************************
** AERMOD Source Pathway
**************************************
**
**
SO STARTING
** Source Location **
** Source ID - Type - X Coord. - Y Coord. **
** ------------------------------------------------------------------------
** Line Source Represented by Adjacent Volume Sources
** LINE VOLUME Source ID = SLINE1
** DESCRSRC
** PREFIX
** Length of Side = 36.48
** Configuration = Adjacent
** Emission Rate = 0.0013
** Vertical Dimension = 3.40
** SZINIT = 1.58
** Nodes = 2
** 657121.247, 4182832.809, 10.67, 1.70, 16.97
** 657096.574, 4183543.704, 10.99, 1.70, 16.97
** ------------------------------------------------------------------------
   LOCATION L0000001     VOLUME   657120.614 4182851.038 10.68
```

```
   LOCATION L0000002     VOLUME   657119.349 4182887.496 10.69
   LOCATION L0000003     VOLUME   657118.083 4182923.954 10.71
   LOCATION L0000004     VOLUME   657116.818 4182960.412 10.73
   LOCATION L0000005     VOLUME   657115.553 4182996.870 10.74
   LOCATION L0000006     VOLUME   657114.287 4183033.328 10.76
   LOCATION L0000007     VOLUME   657113.022 4183069.787 10.78
   LOCATION L0000008     VOLUME   657111.757 4183106.245 10.79
   LOCATION L0000009     VOLUME   657110.491 4183142.703 10.81
   LOCATION L0000010     VOLUME   657109.226 4183179.161 10.83
   LOCATION L0000011     VOLUME   657107.961 4183215.619 10.84
   LOCATION L0000012     VOLUME   657106.695 4183252.077 10.86
   LOCATION L0000013     VOLUME   657105.430 4183288.535 10.88
   LOCATION L0000014     VOLUME   657104.165 4183324.993 10.89
   LOCATION L0000015     VOLUME   657102.899 4183361.451 10.91
   LOCATION L0000016     VOLUME   657101.634 4183397.909 10.92
   LOCATION L0000017     VOLUME   657100.368 4183434.367 10.94
   LOCATION L0000018     VOLUME   657099.103 4183470.825 10.96
   LOCATION L0000019     VOLUME   657097.838 4183507.283 10.97
** End of LINE VOLUME Source ID = SLINE1
** Source Parameters **
** LINE VOLUME Source ID = SLINE1
   SRCPARAM L0000001     0.0000684211      1.70     16.97      1.58
   SRCPARAM L0000002     0.0000684211      1.70     16.97      1.58
   SRCPARAM L0000003     0.0000684211      1.70     16.97      1.58
   SRCPARAM L0000004     0.0000684211      1.70     16.97      1.58
   SRCPARAM L0000005     0.0000684211      1.70     16.97      1.58
   SRCPARAM L0000006     0.0000684211      1.70     16.97      1.58
   SRCPARAM L0000007     0.0000684211      1.70     16.97      1.58
   SRCPARAM L0000008     0.0000684211      1.70     16.97      1.58
   SRCPARAM L0000009     0.0000684211      1.70     16.97      1.58
   SRCPARAM L0000010     0.0000684211      1.70     16.97      1.58
   SRCPARAM L0000011     0.0000684211      1.70     16.97      1.58
   SRCPARAM L0000012     0.0000684211      1.70     16.97      1.58
   SRCPARAM L0000013     0.0000684211      1.70     16.97      1.58
   SRCPARAM L0000014     0.0000684211      1.70     16.97      1.58
   SRCPARAM L0000015     0.0000684211      1.70     16.97      1.58
   SRCPARAM L0000016     0.0000684211      1.70     16.97      1.58
   SRCPARAM L0000017     0.0000684211      1.70     16.97      1.58
   SRCPARAM L0000018     0.0000684211      1.70     16.97      1.58
   SRCPARAM L0000019     0.0000684211      1.70     16.97      1.58
** ------------------------------------------------------------------
   SRCGROUP ALL
SO FINISHED
**
**************************************
** AERMOD Receptor Pathway
**************************************
**
**
RE STARTING
```

```
   INCLUDED MantecaQuintal_offsite_Road.rou
RE FINISHED
**
**************************************
** AERMOD Meteorology Pathway
**************************************
**
**
ME STARTING
   SURFFILE Stockton_2013-2017.SFC
   PROFFILE Stockton_2013-2017.PFL
   SURFDATA 23237 2013
   UAIRDATA 23230 2013 OAKLAND/WSO_AP
   PROFBASE 7.9 METERS
ME FINISHED
**
**************************************
** AERMOD Output Pathway
**************************************
**
**
OU STARTING
   RECTABLE ALLAVE 1ST
   RECTABLE 1 1ST
** Auto-Generated Plotfiles
   PLOTFILE 1 ALL 1ST MANTECAQUINTAL_OFFSITE_ROAD.AD\01H1GALL.PLT 31
   PLOTFILE ANNUAL ALL MANTECAQUINTAL_OFFSITE_ROAD.AD\AN00GALL.PLT 32
   SUMMFILE MantecaQuintal_offsite_Road.sum
OU FINISHED
**
**************************************
** Project Parameters
**************************************
** PROJCTN  CoordinateSystemUTM
** DESCPTN  UTM: Universal Transverse Mercator
** DATUM    World Geodetic System 1984
** DTMRGN   Global Definition
** UNITS    m
** ZONE     10
** ZONEINX  0
**
```

```
**
**************************************
**
** AERMOD Input Produced by:
** AERMOD View Ver. 10.0.0
** Lakes Environmental Software Inc.
** Date: 3/22/2024
** File: C:\Lakes\AERMOD
View\MantecaQuintal_offsite_Road\MantecaQuintal_offsite_Road.ADI
**
**************************************
**
**
**************************************
** AERMOD Control Pathway
**************************************
**
**
CO STARTING
   TITLEONE C:\Lakes\AERMOD View\MantecaQuinta_onsite_mitigated\MantecaQuinta_on
   MODELOPT DFAULT CONC
   AVERTIME 1 ANNUAL
   POLLUTID PM_10
   RUNORNOT RUN
   ERRORFIL MantecaQuintal_offsite_Road.err
CO FINISHED
**
**************************************
** AERMOD Source Pathway
**************************************
**
**
SO STARTING
** Source Location **
** Source ID - Type - X Coord. - Y Coord. **
** ------------------------------------------------------------------------
** Line Source Represented by Adjacent Volume Sources
** LINE VOLUME Source ID = SLINE1
** DESCRSRC
** PREFIX
** Length of Side = 36.48
** Configuration = Adjacent
** Emission Rate = 0.0013
** Vertical Dimension = 3.40
** SZINIT = 1.58
** Nodes = 2
** 657121.247, 4182832.809, 10.67, 1.70, 16.97
** 657096.574, 4183543.704, 10.99, 1.70, 16.97
** ------------------------------------------------------------------------
   LOCATION L0000001     VOLUME   657120.614 4182851.038 10.68
```

```
   LOCATION L0000002     VOLUME   657119.349 4182887.496 10.69
   LOCATION L0000003     VOLUME   657118.083 4182923.954 10.71
   LOCATION L0000004     VOLUME   657116.818 4182960.412 10.73
   LOCATION L0000005     VOLUME   657115.553 4182996.870 10.74
   LOCATION L0000006     VOLUME   657114.287 4183033.328 10.76
   LOCATION L0000007     VOLUME   657113.022 4183069.787 10.78
   LOCATION L0000008     VOLUME   657111.757 4183106.245 10.79
   LOCATION L0000009     VOLUME   657110.491 4183142.703 10.81
   LOCATION L0000010     VOLUME   657109.226 4183179.161 10.83
   LOCATION L0000011     VOLUME   657107.961 4183215.619 10.84
   LOCATION L0000012     VOLUME   657106.695 4183252.077 10.86
   LOCATION L0000013     VOLUME   657105.430 4183288.535 10.88
   LOCATION L0000014     VOLUME   657104.165 4183324.993 10.89
   LOCATION L0000015     VOLUME   657102.899 4183361.451 10.91
   LOCATION L0000016     VOLUME   657101.634 4183397.909 10.92
   LOCATION L0000017     VOLUME   657100.368 4183434.367 10.94
   LOCATION L0000018     VOLUME   657099.103 4183470.825 10.96
   LOCATION L0000019     VOLUME   657097.838 4183507.283 10.97
** End of LINE VOLUME Source ID = SLINE1
** Source Parameters **
** LINE VOLUME Source ID = SLINE1
   SRCPARAM L0000001     0.0000684211      1.70     16.97      1.58
   SRCPARAM L0000002     0.0000684211      1.70     16.97      1.58
   SRCPARAM L0000003     0.0000684211      1.70     16.97      1.58
   SRCPARAM L0000004     0.0000684211      1.70     16.97      1.58
   SRCPARAM L0000005     0.0000684211      1.70     16.97      1.58
   SRCPARAM L0000006     0.0000684211      1.70     16.97      1.58
   SRCPARAM L0000007     0.0000684211      1.70     16.97      1.58
   SRCPARAM L0000008     0.0000684211      1.70     16.97      1.58
   SRCPARAM L0000009     0.0000684211      1.70     16.97      1.58
   SRCPARAM L0000010     0.0000684211      1.70     16.97      1.58
   SRCPARAM L0000011     0.0000684211      1.70     16.97      1.58
   SRCPARAM L0000012     0.0000684211      1.70     16.97      1.58
   SRCPARAM L0000013     0.0000684211      1.70     16.97      1.58
   SRCPARAM L0000014     0.0000684211      1.70     16.97      1.58
   SRCPARAM L0000015     0.0000684211      1.70     16.97      1.58
   SRCPARAM L0000016     0.0000684211      1.70     16.97      1.58
   SRCPARAM L0000017     0.0000684211      1.70     16.97      1.58
   SRCPARAM L0000018     0.0000684211      1.70     16.97      1.58
   SRCPARAM L0000019     0.0000684211      1.70     16.97      1.58
** ------------------------------------------------------------------
   SRCGROUP ALL
SO FINISHED
**
**************************************
** AERMOD Receptor Pathway
**************************************
**
**
RE STARTING
```

```
   INCLUDED MantecaQuintal_offsite_Road.rou
RE FINISHED
**
**************************************
** AERMOD Meteorology Pathway
**************************************
**
**
ME STARTING
   SURFFILE Stockton_2013-2017.SFC
   PROFFILE Stockton_2013-2017.PFL
   SURFDATA 23237 2013
   UAIRDATA 23230 2013 OAKLAND/WSO_AP
   PROFBASE 7.9 METERS
ME FINISHED
**
**************************************
** AERMOD Output Pathway
**************************************
**
**
OU STARTING
   RECTABLE ALLAVE 1ST
   RECTABLE 1 1ST
** Auto-Generated Plotfiles
   PLOTFILE 1 ALL 1ST MANTECAQUINTAL_OFFSITE_ROAD.AD\01H1GALL.PLT 31
   PLOTFILE ANNUAL ALL MANTECAQUINTAL_OFFSITE_ROAD.AD\AN00GALL.PLT 32
   SUMMFILE MantecaQuintal_offsite_Road.sum
OU FINISHED


  *** Message Summary For AERMOD Model Setup ***

  --------- Summary of Total Messages --------

 A Total of            0 Fatal Error Message(s)
 A Total of            2 Warning Message(s)
 A Total of            0 Informational Message(s)


    ******** FATAL ERROR MESSAGES ********
               ***  NONE  ***


    ********   WARNING MESSAGES   ********
 ME W186     114       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used
      0.50
 ME W187     114       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET
```

```
 **********************************
 *** SETUP Finishes Successfully ***
 **********************************

 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuinta_onsite_mitigated\MantecaQuinta_on ***        03/22/24
 *** AERMET - VERSION  18081 ***   ***
                        ***       08:23:22

                                  PAGE   1
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                                          ***     MODEL SETUP OPTIONS SUMMARY
  ***
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - -

 **Model Is Setup For Calculation of Average CONCentration Values.

   --  DEPOSITION LOGIC  --
 **NO GAS DEPOSITION Data Provided.
 **NO PARTICLE DEPOSITION Data Provided.
 **Model Uses NO DRY DEPLETION.  DRYDPLT  =  F
 **Model Uses NO WET DEPLETION.  WETDPLT  =  F

 **Model Uses RURAL Dispersion Only.

 **Model Uses Regulatory DEFAULT Options:
        1. Stack-tip Downwash.
        2. Model Accounts for ELEVated Terrain Effects.
        3. Use Calms Processing Routine.
        4. Use Missing Data Processing Routine.
        5. No Exponential Decay.

 **Other Options Specified:
        ADJ_U*   - Use ADJ_U* option for SBL in AERMET
        CCVR_Sub - Meteorological data includes CCVR substitutions
        TEMP_Sub - Meteorological data includes TEMP substitutions

 **Model Assumes No FLAGPOLE Receptor Heights.

 **The User Specified a Pollutant Type of:  PM_10

 **Model Calculates  1 Short Term Average(s) of:   1-HR
     and Calculates ANNUAL Averages

 **This Run Includes:     19 Source(s);       1 Source Group(s); and     987
Receptor(s)

                with:      0 POINT(s), including
```

```
                          0 POINTCAP(s) and      0 POINTHOR(s)
                and:     19 VOLUME source(s)
                and:      0 AREA type source(s)
                and:      0 LINE source(s)
                and:      0 RLINE/RLINEXT source(s)
                and:      0 OPENPIT source(s)
                and:      0 BUOYANT LINE source(s) with a total of     0 line(s)


 **Model Set To Continue RUNning After the Setup Testing.

 **The AERMET Input Meteorological Data Version Date:  18081

 **Output Options Selected:
          Model Outputs Tables of ANNUAL Averages by Receptor
          Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE
Keyword)
          Model Outputs External File(s) of High Values for Plotting (PLOTFILE
Keyword)
          Model Outputs Separate Summary File of High Ranked Values (SUMMFILE
Keyword)

 **NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                 m for Missing
Hours
                                                                 b for Both Calm
and Missing Hours

 **Misc. Inputs:  Base Elev. for Pot. Temp. Profile (m MSL) =     7.90 ;  Decay
Coef. =    0.000     ;  Rot. Angle =     0.0
                  Emission Units = GRAMS/SEC                                 ;
Emission Rate Unit Factor =   0.10000E+07
                  Output Units   = MICROGRAMS/M**3

 **Approximate Storage Requirements of Model =      3.6 MB of RAM.

 **Input Runstream File:          aermod.inp

 **Output Print File:             aermod.out


 **Detailed Error/Message File:   MantecaQuintal_offsite_Road.err

 **File for Summary of Results:   MantecaQuintal_offsite_Road.sum

 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuinta_onsite_mitigated\MantecaQuinta_on ***        03/22/24
 *** AERMET - VERSION  18081 ***   ***
                        ***       08:23:22
```

*** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER EMISSION RATE PART. SCALAR CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	URBAN SOURCE BY
L0000001	0	0.68421E-04	657120.6	4182851.0	10.7	1.70	16.97	1.58	NO
L0000002	0	0.68421E-04	657119.3	4182887.5	10.7	1.70	16.97	1.58	NO
L0000003	0	0.68421E-04	657118.1	4182924.0	10.7	1.70	16.97	1.58	NO
L0000004	0	0.68421E-04	657116.8	4182960.4	10.7	1.70	16.97	1.58	NO
L0000005	0	0.68421E-04	657115.6	4182996.9	10.7	1.70	16.97	1.58	NO
L0000006	0	0.68421E-04	657114.3	4183033.3	10.8	1.70	16.97	1.58	NO
L0000007	0	0.68421E-04	657113.0	4183069.8	10.8	1.70	16.97	1.58	NO
L0000008	0	0.68421E-04	657111.8	4183106.2	10.8	1.70	16.97	1.58	NO
L0000009	0	0.68421E-04	657110.5	4183142.7	10.8	1.70	16.97	1.58	NO
L0000010	0	0.68421E-04	657109.2	4183179.2	10.8	1.70	16.97	1.58	NO
L0000011	0	0.68421E-04	657108.0	4183215.6	10.8	1.70	16.97	1.58	NO
L0000012	0	0.68421E-04	657106.7	4183252.1	10.9	1.70	16.97	1.58	NO
L0000013	0	0.68421E-04	657105.4	4183288.5	10.9	1.70	16.97	1.58	NO
L0000014	0	0.68421E-04	657104.2	4183325.0	10.9	1.70	16.97	1.58	NO
L0000015	0	0.68421E-04	657102.9	4183361.5	10.9	1.70	16.97	1.58	NO
L0000016	0	0.68421E-04	657101.6	4183397.9	10.9	1.70	16.97	1.58	NO
L0000017	0	0.68421E-04	657100.4	4183434.4	10.9	1.70	16.97	1.58	NO
L0000018	0	0.68421E-04	657099.1	4183470.8	11.0	1.70	16.97		

                                          *** SOURCE IDs DEFINING SOURCE GROUPS
***

 SRCGROUP ID   SOURCE IDs
 -----------   ----------

  ALL   L0000001   , L0000002   , L0000003   , L0000004   , L0000005   ,
L0000006   , L0000007   , L0000008   ,

             L0000009   , L0000010   , L0000011   , L0000012   , L0000013   ,
L0000014   , L0000015   , L0000016   ,

             L0000017   , L0000018   , L0000019   ,

                                        *** DISCRETE CARTESIAN RECEPTORS ***
                                       (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
                                                 (METERS)

     (657151.5, 4182491.8,   10.7,   10.7,   0.0);   (657151.5,
4182511.5,   10.7,   10.7,   0.0);
     (657151.5, 4182531.2,   10.7,   10.7,   0.0);   (657151.5,
4182551.0,   10.7,   10.7,   0.0);
     (657151.5, 4182570.8,   10.7,   10.7,   0.0);   (657151.5,
4182590.5,   10.7,   10.7,   0.0);
     (657151.5, 4182610.2,   10.7,   10.7,   0.0);   (657151.5,
4182630.0,   10.7,   10.7,   0.0);
     (657151.5, 4182649.8,   10.7,   10.7,   0.0);   (657171.2,
4182472.0,   10.7,   10.7,   0.0);
     (657171.2, 4182491.8,   10.7,   10.7,   0.0);   (657171.2,
4182511.5,   10.7,   10.7,   0.0);

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     ( 657171.2, 4182531.2,      10.7,      10.7,       0.0);         ( 657171.2,
4182551.0,      10.7,      10.7,       0.0);
     ( 657171.2, 4182570.8,      10.7,      10.7,       0.0);         ( 657171.2,
4182590.5,      10.7,      10.7,       0.0);
     ( 657171.2, 4182610.2,      10.7,      10.7,       0.0);         ( 657171.2,
4182630.0,      10.7,      10.7,       0.0);
     ( 657171.2, 4182649.8,      10.7,      10.7,       0.0);         ( 657191.0,
4182472.0,      10.7,      10.7,       0.0);
     ( 657191.0, 4182491.8,      10.7,      10.7,       0.0);         ( 657191.0,
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     ( 657191.0, 4182531.2,      10.7,      10.7,       0.0);         ( 657191.0,
4182551.0,      10.7,      10.7,       0.0);
     ( 657191.0, 4182570.8,      10.7,      10.7,       0.0);         ( 657191.0,
4182590.5,      10.7,      10.7,       0.0);
     ( 657191.0, 4182610.2,      10.7,      10.7,       0.0);         ( 657191.0,
4182630.0,      10.7,      10.7,       0.0);
     ( 657191.0, 4182649.8,      10.7,      10.7,       0.0);         ( 657210.8,
4182472.0,      10.7,      10.7,       0.0);
     ( 657210.8, 4182491.8,      10.7,      10.7,       0.0);         ( 657210.8,
4182511.5,      10.7,      10.7,       0.0);
     ( 657210.8, 4182531.2,      10.7,      10.7,       0.0);         ( 657210.8,
4182551.0,      10.7,      10.7,       0.0);
     ( 657210.8, 4182570.8,      10.7,      10.7,       0.0);         ( 657210.8,
4182590.5,      10.7,      10.7,       0.0);
     ( 657210.8, 4182610.2,      10.7,      10.7,       0.0);         ( 657210.8,
4182630.0,      10.7,      10.7,       0.0);
     ( 657210.8, 4182649.8,      10.7,      10.7,       0.0);         ( 657230.5,
4182472.0,      10.7,      10.7,       0.0);
     ( 657230.5, 4182491.8,      10.7,      10.7,       0.0);         ( 657230.5,
4182511.5,      10.7,      10.7,       0.0);
     ( 657230.5, 4182531.2,      10.7,      10.7,       0.0);         ( 657230.5,
4182551.0,      10.7,      10.7,       0.0);
     ( 657230.5, 4182570.8,      10.7,      10.7,       0.0);         ( 657230.5,
4182590.5,      10.7,      10.7,       0.0);
     ( 657230.5, 4182610.2,      10.7,      10.7,       0.0);         ( 657230.5,
4182630.0,      10.7,      10.7,       0.0);
     ( 657230.5, 4182649.8,      10.7,      10.7,       0.0);         ( 657250.2,
4182472.0,      10.7,      10.7,       0.0);
     ( 657250.2, 4182491.8,      10.7,      10.7,       0.0);         ( 657250.2,
4182511.5,      10.7,      10.7,       0.0);
     ( 657250.2, 4182531.2,      10.7,      10.7,       0.0);         ( 657250.2,
4182551.0,      10.7,      10.7,       0.0);
     ( 657250.2, 4182570.8,      10.7,      10.7,       0.0);         ( 657250.2,
4182590.5,      10.7,      10.7,       0.0);
     ( 657250.2, 4182610.2,      10.7,      10.7,       0.0);         ( 657250.2,
4182630.0,      10.7,      10.7,       0.0);
     ( 657250.2, 4182649.8,      10.7,      10.7,       0.0);         ( 657270.0,
4182472.0,      10.7,      10.7,       0.0);
     ( 657270.0, 4182491.8,      10.7,      10.7,       0.0);         ( 657270.0,
4182511.5,      10.7,      10.7,       0.0);
```

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     ( 657270.0, 4182531.2,      10.7,      10.7,       0.0);         ( 657270.0,
4182551.0,      10.7,      10.7,       0.0);
     ( 657270.0, 4182570.8,      10.7,      10.7,       0.0);         ( 657270.0,
4182590.5,      10.7,      10.7,       0.0);
     ( 657270.0, 4182610.2,      10.7,      10.7,       0.0);         ( 657270.0,
4182630.0,      10.7,      10.7,       0.0);
     ( 657270.0, 4182649.8,      10.7,      10.7,       0.0);         ( 657289.7,
4182472.0,      10.7,      10.7,       0.0);
     ( 657289.7, 4182491.8,      10.7,      10.7,       0.0);         ( 657289.7,
4182511.5,      10.7,      10.7,       0.0);
     ( 657289.7, 4182531.2,      10.7,      10.7,       0.0);         ( 657289.7,
4182551.0,      10.7,      10.7,       0.0);
     ( 657289.7, 4182570.8,      10.7,      10.7,       0.0);         ( 657289.7,
4182590.5,      10.7,      10.7,       0.0);
     ( 657289.7, 4182610.2,      10.7,      10.7,       0.0);         ( 657289.7,
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     ( 657289.7, 4182649.8,      10.7,      10.7,       0.0);         ( 657309.4,
4182472.0,      10.7,      10.7,       0.0);
     ( 657309.4, 4182491.8,      10.7,      10.7,       0.0);         ( 657309.4,
4182511.5,      10.7,      10.7,       0.0);
     ( 657309.4, 4182531.2,      10.7,      10.7,       0.0);         ( 657309.4,
4182551.0,      10.7,      10.7,       0.0);
     ( 657309.4, 4182570.8,      10.7,      10.7,       0.0);         ( 657309.4,
4182590.5,      10.7,      10.7,       0.0);
     ( 657309.4, 4182610.2,      10.7,      10.7,       0.0);         ( 657309.4,
4182630.0,      10.7,      10.7,       0.0);
     ( 657309.4, 4182649.8,      10.7,      10.7,       0.0);         ( 657329.2,
4182472.0,      10.7,      10.7,       0.0);
  *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuinta_onsite_mitigated\MantecaQuinta_on ***        03/22/24
 *** AERMET - VERSION  18081 ***   ***
                        ***        08:23:22

                                   PAGE   5
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                                          *** DISCRETE CARTESIAN RECEPTORS ***
                                        (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
                                                    (METERS)

     ( 657329.2, 4182491.8,      10.7,      10.7,       0.0);         ( 657329.2,
4182511.5,      10.7,      10.7,       0.0);
     ( 657329.2, 4182531.2,      10.7,      10.7,       0.0);         ( 657329.2,
4182551.0,      10.7,      10.7,       0.0);
     ( 657329.2, 4182570.8,      10.7,      10.7,       0.0);         ( 657329.2,
4182590.5,      10.7,      10.7,       0.0);
     ( 657329.2, 4182610.2,      10.7,      10.7,       0.0);         ( 657329.2,
4182630.0,      10.7,      10.7,       0.0);
     ( 657329.2, 4182649.8,      10.7,      10.7,       0.0);         ( 657348.9,
4182472.0,      10.7,      10.7,       0.0);
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```
     ( 657348.9, 4182491.8,      10.7,      10.7,       0.0);         ( 657348.9,
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     ( 657348.9, 4182531.2,      10.7,      10.7,       0.0);         ( 657348.9,
4182551.0,      10.7,      10.7,       0.0);
     ( 657348.9, 4182570.8,      10.7,      10.7,       0.0);         ( 657348.9,
4182590.5,      10.7,      10.7,       0.0);
     ( 657348.9, 4182610.2,      10.7,      10.7,       0.0);         ( 657348.9,
4182630.0,      10.7,      10.7,       0.0);
     ( 657348.9, 4182649.8,      10.7,      10.7,       0.0);         ( 657368.7,
4182472.0,      10.7,      10.7,       0.0);
     ( 657368.7, 4182491.8,      10.7,      10.7,       0.0);         ( 657368.7,
4182511.5,      10.7,      10.7,       0.0);
     ( 657368.7, 4182531.2,      10.7,      10.7,       0.0);         ( 657368.7,
4182551.0,      10.7,      10.7,       0.0);
     ( 657368.7, 4182570.8,      10.7,      10.7,       0.0);         ( 657368.7,
4182590.5,      10.7,      10.7,       0.0);
     ( 657368.7, 4182610.2,      10.7,      10.7,       0.0);         ( 657368.7,
4182630.0,      10.7,      10.7,       0.0);
     ( 657368.7, 4182649.8,      10.7,      10.7,       0.0);         ( 657388.4,
4182472.0,      10.7,      10.7,       0.0);
     ( 657388.4, 4182491.8,      10.7,      10.7,       0.0);         ( 657388.4,
4182511.5,      10.7,      10.7,       0.0);
     ( 657388.4, 4182531.2,      10.7,      10.7,       0.0);         ( 657388.4,
4182551.0,      10.7,      10.7,       0.0);
     ( 657388.4, 4182570.8,      10.7,      10.7,       0.0);         ( 657388.4,
4182590.5,      10.7,      10.7,       0.0);
     ( 657388.4, 4182610.2,      10.7,      10.7,       0.0);         ( 657388.4,
4182630.0,      10.7,      10.7,       0.0);
     ( 657388.4, 4182649.8,      10.7,      10.7,       0.0);         ( 657408.1,
4182472.0,      10.9,      10.9,       0.0);
     ( 657408.1, 4182491.8,      10.9,      10.9,       0.0);         ( 657408.1,
4182511.5,      10.8,      10.8,       0.0);
     ( 657408.1, 4182531.2,      10.7,      10.7,       0.0);         ( 657408.1,
4182551.0,      10.7,      10.7,       0.0);
     ( 657408.1, 4182570.8,      10.7,      10.7,       0.0);         ( 657408.1,
4182590.5,      10.7,      10.7,       0.0);
     ( 657408.1, 4182610.2,      10.7,      10.7,       0.0);         ( 657408.1,
4182630.0,      10.7,      10.7,       0.0);
     ( 657408.1, 4182649.8,      10.7,      10.7,       0.0);         ( 657427.9,
4182472.0,      11.0,      11.0,       0.0);
     ( 657427.9, 4182491.8,      11.0,      11.0,       0.0);         ( 657427.9,
4182511.5,      10.9,      10.9,       0.0);
     ( 657427.9, 4182531.2,      10.8,      10.8,       0.0);         ( 657427.9,
4182551.0,      10.8,      10.8,       0.0);
     ( 657427.9, 4182570.8,      10.8,      10.8,       0.0);         ( 657427.9,
4182590.5,      10.8,      10.8,       0.0);
     ( 657427.9, 4182610.2,      10.8,      10.8,       0.0);         ( 657427.9,
4182630.0,      10.7,      10.7,       0.0);
     ( 657427.9, 4182649.8,      10.7,      10.7,       0.0);         ( 657447.6,
4182472.0,      11.0,      11.0,       0.0);
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     ( 657447.6, 4182491.8,      11.0,      11.0,       0.0);         ( 657447.6,
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     ( 657447.6, 4182531.2,      11.0,      11.0,       0.0);         ( 657447.6,
4182551.0,      11.0,      11.0,       0.0);
     ( 657447.6, 4182570.8,      11.0,      11.0,       0.0);         ( 657447.6,
4182590.5,      11.0,      11.0,       0.0);
     ( 657447.6, 4182610.2,      11.0,      11.0,       0.0);         ( 657447.6,
4182630.0,      10.8,      10.8,       0.0);
     ( 657447.6, 4182649.8,      10.7,      10.7,       0.0);         ( 657467.4,
4182472.0,      11.0,      11.0,       0.0);
     ( 657467.4, 4182491.8,      11.0,      11.0,       0.0);         ( 657467.4,
4182511.5,      11.0,      11.0,       0.0);
     ( 657467.4, 4182531.2,      11.0,      11.0,       0.0);         ( 657467.4,
4182551.0,      11.0,      11.0,       0.0);
     ( 657467.4, 4182570.8,      11.0,      11.0,       0.0);         ( 657467.4,
4182590.5,      11.0,      11.0,       0.0);
     ( 657467.4, 4182610.2,      11.0,      11.0,       0.0);         ( 657467.4,
4182630.0,      10.9,      10.9,       0.0);
     ( 657467.4, 4182649.8,      10.9,      10.9,       0.0);         ( 657487.1,
4182472.0,      11.1,      11.1,       0.0);
     ( 657487.1, 4182491.8,      11.1,      11.1,       0.0);         ( 657487.1,
4182511.5,      11.1,      11.1,       0.0);
     ( 657487.1, 4182531.2,      11.1,      11.1,       0.0);         ( 657487.1,
4182551.0,      11.1,      11.1,       0.0);
     ( 657487.1, 4182570.8,      11.1,      11.1,       0.0);         ( 657487.1,
4182590.5,      11.1,      11.1,       0.0);
     ( 657487.1, 4182610.2,      11.1,      11.1,       0.0);         ( 657487.1,
4182630.0,      11.1,      11.1,       0.0);
     ( 657487.1, 4182649.8,      11.1,      11.1,       0.0);         ( 657506.9,
4182472.0,      11.3,      11.3,       0.0);
 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuinta_onsite_mitigated\MantecaQuinta_on ***        03/22/24
 *** AERMET - VERSION  18081 ***   ***
                        ***        08:23:22

                                   PAGE   6
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                                          *** DISCRETE CARTESIAN RECEPTORS ***
                                        (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
                                                    (METERS)

     ( 657506.9, 4182491.8,      11.3,      11.3,       0.0);         ( 657506.9,
4182511.5,      11.3,      11.3,       0.0);
     ( 657506.9, 4182531.2,      11.3,      11.3,       0.0);         ( 657506.9,
4182551.0,      11.3,      11.3,       0.0);
     ( 657506.9, 4182570.8,      11.3,      11.3,       0.0);         ( 657506.9,
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     ( 657506.9, 4182610.2,      11.3,      11.3,       0.0);         ( 657506.9,
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     ( 657526.6, 4182570.8,      11.5,      11.5,       0.0);         ( 657526.6,
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 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuinta_onsite_mitigated\MantecaQuinta_on ***        03/22/24
 *** AERMET - VERSION  18081 ***   ***
                         ***       08:23:22

                                   PAGE   7
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                                          *** DISCRETE CARTESIAN RECEPTORS ***
                                        (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
                                                    (METERS)

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     ( 657645.1, 4182728.8,      11.6,      11.6,       0.0);         ( 657664.8,
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     ( 657664.8, 4182570.8,      12.2,      12.2,       0.0);         ( 657664.8,
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     ( 657664.8, 4182610.2,      12.2,      12.2,       0.0);         ( 657664.8,
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     ( 657684.5, 4182531.2,      12.2,      12.2,       0.0);         ( 657684.5,
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 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuinta_onsite_mitigated\MantecaQuinta_on ***        03/22/24
 *** AERMET - VERSION  18081 ***   ***
                        ***       08:23:22

                                  PAGE   8
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                                     *** DISCRETE CARTESIAN RECEPTORS ***
                                    (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
                                                (METERS)

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     ( 657881.9, 4182491.8,      12.5,      12.5,       0.0);         ( 657881.9,
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     ( 657881.9, 4182531.2,      12.5,      12.5,       0.0);         ( 657881.9,
4182551.0,      12.7,      12.7,       0.0);
     ( 657881.9, 4182570.8,      12.7,      12.7,       0.0);         ( 657881.9,
4182590.5,      12.7,      12.7,       0.0);
     ( 657881.9, 4182610.2,      12.7,      12.7,       0.0);         ( 657881.9,
4182630.0,      12.7,      12.7,       0.0);
     ( 657881.9, 4182649.8,      12.7,      12.7,       0.0);         ( 657881.9,
4182669.5,      12.7,      12.7,       0.0);
     ( 657881.9, 4182689.2,      12.7,      12.7,       0.0);         ( 657881.9,
4182709.0,      12.7,      12.7,       0.0);
 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuinta_onsite_mitigated\MantecaQuinta_on ***        03/22/24
 *** AERMET - VERSION  18081 ***   ***
                        ***       08:23:22

                                  PAGE   9
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                                        *** DISCRETE CARTESIAN RECEPTORS ***
                                      (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
                                                (METERS)

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4182472.0,      12.5,      12.5,       0.0);
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     ( 657901.7, 4182570.8,      12.8,      12.8,       0.0);         ( 657901.7,
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     ( 657901.7, 4182610.2,      12.9,      12.9,       0.0);         ( 657901.7,
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     ( 657941.1, 4183005.0,      12.2,      12.2,       0.0);         ( 657941.1,
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     ( 657960.9, 4182768.0,      12.5,      12.5,       0.0);         ( 657960.9,
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     ( 657960.9, 4183005.0,      12.2,      12.2,       0.0);         ( 657960.9,
4183024.8,      12.2,      12.2,       0.0);
↟ *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuinta_onsite_mitigated\MantecaQuinta_on ***       03/22/24
 *** AERMET - VERSION  18081 ***   ***
                        ***       08:23:22

                                  PAGE  10
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                                    *** DISCRETE CARTESIAN RECEPTORS ***
                                  (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
                                               (METERS)
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     ( 657980.6, 4182590.5,      13.5,      13.5,       0.0);         ( 657980.6,
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     ( 657980.6, 4182985.2,      12.2,      12.2,       0.0);         ( 657980.6,
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     ( 658000.4, 4182748.2,      12.8,      12.8,       0.0);         ( 658000.4,
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     ( 658000.4, 4182787.8,      12.3,      12.3,       0.0);         ( 658000.4,
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     ( 658000.4, 4182866.8,      12.2,      12.2,       0.0);         ( 658000.4,
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     ( 658000.4, 4182985.2,      12.2,      12.2,       0.0);         ( 658000.4,
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     ( 658020.1, 4182768.0,      12.8,      12.8,       0.0);         ( 658020.1,
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 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuinta_onsite_mitigated\MantecaQuinta_on ***        03/22/24
 *** AERMET - VERSION  18081 ***   ***
                        ***       08:23:22

                                  PAGE  11
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                                    *** DISCRETE CARTESIAN RECEPTORS ***
                                  (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
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(METERS)

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     ( 658020.1, 4183005.0,      12.2,      12.2,       0.0);         ( 658020.1,
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     ( 658039.9, 4183064.2,      12.2,      12.2,       0.0);         ( 658039.9,
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     ( 658039.9, 4183202.5,      12.2,      12.2,       0.0);         ( 658039.9,
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     ( 658039.9, 4183242.0,      12.2,      12.2,       0.0);         ( 658059.6,
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     ( 658059.6, 4182570.8,      13.4,      13.4,       0.0);         ( 658059.6,
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     ( 658059.6, 4182610.2,      13.7,      13.7,       0.0);         ( 658059.6,
4182630.0,      13.7,      13.7,       0.0);
     ( 658059.6, 4182649.8,      13.7,      13.7,       0.0);         ( 658059.6,
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     ( 658059.6, 4182689.2,      13.6,      13.6,       0.0);         ( 658059.6,
4182709.0,      13.4,      13.4,       0.0);
     ( 658059.6, 4182728.8,      13.2,      13.2,       0.0);         ( 658059.6,
4182748.2,      13.0,      13.0,       0.0);
     ( 658059.6, 4182768.0,      12.8,      12.8,       0.0);         ( 658059.6,
4182787.8,      12.7,      12.7,       0.0);
     ( 658059.6, 4182807.5,      12.6,      12.6,       0.0);         ( 658059.6,
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     ( 658059.6, 4182847.0,      12.4,      12.4,       0.0);         ( 658059.6,
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     ( 658059.6, 4182886.5,      12.4,      12.4,       0.0);         ( 658059.6,
4182906.2,      12.2,      12.2,       0.0);
     ( 658059.6, 4182926.0,      12.2,      12.2,       0.0);         ( 658059.6,
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     ( 658059.6, 4182965.5,      12.2,      12.2,       0.0);         ( 658059.6,
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     ( 658059.6, 4183005.0,      12.2,      12.2,       0.0);         ( 658059.6,
4183024.8,      12.2,      12.2,       0.0);
     ( 658059.6, 4183044.5,      12.2,      12.2,       0.0);         ( 658059.6,
4183064.2,      12.2,      12.2,       0.0);
     ( 658059.6, 4183084.0,      12.2,      12.2,       0.0);         ( 658059.6,
4183123.5,      12.2,      12.2,       0.0);
     ( 658059.6, 4183143.2,      12.2,      12.2,       0.0);         ( 658059.6,
4183163.0,      12.2,      12.2,       0.0);
↟ *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuinta_onsite_mitigated\MantecaQuinta_on ***        03/22/24
 *** AERMET - VERSION  18081 ***   ***
                        ***        08:23:22

                                   PAGE  12
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*
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*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

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     ( 658099.1, 4182649.8,      13.7,      13.7,       0.0);         ( 658099.1,
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     ( 658099.1, 4182886.5,      12.5,      12.5,       0.0);         ( 658099.1,
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     ( 658099.1, 4182926.0,      12.4,      12.4,       0.0);         ( 658099.1,
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     ( 658099.1, 4182965.5,      12.2,      12.2,       0.0);         ( 658099.1,
4182985.2,      12.2,      12.2,       0.0);
     ( 658099.1, 4183005.0,      12.2,      12.2,       0.0);         ( 658099.1,
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     ( 658099.1, 4183163.0,      12.2,      12.2,       0.0);         ( 658099.1,
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4182590.5,      13.5,      13.5,       0.0);
 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuinta_onsite_mitigated\MantecaQuinta_on ***       03/22/24
 *** AERMET - VERSION  18081 ***   ***
                       ***       08:23:22
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*** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

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(658118.8, 4182728.8, 13.3, 13.3, 0.0); (658118.8, 4182748.2, 13.2, 13.2, 0.0);
(658118.8, 4182768.0, 13.1, 13.1, 0.0); (658118.8, 4182787.8, 13.0, 13.0, 0.0);
(658118.8, 4182807.5, 12.9, 12.9, 0.0); (658118.8, 4182827.2, 12.8, 12.8, 0.0);
(658118.8, 4182847.0, 12.7, 12.7, 0.0); (658118.8, 4182866.8, 12.6, 12.6, 0.0);
(658118.8, 4182886.5, 12.5, 12.5, 0.0); (658118.8, 4182906.2, 12.5, 12.5, 0.0);
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(658118.8, 4182965.5, 12.2, 12.2, 0.0); (658118.8, 4182985.2, 12.2, 12.2, 0.0);
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(658118.8, 4183044.5, 12.2, 12.2, 0.0); (658118.8, 4183064.2, 12.2, 12.2, 0.0);
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     ( 658138.6, 4182847.0,      12.9,      12.9,       0.0);         ( 658138.6,
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     ( 658138.6, 4182886.5,      12.6,      12.6,       0.0);         ( 658138.6,
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     ( 658138.6, 4182926.0,      12.5,      12.5,       0.0);         ( 658138.6,
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     ( 658138.6, 4183005.0,      12.2,      12.2,       0.0);         ( 658138.6,
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     ( 658138.6, 4183044.5,      12.2,      12.2,       0.0);         ( 658138.6,
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     ( 658138.6, 4183084.0,      12.2,      12.2,       0.0);         ( 658138.6,
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     ( 658138.6, 4183123.5,      12.2,      12.2,       0.0);         ( 658138.6,
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     ( 658138.6, 4183163.0,      12.2,      12.2,       0.0);         ( 658138.6,
4183182.8,      12.2,      12.2,       0.0);
     ( 658138.6, 4183202.5,      12.2,      12.2,       0.0);         ( 658138.6,
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 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuinta_onsite_mitigated\MantecaQuinta_on ***        03/22/24
 *** AERMET - VERSION  18081 ***   ***
                         ***       08:23:22
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*** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

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     ( 657113.4, 4182564.4,      10.7,      10.7,       0.0);         ( 656761.0,
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     ( 656800.2, 4182590.1,      10.7,      10.7,       0.0);         ( 656839.3,
4182590.1,      10.7,      10.7,       0.0);
     ( 656878.5, 4182590.1,      10.7,      10.7,       0.0);         ( 656917.6,
4182590.1,      10.7,      10.7,       0.0);
     ( 656956.8, 4182590.1,      10.7,      10.7,       0.0);         ( 656995.9,
4182590.1,      10.7,      10.7,       0.0);
     ( 657035.1, 4182590.1,      10.7,      10.7,       0.0);         ( 657074.2,
4182590.1,      10.7,      10.7,       0.0);
     ( 657113.4, 4182590.1,      10.7,      10.7,       0.0);         ( 656761.0,
4182615.9,      10.4,      10.4,       0.0);
     ( 656800.2, 4182615.9,      10.5,      10.5,       0.0);         ( 656839.3,
4182615.9,      10.7,      10.7,       0.0);
     ( 656878.5, 4182615.9,      10.7,      10.7,       0.0);         ( 656917.6,
4182615.9,      10.7,      10.7,       0.0);
     ( 656956.8, 4182615.9,      10.7,      10.7,       0.0);         ( 656995.9,
4182615.9,      10.7,      10.7,       0.0);
     ( 657035.1, 4182615.9,      10.7,      10.7,       0.0);         ( 657074.2,
4182615.9,      10.7,      10.7,       0.0);
     ( 657113.4, 4182615.9,      10.7,      10.7,       0.0);         ( 656800.2,
4182641.7,      10.5,      10.5,       0.0);
     ( 656839.3, 4182641.7,      10.7,      10.7,       0.0);         ( 656878.5,
4182641.7,      10.7,      10.7,       0.0);
     ( 656917.6, 4182641.7,      10.7,      10.7,       0.0);         ( 656956.8,
4182641.7,      10.7,      10.7,       0.0);
     ( 656995.9, 4182641.7,      10.7,      10.7,       0.0);         ( 657035.1,
4182641.7,      10.7,      10.7,       0.0);
     ( 657074.2, 4182641.7,      10.7,      10.7,       0.0);         ( 657113.4,
4182641.7,      10.7,      10.7,       0.0);
     ( 656800.2, 4182667.4,      10.4,      10.4,       0.0);         ( 656839.3,
4182667.4,      10.6,      10.6,       0.0);
     ( 656878.5, 4182667.4,      10.7,      10.7,       0.0);         ( 656917.6,
4182667.4,      10.7,      10.7,       0.0);
     ( 656956.8, 4182667.4,      10.7,      10.7,       0.0);         ( 656995.9,
4182667.4,      10.7,      10.7,       0.0);
     ( 657035.1, 4182667.4,      10.7,      10.7,       0.0);         ( 657074.2,
4182667.4,      10.7,      10.7,       0.0);
     ( 657113.4, 4182667.4,      10.7,      10.7,       0.0);

 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuinta_onsite_mitigated\MantecaQuinta_on ***        03/22/24
 *** AERMET - VERSION  18081 ***   ***
                         ***        08:23:22
```

*** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

*** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
(1=YES; 0=NO)

```
          1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
          1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
          1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
          1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
          1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
          1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
          1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
          1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
```

NOTE: METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.

*** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
(METERS/SEC)

1.54, 3.09, 5.14, 8.23, 10.80,

*** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

*** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

Surface file: Stockton_2013-2017.SFC
Met Version: 18081
Profile file: Stockton_2013-2017.PFL

Surface format: FREE

Profile format: FREE

Surface station no.: 23237 Upper air station no.: 23230
Name: UNKNOWN Name: OAKLAND/WSO_AP
Year: 2013 Year: 2013

First 24 hours of scalar data

YR	MO	DY	JDY	HR	H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS	WD	HT	REF TA	HT
13	01	01	1	01	-22.0	0.211	-9.000	-9.000	-999.	232.	48.8	0.07	2.20	1.00	2.78	149.	10.0	273.8	2.0
13	01	01	1	02	-14.6	0.158	-9.000	-9.000	-999.	152.	27.6	0.04	2.20	1.00	2.37	77.	10.0	273.8	2.0
13	01	01	1	03	-18.4	0.181	-9.000	-9.000	-999.	185.	36.0	0.06	2.20	1.00	2.52	97.	10.0	273.1	2.0
13	01	01	1	04	-6.7	0.105	-9.000	-9.000	-999.	84.	16.0	0.04	2.20	1.00	1.63	349.	10.0	272.5	2.0
13	01	01	1	05	-20.1	0.193	-9.000	-9.000	-999.	203.	40.9	0.04	2.20	1.00	2.86	356.	10.0	274.2	2.0
13	01	01	1	06	-3.9	0.081	-9.000	-9.000	-999.	64.	12.6	0.04	2.20	1.00	1.23	77.	10.0	273.8	2.0
13	01	01	1	07	-18.3	0.180	-9.000	-9.000	-999.	184.	35.8	0.06	2.20	1.00	2.52	255.	10.0	273.1	2.0
13	01	01	1	08	-26.9	0.259	-9.000	-9.000	-999.	316.	73.8	0.08	2.20	0.73	3.29	287.	10.0	274.2	2.0
13	01	01	1	09	-1.9	0.212	-9.000	-9.000	-999.	236.	461.6	0.05	2.20	0.39	2.81	315.	10.0	275.9	2.0
13	01	01	1	10	61.1	0.155	0.630	0.005	150.	147.	-5.5	0.04	2.20	0.27	1.60	336.	10.0	277.5	2.0
13	01	01	1	11	110.2	0.238	1.137	0.005	488.	279.	-11.2	0.06	2.20	0.23	2.45	228.	10.0	279.9	2.0
13	01	01	1	12	137.1	0.276	1.492	0.008	886.	347.	-14.0	0.08	2.20	0.22	2.69	286.	10.0	280.4	2.0
13	01	01	1	13	141.1	0.271	1.531	0.007	929.	339.	-12.9	0.05	2.20	0.21	2.88	325.	10.0	282.5	2.0
13	01	01	1	14	121.3	0.232	1.475	0.006	965.	269.	-9.4	0.04	2.20	0.22	2.57	356.	10.0	283.8	2.0
13	01	01	1	15	78.7	0.218	1.287	0.005	988.	244.	-12.0	0.04	2.20	0.26	2.47	357.	10.0	284.2	2.0
13	01	01	1	16	17.6	0.265	0.783	0.005	993.	327.	-96.0	0.03	2.20	0.35	3.59	2.	10.0	284.2	2.0
13	01	01	1	17	-11.2	0.143	-9.000	-9.000	-999.	139.	24.1	0.04	2.20	0.60	2.16	346.	10.0	282.5	2.0
13	01	01	1	18	-8.7	0.125	-9.000	-9.000	-999.	107.	20.6	0.08	2.20	1.00	1.67	273.	10.0	279.2	2.0

```
 13 01 01   1 19  -13.3  0.154 -9.000 -9.000 -999.  145.     26.0  0.06   2.20
1.00    2.15  238.   10.0  278.1    2.0
 13 01 01   1 20  -10.2  0.134 -9.000 -9.000 -999.  117.     21.4  0.06   2.20
1.00    1.89  230.   10.0  275.9    2.0
 13 01 01   1 21  -12.5  0.148 -9.000 -9.000 -999.  137.     24.2  0.05   2.20
1.00    2.11  300.   10.0  276.4    2.0
 13 01 01   1 22 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.05   2.20
1.00    0.00    0.   10.0  275.9    2.0
 13 01 01   1 23  -24.0  0.230 -9.000 -9.000 -999.  264.     57.9  0.04   2.20
1.00    3.36   80.   10.0  274.2    2.0
 13 01 01   1 24  -16.1  0.169 -9.000 -9.000 -999.  167.     31.3  0.06   2.20
1.00    2.36  100.   10.0  274.2    2.0


 First hour of profile data
 YR MO DY HR HEIGHT F  WDIR    WSPD AMB_TMP sigmaA  sigmaW  sigmaV
 13 01 01 01   10.0 1  149.    2.78   273.8   99.0  -99.00  -99.00

 F indicates top of profile (=1) or below (=0)
🡅 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuinta_onsite_mitigated\MantecaQuinta_on ***        03/22/24
 *** AERMET - VERSION  18081 ***   ***
                        ***       08:23:22

                                  PAGE  17
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                  *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   5
YEARS FOR SOURCE GROUP: ALL      ***
                                  INCLUDING SOURCE(S):     L0000001    , L0000002
 , L0000003    , L0000004    , L0000005    ,
                L0000006    , L0000007    , L0000008    , L0000009    , L0000010
 , L0000011    , L0000012    , L0000013    ,
                L0000014    , L0000015    , L0000016    , L0000017    , L0000018
 , L0000019    ,

                                            *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                        ** CONC OF PM_10    IN MICROGRAMS/M**3
                   **

       X-COORD (M)   Y-COORD (M)        CONC                       X-COORD (M)
Y-COORD (M)        CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - -
         657151.50    4182491.75        0.00473                      657151.50
4182511.50        0.00506
         657151.50    4182531.25        0.00544                      657151.50
4182551.00        0.00587
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         657151.50    4182570.75        0.00636                    657151.50
4182590.50        0.00694
         657151.50    4182610.25        0.00761                    657151.50
4182630.00        0.00842
         657151.50    4182649.75        0.00939                    657171.25
4182472.00        0.00452
         657171.25    4182491.75        0.00482                    657171.25
4182511.50        0.00517
         657171.25    4182531.25        0.00556                    657171.25
4182551.00        0.00601
         657171.25    4182570.75        0.00652                    657171.25
4182590.50        0.00712
         657171.25    4182610.25        0.00783                    657171.25
4182630.00        0.00867
         657171.25    4182649.75        0.00969                    657191.00
4182472.00        0.00461
         657191.00    4182491.75        0.00493                    657191.00
4182511.50        0.00529
         657191.00    4182531.25        0.00569                    657191.00
4182551.00        0.00616
         657191.00    4182570.75        0.00669                    657191.00
4182590.50        0.00731
         657191.00    4182610.25        0.00803                    657191.00
4182630.00        0.00890
         657191.00    4182649.75        0.00994                    657210.75
4182472.00        0.00471
         657210.75    4182491.75        0.00503                    657210.75
4182511.50        0.00540
         657210.75    4182531.25        0.00581                    657210.75
4182551.00        0.00629
         657210.75    4182570.75        0.00683                    657210.75
4182590.50        0.00746
         657210.75    4182610.25        0.00819                    657210.75
4182630.00        0.00906
         657210.75    4182649.75        0.01009                    657230.50
4182472.00        0.00479
         657230.50    4182491.75        0.00512                    657230.50
4182511.50        0.00549
         657230.50    4182531.25        0.00591                    657230.50
4182551.00        0.00639
         657230.50    4182570.75        0.00693                    657230.50
4182590.50        0.00756
         657230.50    4182610.25        0.00828                    657230.50
4182630.00        0.00913
         657230.50    4182649.75        0.01013                    657250.25
4182472.00        0.00485
         657250.25    4182491.75        0.00519                    657250.25
4182511.50        0.00556
         657250.25    4182531.25        0.00598                    657250.25
4182551.00        0.00645
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         657250.25    4182570.75        0.00699                      657250.25
4182590.50        0.00760
         657250.25    4182610.25        0.00830                      657250.25
4182630.00        0.00912
         657250.25    4182649.75        0.01008                      657270.00
4182472.00        0.00490
         657270.00    4182491.75        0.00523                      657270.00
4182511.50        0.00560
         657270.00    4182531.25        0.00601                      657270.00
4182551.00        0.00647
         657270.00    4182570.75        0.00699                      657270.00
4182590.50        0.00759
         657270.00    4182610.25        0.00826                      657270.00
4182630.00        0.00904
         657270.00    4182649.75        0.00996                      657289.69
4182472.00        0.00493
         657289.69    4182491.75        0.00525                      657289.69
4182511.50        0.00561
         657289.69    4182531.25        0.00601                      657289.69
4182551.00        0.00646
         657289.69    4182570.75        0.00696                      657289.69
4182590.50        0.00753
         657289.69    4182610.25        0.00818                      657289.69
4182630.00        0.00893
         657289.69    4182649.75        0.00979                      657309.44
4182472.00        0.00494
 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuinta_onsite_mitigated\MantecaQuinta_on ***        03/22/24
 *** AERMET - VERSION  18081 ***   ***
                       ***        08:23:22

                                  PAGE  18
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                   *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   5
YEARS FOR SOURCE GROUP: ALL      ***
                                  INCLUDING SOURCE(S):     L0000001    , L0000002
 , L0000003    , L0000004    , L0000005    ,
                   L0000006    , L0000007    , L0000008    , L0000009    , L0000010
 , L0000011    , L0000012    , L0000013    ,
                   L0000014    , L0000015    , L0000016    , L0000017    , L0000018
 , L0000019    ,

                                             *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                          ** CONC OF PM_10    IN MICROGRAMS/M**3
                    **

       X-COORD (M)   Y-COORD (M)        CONC                      X-COORD (M)
```

Y-COORD (M)   CONC

- -
- -

657309.44   4182491.75   0.00525   657309.44
4182511.50   0.00560
657309.44   4182531.25   0.00599   657309.44
4182551.00   0.00642
657309.44   4182570.75   0.00690   657309.44
4182590.50   0.00745
657309.44   4182610.25   0.00807   657309.44
4182630.00   0.00878
657309.44   4182649.75   0.00960   657329.19
4182472.00   0.00492
657329.19   4182491.75   0.00523   657329.19
4182511.50   0.00557
657329.19   4182531.25   0.00594   657329.19
4182551.00   0.00636
657329.19   4182570.75   0.00682   657329.19
4182590.50   0.00735
657329.19   4182610.25   0.00794   657329.19
4182630.00   0.00862
657329.19   4182649.75   0.00938   657348.94
4182472.00   0.00490
657348.94   4182491.75   0.00519   657348.94
4182511.50   0.00552
657348.94   4182531.25   0.00588   657348.94
4182551.00   0.00628
657348.94   4182570.75   0.00673   657348.94
4182590.50   0.00723
657348.94   4182610.25   0.00780   657348.94
4182630.00   0.00844
657348.94   4182649.75   0.00915   657368.69
4182472.00   0.00485
657368.69   4182491.75   0.00514   657368.69
4182511.50   0.00546
657368.69   4182531.25   0.00581   657368.69
4182551.00   0.00619
657368.69   4182570.75   0.00663   657368.69
4182590.50   0.00711
657368.69   4182610.25   0.00765   657368.69
4182630.00   0.00824
657368.69   4182649.75   0.00890   657388.44
4182472.00   0.00481
657388.44   4182491.75   0.00508   657388.44
4182511.50   0.00539
657388.44   4182531.25   0.00573   657388.44
4182551.00   0.00610
657388.44   4182570.75   0.00652   657388.44
4182590.50   0.00698
657388.44   4182610.25   0.00748   657388.44

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4182630.00        0.00804
         657388.44    4182649.75        0.00864                    657408.13
4182472.00        0.00475
         657408.13    4182491.75        0.00502                    657408.13
4182511.50        0.00532
         657408.13    4182531.25        0.00565                    657408.13
4182551.00        0.00601
         657408.13    4182570.75        0.00640                    657408.13
4182590.50        0.00684
         657408.13    4182610.25        0.00731                    657408.13
4182630.00        0.00782
         657408.13    4182649.75        0.00837                    657427.88
4182472.00        0.00469
         657427.88    4182491.75        0.00496                    657427.88
4182511.50        0.00525
         657427.88    4182531.25        0.00556                    657427.88
4182551.00        0.00590
         657427.88    4182570.75        0.00628                    657427.88
4182590.50        0.00669
         657427.88    4182610.25        0.00713                    657427.88
4182630.00        0.00760
         657427.88    4182649.75        0.00811                    657447.63
4182472.00        0.00463
         657447.63    4182491.75        0.00489                    657447.63
4182511.50        0.00517
         657447.63    4182531.25        0.00547                    657447.63
4182551.00        0.00580
         657447.63    4182570.75        0.00615                    657447.63
4182590.50        0.00653
         657447.63    4182610.25        0.00694                    657447.63
4182630.00        0.00738
         657447.63    4182649.75        0.00784                    657467.38
4182472.00        0.00457
 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuinta_onsite_mitigated\MantecaQuinta_on ***        03/22/24
 *** AERMET - VERSION  18081 ***   ***
                       ***        08:23:22

                                  PAGE  19
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                   *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   5
YEARS FOR SOURCE GROUP: ALL      ***
                                  INCLUDING SOURCE(S):     L0000001    , L0000002
 , L0000003    , L0000004    , L0000005    ,
                   L0000006    , L0000007    , L0000008    , L0000009    , L0000010
 , L0000011    , L0000012    , L0000013    ,
                   L0000014    , L0000015    , L0000016    , L0000017    , L0000018
 , L0000019    ,
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*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
657467.38	4182491.75	0.00482	657467.38	4182511.50	0.00508
657467.38	4182531.25	0.00537	657467.38	4182551.00	0.00568
657467.38	4182570.75	0.00601	657467.38	4182590.50	0.00637
657467.38	4182610.25	0.00675	657467.38	4182630.00	0.00715
657467.38	4182649.75	0.00757	657487.13	4182472.00	0.00451
657487.13	4182491.75	0.00474	657487.13	4182511.50	0.00500
657487.13	4182531.25	0.00527	657487.13	4182551.00	0.00556
657487.13	4182570.75	0.00588	657487.13	4182590.50	0.00621
657487.13	4182610.25	0.00656	657487.13	4182630.00	0.00693
657487.13	4182649.75	0.00731	657506.88	4182472.00	0.00444
657506.88	4182491.75	0.00466	657506.88	4182511.50	0.00491
657506.88	4182531.25	0.00517	657506.88	4182551.00	0.00544
657506.88	4182570.75	0.00574	657506.88	4182590.50	0.00604
657506.88	4182610.25	0.00637	657506.88	4182630.00	0.00671
657506.88	4182649.75	0.00706	657526.63	4182472.00	0.00437
657526.63	4182491.75	0.00458	657526.63	4182511.50	0.00481
657526.63	4182531.25	0.00506	657526.63	4182551.00	0.00532
657526.63	4182570.75	0.00559	657526.63	4182590.50	0.00588
657526.63	4182610.25	0.00618	657526.63	4182630.00	0.00649
657526.63	4182649.75	0.00681	657546.31	4182472.00	0.00429

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         657546.31    4182491.75        0.00450                      657546.31
4182511.50        0.00472
         657546.31    4182531.25        0.00495                      657546.31
4182551.00        0.00519
         657546.31    4182570.75        0.00545                      657546.31
4182590.50        0.00572
         657546.31    4182610.25        0.00600                      657546.31
4182630.00        0.00628
         657546.31    4182649.75        0.00658                      657546.31
4182669.50        0.00688
         657546.31    4182689.25        0.00718                      657546.31
4182709.00        0.00749
         657546.31    4182728.75        0.00780                      657566.06
4182472.00        0.00422
         657566.06    4182491.75        0.00441                      657566.06
4182511.50        0.00462
         657566.06    4182531.25        0.00484                      657566.06
4182551.00        0.00507
         657566.06    4182570.75        0.00531                      657566.06
4182590.50        0.00556
         657566.06    4182610.25        0.00582                      657566.06
4182630.00        0.00608
         657566.06    4182649.75        0.00635                      657566.06
4182669.50        0.00663
         657566.06    4182689.25        0.00690                      657566.06
4182709.00        0.00718
         657566.06    4182728.75        0.00747                      657585.81
4182472.00        0.00414
         657585.81    4182491.75        0.00433                      657585.81
4182511.50        0.00452
         657585.81    4182531.25        0.00473                      657585.81
4182551.00        0.00495
         657585.81    4182570.75        0.00517                      657585.81
4182590.50        0.00540
         657585.81    4182610.25        0.00564                      657585.81
4182630.00        0.00588
         657585.81    4182649.75        0.00613                      657585.81
4182669.50        0.00639
         657585.81    4182689.25        0.00664                      657585.81
4182709.00        0.00690
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View\MantecaQuinta_onsite_mitigated\MantecaQuinta_on ***        03/22/24
 *** AERMET - VERSION  18081 ***   ***
                       ***        08:23:22

                                  PAGE  20
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                   *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   5
YEARS FOR SOURCE GROUP: ALL      ***
```

INCLUDING SOURCE(S): L0000001 , L0000002
, L0000003 , L0000004 , L0000005 ,
L0000006 , L0000007 , L0000008 , L0000009 , L0000010
, L0000011 , L0000012 , L0000013 ,
L0000014 , L0000015 , L0000016 , L0000017 , L0000018
, L0000019 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS
***

** CONC OF PM_10 IN MICROGRAMS/M**3
**

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
657585.81	4182728.75	0.00715	657605.56	4182472.00	0.00406
657605.56	4182491.75	0.00424	657605.56	4182511.50	0.00443
657605.56	4182531.25	0.00462	657605.56	4182551.00	0.00482
657605.56	4182570.75	0.00503	657605.56	4182590.50	0.00525
657605.56	4182610.25	0.00547	657605.56	4182630.00	0.00570
657605.56	4182649.75	0.00593	657605.56	4182669.50	0.00616
657605.56	4182689.25	0.00639	657605.56	4182709.00	0.00663
657605.56	4182728.75	0.00686	657625.31	4182472.00	0.00399
657625.31	4182491.75	0.00416	657625.31	4182511.50	0.00433
657625.31	4182531.25	0.00452	657625.31	4182551.00	0.00470
657625.31	4182570.75	0.00490	657625.31	4182590.50	0.00510
657625.31	4182610.25	0.00531	657625.31	4182630.00	0.00552
657625.31	4182649.75	0.00573	657625.31	4182669.50	0.00594
657625.31	4182689.25	0.00616	657625.31	4182709.00	0.00637
657625.31	4182728.75	0.00659	657645.06	4182472.00	0.00391
657645.06	4182491.75	0.00407	657645.06	4182511.50	0.00424
657645.06	4182531.25	0.00441	657645.06		

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4182551.00        0.00459
         657645.06    4182570.75        0.00477                     657645.06
4182590.50        0.00496
         657645.06    4182610.25        0.00515                     657645.06
4182630.00        0.00534
         657645.06    4182649.75        0.00554                     657645.06
4182669.50        0.00574
         657645.06    4182689.25        0.00593                     657645.06
4182709.00        0.00613
         657645.06    4182728.75        0.00633                     657664.81
4182472.00        0.00383
         657664.81    4182491.75        0.00399                     657664.81
4182511.50        0.00414
         657664.81    4182531.25        0.00431                     657664.81
4182551.00        0.00447
         657664.81    4182570.75        0.00465                     657664.81
4182590.50        0.00482
         657664.81    4182610.25        0.00500                     657664.81
4182630.00        0.00518
         657664.81    4182649.75        0.00536                     657664.81
4182669.50        0.00554
         657664.81    4182689.25        0.00572                     657664.81
4182709.00        0.00591
         657664.81    4182728.75        0.00609                     657684.50
4182472.00        0.00376
         657684.50    4182491.75        0.00390                     657684.50
4182511.50        0.00405
         657684.50    4182531.25        0.00421                     657684.50
4182551.00        0.00436
         657684.50    4182570.75        0.00452                     657684.50
4182590.50        0.00469
         657684.50    4182610.25        0.00485                     657684.50
4182630.00        0.00502
         657684.50    4182649.75        0.00519                     657684.50
4182669.50        0.00536
         657684.50    4182689.25        0.00552                     657684.50
4182709.00        0.00569
         657684.50    4182728.75        0.00586                     657704.25
4182472.00        0.00368
         657704.25    4182491.75        0.00382                     657704.25
4182511.50        0.00396
         657704.25    4182531.25        0.00411                     657704.25
4182551.00        0.00426
         657704.25    4182570.75        0.00441                     657704.25
4182590.50        0.00456
         657704.25    4182610.25        0.00471                     657704.25
4182630.00        0.00487
 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuinta_onsite_mitigated\MantecaQuinta_on ***        03/22/24
 *** AERMET - VERSION  18081 ***   ***
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*** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

*** THE ANNUAL AVERAGE CONCENTRATION VALUES AVERAGED OVER 5 YEARS FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): L0000001 , L0000002 , L0000003 , L0000004 , L0000005 , L0000006 , L0000007 , L0000008 , L0000009 , L0000010 , L0000011 , L0000012 , L0000013 , L0000014 , L0000015 , L0000016 , L0000017 , L0000018 , L0000019 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
657704.25	4182649.75	0.00502	657704.25	4182669.50	0.00518
657704.25	4182689.25	0.00533	657704.25	4182709.00	0.00549
657704.25	4182728.75	0.00564	657724.00	4182472.00	0.00361
657724.00	4182491.75	0.00374	657724.00	4182511.50	0.00388
657724.00	4182531.25	0.00401	657724.00	4182551.00	0.00415
657724.00	4182570.75	0.00429	657724.00	4182590.50	0.00443
657724.00	4182610.25	0.00458	657724.00	4182630.00	0.00472
657724.00	4182649.75	0.00487	657724.00	4182669.50	0.00501
657724.00	4182689.25	0.00515	657724.00	4182709.00	0.00529
657724.00	4182728.75	0.00543	657743.75	4182472.00	0.00354
657743.75	4182491.75	0.00366	657743.75	4182511.50	0.00379
657743.75	4182531.25	0.00392	657743.75	4182551.00	0.00405
657743.75	4182570.75	0.00418	657743.75	4182590.50	0.00431

657743.75 4182610.25 0.00445 657743.75
4182630.00 0.00458
657743.75 4182649.75 0.00472 657743.75
4182669.50 0.00485
657743.75 4182689.25 0.00498 657743.75
4182709.00 0.00511
657743.75 4182728.75 0.00524 657763.50
4182472.00 0.00347
657763.50 4182491.75 0.00359 657763.50
4182511.50 0.00371
657763.50 4182531.25 0.00383 657763.50
4182551.00 0.00395
657763.50 4182570.75 0.00407 657763.50
4182590.50 0.00420
657763.50 4182610.25 0.00432 657763.50
4182630.00 0.00445
657763.50 4182649.75 0.00457 657763.50
4182669.50 0.00469
657763.50 4182689.25 0.00481 657763.50
4182709.00 0.00493
657763.50 4182728.75 0.00505 657783.25
4182472.00 0.00340
657783.25 4182491.75 0.00351 657783.25
4182511.50 0.00362
657783.25 4182531.25 0.00374 657783.25
4182551.00 0.00385
657783.25 4182570.75 0.00397 657783.25
4182590.50 0.00408
657783.25 4182610.25 0.00420 657783.25
4182630.00 0.00432
657783.25 4182649.75 0.00443 657783.25
4182669.50 0.00454
657783.25 4182689.25 0.00466 657783.25
4182709.00 0.00477
657783.25 4182728.75 0.00487 657803.00
4182472.00 0.00333
657803.00 4182491.75 0.00344 657803.00
4182511.50 0.00354
657803.00 4182531.25 0.00365 657803.00
4182551.00 0.00376
657803.00 4182570.75 0.00387 657803.00
4182590.50 0.00397
657803.00 4182610.25 0.00408 657803.00
4182630.00 0.00419
657803.00 4182649.75 0.00430 657803.00
4182669.50 0.00440
657803.00 4182689.25 0.00451 657803.00
4182709.00 0.00461
657803.00 4182728.75 0.00471 657822.69
4182472.00 0.00327

*** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

*** THE ANNUAL AVERAGE CONCENTRATION VALUES AVERAGED OVER 5 YEARS FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): L0000001 , L0000002 , L0000003 , L0000004 , L0000005 , L0000006 , L0000007 , L0000008 , L0000009 , L0000010 , L0000011 , L0000012 , L0000013 , L0000014 , L0000015 , L0000016 , L0000017 , L0000018 , L0000019 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
657822.69	4182491.75	0.00336	657822.69	4182511.50	0.00346
657822.69	4182531.25	0.00357	657822.69	4182551.00	0.00367
657822.69	4182570.75	0.00377	657822.69	4182590.50	0.00387
657822.69	4182610.25	0.00397	657822.69	4182630.00	0.00407
657822.69	4182649.75	0.00417	657822.69	4182669.50	0.00427
657822.69	4182689.25	0.00436	657822.69	4182709.00	0.00446
657822.69	4182728.75	0.00455	657842.44	4182472.00	0.00320
657842.44	4182491.75	0.00329	657842.44	4182511.50	0.00339
657842.44	4182531.25	0.00348	657842.44	4182551.00	0.00358
657842.44	4182570.75	0.00367	657842.44	4182590.50	0.00376
657842.44	4182610.25	0.00386	657842.44	4182630.00	0.00395
657842.44	4182649.75	0.00404	657842.44		

4182669.50 0.00413
657842.44 4182689.25 0.00422 657842.44
4182709.00 0.00431
657842.44 4182728.75 0.00439 657862.19
4182472.00 0.00313
657862.19 4182491.75 0.00322 657862.19
4182511.50 0.00331
657862.19 4182531.25 0.00340 657862.19
4182551.00 0.00349
657862.19 4182570.75 0.00358 657862.19
4182590.50 0.00366
657862.19 4182610.25 0.00375 657862.19
4182630.00 0.00384
657862.19 4182649.75 0.00392 657862.19
4182669.50 0.00401
657862.19 4182689.25 0.00409 657862.19
4182709.00 0.00417
657862.19 4182728.75 0.00425 657881.94
4182472.00 0.00307
657881.94 4182491.75 0.00315 657881.94
4182511.50 0.00324
657881.94 4182531.25 0.00332 657881.94
4182551.00 0.00340
657881.94 4182570.75 0.00348 657881.94
4182590.50 0.00357
657881.94 4182610.25 0.00365 657881.94
4182630.00 0.00373
657881.94 4182649.75 0.00381 657881.94
4182669.50 0.00388
657881.94 4182689.25 0.00396 657881.94
4182709.00 0.00404
657881.94 4182728.75 0.00411 657901.69
4182472.00 0.00301
657901.69 4182491.75 0.00308 657901.69
4182511.50 0.00316
657901.69 4182531.25 0.00324 657901.69
4182551.00 0.00332
657901.69 4182570.75 0.00339 657901.69
4182590.50 0.00347
657901.69 4182610.25 0.00355 657901.69
4182630.00 0.00362
657901.69 4182649.75 0.00370 657901.69
4182669.50 0.00377
657901.69 4182689.25 0.00384 657901.69
4182709.00 0.00391
657901.69 4182728.75 0.00398 657921.44
4182472.00 0.00294
657921.44 4182491.75 0.00302 657921.44
4182511.50 0.00309
657921.44 4182531.25 0.00316 657921.44

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4182551.00        0.00324
         657921.44    4182570.75        0.00331                      657921.44
4182590.50        0.00338
         657921.44    4182610.25        0.00345                      657921.44
4182630.00        0.00352
         657921.44    4182649.75        0.00359                      657921.44
4182669.50        0.00366
         657921.44    4182689.25        0.00372                      657921.44
4182709.00        0.00379
         657921.44    4182728.75        0.00385                      657941.13
4182472.00        0.00288
🡅 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuinta_onsite_mitigated\MantecaQuinta_on ***        03/22/24
 *** AERMET - VERSION  18081 ***   ***
                       ***        08:23:22

                                  PAGE  23
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                  *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   5
YEARS FOR SOURCE GROUP: ALL      ***
                                 INCLUDING SOURCE(S):     L0000001    , L0000002
 , L0000003    , L0000004    , L0000005    ,
                L0000006    , L0000007    , L0000008    , L0000009    , L0000010
 , L0000011    , L0000012    , L0000013    ,
                L0000014    , L0000015    , L0000016    , L0000017    , L0000018
 , L0000019    ,

                                            *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                        ** CONC OF PM_10    IN MICROGRAMS/M**3
                   **

       X-COORD (M)   Y-COORD (M)        CONC                       X-COORD (M)
Y-COORD (M)        CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - -
         657941.13    4182491.75        0.00295                      657941.13
4182511.50        0.00302
         657941.13    4182531.25        0.00309                      657941.13
4182551.00        0.00316
         657941.13    4182570.75        0.00322                      657941.13
4182590.50        0.00329
         657941.13    4182610.25        0.00336                      657941.13
4182630.00        0.00342
         657941.13    4182649.75        0.00348                      657941.13
4182669.50        0.00355
         657941.13    4182689.25        0.00361                      657941.13
4182709.00        0.00367
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         657941.13    4182728.75        0.00373                    657941.13
4182748.25        0.00378
         657941.13    4182768.00        0.00384                    657941.13
4182787.75        0.00388
         657941.13    4182807.50        0.00393                    657941.13
4182827.25        0.00397
         657941.13    4182847.00        0.00401                    657941.13
4182866.75        0.00405
         657941.13    4182886.50        0.00408                    657941.13
4182906.25        0.00410
         657941.13    4182926.00        0.00413                    657941.13
4182945.75        0.00414
         657941.13    4182965.50        0.00416                    657941.13
4182985.25        0.00416
         657941.13    4183005.00        0.00416                    657941.13
4183024.75        0.00416
         657941.13    4183064.25        0.00413                    657941.13
4183084.00        0.00411
         657941.13    4183103.75        0.00408                    657960.88
4182472.00        0.00282
         657960.88    4182491.75        0.00289                    657960.88
4182511.50        0.00295
         657960.88    4182531.25        0.00302                    657960.88
4182551.00        0.00308
         657960.88    4182570.75        0.00314                    657960.88
4182590.50        0.00320
         657960.88    4182610.25        0.00326                    657960.88
4182630.00        0.00333
         657960.88    4182649.75        0.00339                    657960.88
4182669.50        0.00344
         657960.88    4182689.25        0.00350                    657960.88
4182709.00        0.00356
         657960.88    4182728.75        0.00361                    657960.88
4182748.25        0.00366
         657960.88    4182768.00        0.00371                    657960.88
4182787.75        0.00376
         657960.88    4182807.50        0.00380                    657960.88
4182827.25        0.00384
         657960.88    4182847.00        0.00387                    657960.88
4182866.75        0.00391
         657960.88    4182886.50        0.00393                    657960.88
4182906.25        0.00396
         657960.88    4182926.00        0.00398                    657960.88
4182945.75        0.00399
         657960.88    4182965.50        0.00401                    657960.88
4182985.25        0.00401
         657960.88    4183005.00        0.00401                    657960.88
4183024.75        0.00400
         657960.88    4183044.50        0.00399                    657960.88
4183064.25        0.00398
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         657960.88    4183084.00        0.00396                      657960.88
4183103.75        0.00393
         657980.63    4182472.00        0.00276                      657980.63
4182491.75        0.00282
         657980.63    4182511.50        0.00288                      657980.63
4182531.25        0.00294
         657980.63    4182551.00        0.00300                      657980.63
4182570.75        0.00306
         657980.63    4182590.50        0.00312                      657980.63
4182610.25        0.00318
         657980.63    4182630.00        0.00323                      657980.63
4182649.75        0.00329
         657980.63    4182669.50        0.00335                      657980.63
4182689.25        0.00340
         657980.63    4182709.00        0.00345                      657980.63
4182728.75        0.00350
         657980.63    4182748.25        0.00355                      657980.63
4182768.00        0.00359
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View\MantecaQuinta_onsite_mitigated\MantecaQuinta_on ***        03/22/24
 *** AERMET - VERSION  18081 ***   ***
                       ***        08:23:22

                                  PAGE  24
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                   *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   5
YEARS FOR SOURCE GROUP: ALL      ***
                                  INCLUDING SOURCE(S):     L0000001    , L0000002
 , L0000003    , L0000004    , L0000005    ,
                   L0000006    , L0000007    , L0000008    , L0000009    , L0000010
 , L0000011    , L0000012    , L0000013    ,
                   L0000014    , L0000015    , L0000016    , L0000017    , L0000018
 , L0000019    ,

                                               *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                       ** CONC OF PM_10    IN MICROGRAMS/M**3
                    **

       X-COORD (M)   Y-COORD (M)        CONC                         X-COORD (M)
Y-COORD (M)        CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - -
         657980.63    4182787.75        0.00364                      657980.63
4182807.50        0.00368
         657980.63    4182827.25        0.00371                      657980.63
4182847.00        0.00374
         657980.63    4182866.75        0.00377                      657980.63
```

4182886.50 0.00380
657980.63 4182906.25 0.00382 657980.63
4182926.00 0.00384
657980.63 4182945.75 0.00385 657980.63
4182965.50 0.00386
657980.63 4182985.25 0.00387 657980.63
4183005.00 0.00387
657980.63 4183024.75 0.00386 657980.63
4183044.50 0.00385
657980.63 4183064.25 0.00383 657980.63
4183084.00 0.00381
657980.63 4183103.75 0.00379 657980.63
4183123.50 0.00376
658000.38 4182472.00 0.00270 658000.38
4182491.75 0.00276
658000.38 4182511.50 0.00282 658000.38
4182531.25 0.00287
658000.38 4182551.00 0.00293 658000.38
4182570.75 0.00299
658000.38 4182590.50 0.00304 658000.38
4182610.25 0.00309
658000.38 4182630.00 0.00315 658000.38
4182649.75 0.00320
658000.38 4182669.50 0.00325 658000.38
4182689.25 0.00330
658000.38 4182709.00 0.00335 658000.38
4182728.75 0.00340
658000.38 4182748.25 0.00344 658000.38
4182768.00 0.00348
658000.38 4182787.75 0.00352 658000.38
4182807.50 0.00356
658000.38 4182827.25 0.00359 658000.38
4182847.00 0.00362
658000.38 4182866.75 0.00365 658000.38
4182886.50 0.00367
658000.38 4182906.25 0.00369 658000.38
4182926.00 0.00371
658000.38 4182945.75 0.00372 658000.38
4182965.50 0.00373
658000.38 4182985.25 0.00373 658000.38
4183005.00 0.00373
658000.38 4183024.75 0.00372 658000.38
4183044.50 0.00371
658000.38 4183064.25 0.00370 658000.38
4183103.75 0.00365
658000.38 4183123.50 0.00363 658020.13
4182472.00 0.00265
658020.13 4182491.75 0.00270 658020.13
4182511.50 0.00275
658020.13 4182531.25 0.00281 658020.13

4182551.00   0.00286
         658020.13   4182570.75   0.00291   658020.13
4182590.50   0.00296
         658020.13   4182610.25   0.00301   658020.13
4182630.00   0.00306
         658020.13   4182649.75   0.00311   658020.13
4182669.50   0.00316
         658020.13   4182689.25   0.00320   658020.13
4182709.00   0.00325
         658020.13   4182728.75   0.00329   658020.13
4182748.25   0.00333
         658020.13   4182768.00   0.00337   658020.13
4182787.75   0.00341
         658020.13   4182807.50   0.00344   658020.13
4182827.25   0.00347
         658020.13   4182847.00   0.00350   658020.13
4182866.75   0.00353
         658020.13   4182886.50   0.00355   658020.13
4182906.25   0.00357
         658020.13   4182926.00   0.00358   658020.13
4182945.75   0.00359
         658020.13   4182965.50   0.00360   658020.13
4182985.25   0.00360
         658020.13   4183005.00   0.00360   658020.13
4183024.75   0.00359

 *** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

                   *** THE ANNUAL AVERAGE CONCENTRATION   VALUES AVERAGED OVER   5 YEARS FOR SOURCE GROUP: ALL   ***
                                    INCLUDING SOURCE(S):   L0000001   , L0000002
 , L0000003   , L0000004   , L0000005   ,
                   L0000006   , L0000007   , L0000008   , L0000009   , L0000010
 , L0000011   , L0000012   , L0000013   ,
                   L0000014   , L0000015   , L0000016   , L0000017   , L0000018
 , L0000019   ,

                                                 *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                             ** CONC OF PM_10   IN MICROGRAMS/M**3
                    **

       X-COORD (M)   Y-COORD (M)   CONC   X-COORD (M)
Y-COORD (M)   CONC

- -
658020.13 4183044.50 0.00358 658020.13
4183064.25 0.00357
658020.13 4183084.00 0.00355 658020.13
4183103.75 0.00353
658020.13 4183123.50 0.00350 658020.13
4183143.25 0.00347
658039.88 4182472.00 0.00259 658039.88
4182491.75 0.00264
658039.88 4182511.50 0.00269 658039.88
4182531.25 0.00274
658039.88 4182551.00 0.00279 658039.88
4182570.75 0.00284
658039.88 4182590.50 0.00289 658039.88
4182610.25 0.00293
658039.88 4182630.00 0.00298 658039.88
4182649.75 0.00303
658039.88 4182669.50 0.00307 658039.88
4182689.25 0.00311
658039.88 4182709.00 0.00316 658039.88
4182728.75 0.00320
658039.88 4182748.25 0.00324 658039.88
4182768.00 0.00327
658039.88 4182787.75 0.00330 658039.88
4182807.50 0.00334
658039.88 4182827.25 0.00336 658039.88
4182847.00 0.00339
658039.88 4182866.75 0.00341 658039.88
4182886.50 0.00343
658039.88 4182906.25 0.00345 658039.88
4182926.00 0.00346
658039.88 4182945.75 0.00347 658039.88
4182965.50 0.00348
658039.88 4182985.25 0.00348 658039.88
4183005.00 0.00348
658039.88 4183024.75 0.00347 658039.88
4183044.50 0.00346
658039.88 4183064.25 0.00345 658039.88
4183084.00 0.00343
658039.88 4183123.50 0.00338 658039.88
4183143.25 0.00335
658039.88 4183163.00 0.00332 658039.88
4183182.75 0.00329
658039.88 4183202.50 0.00325 658039.88
4183222.25 0.00321
658039.88 4183242.00 0.00317 658059.63
4182472.00 0.00253
658059.63 4182491.75 0.00258 658059.63
4182511.50 0.00263

```
         658059.63    4182531.25        0.00268                      658059.63
4182551.00        0.00272
         658059.63    4182570.75        0.00277                      658059.63
4182590.50        0.00281
         658059.63    4182610.25        0.00286                      658059.63
4182630.00        0.00290
         658059.63    4182649.75        0.00294                      658059.63
4182669.50        0.00299
         658059.63    4182689.25        0.00303                      658059.63
4182709.00        0.00307
         658059.63    4182728.75        0.00310                      658059.63
4182748.25        0.00314
         658059.63    4182768.00        0.00317                      658059.63
4182787.75        0.00320
         658059.63    4182807.50        0.00323                      658059.63
4182827.25        0.00326
         658059.63    4182847.00        0.00328                      658059.63
4182866.75        0.00330
         658059.63    4182886.50        0.00332                      658059.63
4182906.25        0.00334
         658059.63    4182926.00        0.00335                      658059.63
4182945.75        0.00336
         658059.63    4182965.50        0.00336                      658059.63
4182985.25        0.00336
         658059.63    4183005.00        0.00336                      658059.63
4183024.75        0.00336
         658059.63    4183044.50        0.00335                      658059.63
4183064.25        0.00333
         658059.63    4183084.00        0.00332                      658059.63
4183123.50        0.00327
         658059.63    4183143.25        0.00324                      658059.63
4183163.00        0.00321
 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuinta_onsite_mitigated\MantecaQuinta_on ***        03/22/24
 *** AERMET - VERSION  18081 ***   ***
                       ***        08:23:22

                                  PAGE  26
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                   *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   5
YEARS FOR SOURCE GROUP: ALL      ***
                                   INCLUDING SOURCE(S):     L0000001    , L0000002
 , L0000003    , L0000004    , L0000005    ,
                  L0000006    , L0000007    , L0000008    , L0000009    , L0000010
 , L0000011    , L0000012    , L0000013    ,
                  L0000014    , L0000015    , L0000016    , L0000017    , L0000018
 , L0000019    ,

                                              *** DISCRETE CARTESIAN RECEPTOR POINTS
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***

** CONC OF PM_10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
658059.63	4183182.75	0.00318	658059.63	4183202.50	0.00314
658059.63	4183222.25	0.00311	658059.63	4183242.00	0.00306
658079.31	4182472.00	0.00248	658079.31	4182491.75	0.00253
658079.31	4182511.50	0.00257	658079.31	4182531.25	0.00262
658079.31	4182551.00	0.00266	658079.31	4182570.75	0.00270
658079.31	4182590.50	0.00274	658079.31	4182610.25	0.00279
658079.31	4182630.00	0.00283	658079.31	4182649.75	0.00287
658079.31	4182669.50	0.00291	658079.31	4182689.25	0.00294
658079.31	4182709.00	0.00298	658079.31	4182728.75	0.00302
658079.31	4182748.25	0.00305	658079.31	4182768.00	0.00308
658079.31	4182787.75	0.00311	658079.31	4182807.50	0.00313
658079.31	4182827.25	0.00316	658079.31	4182847.00	0.00318
658079.31	4182866.75	0.00320	658079.31	4182886.50	0.00322
658079.31	4182906.25	0.00323	658079.31	4182926.00	0.00324
658079.31	4182945.75	0.00325	658079.31	4182965.50	0.00325
658079.31	4182985.25	0.00325	658079.31	4183005.00	0.00325
658079.31	4183024.75	0.00325	658079.31	4183044.50	0.00324
658079.31	4183064.25	0.00322	658079.31	4183084.00	0.00321
658079.31	4183123.50	0.00317	658079.31	4183143.25	0.00314
658079.31	4183163.00	0.00311	658079.31	4183182.75	0.00308
658079.31	4183202.50	0.00304	658079.31		

4183222.25   0.00301
         658079.31   4183242.00   0.00297   658099.06
4182472.00   0.00243
         658099.06   4182491.75   0.00247   658099.06
4182511.50   0.00251
         658099.06   4182531.25   0.00256   658099.06
4182551.00   0.00260
         658099.06   4182570.75   0.00264   658099.06
4182590.50   0.00268
         658099.06   4182610.25   0.00272   658099.06
4182630.00   0.00275
         658099.06   4182649.75   0.00279   658099.06
4182669.50   0.00283
         658099.06   4182689.25   0.00286   658099.06
4182709.00   0.00290
         658099.06   4182728.75   0.00293   658099.06
4182748.25   0.00296
         658099.06   4182768.00   0.00299   658099.06
4182787.75   0.00302
         658099.06   4182807.50   0.00304   658099.06
4182827.25   0.00306
         658099.06   4182847.00   0.00308   658099.06
4182866.75   0.00310
         658099.06   4182886.50   0.00311   658099.06
4182906.25   0.00313
         658099.06   4182926.00   0.00314   658099.06
4182945.75   0.00315
         658099.06   4182965.50   0.00315   658099.06
4182985.25   0.00315
         658099.06   4183005.00   0.00315   658099.06
4183024.75   0.00314
         658099.06   4183044.50   0.00313   658099.06
4183064.25   0.00312
         658099.06   4183084.00   0.00311   658099.06
4183103.75   0.00309
         658099.06   4183123.50   0.00306   658099.06
4183143.25   0.00304
         658099.06   4183163.00   0.00301   658099.06
4183182.75   0.00298

 *** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

                   *** THE ANNUAL AVERAGE CONCENTRATION   VALUES AVERAGED OVER   5
YEARS FOR SOURCE GROUP: ALL   ***
                                   INCLUDING SOURCE(S):   L0000001   , L0000002

```
 , L0000003    , L0000004    , L0000005    ,
                L0000006    , L0000007    , L0000008    , L0000009    , L0000010
 , L0000011    , L0000012    , L0000013    ,
                L0000014    , L0000015    , L0000016    , L0000017    , L0000018
 , L0000019    ,

                                          *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                     ** CONC OF PM_10    IN MICROGRAMS/M**3
                   **

       X-COORD (M)   Y-COORD (M)        CONC                       X-COORD (M)
Y-COORD (M)        CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - -
         658099.06    4183202.50        0.00295                       658099.06
4183222.25        0.00292
         658099.06    4183242.00        0.00288                       658118.81
4182472.00        0.00238
         658118.81    4182491.75        0.00242                       658118.81
4182511.50        0.00246
         658118.81    4182531.25        0.00250                       658118.81
4182551.00        0.00254
         658118.81    4182570.75        0.00257                       658118.81
4182590.50        0.00261
         658118.81    4182610.25        0.00265                       658118.81
4182630.00        0.00268
         658118.81    4182649.75        0.00272                       658118.81
4182669.50        0.00275
         658118.81    4182689.25        0.00279                       658118.81
4182709.00        0.00282
         658118.81    4182728.75        0.00285                       658118.81
4182748.25        0.00288
         658118.81    4182768.00        0.00290                       658118.81
4182787.75        0.00293
         658118.81    4182807.50        0.00295                       658118.81
4182827.25        0.00297
         658118.81    4182847.00        0.00299                       658118.81
4182866.75        0.00301
         658118.81    4182886.50        0.00302                       658118.81
4182906.25        0.00303
         658118.81    4182926.00        0.00304                       658118.81
4182945.75        0.00305
         658118.81    4182965.50        0.00305                       658118.81
4182985.25        0.00305
         658118.81    4183005.00        0.00305                       658118.81
4183024.75        0.00304
         658118.81    4183044.50        0.00303                       658118.81
4183064.25        0.00302
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         658118.81    4183084.00        0.00301                    658118.81
4183103.75        0.00299
         658118.81    4183123.50        0.00297                    658118.81
4183143.25        0.00295
         658118.81    4183163.00        0.00292                    658118.81
4183182.75        0.00289
         658118.81    4183202.50        0.00286                    658118.81
4183222.25        0.00283
         658118.81    4183242.00        0.00279                    658138.56
4182472.00        0.00233
         658138.56    4182491.75        0.00237                    658138.56
4182511.50        0.00240
         658138.56    4182531.25        0.00244                    658138.56
4182551.00        0.00248
         658138.56    4182570.75        0.00251                    658138.56
4182590.50        0.00255
         658138.56    4182610.25        0.00258                    658138.56
4182630.00        0.00262
         658138.56    4182649.75        0.00265                    658138.56
4182669.50        0.00268
         658138.56    4182689.25        0.00271                    658138.56
4182709.00        0.00274
         658138.56    4182728.75        0.00277                    658138.56
4182748.25        0.00280
         658138.56    4182768.00        0.00282                    658138.56
4182787.75        0.00284
         658138.56    4182807.50        0.00287                    658138.56
4182827.25        0.00288
         658138.56    4182847.00        0.00290                    658138.56
4182866.75        0.00292
         658138.56    4182886.50        0.00293                    658138.56
4182906.25        0.00294
         658138.56    4182926.00        0.00295                    658138.56
4182945.75        0.00295
         658138.56    4182965.50        0.00296                    658138.56
4182985.25        0.00296
         658138.56    4183005.00        0.00295                    658138.56
4183024.75        0.00295
         658138.56    4183044.50        0.00294                    658138.56
4183064.25        0.00293
         658138.56    4183084.00        0.00291                    658138.56
4183103.75        0.00290
         658138.56    4183123.50        0.00288                    658138.56
4183143.25        0.00286
         658138.56    4183163.00        0.00283                    658138.56
4183182.75        0.00280
 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuinta_onsite_mitigated\MantecaQuinta_on ***        03/22/24
 *** AERMET - VERSION  18081 ***   ***
                       ***        08:23:22
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*** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

*** THE ANNUAL AVERAGE CONCENTRATION VALUES AVERAGED OVER 5 YEARS FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): L0000001 , L0000002 , L0000003 , L0000004 , L0000005 ,
L0000006 , L0000007 , L0000008 , L0000009 , L0000010 , L0000011 , L0000012 , L0000013 ,
L0000014 , L0000015 , L0000016 , L0000017 , L0000018 , L0000019 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
658138.56	4183202.50	0.00277	658138.56	4183222.25	0.00274
658138.56	4183242.00	0.00271	656770.14	4183459.54	0.01010
656742.76	4183470.49	0.00907	656777.44	4183412.09	0.01102
656777.44	4183371.93	0.01143	656739.11	4183386.53	0.00986
656740.94	4183430.34	0.00951	656750.06	4183550.80	0.00797
656753.71	4183523.42	0.00855	656750.06	4183496.05	0.00890
656773.79	4183501.52	0.00951	656706.26	4183413.91	0.00864
656691.66	4183392.01	0.00841	656686.18	4183373.76	0.00837
656700.78	4183355.50	0.00887	656717.21	4183344.55	0.00942
656660.63	4183362.80	0.00780	656761.01	4182461.34	0.00303
656800.16	4182461.34	0.00325	656839.31	4182461.34	0.00347
656878.46	4182461.34	0.00371	656917.61	4182461.34	0.00394
656956.76	4182461.34	0.00413	656995.91	4182461.34	0.00425
657035.06	4182461.34	0.00429	657074.21		

4182461.34 0.00424
657113.36 4182461.34 0.00421 656761.01
4182487.10 0.00317
656800.16 4182487.10 0.00340 656839.31
4182487.10 0.00365
656878.46 4182487.10 0.00392 656917.61
4182487.10 0.00418
656956.76 4182487.10 0.00442 656995.91
4182487.10 0.00458
657035.06 4182487.10 0.00464 657074.21
4182487.10 0.00460
657113.36 4182487.10 0.00456 656761.01
4182512.86 0.00333
656800.16 4182512.86 0.00358 656839.31
4182512.86 0.00385
656878.46 4182512.86 0.00415 656917.61
4182512.86 0.00445
656956.76 4182512.86 0.00473 656995.91
4182512.86 0.00494
657035.06 4182512.86 0.00504 657074.21
4182512.86 0.00501
657113.36 4182512.86 0.00498 656761.01
4182538.62 0.00350
656800.16 4182538.62 0.00377 656839.31
4182538.62 0.00407
656878.46 4182538.62 0.00439 656917.61
4182538.62 0.00474
656956.76 4182538.62 0.00508 656995.91
4182538.62 0.00536
657035.06 4182538.62 0.00550 657074.21
4182538.62 0.00549
657113.36 4182538.62 0.00546 656761.01
4182564.38 0.00368
656800.16 4182564.38 0.00397 656839.31
4182564.38 0.00430
656878.46 4182564.38 0.00467 656917.61
4182564.38 0.00507
656956.76 4182564.38 0.00547 656995.91
4182564.38 0.00582
657035.06 4182564.38 0.00604 657074.21
4182564.38 0.00606
657113.36 4182564.38 0.00604 656761.01
4182590.14 0.00388
656800.16 4182590.14 0.00420 656839.31
4182590.14 0.00457
656878.46 4182590.14 0.00497 656917.61
4182590.14 0.00542
656956.76 4182590.14 0.00590 656995.91
4182590.14 0.00635
657035.06 4182590.14 0.00666 657074.21

```
4182590.14        0.00674
         657113.36    4182590.14        0.00673                      656761.01
4182615.90        0.00411
🡅 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuinta_onsite_mitigated\MantecaQuinta_on ***        03/22/24
 *** AERMET - VERSION  18081 ***   ***
                        ***        08:23:22

                                   PAGE  29
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                   *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   5
YEARS FOR SOURCE GROUP: ALL      ***
                                  INCLUDING SOURCE(S):     L0000001    , L0000002
 , L0000003    , L0000004    , L0000005    ,
                 L0000006    , L0000007    , L0000008    , L0000009    , L0000010
 , L0000011    , L0000012    , L0000013    ,
                 L0000014    , L0000015    , L0000016    , L0000017    , L0000018
 , L0000019    ,

                                              *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                         ** CONC OF PM_10    IN MICROGRAMS/M**3
                    **

       X-COORD (M)   Y-COORD (M)        CONC                      X-COORD (M)
Y-COORD (M)        CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - -
         656800.16    4182615.90        0.00446                      656839.31
4182615.90        0.00486
         656878.46    4182615.90        0.00531                      656917.61
4182615.90        0.00583
         656956.76    4182615.90        0.00639                      656995.91
4182615.90        0.00696
         657035.06    4182615.90        0.00739                      657074.21
4182615.90        0.00756
         657113.36    4182615.90        0.00757                      656800.16
4182641.66        0.00475
         656839.31    4182641.66        0.00519                      656878.46
4182641.66        0.00570
         656917.61    4182641.66        0.00629                      656956.76
4182641.66        0.00695
         656995.91    4182641.66        0.00765                      657035.06
4182641.66        0.00827
         657074.21    4182641.66        0.00856                      657113.36
4182641.66        0.00863
         656800.16    4182667.42        0.00506                      656839.31
4182667.42        0.00556
```

*** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

*** THE 1ST HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): L0000001 , L0000002 , L0000003 , L0000004 , L0000005 , L0000006 , L0000007 , L0000008 , L0000009 , L0000010 , L0000011 , L0000012 , L0000013 , L0000014 , L0000015 , L0000016 , L0000017 , L0000018 , L0000019 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
657151.50	4182491.75	0.58145	(15011509)	657151.50	4182511.50	0.60935	(15011509)
657151.50	4182531.25	0.63919	(15011509)	657151.50	4182551.00	0.67114	(15011509)
657151.50	4182570.75	0.70535	(15011509)	657151.50	4182590.50	0.74198	(15011509)
657151.50	4182610.25	0.78118	(15011509)	657151.50	4182630.00	0.82308	(15011509)
657151.50	4182649.75	0.86777	(15011509)	657171.25	4182472.00	0.52978	(17120822)
657171.25	4182491.75	0.55821	(17120822)	657171.25	4182511.50	0.58809	(17120822)
657171.25	4182531.25	0.61936	(17120822)	657171.25	4182551.00	0.65192	(17120822)
657171.25	4182570.75	0.68823	(17122917)	657171.25

4182590.50 0.73722 (17122917)
657171.25 4182610.25 0.78777 (17122917) 657171.25
4182630.00 0.83908 (17122917)
657171.25 4182649.75 0.89006 (17122917) 657191.00
4182472.00 0.55529 (17122917)
657191.00 4182491.75 0.58547 (17122917) 657191.00
4182511.50 0.61592 (17122917)
657191.00 4182531.25 0.64621 (17122917) 657191.00
4182551.00 0.67581 (17122917)
657191.00 4182570.75 0.70408 (17122917) 657191.00
4182590.50 0.73029 (17122917)
657191.00 4182610.25 0.75360 (17122917) 657191.00
4182630.00 0.77314 (17122917)
657191.00 4182649.75 0.78806 (17122917) 657210.75
4182472.00 0.55949 (17122917)
657210.75 4182491.75 0.57605 (17122917) 657210.75
4182511.50 0.59085 (17122917)
657210.75 4182531.25 0.60347 (17122917) 657210.75
4182551.00 0.61348 (17122917)
657210.75 4182570.75 0.62049 (17122917) 657210.75
4182590.50 0.62418 (17122917)
657210.75 4182610.25 0.63449 (17013024) 657210.75
4182630.00 0.66181 (17013024)
657210.75 4182649.75 0.68295 (17013024) 657230.50
4182472.00 0.50190 (17122917)
657230.50 4182491.75 0.50472 (17122917) 657230.50
4182511.50 0.50533 (17011203)
657230.50 4182531.25 0.52637 (17013024) 657230.50
4182551.00 0.54934 (17013024)
657230.50 4182570.75 0.56859 (17013024) 657230.50
4182590.50 0.58350 (17013024)
657230.50 4182610.25 0.59368 (17013024) 657230.50
4182630.00 0.59907 (17013024)
657230.50 4182649.75 0.60019 (17122701) 657250.25
4182472.00 0.46734 (17013024)
657250.25 4182491.75 0.48409 (17013024) 657250.25
4182511.50 0.49798 (17013024)
657250.25 4182531.25 0.50864 (17013024) 657250.25
4182551.00 0.51583 (17013024)
657250.25 4182570.75 0.51947 (17013024) 657250.25
4182590.50 0.52548 (17122701)
657250.25 4182610.25 0.53010 (17122701) 657250.25
4182630.00 0.53096 (17122701)
657250.25 4182649.75 0.52876 (17122701) 657270.00
4182472.00 0.44963 (17013024)
657270.00 4182491.75 0.45458 (17013024) 657270.00
4182511.50 0.45881 (17122701)
657270.00 4182531.25 0.46668 (17122701) 657270.00
4182551.00 0.47119 (17122701)
657270.00 4182570.75 0.47256 (17122701) 657270.00

*** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

*** THE 1ST HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): L0000001 , L0000002 , L0000003 , L0000004 , L0000005 , L0000006 , L0000007 , L0000008 , L0000009 , L0000010 , L0000011 , L0000012 , L0000013 , L0000014 , L0000015 , L0000016 , L0000017 , L0000018 , L0000019 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
657309.44	4182491.75	0.38154	(17122701)	657309.44	4182511.50	0.37731	(17122701)
657309.44	4182531.25	0.37924	(17122318)	657309.44	4182551.00	0.38723	(17122318)
657309.44	4182570.75	0.39201	(17122318)	657309.44	4182590.50	0.39419	(17122318)
657309.44	4182610.25	0.39447	(17122318)	657309.44	4182630.00	0.39346	(17122318)

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       657309.44   4182649.75        0.39165  (17122318)               657329.19
4182472.00        0.34569  (17012804)
       657329.19   4182491.75        0.35259  (17122318)               657329.19
4182511.50        0.35961  (17122318)
       657329.19   4182531.25        0.36392  (17122318)               657329.19
4182551.00        0.36593  (17122318)
       657329.19   4182570.75        0.36617  (17122318)               657329.19
4182590.50        0.36511  (17122318)
       657329.19   4182610.25        0.36315  (17122318)               657329.19
4182630.00        0.36055  (17122318)
       657329.19   4182649.75        0.35743  (17122318)               657348.94
4182472.00        0.33582  (17122318)
       657348.94   4182491.75        0.33964  (17122318)               657348.94
4182511.50        0.34142  (17122318)
       657348.94   4182531.25        0.34156  (17122318)               657348.94
4182551.00        0.34043  (17122318)
       657348.94   4182570.75        0.33835  (17122318)               657348.94
4182590.50        0.33555  (17122318)
       657348.94   4182610.25        0.33215  (17122318)               657348.94
4182630.00        0.32894  (17012903)
       657348.94   4182649.75        0.32807  (17012903)               657368.69
4182472.00        0.31987  (17122318)
       657368.69   4182491.75        0.31986  (17122318)               657368.69
4182511.50        0.31863  (17122318)
       657368.69   4182531.25        0.31643  (17122318)               657368.69
4182551.00        0.31346  (17122318)
       657368.69   4182570.75        0.31079  (17012903)               657368.69
4182590.50        0.31032  (17012903)
       657368.69   4182610.25        0.30943  (17012903)               657368.69
4182630.00        0.30823  (17012903)
       657368.69   4182649.75        0.30675  (17012903)               657388.44
4182472.00        0.29920  (17122318)
       657388.44   4182491.75        0.29689  (17122318)               657388.44
4182511.50        0.29464  (17122920)
       657388.44   4182531.25        0.29416  (17012903)               657388.44
4182551.00        0.29385  (17012903)
       657388.44   4182570.75        0.29299  (17012903)               657388.44
4182590.50        0.29173  (17012903)
       657388.44   4182610.25        0.29014  (17012903)               657388.44
4182630.00        0.28821  (17012903)
       657388.44   4182649.75        0.28588  (17012903)               657408.13
4182472.00        0.27874  (17122920)
       657408.13   4182491.75        0.27935  (17012903)               657408.13
4182511.50        0.27922  (17012903)
       657408.13   4182531.25        0.27835  (17012903)               657408.13
4182551.00        0.27709  (17012903)
       657408.13   4182570.75        0.27543  (17012903)               657408.13
4182590.50        0.27339  (17012903)
       657408.13   4182610.25        0.27094  (17012903)               657408.13
4182630.00        0.26802  (17012903)
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       657408.13   4182649.75        0.26455  (17012903)               657427.88
 4182472.00        0.26586  (17012903)
       657427.88   4182491.75        0.26519  (17012903)               657427.88
 4182511.50        0.26396  (17012903)
       657427.88   4182531.25        0.26226  (17012903)               657427.88
 4182551.00        0.26015  (17012903)
       657427.88   4182570.75        0.25762  (17012903)               657427.88
 4182590.50        0.25461  (17012903)
       657427.88   4182610.25        0.25106  (17012903)               657427.88
 4182630.00        0.24861  (17020801)
       657427.88   4182649.75        0.24764  (17020801)               657447.63
 4182472.00        0.25193  (17012903)
       657447.63   4182491.75        0.25025  (17012903)               657447.63
 4182511.50        0.24811  (17012903)
       657447.63   4182531.25        0.24552  (17012903)               657447.63
 4182551.00        0.24245  (17012903)
       657447.63   4182570.75        0.23912  (17020801)               657447.63
 4182590.50        0.23841  (17020801)
       657447.63   4182610.25        0.23751  (17020801)               657447.63
 4182630.00        0.23636  (17020801)
       657447.63   4182649.75        0.23480  (17020801)               657467.38
 4182472.00        0.23712  (17012903)
 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuinta_onsite_mitigated\MantecaQuinta_on ***        03/22/24
 *** AERMET - VERSION  18081 ***   ***
                       ***        08:23:22

                                  PAGE  32
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                              *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP:  ALL      ***
                                 INCLUDING SOURCE(S):     L0000001    , L0000002
 , L0000003    , L0000004    , L0000005    ,
                L0000006    , L0000007    , L0000008    , L0000009    , L0000010
 , L0000011    , L0000012    , L0000013    ,
                L0000014    , L0000015    , L0000016    , L0000017    , L0000018
 , L0000019    ,

                                          *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                        ** CONC OF PM_10    IN MICROGRAMS/M**3
                  **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD (M)
Y-COORD (M)        CONC     (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
       657467.38   4182491.75        0.23450  (17012903)               657467.38
```

4182511.50 0.23140 (17012903)
657467.38 4182531.25 0.22981 (17020801) 657467.38
4182551.00 0.22911 (17020801)
657467.38 4182570.75 0.22821 (17020801) 657467.38
4182590.50 0.22707 (17020801)
657467.38 4182610.25 0.22563 (17020801) 657467.38
4182630.00 0.22382 (17020801)
657467.38 4182649.75 0.22153 (17020801) 657487.13
4182472.00 0.22174 (17020801)
657487.13 4182491.75 0.22129 (17020801) 657487.13
4182511.50 0.22062 (17020801)
657487.13 4182531.25 0.21973 (17020801) 657487.13
4182551.00 0.21860 (17020801)
657487.13 4182570.75 0.21719 (17020801) 657487.13
4182590.50 0.21541 (17020801)
657487.13 4182610.25 0.21319 (17020801) 657487.13
4182630.00 0.21043 (17020801)
657487.13 4182649.75 0.20721 (17011208) 657506.88
4182472.00 0.21281 (17020801)
657506.88 4182491.75 0.21195 (17020801) 657506.88
4182511.50 0.21085 (17020801)
657506.88 4182531.25 0.20946 (17020801) 657506.88
4182551.00 0.20772 (17020801)
657506.88 4182570.75 0.20557 (17020801) 657506.88
4182590.50 0.20292 (17020801)
657506.88 4182610.25 0.19977 (17011208) 657506.88
4182630.00 0.19896 (17011208)
657506.88 4182649.75 0.19790 (17011208) 657526.63
4182472.00 0.20371 (17020801)
657526.63 4182491.75 0.20235 (17020801) 657526.63
4182511.50 0.20067 (17020801)
657526.63 4182531.25 0.19858 (17020801) 657526.63
4182551.00 0.19603 (17020801)
657526.63 4182570.75 0.19297 (17011208) 657526.63
4182590.50 0.19221 (17011208)
657526.63 4182610.25 0.19121 (17011208) 657526.63
4182630.00 0.18992 (17011208)
657526.63 4182649.75 0.18826 (17011208) 657546.31
4182472.00 0.19422 (17020801)
657546.31 4182491.75 0.19221 (17020801) 657546.31
4182511.50 0.18976 (17020801)
657546.31 4182531.25 0.18678 (17020801) 657546.31
4182551.00 0.18605 (17011208)
657546.31 4182570.75 0.18512 (17011208) 657546.31
4182590.50 0.18392 (17011208)
657546.31 4182610.25 0.18238 (17011208) 657546.31
4182630.00 0.18044 (17011208)
657546.31 4182649.75 0.17799 (17011208) 657546.31
4182669.50 0.18172 (17011509)
657546.31 4182689.25 0.18601 (17011509) 657546.31

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 4182709.00        0.18788  (17011509)
       657546.31   4182728.75        0.18865  (17011509)               657566.06
 4182472.00        0.18393  (17020801)
       657566.06   4182491.75        0.18108  (17020801)               657566.06
 4182511.50        0.18035  (17011208)
       657566.06   4182531.25        0.17949  (17011208)               657566.06
 4182551.00        0.17838  (17011208)
       657566.06   4182570.75        0.17697  (17011208)               657566.06
 4182590.50        0.17518  (17011208)
       657566.06   4182610.25        0.17294  (17011208)               657566.06
 4182630.00        0.17017  (17011208)
       657566.06   4182649.75        0.17235  (17011509)               657566.06
 4182669.50        0.17825  (17011509)
       657566.06   4182689.25        0.18114  (17011509)               657566.06
 4182709.00        0.18237  (17011509)
       657566.06   4182728.75        0.18286  (17011509)               657585.81
 4182472.00        0.17503  (17011208)
       657585.81   4182491.75        0.17424  (17011208)               657585.81
 4182511.50        0.17322  (17011208)
       657585.81   4182531.25        0.17192  (17011208)               657585.81
 4182551.00        0.17028  (17011208)
       657585.81   4182570.75        0.16824  (17011208)               657585.81
 4182590.50        0.16573  (17011208)
       657585.81   4182610.25        0.16322  (17120120)               657585.81
 4182630.00        0.16262  (17011509)
       657585.81   4182649.75        0.17028  (17011509)               657585.81
 4182669.50        0.17440  (17011509)
       657585.81   4182689.25        0.17630  (17011509)               657585.81
 4182709.00        0.17710  (17011509)
↑ *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuinta_onsite_mitigated\MantecaQuinta_on ***        03/22/24
 *** AERMET - VERSION  18081 ***   ***
                        ***        08:23:22

                                   PAGE  33
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                               *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP:  ALL      ***
                                  INCLUDING SOURCE(S):     L0000001    , L0000002
 , L0000003    , L0000004    , L0000005    ,
                 L0000006    , L0000007    , L0000008    , L0000009    , L0000010
 , L0000011    , L0000012    , L0000013    ,
                 L0000014    , L0000015    , L0000016    , L0000017    , L0000018
 , L0000019    ,

                                        *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                     ** CONC OF PM_10    IN MICROGRAMS/M**3
```

**

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
657585.81	4182728.75	0.17747	(17011509)	657605.56	4182472.00	0.16843	(17011208)
657605.56	4182491.75	0.16724	(17011208)	657605.56	4182511.50	0.16574	(17011208)
657605.56	4182531.25	0.16387	(17011208)	657605.56	4182551.00	0.16157	(17011208)
657605.56	4182570.75	0.15922	(17120120)	657605.56	4182590.50	0.15793	(17012908)
657605.56	4182610.25	0.15787	(17012908)	657605.56	4182630.00	0.16203	(17011509)
657605.56	4182649.75	0.16751	(17011509)	657605.56	4182669.50	0.17033	(17011509)
657605.56	4182689.25	0.17159	(17011509)	657605.56	4182709.00	0.17214	(17011509)
657605.56	4182728.75	0.17241	(17011509)	657625.31	4182472.00	0.16150	(17011208)
657625.31	4182491.75	0.15980	(17011208)	657625.31	4182511.50	0.15771	(17011208)
657625.31	4182531.25	0.15548	(17120120)	657625.31	4182551.00	0.15371	(17012908)
657625.31	4182570.75	0.15363	(17012908)	657625.31	4182590.50	0.15355	(17012908)
657625.31	4182610.25	0.15349	(17011509)	657625.31	4182630.00	0.16047	(17011509)
657625.31	4182649.75	0.16433	(17011509)	657625.31	4182669.50	0.16620	(17011509)
657625.31	4182689.25	0.16707	(17011509)	657625.31	4182709.00	0.16747	(17011509)
657625.31	4182728.75	0.16765	(17011509)	657645.06	4182472.00	0.15405	(17011208)
657645.06	4182491.75	0.15191	(17120120)	657645.06	4182511.50	0.15026	(17120120)
657645.06	4182531.25	0.14974	(17012908)	657645.06	4182551.00	0.14965	(17012908)
657645.06	4182570.75	0.14955	(17012908)	657645.06	4182590.50	0.14942	(17012908)
657645.06	4182610.25	0.15308	(17011509)	657645.06	4182630.00	0.15817	(17011509)
657645.06	4182649.75	0.16087	(17011509)	657645.06	4182669.50	0.16219	(17011509)
657645.06	4182689.25	0.16276	(17011509)	657645.06	4182709.00	0.16303	(17011509)
657645.06	4182728.75	0.16322	(17011509)	657664.81	4182472.00	0.14711	(17120120)

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       657664.81   4182491.75        0.14602  (17012908)               657664.81
 4182511.50        0.14598  (17012908)
       657664.81   4182531.25        0.14590  (17012908)               657664.81
 4182551.00        0.14579  (17012908)
       657664.81   4182570.75        0.14564  (17012908)               657664.81
 4182590.50        0.14547  (17011509)
       657664.81   4182610.25        0.15184  (17011509)               657664.81
 4182630.00        0.15550  (17011509)
       657664.81   4182649.75        0.15737  (17011509)               657664.81
 4182669.50        0.15826  (17011509)
       657664.81   4182689.25        0.15866  (17011509)               657664.81
 4182709.00        0.15887  (17011509)
       657664.81   4182728.75        0.15902  (17011509)               657684.50
 4182472.00        0.14255  (17012908)
       657684.50   4182491.75        0.14247  (17012908)               657684.50
 4182511.50        0.14238  (17012908)
       657684.50   4182531.25        0.14225  (17012908)               657684.50
 4182551.00        0.14209  (17012908)
       657684.50   4182570.75        0.14185  (17012908)               657684.50
 4182590.50        0.14530  (17011509)
       657684.50   4182610.25        0.15003  (17011509)               657684.50
 4182630.00        0.15263  (17011509)
       657684.50   4182649.75        0.15391  (17011509)               657684.50
 4182669.50        0.15448  (17011509)
       657684.50   4182689.25        0.15479  (17011509)               657684.50
 4182709.00        0.15497  (17011509)
       657684.50   4182728.75        0.15507  (17011509)               657704.25
 4182472.00        0.13914  (17012908)
       657704.25   4182491.75        0.13904  (17012908)               657704.25
 4182511.50        0.13890  (17012908)
       657704.25   4182531.25        0.13871  (17012908)               657704.25
 4182551.00        0.13845  (17012908)
       657704.25   4182570.75        0.13849  (17011509)               657704.25
 4182590.50        0.14435  (17011509)
       657704.25   4182610.25        0.14782  (17011509)               657704.25
 4182630.00        0.14965  (17011509)
 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuinta_onsite_mitigated\MantecaQuinta_on ***        03/22/24
 *** AERMET - VERSION  18081 ***   ***
                       ***        08:23:22

                                  PAGE  34
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                               *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP:  ALL      ***
                                  INCLUDING SOURCE(S):     L0000001    , L0000002
 , L0000003    , L0000004    , L0000005    ,
                 L0000006    , L0000007    , L0000008    , L0000009    , L0000010
 , L0000011    , L0000012    , L0000013    ,
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L0000014 , L0000015 , L0000016 , L0000017 , L0000018 , L0000019 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
657704.25	4182649.75	0.15052	(17011509)	657704.25	4182669.50	0.15090	(17011509)
657704.25	4182689.25	0.15110	(17011509)	657704.25	4182709.00	0.15123	(17011509)
657704.25	4182728.75	0.15136	(17011509)	657724.00	4182472.00	0.13587	(17012908)
657724.00	4182491.75	0.13572	(17012908)	657724.00	4182511.50	0.13551	(17012908)
657724.00	4182531.25	0.13522	(17012908)	657724.00	4182551.00	0.13480	(17012908)
657724.00	4182570.75	0.13844	(17011509)	657724.00	4182590.50	0.14285	(17011509)
657724.00	4182610.25	0.14535	(17011509)	657724.00	4182630.00	0.14663	(17011509)
657724.00	4182649.75	0.14723	(17011509)	657724.00	4182669.50	0.14749	(17011509)
657724.00	4182689.25	0.14763	(17011509)	657724.00	4182709.00	0.14772	(17011509)
657724.00	4182728.75	0.14783	(17011509)	657743.75	4182472.00	0.13270	(17012908)
657743.75	4182491.75	0.13247	(17012908)	657743.75	4182511.50	0.13214	(17012908)
657743.75	4182531.25	0.13168	(17012908)	657743.75	4182551.00	0.13228	(17011509)
657743.75	4182570.75	0.13769	(17011509)	657743.75	4182590.50	0.14097	(17011509)
657743.75	4182610.25	0.14276	(17011509)	657743.75	4182630.00	0.14365	(17011509)
657743.75	4182649.75	0.14406	(17011509)	657743.75	4182669.50	0.14424	(17011509)
657743.75	4182689.25	0.14434	(17011509)	657743.75	4182709.00	0.14441	(17011509)
657743.75	4182728.75	0.14447	(17011509)	657763.50	4182472.00	0.12957	(17012908)
657763.50	4182491.75	0.12921	(17012908)	657763.50	4182511.50	0.12870	(17012908)
657763.50	4182531.25	0.12801	(17012908)	657763.50			

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 4182551.00         0.13231  (17011509)
       657763.50   4182570.75         0.13643  (17011509)                657763.50
 4182590.50         0.13884  (17011509)
       657763.50   4182610.25         0.14011  (17011509)                657763.50
 4182630.00         0.14073  (17011509)
       657763.50   4182649.75         0.14101  (17011509)                657763.50
 4182669.50         0.14114  (17011509)
       657763.50   4182689.25         0.14122  (17011509)                657763.50
 4182709.00         0.14128  (17011509)
       657763.50   4182728.75         0.14133  (17011509)                657783.25
 4182472.00         0.12640  (17012908)
       657783.25   4182491.75         0.12585  (17012908)                657783.25
 4182511.50         0.12511  (17012908)
       657783.25   4182531.25         0.12672  (17011509)                657783.25
 4182551.00         0.13172  (17011509)
       657783.25   4182570.75         0.13482  (17011509)                657783.25
 4182590.50         0.13657  (17011509)
       657783.25   4182610.25         0.13747  (17011509)                657783.25
 4182630.00         0.13790  (17011509)
       657783.25   4182649.75         0.13809  (17011509)                657783.25
 4182669.50         0.13819  (17011509)
       657783.25   4182689.25         0.13825  (17011509)                657783.25
 4182709.00         0.13830  (17011509)
       657783.25   4182728.75         0.13835  (17011509)                657803.00
 4182472.00         0.12312  (17012908)
       657803.00   4182491.75         0.12232  (17012908)                657803.00
 4182511.50         0.12124  (17012908)
       657803.00   4182531.25         0.12680  (17011509)                657803.00
 4182551.00         0.13066  (17011509)
       657803.00   4182570.75         0.13297  (17011509)                657803.00
 4182590.50         0.13423  (17011509)
       657803.00   4182610.25         0.13486  (17011509)                657803.00
 4182630.00         0.13516  (17011509)
       657803.00   4182649.75         0.13530  (17011509)                657803.00
 4182669.50         0.13538  (17011509)
       657803.00   4182689.25         0.13543  (17011509)                657803.00
 4182709.00         0.13547  (17011509)
       657803.00   4182728.75         0.13551  (17011509)                657822.69
 4182472.00         0.11965  (17012908)
       657822.69   4182491.75         0.11851  (17012908)                657822.69
 4182511.50         0.12170  (17011509)
       657822.69   4182531.25         0.12633  (17011509)                657822.69
 4182551.00         0.12928  (17011509)
 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuinta_onsite_mitigated\MantecaQuinta_on ***        03/22/24
 *** AERMET - VERSION  18081 ***   ***
                       ***        08:23:22

                                  PAGE  35
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*
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*** THE 1ST HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***

INCLUDING SOURCE(S): L0000001 , L0000002 , L0000003 , L0000004 , L0000005 , L0000006 , L0000007 , L0000008 , L0000009 , L0000010 , L0000011 , L0000012 , L0000013 , L0000014 , L0000015 , L0000016 , L0000017 , L0000018 , L0000019 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
657822.69	4182570.75	0.13098	(17011509)	657822.69	4182590.50	0.13189	(17011509)
657822.69	4182610.25	0.13233	(17011509)	657822.69	4182630.00	0.13254	(17011509)
657822.69	4182649.75	0.13264	(17011509)	657822.69	4182669.50	0.13270	(17011509)
657822.69	4182689.25	0.13274	(17011509)	657822.69	4182709.00	0.13278	(17011509)
657822.69	4182728.75	0.13281	(17011509)	657842.44	4182472.00	0.11603	(17022501)
657842.44	4182491.75	0.11639	(17011509)	657842.44	4182511.50	0.12180	(17011509)
657842.44	4182531.25	0.12542	(17011509)	657842.44	4182551.00	0.12763	(17011509)
657842.44	4182570.75	0.12888	(17011509)	657842.44	4182590.50	0.12953	(17011509)
657842.44	4182610.25	0.12984	(17011509)	657842.44	4182630.00	0.12998	(17011509)
657842.44	4182649.75	0.13006	(17011509)	657842.44	4182669.50	0.13010	(17011509)
657842.44	4182689.25	0.13014	(17011509)	657842.44	4182709.00	0.13017	(17011509)
657842.44	4182728.75	0.13022	(17011509)	657862.19	4182472.00	0.11404	(17022501)
657862.19	4182491.75	0.11707	(17011509)	657862.19	4182511.50	0.12138	(17011509)
657862.19	4182531.25	0.12416	(17011509)	657862.19	4182551.00	0.12582	(17011509)
657862.19	4182570.75	0.12672	(17011509)	657862.19	4182590.50	0.12718	(17011509)

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       657862.19   4182610.25        0.12740  (17011509)              657862.19
4182630.00        0.12750  (17011509)
       657862.19   4182649.75        0.12756  (17011509)              657862.19
4182669.50        0.12760  (17011509)
       657862.19   4182689.25        0.12763  (17011509)              657862.19
4182709.00        0.12766  (17011509)
       657862.19   4182728.75        0.12773  (17011509)              657881.94
4182472.00        0.11224  (17011509)
       657881.94   4182491.75        0.11723  (17011509)              657881.94
4182511.50        0.12061  (17011509)
       657881.94   4182531.25        0.12273  (17011509)              657881.94
4182551.00        0.12392  (17011509)
       657881.94   4182570.75        0.12456  (17011509)              657881.94
4182590.50        0.12489  (17011509)
       657881.94   4182610.25        0.12504  (17011509)              657881.94
4182630.00        0.12512  (17011509)
       657881.94   4182649.75        0.12516  (17011509)              657881.94
4182669.50        0.12519  (17011509)
       657881.94   4182689.25        0.12522  (17011509)              657881.94
4182709.00        0.12525  (17011509)
       657881.94   4182728.75        0.12531  (17011509)              657901.69
4182472.00        0.11291  (17011509)
       657901.69   4182491.75        0.11691  (17011509)              657901.69
4182511.50        0.11955  (17011509)
       657901.69   4182531.25        0.12114  (17011509)              657901.69
4182551.00        0.12200  (17011509)
       657901.69   4182570.75        0.12244  (17011509)              657901.69
4182590.50        0.12266  (17011509)
       657901.69   4182610.25        0.12277  (17011509)              657901.69
4182630.00        0.12283  (17011509)
       657901.69   4182649.75        0.12286  (17011509)              657901.69
4182669.50        0.12289  (17011509)
       657901.69   4182689.25        0.12291  (17011509)              657901.69
4182709.00        0.12295  (17011509)
       657901.69   4182728.75        0.12301  (17011509)              657921.44
4182472.00        0.11308  (17011509)
       657921.44   4182491.75        0.11622  (17011509)              657921.44
4182511.50        0.11824  (17011509)
       657921.44   4182531.25        0.11944  (17011509)              657921.44
4182551.00        0.12009  (17011509)
       657921.44   4182570.75        0.12038  (17011509)              657921.44
4182590.50        0.12050  (17011509)
       657921.44   4182610.25        0.12058  (17011509)              657921.44
4182630.00        0.12063  (17011509)
       657921.44   4182649.75        0.12065  (17011509)              657921.44
4182669.50        0.12067  (17011509)
       657921.44   4182689.25        0.12072  (17011509)              657921.44
4182709.00        0.12078  (17011509)
       657921.44   4182728.75        0.12081  (17011509)              657941.13
4182472.00        0.11285  (17011509)
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 *** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

                            *** THE   1ST HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL   ***
                               INCLUDING SOURCE(S):   L0000001   , L0000002 , L0000003   , L0000004   , L0000005   ,
                 L0000006   , L0000007   , L0000008   , L0000009   , L0000010 , L0000011   , L0000012   , L0000013   ,
                 L0000014   , L0000015   , L0000016   , L0000017   , L0000018 , L0000019   ,

                                                *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                             ** CONC OF PM_10   IN MICROGRAMS/M**3
                  **

      X-COORD (M) Y-COORD (M)   CONC   (YYMMDDHH)   X-COORD (M) Y-COORD (M)   CONC   (YYMMDDHH)
 -
        657941.13   4182491.75   0.11530 (17011509)   657941.13   4182511.50   0.11684 (17011509)
        657941.13   4182531.25   0.11773 (17011509)   657941.13   4182551.00   0.11817 (17011509)
        657941.13   4182570.75   0.11835 (17011509)   657941.13   4182590.50   0.11842 (17011509)
        657941.13   4182610.25   0.11848 (17011509)   657941.13   4182630.00   0.11851 (17011509)
        657941.13   4182649.75   0.11853 (17011509)   657941.13   4182669.50   0.11854 (17011509)
        657941.13   4182689.25   0.11859 (17011509)   657941.13   4182709.00   0.11864 (17011509)
        657941.13   4182728.75   0.11865 (17011509)   657941.13   4182748.25   0.11860 (17011509)
        657941.13   4182768.00   0.11847 (17011509)   657941.13   4182787.75   0.11818 (17011509)
        657941.13   4182807.50   0.11767 (17011509)   657941.13   4182827.25   0.11684 (17011509)
        657941.13   4182847.00   0.11555 (17011509)   657941.13   4182866.75   0.11364 (17011509)
        657941.13   4182886.50   0.11090 (17011509)   657941.13   4182906.25   0.10713 (17011509)
        657941.13   4182926.00   0.10215 (17011509)   657941.13

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4182945.75        0.09585  (17011509)
       657941.13   4182965.50        0.08821  (17011509)                657941.13
4182985.25        0.08612  (17121906)
       657941.13   4183005.00        0.08827  (14022208)                657941.13
4183024.75        0.08957  (14022208)
       657941.13   4183064.25        0.09062  (14022208)                657941.13
4183084.00        0.09076  (14022208)
       657941.13   4183103.75        0.09080  (14022208)                657960.88
4182472.00        0.11228  (17011509)
       657960.88   4182491.75        0.11419  (17011509)                657960.88
4182511.50        0.11534  (17011509)
       657960.88   4182531.25        0.11598  (17011509)                657960.88
4182551.00        0.11629  (17011509)
       657960.88   4182570.75        0.11640  (17011509)                657960.88
4182590.50        0.11643  (17011509)
       657960.88   4182610.25        0.11645  (17011509)                657960.88
4182630.00        0.11647  (17011509)
       657960.88   4182649.75        0.11649  (17011509)                657960.88
4182669.50        0.11650  (17011509)
       657960.88   4182689.25        0.11654  (17011509)                657960.88
4182709.00        0.11657  (17011509)
       657960.88   4182728.75        0.11654  (17011509)                657960.88
4182748.25        0.11644  (17011509)
       657960.88   4182768.00        0.11622  (17011509)                657960.88
4182787.75        0.11581  (17011509)
       657960.88   4182807.50        0.11510  (17011509)                657960.88
4182827.25        0.11398  (17011509)
       657960.88   4182847.00        0.11230  (17011509)                657960.88
4182866.75        0.10990  (17011509)
       657960.88   4182886.50        0.10656  (17011509)                657960.88
4182906.25        0.10212  (17011509)
       657960.88   4182926.00        0.09644  (17011509)                657960.88
4182945.75        0.08947  (17011509)
       657960.88   4182965.50        0.08488  (17121906)                657960.88
4182985.25        0.08436  (17122621)
       657960.88   4183005.00        0.08649  (14022208)                657960.88
4183024.75        0.08788  (14022208)
       657960.88   4183044.50        0.08864  (14022208)                657960.88
4183064.25        0.08903  (14022208)
       657960.88   4183084.00        0.08919  (14022208)                657960.88
4183103.75        0.08925  (14022208)
       657980.63   4182472.00        0.11143  (17011509)                657980.63
4182491.75        0.11293  (17011509)
       657980.63   4182511.50        0.11377  (17011509)                657980.63
4182531.25        0.11422  (17011509)
       657980.63   4182551.00        0.11447  (17011509)                657980.63
4182570.75        0.11454  (17011509)
       657980.63   4182590.50        0.11454  (17011509)                657980.63
4182610.25        0.11450  (17011509)
       657980.63   4182630.00        0.11450  (17011509)                657980.63
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*** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

*** THE 1ST HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): L0000001 , L0000002 , L0000003 , L0000004 , L0000005 ,
L0000006 , L0000007 , L0000008 , L0000009 , L0000010 , L0000011 , L0000012 , L0000013 ,
L0000014 , L0000015 , L0000016 , L0000017 , L0000018 , L0000019 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
657980.63	4182787.75	0.11339	(17011509)	657980.63	4182807.50	0.11242	(17011509)
657980.63	4182827.25	0.11096	(17011509)	657980.63	4182847.00	0.10884	(17011509)
657980.63	4182866.75	0.10589	(17011509)	657980.63	4182886.50	0.10193	(17011509)
657980.63	4182906.25	0.09682	(17011509)	657980.63	4182926.00	0.09048	(17011509)
657980.63	4182945.75	0.08365	(17121906)	657980.63	4182965.50	0.08324	(17121906)
657980.63	4182985.25	0.08295	(17122621)	657980.63	4183005.00	0.08477	(14022208)
657980.63	4183024.75	0.08624	(14022208)	657980.63	4183044.50	0.08706	(14022208)
657980.63	4183064.25	0.08749	(14022208)	657980.63	4183084.00	0.08768	(14022208)

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       657980.63   4183103.75        0.08775  (14022208)               657980.63
4183123.50        0.08776  (14022208)
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       658000.38   4182511.50        0.11220  (17011509)               658000.38
4182531.25        0.11251  (17011509)
       658000.38   4182551.00        0.11266  (17011509)               658000.38
4182570.75        0.11271  (17011509)
       658000.38   4182590.50        0.11272  (17011509)               658000.38
4182610.25        0.11267  (17011509)
       658000.38   4182630.00        0.11266  (17011509)               658000.38
4182649.75        0.11266  (17011509)
       658000.38   4182669.50        0.11266  (17011509)               658000.38
4182689.25        0.11266  (17011509)
       658000.38   4182709.00        0.11260  (17011509)               658000.38
4182728.75        0.11245  (17011509)
       658000.38   4182748.25        0.11216  (17011509)               658000.38
4182768.00        0.11166  (17011509)
       658000.38   4182787.75        0.11087  (17011509)               658000.38
4182807.50        0.10961  (17011509)
       658000.38   4182827.25        0.10774  (17011509)               658000.38
4182847.00        0.10513  (17011509)
       658000.38   4182866.75        0.10161  (17011509)               658000.38
4182886.50        0.09701  (17011509)
       658000.38   4182906.25        0.09126  (17011509)               658000.38
4182926.00        0.08435  (17011509)
       658000.38   4182945.75        0.08211  (17121906)               658000.38
4182965.50        0.08160  (17121906)
       658000.38   4182985.25        0.08158  (17122621)               658000.38
4183005.00        0.08311  (14022208)
       658000.38   4183024.75        0.08465  (14022208)               658000.38
4183044.50        0.08554  (14022208)
       658000.38   4183064.25        0.08601  (14022208)               658000.38
4183103.75        0.08632  (14022208)
       658000.38   4183123.50        0.08633  (14022208)               658020.13
4182472.00        0.10931  (17011509)
       658020.13   4182491.75        0.11017  (17011509)               658020.13
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       658020.13   4182531.25        0.11084  (17011509)               658020.13
4182551.00        0.11091  (17011509)
       658020.13   4182570.75        0.11096  (17011509)               658020.13
4182590.50        0.11097  (17011509)
       658020.13   4182610.25        0.11092  (17011509)               658020.13
4182630.00        0.11089  (17011509)
       658020.13   4182649.75        0.11087  (17011509)               658020.13
4182669.50        0.11081  (17011509)
       658020.13   4182689.25        0.11076  (17011509)               658020.13
4182709.00        0.11064  (17011509)
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4182748.25        0.10998  (17011509)
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       658020.13   4182886.50        0.09184  (17011509)               658020.13
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       658020.13   4182926.00        0.08099  (17121906)               658020.13
 4182945.75        0.08058  (17121906)
       658020.13   4182965.50        0.07993  (17121906)               658020.13
 4182985.25        0.08027  (17122621)
       658020.13   4183005.00        0.08149  (14022208)               658020.13
 4183024.75        0.08311  (14022208)
 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuinta_onsite_mitigated\MantecaQuinta_on ***        03/22/24
 *** AERMET - VERSION  18081 ***   ***
                       ***        08:23:22

                                  PAGE  38
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                              *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP:  ALL      ***
                                 INCLUDING SOURCE(S):     L0000001    , L0000002
 , L0000003    , L0000004    , L0000005    ,
                 L0000006    , L0000007    , L0000008    , L0000009    , L0000010
 , L0000011    , L0000012    , L0000013    ,
                 L0000014    , L0000015    , L0000016    , L0000017    , L0000018
 , L0000019    ,

                                       *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                    ** CONC OF PM_10    IN MICROGRAMS/M**3
                  **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD (M)
Y-COORD (M)        CONC     (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
       658020.13   4183044.50        0.08406  (14022208)               658020.13
 4183064.25        0.08457  (14022208)
       658020.13   4183084.00        0.08483  (14022208)               658020.13
 4183103.75        0.08493  (14022208)
       658020.13   4183123.50        0.08496  (14022208)               658020.13
 4183143.25        0.08495  (14022208)
       658039.88   4182472.00        0.10808  (17011509)               658039.88
 4182491.75        0.10869  (17011509)
       658039.88   4182511.50        0.10904  (17011509)               658039.88
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4182531.25 0.10921 (17011509)
658039.88 4182551.00 0.10924 (17011509) 658039.88
4182570.75 0.10927 (17011509)
658039.88 4182590.50 0.10927 (17011509) 658039.88
4182610.25 0.10921 (17011509)
658039.88 4182630.00 0.10917 (17011509) 658039.88
4182649.75 0.10913 (17011509)
658039.88 4182669.50 0.10904 (17011509) 658039.88
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4182886.50 0.08645 (17011509)
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4182926.00 0.07955 (17121906)
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4182965.50 0.07865 (17122621)
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4183084.00 0.08347 (14022208)
658039.88 4183123.50 0.08363 (14022208) 658039.88
4183143.25 0.08363 (14022208)
658039.88 4183163.00 0.08360 (14022208) 658039.88
4183182.75 0.08357 (14022208)
658039.88 4183202.50 0.08353 (14022208) 658039.88
4183222.25 0.08349 (14022208)
658039.88 4183242.00 0.08344 (14022208) 658059.63
4182472.00 0.10680 (17011509)
658059.63 4182491.75 0.10724 (17011509) 658059.63
4182511.50 0.10750 (17011509)
658059.63 4182531.25 0.10762 (17011509) 658059.63
4182551.00 0.10763 (17011509)
658059.63 4182570.75 0.10764 (17011509) 658059.63
4182590.50 0.10763 (17011509)
658059.63 4182610.25 0.10756 (17011509) 658059.63
4182630.00 0.10750 (17011509)
658059.63 4182649.75 0.10742 (17011509) 658059.63
4182669.50 0.10729 (17011509)
658059.63 4182689.25 0.10710 (17011509) 658059.63
4182709.00 0.10679 (17011509)
658059.63 4182728.75 0.10627 (17011509) 658059.63

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 4182748.25         0.10545  (17011509)
       658059.63   4182768.00         0.10422  (17011509)                658059.63
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       658059.63   4182886.50         0.08088  (17011509)                658059.63
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       658059.63   4182965.50         0.07742  (17122621)                658059.63
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       658059.63   4183044.50         0.08123  (14022208)                658059.63
 4183064.25         0.08184  (14022208)
       658059.63   4183084.00         0.08216  (14022208)                658059.63
 4183123.50         0.08235  (14022208)
       658059.63   4183143.25         0.08236  (14022208)                658059.63
 4183163.00         0.08234  (14022208)
 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuinta_onsite_mitigated\MantecaQuinta_on ***        03/22/24
 *** AERMET - VERSION  18081 ***   ***
                       ***        08:23:22

                                  PAGE  39
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                               *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP:  ALL      ***
                                  INCLUDING SOURCE(S):     L0000001    , L0000002
 , L0000003    , L0000004    , L0000005    ,
                 L0000006    , L0000007    , L0000008    , L0000009    , L0000010
 , L0000011    , L0000012    , L0000013    ,
                 L0000014    , L0000015    , L0000016    , L0000017    , L0000018
 , L0000019    ,

                                            *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                         ** CONC OF PM_10    IN MICROGRAMS/M**3
                   **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD (M)
Y-COORD (M)        CONC     (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
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 4183202.50         0.08227  (14022208)
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4182491.75        0.10581  (17011509)
       658079.31   4182511.50        0.10599  (17011509)               658079.31
4182531.25        0.10607  (17011509)
       658079.31   4182551.00        0.10606  (17011509)               658079.31
4182570.75        0.10606  (17011509)
       658079.31   4182590.50        0.10604  (17011509)               658079.31
4182610.25        0.10595  (17011509)
       658079.31   4182630.00        0.10587  (17011509)               658079.31
4182649.75        0.10575  (17011509)
       658079.31   4182669.50        0.10556  (17011509)               658079.31
4182689.25        0.10528  (17011509)
       658079.31   4182709.00        0.10482  (17011509)               658079.31
4182728.75        0.10410  (17011509)
       658079.31   4182748.25        0.10303  (17011509)               658079.31
4182768.00        0.10146  (17011509)
       658079.31   4182787.75        0.09926  (17011509)               658079.31
4182807.50        0.09632  (17011509)
       658079.31   4182827.25        0.09252  (17011509)               658079.31
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       658079.31   4182866.75        0.08195  (17011509)               658079.31
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       658079.31   4182906.25        0.07716  (17121906)               658079.31
4182926.00        0.07666  (17121906)
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       658079.31   4183064.25        0.08054  (14022208)               658079.31
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       658079.31   4183123.50        0.08112  (14022208)               658079.31
4183143.25        0.08113  (14022208)
       658079.31   4183163.00        0.08111  (14022208)               658079.31
4183182.75        0.08109  (14022208)
       658079.31   4183202.50        0.08105  (14022208)               658079.31
4183222.25        0.08101  (14022208)
       658079.31   4183242.00        0.08097  (14022208)               658099.06
4182472.00        0.10415  (17011509)
       658099.06   4182491.75        0.10438  (17011509)               658099.06
4182511.50        0.10451  (17011509)
       658099.06   4182531.25        0.10456  (17011509)               658099.06
4182551.00        0.10454  (17011509)
       658099.06   4182570.75        0.10453  (17011509)               658099.06
4182590.50        0.10448  (17011509)
       658099.06   4182610.25        0.10437  (17011509)               658099.06
4182630.00        0.10425  (17011509)
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       658099.06   4182728.75        0.10182  (17011509)               658099.06
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       658099.06   4182768.00        0.09849  (17011509)               658099.06
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       658099.06   4182807.50        0.09244  (17011509)               658099.06
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       658099.06   4182847.00        0.08282  (17011509)               658099.06
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       658099.06   4182965.50        0.07509  (17122621)               658099.06
 4182985.25        0.07546  (17122621)
       658099.06   4183005.00        0.07566  (17122621)               658099.06
 4183024.75        0.07738  (14022208)
       658099.06   4183044.50        0.07857  (14022208)               658099.06
 4183064.25        0.07927  (14022208)
       658099.06   4183084.00        0.07966  (14022208)               658099.06
 4183103.75        0.07985  (14022208)
       658099.06   4183123.50        0.07992  (14022208)               658099.06
 4183143.25        0.07994  (14022208)
       658099.06   4183163.00        0.07993  (14022208)               658099.06
 4183182.75        0.07991  (14022208)
 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuinta_onsite_mitigated\MantecaQuinta_on ***        03/22/24
 *** AERMET - VERSION  18081 ***   ***
                       ***        08:23:22

                                  PAGE  40
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                              *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP:  ALL      ***
                                 INCLUDING SOURCE(S):     L0000001    , L0000002
 , L0000003    , L0000004    , L0000005    ,
                 L0000006    , L0000007    , L0000008    , L0000009    , L0000010
 , L0000011    , L0000012    , L0000013    ,
                 L0000014    , L0000015    , L0000016    , L0000017    , L0000018
 , L0000019    ,

                                       *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                     ** CONC OF PM_10    IN MICROGRAMS/M**3
                   **
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X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
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658118.81	4182491.75	0.10301	(17011509)	658118.81	4182511.50	0.10308	(17011509)
658118.81	4182531.25	0.10310	(17011509)	658118.81	4182551.00	0.10306	(17011509)
658118.81	4182570.75	0.10303	(17011509)	658118.81	4182590.50	0.10296	(17011509)
658118.81	4182610.25	0.10282	(17011509)	658118.81	4182630.00	0.10265	(17011509)
658118.81	4182649.75	0.10242	(17011509)	658118.81	4182669.50	0.10208	(17011509)
658118.81	4182689.25	0.10150	(17011509)	658118.81	4182709.00	0.10063	(17011509)
658118.81	4182728.75	0.09939	(17011509)	658118.81	4182748.25	0.09768	(17011509)
658118.81	4182768.00	0.09534	(17011509)	658118.81	4182787.75	0.09225	(17011509)
658118.81	4182807.50	0.08833	(17011509)	658118.81	4182827.25	0.08350	(17011509)
658118.81	4182847.00	0.07776	(17011509)	658118.81	4182866.75	0.07524	(17121906)
658118.81	4182886.50	0.07493	(17121906)	658118.81	4182906.25	0.07443	(17121906)
658118.81	4182926.00	0.07368	(17121906)	658118.81	4182945.75	0.07329	(17122621)
658118.81	4182965.50	0.07398	(17122621)	658118.81	4182985.25	0.07436	(17122621)
658118.81	4183005.00	0.07456	(17122621)	658118.81	4183024.75	0.07604	(14022208)
658118.81	4183044.50	0.07729	(14022208)	658118.81	4183064.25	0.07804	(14022208)
658118.81	4183084.00	0.07846	(14022208)	658118.81	4183103.75	0.07867	(14022208)
658118.81	4183123.50	0.07877	(14022208)	658118.81	4183143.25	0.07879	(14022208)
658118.81	4183163.00	0.07879	(14022208)	658118.81	4183182.75	0.07877	(14022208)
658118.81	4183202.50	0.07873	(14022208)	658118.81	4183222.25	0.07870	(14022208)
658118.81	4183242.00	0.07866	(14022208)	658138.56	4182472.00	0.10151	(17011509)
658138.56	4182491.75	0.10164	(17011509)	658138.56

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        658138.56   4182531.25         0.10167  (17011509)                658138.56
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        658138.56   4182570.75         0.10156  (17011509)                658138.56
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        658138.56   4182610.25         0.10128  (17011509)                658138.56
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        658138.56   4182649.75         0.10072  (17011509)                658138.56
 4182669.50         0.10024  (17011509)
        658138.56   4182689.25         0.09948  (17011509)                658138.56
 4182709.00         0.09837  (17011509)
        658138.56   4182728.75         0.09681  (17011509)                658138.56
 4182748.25         0.09474  (17011509)
        658138.56   4182768.00         0.09198  (17011509)                658138.56
 4182787.75         0.08841  (17011509)
        658138.56   4182807.50         0.08401  (17011509)                658138.56
 4182827.25         0.07873  (17011509)
        658138.56   4182847.00         0.07428  (17121906)                658138.56
 4182866.75         0.07403  (17121906)
        658138.56   4182886.50         0.07365  (17121906)                658138.56
 4182906.25         0.07304  (17121906)
        658138.56   4182926.00         0.07215  (17121906)                658138.56
 4182945.75         0.07220  (17122621)
        658138.56   4182965.50         0.07290  (17122621)                658138.56
 4182985.25         0.07330  (17122621)
        658138.56   4183005.00         0.07350  (17122621)                658138.56
 4183024.75         0.07474  (14022208)
        658138.56   4183044.50         0.07604  (14022208)                658138.56
 4183064.25         0.07684  (14022208)
        658138.56   4183084.00         0.07730  (14022208)                658138.56
 4183103.75         0.07754  (14022208)
        658138.56   4183123.50         0.07765  (14022208)                658138.56
 4183143.25         0.07768  (14022208)
        658138.56   4183163.00         0.07768  (14022208)                658138.56
 4183182.75         0.07766  (14022208)
 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuinta_onsite_mitigated\MantecaQuinta_on ***        03/22/24
 *** AERMET - VERSION  18081 ***   ***
                       ***        08:23:22

                                  PAGE  41
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                               *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP:  ALL      ***
                                  INCLUDING SOURCE(S):     L0000001    , L0000002
 , L0000003    , L0000004    , L0000005    ,
                 L0000006    , L0000007    , L0000008    , L0000009    , L0000010
 , L0000011    , L0000012    , L0000013    ,
                 L0000014    , L0000015    , L0000016    , L0000017    , L0000018
```

, L0000019 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
658138.56	4183202.50	0.07763	(14022208)	658138.56	4183222.25	0.07760	(14022208)
658138.56	4183242.00	0.07756	(14022208)	656770.14	4183459.54	0.20194	(17122909)
656742.76	4183470.49	0.18832	(17020404)	656777.44	4183412.09	0.20354	(17122909)
656777.44	4183371.93	0.20286	(17121402)	656739.11	4183386.53	0.18754	(17121402)
656740.94	4183430.34	0.18790	(17121402)	656750.06	4183550.80	0.19321	(17122909)
656753.71	4183523.42	0.19486	(17122909)	656750.06	4183496.05	0.19280	(17122909)
656773.79	4183501.52	0.20423	(17122909)	656706.26	4183413.91	0.17626	(17020404)
656691.66	4183392.01	0.17194	(17020404)	656686.18	4183373.76	0.17050	(17020404)
656700.78	4183355.50	0.17490	(17020404)	656717.21	4183344.55	0.18025	(17121402)
656660.63	4183362.80	0.16381	(17020404)	656761.01	4182461.34	0.20126	(17123007)
656800.16	4182461.34	0.22418	(17123007)	656839.31	4182461.34	0.24653	(14012608)
656878.46	4182461.34	0.27522	(14021105)	656917.61	4182461.34	0.31043	(13012120)
656956.76	4182461.34	0.35652	(15010901)	656995.91	4182461.34	0.43079	(17011609)
657035.06	4182461.34	0.50832	(17011609)	657074.21	4182461.34	0.50342	(17122820)
657113.36	4182461.34	0.64742	(17123009)	656761.01	4182487.10	0.19949	(14021408)
656800.16	4182487.10	0.22375	(17123007)	656839.31	4182487.10	0.24653	(14012608)
656878.46	4182487.10	0.27519	(14021105)	656917.61	4182487.10	0.31300	(13012120)
656956.76	4182487.10	0.35935	(15010901)	656995.91	4182487.10	0.43433	(17011609)
657035.06	4182487.10	0.53419	(17011609)	657074.21	4182487.10	0.53539	(17122820)

```
       657113.36   4182487.10        0.68548  (17123009)                656761.01
4182512.86        0.19968  (14021408)
       656800.16   4182512.86        0.22294  (17123007)                656839.31
4182512.86        0.24720  (17123007)
       656878.46   4182512.86        0.27598  (14012608)                656917.61
4182512.86        0.31413  (14021105)
       656956.76   4182512.86        0.36021  (15010901)                656995.91
4182512.86        0.43608  (17011609)
       657035.06   4182512.86        0.55953  (17011609)                657074.21
4182512.86        0.56976  (17122820)
       657113.36   4182512.86        0.72783  (17123009)                656761.01
4182538.62        0.19956  (14021408)
       656800.16   4182538.62        0.22172  (17123007)                656839.31
4182538.62        0.24747  (17123007)
       656878.46   4182538.62        0.27727  (14012608)                656917.61
4182538.62        0.31666  (14021105)
       656956.76   4182538.62        0.36403  (16120719)                656995.91
4182538.62        0.43644  (14012501)
       657035.06   4182538.62        0.58377  (17011609)                657074.21
4182538.62        0.60657  (17122820)
       657113.36   4182538.62        0.77523  (17123009)                656761.01
4182564.38        0.19909  (14021408)
       656800.16   4182564.38        0.22011  (13011517)                656839.31
4182564.38        0.24744  (17123007)
       656878.46   4182564.38        0.27778  (14012608)                656917.61
4182564.38        0.31778  (14021105)
       656956.76   4182564.38        0.36954  (13012120)                656995.91
4182564.38        0.44683  (15010901)
       657035.06   4182564.38        0.60627  (17011609)                657074.21
4182564.38        0.64583  (17122820)
       657113.36   4182564.38        0.82864  (17123009)                656761.01
4182590.14        0.19818  (14021408)
       656800.16   4182590.14        0.21955  (14021408)                656839.31
4182590.14        0.24712  (17123007)
       656878.46   4182590.14        0.27780  (14012608)                656917.61
4182590.14        0.31797  (14021105)
       656956.76   4182590.14        0.37292  (13012120)                656995.91
4182590.14        0.45492  (15010901)
       657035.06   4182590.14        0.62636  (17011609)                657074.21
4182590.14        0.68742  (17122820)
       657113.36   4182590.14        0.88927  (17123009)                656761.01
4182615.90        0.19816  (13020205)
 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuinta_onsite_mitigated\MantecaQuinta_on ***        03/22/24
 *** AERMET - VERSION  18081 ***   ***
                       ***        08:23:22

                                  PAGE  42
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*
```

```
                              *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP:  ALL      ***
                                 INCLUDING SOURCE(S):     L0000001    , L0000002
 , L0000003    , L0000004    , L0000005    ,
                L0000006    , L0000007    , L0000008    , L0000009    , L0000010
 , L0000011    , L0000012    , L0000013    ,
                L0000014    , L0000015    , L0000016    , L0000017    , L0000018
 , L0000019    ,

                                          *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                        ** CONC OF PM_10    IN MICROGRAMS/M**3
                    **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD (M)
Y-COORD (M)        CONC     (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - -
        656800.16   4182615.90        0.21973  (14021408)                656839.31
 4182615.90        0.24711  (13011517)
        656878.46   4182615.90        0.27746  (14012608)                656917.61
 4182615.90        0.31757  (14021105)
        656956.76   4182615.90        0.37452  (13012120)                656995.91
 4182615.90        0.45974  (15010901)
        657035.06   4182615.90        0.64343  (17011609)                657074.21
 4182615.90        0.73108  (17122820)
        657113.36   4182615.90        0.95871  (17123009)                656800.16
 4182641.66        0.21973  (14021408)
        656839.31   4182641.66        0.24687  (13011517)                656878.46
 4182641.66        0.27853  (13011517)
        656917.61   4182641.66        0.31807  (14012608)                656956.76
 4182641.66        0.37505  (13012120)
        656995.91   4182641.66        0.46194  (15010901)                657035.06
 4182641.66        0.65706  (17011609)
        657074.21   4182641.66        0.78781  (17011609)                657113.36
 4182641.66        1.03905  (17123009)
        656800.16   4182667.42        0.21928  (14021408)                656839.31
 4182667.42        0.24621  (13011517)
        656878.46   4182667.42        0.27971  (13011517)                656917.61
 4182667.42        0.31899  (14012608)
        656956.76   4182667.42        0.37592  (14021105)                656995.91
 4182667.42        0.46230  (15010901)
        657035.06   4182667.42        0.66714  (17011609)                657074.21
 4182667.42        0.86070  (17011609)
        657113.36   4182667.42        1.13311  (17123009)
```

*** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

*** THE SUMMARY OF MAXIMUM ANNUAL RESULTS AVERAGED OVER 5 YEARS ***

** CONC OF PM_10 IN MICROGRAMS/M**3 **

GROUP ID	NETWORK AVERAGE CONC			RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	OF TYPE	GRID-ID
ALL	1ST HIGHEST VALUE IS	0.01143	AT (	656777.44, 4183371.93, 12.14, 12.14, 0.00)	DC	
	2ND HIGHEST VALUE IS	0.01102	AT (	656777.44, 4183412.09, 12.19, 12.19, 0.00)	DC	
	3RD HIGHEST VALUE IS	0.01013	AT (	657230.50, 4182649.75, 10.67, 10.67, 0.00)	DC	
	4TH HIGHEST VALUE IS	0.01010	AT (	656770.14, 4183459.54, 12.19, 12.19, 0.00)	DC	
	5TH HIGHEST VALUE IS	0.01009	AT (	657210.75, 4182649.75, 10.67, 10.67, 0.00)	DC	
	6TH HIGHEST VALUE IS	0.01008	AT (	657250.25, 4182649.75, 10.67, 10.67, 0.00)	DC	
	7TH HIGHEST VALUE IS	0.00999	AT (	657113.36, 4182667.42, 10.67, 10.67, 0.00)	DC	
	8TH HIGHEST VALUE IS	0.00996	AT (	657270.00, 4182649.75, 10.67, 10.67, 0.00)	DC	
	9TH HIGHEST VALUE IS	0.00994	AT (	657191.00, 4182649.75, 10.67, 10.67, 0.00)	DC	
	10TH HIGHEST VALUE IS	0.00986	AT (	656739.11, 4183386.53, 12.00, 12.00, 0.00)	DC	

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR

 *** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

*** THE SUMMARY OF HIGHEST 1-HR RESULTS ***

** CONC OF PM_10   IN MICROGRAMS/M**3 **

GROUP ID	AVERAGE	CONC	DATE (YYMMDDHH)	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	OF TYPE	NETWORK GRID-ID
ALL	HIGH 1ST HIGH VALUE IS	1.13311	ON 17123009:	AT (657113.36, 4182667.42, 10.67, 10.67, 0.00)	DC	

 *** RECEPTOR TYPES: GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR

 *** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

 *** Message Summary : AERMOD Model Execution ***

  --------- Summary of Total Messages --------

 A Total of   0 Fatal Error Message(s)
 A Total of   11 Warning Message(s)
 A Total of   971 Informational Message(s)

 A Total of   43824 Hours Were Processed

 A Total of   442 Calm Hours Identified

 A Total of   529 Missing Hours Identified (1.21 Percent)

    ******** FATAL ERROR MESSAGES ********
               *** NONE ***

```
   ********   WARNING MESSAGES   ********
ME W186     114       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used
     0.50
ME W187     114       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET

MX W420   34276        METQA: Wind Speed Out-of-Range.   KURDAT =
 16112904
MX W420   34282        METQA: Wind Speed Out-of-Range.   KURDAT =
 16112910
MX W420   34288        METQA: Wind Speed Out-of-Range.   KURDAT =
 16112916
MX W420   34294        METQA: Wind Speed Out-of-Range.   KURDAT =
 16112922
MX W420   34300        METQA: Wind Speed Out-of-Range.   KURDAT =
 16113004
MX W420   40768        METQA: Wind Speed Out-of-Range.   KURDAT =
 17082616
MX W420   40792        METQA: Wind Speed Out-of-Range.   KURDAT =
 17082716
MX W420   40798        METQA: Wind Speed Out-of-Range.   KURDAT =
 17082722
MX W420   40804        METQA: Wind Speed Out-of-Range.   KURDAT =
 17082804

   ************************************
   *** AERMOD Finishes Successfully ***
   ************************************
```

Construction Phase A and B AERMOD Files

```
**
**************************************
**
** AERMOD Input Produced by:
** AERMOD View Ver. 10.0.0
** Lakes Environmental Software Inc.
** Date: 3/22/2024
** File: C:\Lakes\AERMOD View\MantecaQuintal\MantecaQuintal.ADI
**
**************************************
**
**
**************************************
** AERMOD Control Pathway
**************************************
**
**
CO STARTING
   TITLEONE C:\Lakes\AERMOD View\MantecaQuintal\MantecaQuintal.isc
   MODELOPT DFAULT CONC
   AVERTIME 1 ANNUAL
   POLLUTID PM_10
   RUNORNOT RUN
   ERRORFIL MantecaQuintal.err
CO FINISHED
**
**************************************
** AERMOD Source Pathway
**************************************
**
**
SO STARTING
** Source Location **
** Source ID - Type - X Coord. - Y Coord. **
   LOCATION PAREA1       AREAPOLY   657382.302  4183204.916       10.860
** Source Parameters **
   SRCPARAM PAREA1       6.3975E-09     3.000        14
   AREAVERT PAREA1       657382.302 4183204.916 657158.424 4183064.314
   AREAVERT PAREA1       657165.149 4182988.090 657281.946 4183078.658
   AREAVERT PAREA1       657280.537 4182963.429 657374.909 4182962.181
   AREAVERT PAREA1       657414.582 4182962.437 657414.453 4182841.376
   AREAVERT PAREA1       657526.091 4182845.443 657521.608 4182743.726
   AREAVERT PAREA1       657911.694 4182753.814 657906.089 4183253.752
   AREAVERT PAREA1       657586.622 4183252.631 657494.705 4183250.390
   SRCGROUP ALL
SO FINISHED
**
**************************************
** AERMOD Receptor Pathway
**************************************
```

```
**
**
RE STARTING
   INCLUDED MantecaQuintal.rou
RE FINISHED
**
**************************************
** AERMOD Meteorology Pathway
**************************************
**
**
ME STARTING
   SURFFILE ..\MantecaQuintal_offsite_Road\Stockton_2013-2017.SFC
   PROFFILE ..\MantecaQuintal_offsite_Road\Stockton_2013-2017.PFL
   SURFDATA 23237 2013
   UAIRDATA 23230 2013 OAKLAND/WSO_AP
   PROFBASE 7.9 METERS
ME FINISHED
**
**************************************
** AERMOD Output Pathway
**************************************
**
**
OU STARTING
   RECTABLE ALLAVE 1ST
   RECTABLE 1 1ST
** Auto-Generated Plotfiles
   PLOTFILE 1 ALL 1ST MantecaQuintal.AD\01H1GALL.PLT 31
   PLOTFILE ANNUAL ALL MantecaQuintal.AD\AN00GALL.PLT 32
   SUMMFILE MantecaQuintal.sum
OU FINISHED
**
**************************************
** Project Parameters
**************************************
** PROJCTN  CoordinateSystemUTM
** DESCPTN  UTM: Universal Transverse Mercator
** DATUM    World Geodetic System 1984
** DTMRGN   Global Definition
** UNITS    m
** ZONE     10
** ZONEINX  0
**
```

```
**
**************************************
**
** AERMOD Input Produced by:
** AERMOD View Ver. 10.0.0
** Lakes Environmental Software Inc.
** Date: 3/22/2024
** File: C:\Lakes\AERMOD View\MantecaQuintal\MantecaQuintal.ADI
**
**************************************
**
**
**************************************
** AERMOD Control Pathway
**************************************
**
**
CO STARTING
   TITLEONE C:\Lakes\AERMOD View\MantecaQuintal\MantecaQuintal.isc
   MODELOPT DFAULT CONC
   AVERTIME 1 ANNUAL
   POLLUTID PM_10
   RUNORNOT RUN
   ERRORFIL MantecaQuintal.err
CO FINISHED
**
**************************************
** AERMOD Source Pathway
**************************************
**
**
SO STARTING
** Source Location **
** Source ID - Type - X Coord. - Y Coord. **
   LOCATION PAREA1       AREAPOLY   657382.302  4183204.916       10.860
** Source Parameters **
   SRCPARAM PAREA1       6.3975E-09     3.000        14
   AREAVERT PAREA1       657382.302 4183204.916 657158.424 4183064.314
   AREAVERT PAREA1       657165.149 4182988.090 657281.946 4183078.658
   AREAVERT PAREA1       657280.537 4182963.429 657374.909 4182962.181
   AREAVERT PAREA1       657414.582 4182962.437 657414.453 4182841.376
   AREAVERT PAREA1       657526.091 4182845.443 657521.608 4182743.726
   AREAVERT PAREA1       657911.694 4182753.814 657906.089 4183253.752
   AREAVERT PAREA1       657586.622 4183252.631 657494.705 4183250.390
   SRCGROUP ALL
SO FINISHED
**
**************************************
** AERMOD Receptor Pathway
**************************************
```

```
**
**
RE STARTING
   INCLUDED MantecaQuintal.rou
RE FINISHED
**
**************************************
** AERMOD Meteorology Pathway
**************************************
**
**
ME STARTING
   SURFFILE ..\MantecaQuintal_offsite_Road\Stockton_2013-2017.SFC
   PROFFILE ..\MantecaQuintal_offsite_Road\Stockton_2013-2017.PFL
   SURFDATA 23237 2013
   UAIRDATA 23230 2013 OAKLAND/WSO_AP
   PROFBASE 7.9 METERS
ME FINISHED
**
**************************************
** AERMOD Output Pathway
**************************************
**
**
OU STARTING
   RECTABLE ALLAVE 1ST
   RECTABLE 1 1ST
** Auto-Generated Plotfiles
   PLOTFILE 1 ALL 1ST MantecaQuintal.AD\01H1GALL.PLT 31
   PLOTFILE ANNUAL ALL MantecaQuintal.AD\AN00GALL.PLT 32
   SUMMFILE MantecaQuintal.sum
OU FINISHED


  *** Message Summary For AERMOD Model Setup ***

  --------- Summary of Total Messages --------

 A Total of            0 Fatal Error Message(s)
 A Total of            2 Warning Message(s)
 A Total of            0 Informational Message(s)


    ******** FATAL ERROR MESSAGES ********
               ***  NONE  ***


    ********   WARNING MESSAGES   ********
 ME W186      68       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used
      0.50
```

```
 ME W187      68       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET


 ***********************************
 *** SETUP Finishes Successfully ***
 ***********************************

 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuintal\MantecaQuintal.isc               ***        03/22/24
 *** AERMET - VERSION  18081 ***   ***
                         ***       08:43:47

                                   PAGE   1
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                                          ***     MODEL SETUP OPTIONS SUMMARY
  ***
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - -

 **Model Is Setup For Calculation of Average CONCentration Values.

   --  DEPOSITION LOGIC  --
 **NO GAS DEPOSITION Data Provided.
 **NO PARTICLE DEPOSITION Data Provided.
 **Model Uses NO DRY DEPLETION.  DRYDPLT  =  F
 **Model Uses NO WET DEPLETION.  WETDPLT  =  F

 **Model Uses RURAL Dispersion Only.

 **Model Uses Regulatory DEFAULT Options:
        1. Stack-tip Downwash.
        2. Model Accounts for ELEVated Terrain Effects.
        3. Use Calms Processing Routine.
        4. Use Missing Data Processing Routine.
        5. No Exponential Decay.

 **Other Options Specified:
        ADJ_U*   - Use ADJ_U* option for SBL in AERMET
        CCVR_Sub - Meteorological data includes CCVR substitutions
        TEMP_Sub - Meteorological data includes TEMP substitutions

 **Model Assumes No FLAGPOLE Receptor Heights.

 **The User Specified a Pollutant Type of:  PM_10

 **Model Calculates  1 Short Term Average(s) of:   1-HR
     and Calculates ANNUAL Averages

 **This Run Includes:      1 Source(s);       1 Source Group(s); and     987
```

Receptor(s)

                with: 0 POINT(s), including
                           0 POINTCAP(s) and   0 POINTHOR(s)
                 and: 0 VOLUME source(s)
                 and: 1 AREA type source(s)
                 and: 0 LINE source(s)
                 and: 0 RLINE/RLINEXT source(s)
                 and: 0 OPENPIT source(s)
                 and: 0 BUOYANT LINE source(s) with a total of   0 line(s)

 **Model Set To Continue RUNning After the Setup Testing.

 **The AERMET Input Meteorological Data Version Date: 18081

 **Output Options Selected:
          Model Outputs Tables of ANNUAL Averages by Receptor
          Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE
Keyword)
          Model Outputs External File(s) of High Values for Plotting (PLOTFILE
Keyword)
          Model Outputs Separate Summary File of High Ranked Values (SUMMFILE
Keyword)

 **NOTE: The Following Flags May Appear Following CONC Values: c for Calm Hours
                                                                 m for Missing
Hours
                                                                 b for Both Calm
and Missing Hours

 **Misc. Inputs: Base Elev. for Pot. Temp. Profile (m MSL) =   7.90 ; Decay
Coef. =   0.000   ; Rot. Angle =   0.0
                  Emission Units = GRAMS/SEC   ;
Emission Rate Unit Factor =   0.10000E+07
                  Output Units   = MICROGRAMS/M**3

 **Approximate Storage Requirements of Model =   3.6 MB of RAM.

 **Input Runstream File: aermod.inp

 **Output Print File: aermod.out

 **Detailed Error/Message File: MantecaQuintal.err

 **File for Summary of Results: MantecaQuintal.sum

*** AREAPOLY SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC /METER**2)	LOCATION OF AREA X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	NUMBER OF VERTS.	INIT. SZ SOURCE SCALAR VARY BY	URBAN SOURCE
PAREA1	0	0.63975E-08	657382.3	4183204.9	10.9	3.00	14	0.00	NO

*** SOURCE IDs DEFINING SOURCE GROUPS ***

SRCGROUP ID	SOURCE IDs
ALL	PAREA1 ,

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(657151.5, 4182491.8,   10.7,   10.7,   0.0);   (657151.5,

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4182511.5,      10.7,      10.7,       0.0);
     ( 657151.5, 4182531.2,      10.7,      10.7,       0.0);         ( 657151.5,
4182551.0,      10.7,      10.7,       0.0);
     ( 657151.5, 4182570.8,      10.7,      10.7,       0.0);         ( 657151.5,
4182590.5,      10.7,      10.7,       0.0);
     ( 657151.5, 4182610.2,      10.7,      10.7,       0.0);         ( 657151.5,
4182630.0,      10.7,      10.7,       0.0);
     ( 657151.5, 4182649.8,      10.7,      10.7,       0.0);         ( 657171.2,
4182472.0,      10.7,      10.7,       0.0);
     ( 657171.2, 4182491.8,      10.7,      10.7,       0.0);         ( 657171.2,
4182511.5,      10.7,      10.7,       0.0);
     ( 657171.2, 4182531.2,      10.7,      10.7,       0.0);         ( 657171.2,
4182551.0,      10.7,      10.7,       0.0);
     ( 657171.2, 4182570.8,      10.7,      10.7,       0.0);         ( 657171.2,
4182590.5,      10.7,      10.7,       0.0);
     ( 657171.2, 4182610.2,      10.7,      10.7,       0.0);         ( 657171.2,
4182630.0,      10.7,      10.7,       0.0);
     ( 657171.2, 4182649.8,      10.7,      10.7,       0.0);         ( 657191.0,
4182472.0,      10.7,      10.7,       0.0);
     ( 657191.0, 4182491.8,      10.7,      10.7,       0.0);         ( 657191.0,
4182511.5,      10.7,      10.7,       0.0);
     ( 657191.0, 4182531.2,      10.7,      10.7,       0.0);         ( 657191.0,
4182551.0,      10.7,      10.7,       0.0);
     ( 657191.0, 4182570.8,      10.7,      10.7,       0.0);         ( 657191.0,
4182590.5,      10.7,      10.7,       0.0);
     ( 657191.0, 4182610.2,      10.7,      10.7,       0.0);         ( 657191.0,
4182630.0,      10.7,      10.7,       0.0);
     ( 657191.0, 4182649.8,      10.7,      10.7,       0.0);         ( 657210.8,
4182472.0,      10.7,      10.7,       0.0);
     ( 657210.8, 4182491.8,      10.7,      10.7,       0.0);         ( 657210.8,
4182511.5,      10.7,      10.7,       0.0);
     ( 657210.8, 4182531.2,      10.7,      10.7,       0.0);         ( 657210.8,
4182551.0,      10.7,      10.7,       0.0);
     ( 657210.8, 4182570.8,      10.7,      10.7,       0.0);         ( 657210.8,
4182590.5,      10.7,      10.7,       0.0);
     ( 657210.8, 4182610.2,      10.7,      10.7,       0.0);         ( 657210.8,
4182630.0,      10.7,      10.7,       0.0);
     ( 657210.8, 4182649.8,      10.7,      10.7,       0.0);         ( 657230.5,
4182472.0,      10.7,      10.7,       0.0);
     ( 657230.5, 4182491.8,      10.7,      10.7,       0.0);         ( 657230.5,
4182511.5,      10.7,      10.7,       0.0);
     ( 657230.5, 4182531.2,      10.7,      10.7,       0.0);         ( 657230.5,
4182551.0,      10.7,      10.7,       0.0);
     ( 657230.5, 4182570.8,      10.7,      10.7,       0.0);         ( 657230.5,
4182590.5,      10.7,      10.7,       0.0);
     ( 657230.5, 4182610.2,      10.7,      10.7,       0.0);         ( 657230.5,
4182630.0,      10.7,      10.7,       0.0);
     ( 657230.5, 4182649.8,      10.7,      10.7,       0.0);         ( 657250.2,
4182472.0,      10.7,      10.7,       0.0);
     ( 657250.2, 4182491.8,      10.7,      10.7,       0.0);         ( 657250.2,
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4182511.5,   10.7,   10.7,   0.0);
     (657250.2, 4182531.2,   10.7,   10.7,   0.0);   (657250.2,
4182551.0,   10.7,   10.7,   0.0);
     (657250.2, 4182570.8,   10.7,   10.7,   0.0);   (657250.2,
4182590.5,   10.7,   10.7,   0.0);
     (657250.2, 4182610.2,   10.7,   10.7,   0.0);   (657250.2,
4182630.0,   10.7,   10.7,   0.0);
     (657250.2, 4182649.8,   10.7,   10.7,   0.0);   (657270.0,
4182472.0,   10.7,   10.7,   0.0);
     (657270.0, 4182491.8,   10.7,   10.7,   0.0);   (657270.0,
4182511.5,   10.7,   10.7,   0.0);
     (657270.0, 4182531.2,   10.7,   10.7,   0.0);   (657270.0,
4182551.0,   10.7,   10.7,   0.0);
     (657270.0, 4182570.8,   10.7,   10.7,   0.0);   (657270.0,
4182590.5,   10.7,   10.7,   0.0);
     (657270.0, 4182610.2,   10.7,   10.7,   0.0);   (657270.0,
4182630.0,   10.7,   10.7,   0.0);
     (657270.0, 4182649.8,   10.7,   10.7,   0.0);   (657289.7,
4182472.0,   10.7,   10.7,   0.0);
     (657289.7, 4182491.8,   10.7,   10.7,   0.0);   (657289.7,
4182511.5,   10.7,   10.7,   0.0);
     (657289.7, 4182531.2,   10.7,   10.7,   0.0);   (657289.7,
4182551.0,   10.7,   10.7,   0.0);
     (657289.7, 4182570.8,   10.7,   10.7,   0.0);   (657289.7,
4182590.5,   10.7,   10.7,   0.0);
     (657289.7, 4182610.2,   10.7,   10.7,   0.0);   (657289.7,
4182630.0,   10.7,   10.7,   0.0);
     (657289.7, 4182649.8,   10.7,   10.7,   0.0);   (657309.4,
4182472.0,   10.7,   10.7,   0.0);
     (657309.4, 4182491.8,   10.7,   10.7,   0.0);   (657309.4,
4182511.5,   10.7,   10.7,   0.0);
     (657309.4, 4182531.2,   10.7,   10.7,   0.0);   (657309.4,
4182551.0,   10.7,   10.7,   0.0);
     (657309.4, 4182570.8,   10.7,   10.7,   0.0);   (657309.4,
4182590.5,   10.7,   10.7,   0.0);
     (657309.4, 4182610.2,   10.7,   10.7,   0.0);   (657309.4,
4182630.0,   10.7,   10.7,   0.0);
     (657309.4, 4182649.8,   10.7,   10.7,   0.0);   (657329.2,
4182472.0,   10.7,   10.7,   0.0);

 *** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

                                    *** DISCRETE CARTESIAN RECEPTORS ***
                                  (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
                                               (METERS)

```
     ( 657329.2, 4182491.8,      10.7,      10.7,       0.0);         ( 657329.2,
4182511.5,      10.7,      10.7,       0.0);
     ( 657329.2, 4182531.2,      10.7,      10.7,       0.0);         ( 657329.2,
4182551.0,      10.7,      10.7,       0.0);
     ( 657329.2, 4182570.8,      10.7,      10.7,       0.0);         ( 657329.2,
4182590.5,      10.7,      10.7,       0.0);
     ( 657329.2, 4182610.2,      10.7,      10.7,       0.0);         ( 657329.2,
4182630.0,      10.7,      10.7,       0.0);
     ( 657329.2, 4182649.8,      10.7,      10.7,       0.0);         ( 657348.9,
4182472.0,      10.7,      10.7,       0.0);
     ( 657348.9, 4182491.8,      10.7,      10.7,       0.0);         ( 657348.9,
4182511.5,      10.7,      10.7,       0.0);
     ( 657348.9, 4182531.2,      10.7,      10.7,       0.0);         ( 657348.9,
4182551.0,      10.7,      10.7,       0.0);
     ( 657348.9, 4182570.8,      10.7,      10.7,       0.0);         ( 657348.9,
4182590.5,      10.7,      10.7,       0.0);
     ( 657348.9, 4182610.2,      10.7,      10.7,       0.0);         ( 657348.9,
4182630.0,      10.7,      10.7,       0.0);
     ( 657348.9, 4182649.8,      10.7,      10.7,       0.0);         ( 657368.7,
4182472.0,      10.7,      10.7,       0.0);
     ( 657368.7, 4182491.8,      10.7,      10.7,       0.0);         ( 657368.7,
4182511.5,      10.7,      10.7,       0.0);
     ( 657368.7, 4182531.2,      10.7,      10.7,       0.0);         ( 657368.7,
4182551.0,      10.7,      10.7,       0.0);
     ( 657368.7, 4182570.8,      10.7,      10.7,       0.0);         ( 657368.7,
4182590.5,      10.7,      10.7,       0.0);
     ( 657368.7, 4182610.2,      10.7,      10.7,       0.0);         ( 657368.7,
4182630.0,      10.7,      10.7,       0.0);
     ( 657368.7, 4182649.8,      10.7,      10.7,       0.0);         ( 657388.4,
4182472.0,      10.7,      10.7,       0.0);
     ( 657388.4, 4182491.8,      10.7,      10.7,       0.0);         ( 657388.4,
4182511.5,      10.7,      10.7,       0.0);
     ( 657388.4, 4182531.2,      10.7,      10.7,       0.0);         ( 657388.4,
4182551.0,      10.7,      10.7,       0.0);
     ( 657388.4, 4182570.8,      10.7,      10.7,       0.0);         ( 657388.4,
4182590.5,      10.7,      10.7,       0.0);
     ( 657388.4, 4182610.2,      10.7,      10.7,       0.0);         ( 657388.4,
4182630.0,      10.7,      10.7,       0.0);
     ( 657388.4, 4182649.8,      10.7,      10.7,       0.0);         ( 657408.1,
4182472.0,      10.9,      10.9,       0.0);
     ( 657408.1, 4182491.8,      10.9,      10.9,       0.0);         ( 657408.1,
4182511.5,      10.8,      10.8,       0.0);
     ( 657408.1, 4182531.2,      10.7,      10.7,       0.0);         ( 657408.1,
4182551.0,      10.7,      10.7,       0.0);
     ( 657408.1, 4182570.8,      10.7,      10.7,       0.0);         ( 657408.1,
4182590.5,      10.7,      10.7,       0.0);
     ( 657408.1, 4182610.2,      10.7,      10.7,       0.0);         ( 657408.1,
4182630.0,      10.7,      10.7,       0.0);
     ( 657408.1, 4182649.8,      10.7,      10.7,       0.0);         ( 657427.9,
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```
4182472.0,      11.0,      11.0,       0.0);
     ( 657427.9, 4182491.8,      11.0,      11.0,       0.0);         ( 657427.9,
4182511.5,      10.9,      10.9,       0.0);
     ( 657427.9, 4182531.2,      10.8,      10.8,       0.0);         ( 657427.9,
4182551.0,      10.8,      10.8,       0.0);
     ( 657427.9, 4182570.8,      10.8,      10.8,       0.0);         ( 657427.9,
4182590.5,      10.8,      10.8,       0.0);
     ( 657427.9, 4182610.2,      10.8,      10.8,       0.0);         ( 657427.9,
4182630.0,      10.7,      10.7,       0.0);
     ( 657427.9, 4182649.8,      10.7,      10.7,       0.0);         ( 657447.6,
4182472.0,      11.0,      11.0,       0.0);
     ( 657447.6, 4182491.8,      11.0,      11.0,       0.0);         ( 657447.6,
4182511.5,      11.0,      11.0,       0.0);
     ( 657447.6, 4182531.2,      11.0,      11.0,       0.0);         ( 657447.6,
4182551.0,      11.0,      11.0,       0.0);
     ( 657447.6, 4182570.8,      11.0,      11.0,       0.0);         ( 657447.6,
4182590.5,      11.0,      11.0,       0.0);
     ( 657447.6, 4182610.2,      11.0,      11.0,       0.0);         ( 657447.6,
4182630.0,      10.8,      10.8,       0.0);
     ( 657447.6, 4182649.8,      10.7,      10.7,       0.0);         ( 657467.4,
4182472.0,      11.0,      11.0,       0.0);
     ( 657467.4, 4182491.8,      11.0,      11.0,       0.0);         ( 657467.4,
4182511.5,      11.0,      11.0,       0.0);
     ( 657467.4, 4182531.2,      11.0,      11.0,       0.0);         ( 657467.4,
4182551.0,      11.0,      11.0,       0.0);
     ( 657467.4, 4182570.8,      11.0,      11.0,       0.0);         ( 657467.4,
4182590.5,      11.0,      11.0,       0.0);
     ( 657467.4, 4182610.2,      11.0,      11.0,       0.0);         ( 657467.4,
4182630.0,      10.9,      10.9,       0.0);
     ( 657467.4, 4182649.8,      10.9,      10.9,       0.0);         ( 657487.1,
4182472.0,      11.1,      11.1,       0.0);
     ( 657487.1, 4182491.8,      11.1,      11.1,       0.0);         ( 657487.1,
4182511.5,      11.1,      11.1,       0.0);
     ( 657487.1, 4182531.2,      11.1,      11.1,       0.0);         ( 657487.1,
4182551.0,      11.1,      11.1,       0.0);
     ( 657487.1, 4182570.8,      11.1,      11.1,       0.0);         ( 657487.1,
4182590.5,      11.1,      11.1,       0.0);
     ( 657487.1, 4182610.2,      11.1,      11.1,       0.0);         ( 657487.1,
4182630.0,      11.1,      11.1,       0.0);
     ( 657487.1, 4182649.8,      11.1,      11.1,       0.0);         ( 657506.9,
4182472.0,      11.3,      11.3,       0.0);
 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuintal\MantecaQuintal.isc               ***        03/22/24
 *** AERMET - VERSION  18081 ***   ***
                        ***        08:43:47

                                   PAGE   6
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                                              *** DISCRETE CARTESIAN RECEPTORS ***
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(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(657506.9, 4182491.8, 11.3, 11.3, 0.0); (657506.9, 4182511.5, 11.3, 11.3, 0.0);
(657506.9, 4182531.2, 11.3, 11.3, 0.0); (657506.9, 4182551.0, 11.3, 11.3, 0.0);
(657506.9, 4182570.8, 11.3, 11.3, 0.0); (657506.9, 4182590.5, 11.3, 11.3, 0.0);
(657506.9, 4182610.2, 11.3, 11.3, 0.0); (657506.9, 4182630.0, 11.3, 11.3, 0.0);
(657506.9, 4182649.8, 11.2, 11.2, 0.0); (657526.6, 4182472.0, 11.5, 11.5, 0.0);
(657526.6, 4182491.8, 11.5, 11.5, 0.0); (657526.6, 4182511.5, 11.5, 11.5, 0.0);
(657526.6, 4182531.2, 11.5, 11.5, 0.0); (657526.6, 4182551.0, 11.5, 11.5, 0.0);
(657526.6, 4182570.8, 11.5, 11.5, 0.0); (657526.6, 4182590.5, 11.5, 11.5, 0.0);
(657526.6, 4182610.2, 11.5, 11.5, 0.0); (657526.6, 4182630.0, 11.4, 11.4, 0.0);
(657526.6, 4182649.8, 11.3, 11.3, 0.0); (657546.3, 4182472.0, 11.6, 11.6, 0.0);
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(657546.3, 4182531.2, 11.6, 11.6, 0.0); (657546.3, 4182551.0, 11.6, 11.6, 0.0);
(657546.3, 4182570.8, 11.6, 11.6, 0.0); (657546.3, 4182590.5, 11.6, 11.6, 0.0);
(657546.3, 4182610.2, 11.6, 11.6, 0.0); (657546.3, 4182630.0, 11.5, 11.5, 0.0);
(657546.3, 4182649.8, 11.4, 11.4, 0.0); (657546.3, 4182669.5, 11.4, 11.4, 0.0);
(657546.3, 4182689.2, 11.4, 11.4, 0.0); (657546.3, 4182709.0, 11.3, 11.3, 0.0);
(657546.3, 4182728.8, 11.1, 11.1, 0.0); (657566.1, 4182472.0, 11.6, 11.6, 0.0);
(657566.1, 4182491.8, 11.6, 11.6, 0.0); (657566.1, 4182511.5, 11.6, 11.6, 0.0);
(657566.1, 4182531.2, 11.6, 11.6, 0.0); (657566.1, 4182551.0, 11.6, 11.6, 0.0);
(657566.1, 4182570.8, 11.6, 11.6, 0.0); (657566.1, 4182590.5, 11.6, 11.6, 0.0);
(657566.1, 4182610.2, 11.6, 11.6, 0.0); (657566.1, 4182630.0, 11.6, 11.6, 0.0);
(657566.1, 4182649.8, 11.6, 11.6, 0.0); (657566.1, 4182669.5, 11.6, 11.6, 0.0);
(657566.1, 4182689.2, 11.5, 11.5, 0.0); (657566.1, 4182709.0, 11.3, 11.3, 0.0);
(657566.1, 4182728.8, 11.3, 11.3, 0.0); (657585.8,

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4182472.0,      11.8,      11.8,       0.0);
     ( 657585.8, 4182491.8,      11.8,      11.8,       0.0);         ( 657585.8,
4182511.5,      11.8,      11.8,       0.0);
     ( 657585.8, 4182531.2,      11.8,      11.8,       0.0);         ( 657585.8,
4182551.0,      11.8,      11.8,       0.0);
     ( 657585.8, 4182570.8,      11.8,      11.8,       0.0);         ( 657585.8,
4182590.5,      11.8,      11.8,       0.0);
     ( 657585.8, 4182610.2,      11.8,      11.8,       0.0);         ( 657585.8,
4182630.0,      11.8,      11.8,       0.0);
     ( 657585.8, 4182649.8,      11.8,      11.8,       0.0);         ( 657585.8,
4182669.5,      11.6,      11.6,       0.0);
     ( 657585.8, 4182689.2,      11.6,      11.6,       0.0);         ( 657585.8,
4182709.0,      11.5,      11.5,       0.0);
     ( 657585.8, 4182728.8,      11.3,      11.3,       0.0);         ( 657605.6,
4182472.0,      11.9,      11.9,       0.0);
     ( 657605.6, 4182491.8,      11.9,      11.9,       0.0);         ( 657605.6,
4182511.5,      11.9,      11.9,       0.0);
     ( 657605.6, 4182531.2,      11.9,      11.9,       0.0);         ( 657605.6,
4182551.0,      12.0,      12.0,       0.0);
     ( 657605.6, 4182570.8,      12.0,      12.0,       0.0);         ( 657605.6,
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     ( 657605.6, 4182610.2,      11.9,      11.9,       0.0);         ( 657605.6,
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     ( 657605.6, 4182649.8,      11.9,      11.9,       0.0);         ( 657605.6,
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     ( 657605.6, 4182689.2,      11.7,      11.7,       0.0);         ( 657605.6,
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     ( 657605.6, 4182728.8,      11.4,      11.4,       0.0);         ( 657625.3,
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     ( 657625.3, 4182531.2,      12.0,      12.0,       0.0);         ( 657625.3,
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     ( 657625.3, 4182570.8,      12.2,      12.2,       0.0);         ( 657625.3,
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     ( 657625.3, 4182610.2,      12.0,      12.0,       0.0);         ( 657625.3,
4182630.0,      11.9,      11.9,       0.0);
     ( 657625.3, 4182649.8,      11.9,      11.9,       0.0);         ( 657625.3,
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     ( 657625.3, 4182689.2,      11.8,      11.8,       0.0);         ( 657625.3,
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     ( 657625.3, 4182728.8,      11.6,      11.6,       0.0);         ( 657645.1,
4182472.0,      11.9,      11.9,       0.0);
 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuintal\MantecaQuintal.isc               ***        03/22/24
 *** AERMET - VERSION  18081 ***   ***
                        ***        08:43:47

                                   PAGE   7
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*
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*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

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(657664.8, 4182728.8, 11.7, 11.7, 0.0); (657684.5, 4182472.0, 12.0, 12.0, 0.0);
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 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuintal\MantecaQuintal.isc               ***        03/22/24
 *** AERMET - VERSION  18081 ***   ***
                        ***       08:43:47
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*** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

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(657763.5, 4182728.8, 12.2, 12.2, 0.0); (657783.2, 4182472.0, 12.2, 12.2, 0.0);
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4182709.0,      12.7,      12.7,       0.0);
 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuintal\MantecaQuintal.isc               ***        03/22/24
 *** AERMET - VERSION  18081 ***   ***
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*** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

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     ( 657960.9, 4182491.8,      12.8,      12.8,       0.0);         ( 657960.9,
4182511.5,      12.8,      12.8,       0.0);
     ( 657960.9, 4182531.2,      12.9,      12.9,       0.0);         ( 657960.9,
4182551.0,      13.1,      13.1,       0.0);
     ( 657960.9, 4182570.8,      13.3,      13.3,       0.0);         ( 657960.9,
4182590.5,      13.4,      13.4,       0.0);
     ( 657960.9, 4182610.2,      13.5,      13.5,       0.0);         ( 657960.9,
4182630.0,      13.5,      13.5,       0.0);
     ( 657960.9, 4182649.8,      13.5,      13.5,       0.0);         ( 657960.9,
4182669.5,      13.4,      13.4,       0.0);
     ( 657960.9, 4182689.2,      13.3,      13.3,       0.0);         ( 657960.9,
4182709.0,      13.1,      13.1,       0.0);
     ( 657960.9, 4182728.8,      12.9,      12.9,       0.0);         ( 657960.9,
4182748.2,      12.7,      12.7,       0.0);
     ( 657960.9, 4182768.0,      12.5,      12.5,       0.0);         ( 657960.9,
4182787.8,      12.3,      12.3,       0.0);
     ( 657960.9, 4182807.5,      12.2,      12.2,       0.0);         ( 657960.9,
4182827.2,      12.2,      12.2,       0.0);
     ( 657960.9, 4182847.0,      12.2,      12.2,       0.0);         ( 657960.9,
4182866.8,      12.2,      12.2,       0.0);
     ( 657960.9, 4182886.5,      12.2,      12.2,       0.0);         ( 657960.9,
4182906.2,      12.2,      12.2,       0.0);
     ( 657960.9, 4182926.0,      12.2,      12.2,       0.0);         ( 657960.9,
4182945.8,      12.2,      12.2,       0.0);
     ( 657960.9, 4182965.5,      12.2,      12.2,       0.0);         ( 657960.9,
4182985.2,      12.2,      12.2,       0.0);
     ( 657960.9, 4183005.0,      12.2,      12.2,       0.0);         ( 657960.9,
4183024.8,      12.2,      12.2,       0.0);
↟ *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
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*** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(657960.9, 4183044.5, 12.2, 12.2, 0.0); (657960.9, 4183064.2, 12.2, 12.2, 0.0);
(657960.9, 4183084.0, 12.2, 12.2, 0.0); (657960.9, 4183103.8, 12.2, 12.2, 0.0);
(657980.6, 4182472.0, 12.8, 12.8, 0.0); (657980.6, 4182491.8, 12.8, 12.8, 0.0);
(657980.6, 4182511.5, 13.0, 13.0, 0.0); (657980.6, 4182531.2, 13.1, 13.1, 0.0);
(657980.6, 4182551.0, 13.1, 13.1, 0.0); (657980.6, 4182570.8, 13.3, 13.3, 0.0);
(657980.6, 4182590.5, 13.5, 13.5, 0.0); (657980.6, 4182610.2, 13.6, 13.6, 0.0);
(657980.6, 4182630.0, 13.7, 13.7, 0.0); (657980.6, 4182649.8, 13.7, 13.7, 0.0);
(657980.6, 4182669.5, 13.5, 13.5, 0.0); (657980.6, 4182689.2, 13.3, 13.3, 0.0);
(657980.6, 4182709.0, 13.1, 13.1, 0.0); (657980.6, 4182728.8, 12.9, 12.9, 0.0);
(657980.6, 4182748.2, 12.7, 12.7, 0.0); (657980.6, 4182768.0, 12.5, 12.5, 0.0);
(657980.6, 4182787.8, 12.3, 12.3, 0.0); (657980.6, 4182807.5, 12.2, 12.2, 0.0);
(657980.6, 4182827.2, 12.2, 12.2, 0.0); (657980.6, 4182847.0, 12.2, 12.2, 0.0);
(657980.6, 4182866.8, 12.2, 12.2, 0.0); (657980.6, 4182886.5, 12.2, 12.2, 0.0);
(657980.6, 4182906.2, 12.2, 12.2, 0.0); (657980.6, 4182926.0, 12.2, 12.2, 0.0);
(657980.6, 4182945.8, 12.2, 12.2, 0.0); (657980.6, 4182965.5, 12.2, 12.2, 0.0);
(657980.6, 4182985.2, 12.2, 12.2, 0.0); (657980.6, 4183005.0, 12.2, 12.2, 0.0);
(657980.6, 4183024.8, 12.2, 12.2, 0.0); (657980.6, 4183044.5, 12.2, 12.2, 0.0);
(657980.6, 4183064.2, 12.2, 12.2, 0.0); (657980.6, 4183084.0, 12.2, 12.2, 0.0);
(657980.6, 4183103.8, 12.2, 12.2, 0.0); (657980.6, 4183123.5, 12.2, 12.2, 0.0);
(658000.4, 4182472.0, 12.8, 12.8, 0.0); (658000.4,

```
4182491.8,      12.8,      12.8,       0.0);
     ( 658000.4, 4182511.5,      13.0,      13.0,       0.0);         ( 658000.4,
4182531.2,      13.1,      13.1,       0.0);
     ( 658000.4, 4182551.0,      13.2,      13.2,       0.0);         ( 658000.4,
4182570.8,      13.4,      13.4,       0.0);
     ( 658000.4, 4182590.5,      13.5,      13.5,       0.0);         ( 658000.4,
4182610.2,      13.7,      13.7,       0.0);
     ( 658000.4, 4182630.0,      13.7,      13.7,       0.0);         ( 658000.4,
4182649.8,      13.7,      13.7,       0.0);
     ( 658000.4, 4182669.5,      13.6,      13.6,       0.0);         ( 658000.4,
4182689.2,      13.4,      13.4,       0.0);
     ( 658000.4, 4182709.0,      13.2,      13.2,       0.0);         ( 658000.4,
4182728.8,      13.0,      13.0,       0.0);
     ( 658000.4, 4182748.2,      12.8,      12.8,       0.0);         ( 658000.4,
4182768.0,      12.6,      12.6,       0.0);
     ( 658000.4, 4182787.8,      12.3,      12.3,       0.0);         ( 658000.4,
4182807.5,      12.2,      12.2,       0.0);
     ( 658000.4, 4182827.2,      12.2,      12.2,       0.0);         ( 658000.4,
4182847.0,      12.2,      12.2,       0.0);
     ( 658000.4, 4182866.8,      12.2,      12.2,       0.0);         ( 658000.4,
4182886.5,      12.2,      12.2,       0.0);
     ( 658000.4, 4182906.2,      12.2,      12.2,       0.0);         ( 658000.4,
4182926.0,      12.2,      12.2,       0.0);
     ( 658000.4, 4182945.8,      12.2,      12.2,       0.0);         ( 658000.4,
4182965.5,      12.2,      12.2,       0.0);
     ( 658000.4, 4182985.2,      12.2,      12.2,       0.0);         ( 658000.4,
4183005.0,      12.2,      12.2,       0.0);
     ( 658000.4, 4183024.8,      12.2,      12.2,       0.0);         ( 658000.4,
4183044.5,      12.2,      12.2,       0.0);
     ( 658000.4, 4183064.2,      12.2,      12.2,       0.0);         ( 658000.4,
4183103.8,      12.2,      12.2,       0.0);
     ( 658000.4, 4183123.5,      12.2,      12.2,       0.0);         ( 658020.1,
4182472.0,      12.8,      12.8,       0.0);
     ( 658020.1, 4182491.8,      12.9,      12.9,       0.0);         ( 658020.1,
4182511.5,      13.0,      13.0,       0.0);
     ( 658020.1, 4182531.2,      13.2,      13.2,       0.0);         ( 658020.1,
4182551.0,      13.4,      13.4,       0.0);
     ( 658020.1, 4182570.8,      13.4,      13.4,       0.0);         ( 658020.1,
4182590.5,      13.5,      13.5,       0.0);
     ( 658020.1, 4182610.2,      13.7,      13.7,       0.0);         ( 658020.1,
4182630.0,      13.7,      13.7,       0.0);
     ( 658020.1, 4182649.8,      13.7,      13.7,       0.0);         ( 658020.1,
4182669.5,      13.7,      13.7,       0.0);
     ( 658020.1, 4182689.2,      13.6,      13.6,       0.0);         ( 658020.1,
4182709.0,      13.4,      13.4,       0.0);
     ( 658020.1, 4182728.8,      13.2,      13.2,       0.0);         ( 658020.1,
4182748.2,      13.0,      13.0,       0.0);
     ( 658020.1, 4182768.0,      12.8,      12.8,       0.0);         ( 658020.1,
4182787.8,      12.4,      12.4,       0.0);
     ( 658020.1, 4182807.5,      12.3,      12.3,       0.0);         ( 658020.1,
```

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

     (658020.1, 4182847.0,   12.2,   12.2,   0.0);   (658020.1,
4182866.8,   12.2,   12.2,   0.0);
     (658020.1, 4182886.5,   12.2,   12.2,   0.0);   (658020.1,
4182906.2,   12.2,   12.2,   0.0);
     (658020.1, 4182926.0,   12.2,   12.2,   0.0);   (658020.1,
4182945.8,   12.2,   12.2,   0.0);
     (658020.1, 4182965.5,   12.2,   12.2,   0.0);   (658020.1,
4182985.2,   12.2,   12.2,   0.0);
     (658020.1, 4183005.0,   12.2,   12.2,   0.0);   (658020.1,
4183024.8,   12.2,   12.2,   0.0);
     (658020.1, 4183044.5,   12.2,   12.2,   0.0);   (658020.1,
4183064.2,   12.2,   12.2,   0.0);
     (658020.1, 4183084.0,   12.2,   12.2,   0.0);   (658020.1,
4183103.8,   12.2,   12.2,   0.0);
     (658020.1, 4183123.5,   12.2,   12.2,   0.0);   (658020.1,
4183143.2,   12.2,   12.2,   0.0);
     (658039.9, 4182472.0,   12.9,   12.9,   0.0);   (658039.9,
4182491.8,   13.0,   13.0,   0.0);
     (658039.9, 4182511.5,   13.1,   13.1,   0.0);   (658039.9,
4182531.2,   13.2,   13.2,   0.0);
     (658039.9, 4182551.0,   13.4,   13.4,   0.0);   (658039.9,
4182570.8,   13.4,   13.4,   0.0);
     (658039.9, 4182590.5,   13.5,   13.5,   0.0);   (658039.9,
4182610.2,   13.7,   13.7,   0.0);
     (658039.9, 4182630.0,   13.7,   13.7,   0.0);   (658039.9,
4182649.8,   13.7,   13.7,   0.0);
     (658039.9, 4182669.5,   13.7,   13.7,   0.0);   (658039.9,
4182689.2,   13.6,   13.6,   0.0);
     (658039.9, 4182709.0,   13.4,   13.4,   0.0);   (658039.9,
4182728.8,   13.2,   13.2,   0.0);
     (658039.9, 4182748.2,   13.0,   13.0,   0.0);   (658039.9,
4182768.0,   12.8,   12.8,   0.0);
     (658039.9, 4182787.8,   12.6,   12.6,   0.0);   (658039.9,
4182807.5,   12.5,   12.5,   0.0);
     (658039.9, 4182827.2,   12.4,   12.4,   0.0);   (658039.9,
4182847.0,   12.3,   12.3,   0.0);
     (658039.9, 4182866.8,   12.2,   12.2,   0.0);   (658039.9,

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4182886.5,      12.2,      12.2,       0.0);
     ( 658039.9, 4182906.2,      12.2,      12.2,       0.0);         ( 658039.9,
4182926.0,      12.2,      12.2,       0.0);
     ( 658039.9, 4182945.8,      12.2,      12.2,       0.0);         ( 658039.9,
4182965.5,      12.2,      12.2,       0.0);
     ( 658039.9, 4182985.2,      12.2,      12.2,       0.0);         ( 658039.9,
4183005.0,      12.2,      12.2,       0.0);
     ( 658039.9, 4183024.8,      12.2,      12.2,       0.0);         ( 658039.9,
4183044.5,      12.2,      12.2,       0.0);
     ( 658039.9, 4183064.2,      12.2,      12.2,       0.0);         ( 658039.9,
4183084.0,      12.2,      12.2,       0.0);
     ( 658039.9, 4183123.5,      12.2,      12.2,       0.0);         ( 658039.9,
4183143.2,      12.2,      12.2,       0.0);
     ( 658039.9, 4183163.0,      12.2,      12.2,       0.0);         ( 658039.9,
4183182.8,      12.2,      12.2,       0.0);
     ( 658039.9, 4183202.5,      12.2,      12.2,       0.0);         ( 658039.9,
4183222.2,      12.2,      12.2,       0.0);
     ( 658039.9, 4183242.0,      12.2,      12.2,       0.0);         ( 658059.6,
4182472.0,      12.9,      12.9,       0.0);
     ( 658059.6, 4182491.8,      13.1,      13.1,       0.0);         ( 658059.6,
4182511.5,      13.1,      13.1,       0.0);
     ( 658059.6, 4182531.2,      13.2,      13.2,       0.0);         ( 658059.6,
4182551.0,      13.4,      13.4,       0.0);
     ( 658059.6, 4182570.8,      13.4,      13.4,       0.0);         ( 658059.6,
4182590.5,      13.5,      13.5,       0.0);
     ( 658059.6, 4182610.2,      13.7,      13.7,       0.0);         ( 658059.6,
4182630.0,      13.7,      13.7,       0.0);
     ( 658059.6, 4182649.8,      13.7,      13.7,       0.0);         ( 658059.6,
4182669.5,      13.7,      13.7,       0.0);
     ( 658059.6, 4182689.2,      13.6,      13.6,       0.0);         ( 658059.6,
4182709.0,      13.4,      13.4,       0.0);
     ( 658059.6, 4182728.8,      13.2,      13.2,       0.0);         ( 658059.6,
4182748.2,      13.0,      13.0,       0.0);
     ( 658059.6, 4182768.0,      12.8,      12.8,       0.0);         ( 658059.6,
4182787.8,      12.7,      12.7,       0.0);
     ( 658059.6, 4182807.5,      12.6,      12.6,       0.0);         ( 658059.6,
4182827.2,      12.5,      12.5,       0.0);
     ( 658059.6, 4182847.0,      12.4,      12.4,       0.0);         ( 658059.6,
4182866.8,      12.4,      12.4,       0.0);
     ( 658059.6, 4182886.5,      12.4,      12.4,       0.0);         ( 658059.6,
4182906.2,      12.2,      12.2,       0.0);
     ( 658059.6, 4182926.0,      12.2,      12.2,       0.0);         ( 658059.6,
4182945.8,      12.2,      12.2,       0.0);
     ( 658059.6, 4182965.5,      12.2,      12.2,       0.0);         ( 658059.6,
4182985.2,      12.2,      12.2,       0.0);
     ( 658059.6, 4183005.0,      12.2,      12.2,       0.0);         ( 658059.6,
4183024.8,      12.2,      12.2,       0.0);
     ( 658059.6, 4183044.5,      12.2,      12.2,       0.0);         ( 658059.6,
4183064.2,      12.2,      12.2,       0.0);
     ( 658059.6, 4183084.0,      12.2,      12.2,       0.0);         ( 658059.6,
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4183123.5,   12.2,   12.2,   0.0);
     (658059.6, 4183143.2,   12.2,   12.2,   0.0);   (658059.6,
4183163.0,   12.2,   12.2,   0.0);

 *** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

                                        *** DISCRETE CARTESIAN RECEPTORS ***
                                      (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
                                                (METERS)

     (658059.6, 4183182.8,   12.2,   12.2,   0.0);   (658059.6,
4183202.5,   12.2,   12.2,   0.0);
     (658059.6, 4183222.2,   12.2,   12.2,   0.0);   (658059.6,
4183242.0,   12.2,   12.2,   0.0);
     (658079.3, 4182472.0,   12.9,   12.9,   0.0);   (658079.3,
4182491.8,   13.1,   13.1,   0.0);
     (658079.3, 4182511.5,   13.1,   13.1,   0.0);   (658079.3,
4182531.2,   13.2,   13.2,   0.0);
     (658079.3, 4182551.0,   13.4,   13.4,   0.0);   (658079.3,
4182570.8,   13.4,   13.4,   0.0);
     (658079.3, 4182590.5,   13.5,   13.5,   0.0);   (658079.3,
4182610.2,   13.7,   13.7,   0.0);
     (658079.3, 4182630.0,   13.7,   13.7,   0.0);   (658079.3,
4182649.8,   13.7,   13.7,   0.0);
     (658079.3, 4182669.5,   13.7,   13.7,   0.0);   (658079.3,
4182689.2,   13.5,   13.5,   0.0);
     (658079.3, 4182709.0,   13.4,   13.4,   0.0);   (658079.3,
4182728.8,   13.2,   13.2,   0.0);
     (658079.3, 4182748.2,   13.0,   13.0,   0.0);   (658079.3,
4182768.0,   12.9,   12.9,   0.0);
     (658079.3, 4182787.8,   12.8,   12.8,   0.0);   (658079.3,
4182807.5,   12.7,   12.7,   0.0);
     (658079.3, 4182827.2,   12.6,   12.6,   0.0);   (658079.3,
4182847.0,   12.5,   12.5,   0.0);
     (658079.3, 4182866.8,   12.5,   12.5,   0.0);   (658079.3,
4182886.5,   12.5,   12.5,   0.0);
     (658079.3, 4182906.2,   12.3,   12.3,   0.0);   (658079.3,
4182926.0,   12.2,   12.2,   0.0);
     (658079.3, 4182945.8,   12.2,   12.2,   0.0);   (658079.3,
4182965.5,   12.2,   12.2,   0.0);
     (658079.3, 4182985.2,   12.2,   12.2,   0.0);   (658079.3,
4183005.0,   12.2,   12.2,   0.0);
     (658079.3, 4183024.8,   12.2,   12.2,   0.0);   (658079.3,
4183044.5,   12.2,   12.2,   0.0);
     (658079.3, 4183064.2,   12.2,   12.2,   0.0);   (658079.3,

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4183084.0,      12.2,      12.2,       0.0);
     ( 658079.3, 4183123.5,      12.2,      12.2,       0.0);         ( 658079.3,
4183143.2,      12.2,      12.2,       0.0);
     ( 658079.3, 4183163.0,      12.2,      12.2,       0.0);         ( 658079.3,
4183182.8,      12.2,      12.2,       0.0);
     ( 658079.3, 4183202.5,      12.2,      12.2,       0.0);         ( 658079.3,
4183222.2,      12.2,      12.2,       0.0);
     ( 658079.3, 4183242.0,      12.2,      12.2,       0.0);         ( 658099.1,
4182472.0,      12.9,      12.9,       0.0);
     ( 658099.1, 4182491.8,      13.1,      13.1,       0.0);         ( 658099.1,
4182511.5,      13.1,      13.1,       0.0);
     ( 658099.1, 4182531.2,      13.2,      13.2,       0.0);         ( 658099.1,
4182551.0,      13.4,      13.4,       0.0);
     ( 658099.1, 4182570.8,      13.4,      13.4,       0.0);         ( 658099.1,
4182590.5,      13.5,      13.5,       0.0);
     ( 658099.1, 4182610.2,      13.7,      13.7,       0.0);         ( 658099.1,
4182630.0,      13.7,      13.7,       0.0);
     ( 658099.1, 4182649.8,      13.7,      13.7,       0.0);         ( 658099.1,
4182669.5,      13.5,      13.5,       0.0);
     ( 658099.1, 4182689.2,      13.4,      13.4,       0.0);         ( 658099.1,
4182709.0,      13.4,      13.4,       0.0);
     ( 658099.1, 4182728.8,      13.2,      13.2,       0.0);         ( 658099.1,
4182748.2,      13.1,      13.1,       0.0);
     ( 658099.1, 4182768.0,      13.0,      13.0,       0.0);         ( 658099.1,
4182787.8,      12.9,      12.9,       0.0);
     ( 658099.1, 4182807.5,      12.8,      12.8,       0.0);         ( 658099.1,
4182827.2,      12.7,      12.7,       0.0);
     ( 658099.1, 4182847.0,      12.6,      12.6,       0.0);         ( 658099.1,
4182866.8,      12.5,      12.5,       0.0);
     ( 658099.1, 4182886.5,      12.5,      12.5,       0.0);         ( 658099.1,
4182906.2,      12.5,      12.5,       0.0);
     ( 658099.1, 4182926.0,      12.4,      12.4,       0.0);         ( 658099.1,
4182945.8,      12.2,      12.2,       0.0);
     ( 658099.1, 4182965.5,      12.2,      12.2,       0.0);         ( 658099.1,
4182985.2,      12.2,      12.2,       0.0);
     ( 658099.1, 4183005.0,      12.2,      12.2,       0.0);         ( 658099.1,
4183024.8,      12.2,      12.2,       0.0);
     ( 658099.1, 4183044.5,      12.2,      12.2,       0.0);         ( 658099.1,
4183064.2,      12.2,      12.2,       0.0);
     ( 658099.1, 4183084.0,      12.2,      12.2,       0.0);         ( 658099.1,
4183103.8,      12.2,      12.2,       0.0);
     ( 658099.1, 4183123.5,      12.2,      12.2,       0.0);         ( 658099.1,
4183143.2,      12.2,      12.2,       0.0);
     ( 658099.1, 4183163.0,      12.2,      12.2,       0.0);         ( 658099.1,
4183182.8,      12.2,      12.2,       0.0);
     ( 658099.1, 4183202.5,      12.2,      12.2,       0.0);         ( 658099.1,
4183222.2,      12.2,      12.2,       0.0);
     ( 658099.1, 4183242.0,      12.2,      12.2,       0.0);         ( 658118.8,
4182472.0,      12.8,      12.8,       0.0);
     ( 658118.8, 4182491.8,      12.9,      12.9,       0.0);         ( 658118.8,
```

4182511.5,   13.0,   13.0,   0.0);
     (658118.8, 4182531.2,   13.2,   13.2,   0.0);   (658118.8,
4182551.0,   13.4,   13.4,   0.0);
     (658118.8, 4182570.8,   13.4,   13.4,   0.0);   (658118.8,
4182590.5,   13.5,   13.5,   0.0);

 *** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

                                          *** DISCRETE CARTESIAN RECEPTORS ***
                                        (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
                                                (METERS)

     (658118.8, 4182610.2,   13.7,   13.7,   0.0);   (658118.8,
4182630.0,   13.7,   13.7,   0.0);
     (658118.8, 4182649.8,   13.7,   13.7,   0.0);   (658118.8,
4182669.5,   13.5,   13.5,   0.0);
     (658118.8, 4182689.2,   13.4,   13.4,   0.0);   (658118.8,
4182709.0,   13.4,   13.4,   0.0);
     (658118.8, 4182728.8,   13.3,   13.3,   0.0);   (658118.8,
4182748.2,   13.2,   13.2,   0.0);
     (658118.8, 4182768.0,   13.1,   13.1,   0.0);   (658118.8,
4182787.8,   13.0,   13.0,   0.0);
     (658118.8, 4182807.5,   12.9,   12.9,   0.0);   (658118.8,
4182827.2,   12.8,   12.8,   0.0);
     (658118.8, 4182847.0,   12.7,   12.7,   0.0);   (658118.8,
4182866.8,   12.6,   12.6,   0.0);
     (658118.8, 4182886.5,   12.5,   12.5,   0.0);   (658118.8,
4182906.2,   12.5,   12.5,   0.0);
     (658118.8, 4182926.0,   12.4,   12.4,   0.0);   (658118.8,
4182945.8,   12.3,   12.3,   0.0);
     (658118.8, 4182965.5,   12.2,   12.2,   0.0);   (658118.8,
4182985.2,   12.2,   12.2,   0.0);
     (658118.8, 4183005.0,   12.2,   12.2,   0.0);   (658118.8,
4183024.8,   12.2,   12.2,   0.0);
     (658118.8, 4183044.5,   12.2,   12.2,   0.0);   (658118.8,
4183064.2,   12.2,   12.2,   0.0);
     (658118.8, 4183084.0,   12.2,   12.2,   0.0);   (658118.8,
4183103.8,   12.2,   12.2,   0.0);
     (658118.8, 4183123.5,   12.2,   12.2,   0.0);   (658118.8,
4183143.2,   12.2,   12.2,   0.0);
     (658118.8, 4183163.0,   12.2,   12.2,   0.0);   (658118.8,
4183182.8,   12.2,   12.2,   0.0);
     (658118.8, 4183202.5,   12.2,   12.2,   0.0);   (658118.8,
4183222.2,   12.2,   12.2,   0.0);
     (658118.8, 4183242.0,   12.2,   12.2,   0.0);   (658138.6,

```
4182472.0,      12.8,      12.8,       0.0);
     ( 658138.6, 4182491.8,      12.9,      12.9,       0.0);         ( 658138.6,
4182511.5,      13.0,      13.0,       0.0);
     ( 658138.6, 4182531.2,      13.2,      13.2,       0.0);         ( 658138.6,
4182551.0,      13.4,      13.4,       0.0);
     ( 658138.6, 4182570.8,      13.4,      13.4,       0.0);         ( 658138.6,
4182590.5,      13.5,      13.5,       0.0);
     ( 658138.6, 4182610.2,      13.7,      13.7,       0.0);         ( 658138.6,
4182630.0,      13.7,      13.7,       0.0);
     ( 658138.6, 4182649.8,      13.7,      13.7,       0.0);         ( 658138.6,
4182669.5,      13.5,      13.5,       0.0);
     ( 658138.6, 4182689.2,      13.4,      13.4,       0.0);         ( 658138.6,
4182709.0,      13.4,      13.4,       0.0);
     ( 658138.6, 4182728.8,      13.4,      13.4,       0.0);         ( 658138.6,
4182748.2,      13.3,      13.3,       0.0);
     ( 658138.6, 4182768.0,      13.2,      13.2,       0.0);         ( 658138.6,
4182787.8,      13.1,      13.1,       0.0);
     ( 658138.6, 4182807.5,      13.0,      13.0,       0.0);         ( 658138.6,
4182827.2,      12.9,      12.9,       0.0);
     ( 658138.6, 4182847.0,      12.9,      12.9,       0.0);         ( 658138.6,
4182866.8,      12.7,      12.7,       0.0);
     ( 658138.6, 4182886.5,      12.6,      12.6,       0.0);         ( 658138.6,
4182906.2,      12.6,      12.6,       0.0);
     ( 658138.6, 4182926.0,      12.5,      12.5,       0.0);         ( 658138.6,
4182945.8,      12.5,      12.5,       0.0);
     ( 658138.6, 4182965.5,      12.3,      12.3,       0.0);         ( 658138.6,
4182985.2,      12.2,      12.2,       0.0);
     ( 658138.6, 4183005.0,      12.2,      12.2,       0.0);         ( 658138.6,
4183024.8,      12.2,      12.2,       0.0);
     ( 658138.6, 4183044.5,      12.2,      12.2,       0.0);         ( 658138.6,
4183064.2,      12.2,      12.2,       0.0);
     ( 658138.6, 4183084.0,      12.2,      12.2,       0.0);         ( 658138.6,
4183103.8,      12.2,      12.2,       0.0);
     ( 658138.6, 4183123.5,      12.2,      12.2,       0.0);         ( 658138.6,
4183143.2,      12.2,      12.2,       0.0);
     ( 658138.6, 4183163.0,      12.2,      12.2,       0.0);         ( 658138.6,
4183182.8,      12.2,      12.2,       0.0);
     ( 658138.6, 4183202.5,      12.2,      12.2,       0.0);         ( 658138.6,
4183222.2,      12.2,      12.2,       0.0);
     ( 658138.6, 4183242.0,      12.2,      12.2,       0.0);         ( 656770.1,
4183459.5,      12.2,      12.2,       0.0);
     ( 656742.8, 4183470.5,      12.3,      12.3,       0.0);         ( 656777.4,
4183412.1,      12.2,      12.2,       0.0);
     ( 656777.4, 4183371.9,      12.1,      12.1,       0.0);         ( 656739.1,
4183386.5,      12.0,      12.0,       0.0);
     ( 656740.9, 4183430.3,      12.2,      12.2,       0.0);         ( 656750.1,
4183550.8,      11.2,      11.2,       0.0);
     ( 656753.7, 4183523.4,      11.7,      11.7,       0.0);         ( 656750.1,
4183496.0,      12.1,      12.1,       0.0);
     ( 656773.8, 4183501.5,      12.0,      12.0,       0.0);         ( 656706.3,
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4183413.9,   12.2,   12.2,   0.0);
     (656691.7, 4183392.0,   12.2,   12.2,   0.0);   (656686.2,
4183373.8,   11.9,   11.9,   0.0);
     (656700.8, 4183355.5,   11.5,   11.5,   0.0);   (656717.2,
4183344.5,   11.2,   11.2,   0.0);
     (656660.6, 4183362.8,   11.2,   11.2,   0.0);   (656761.0,
4182461.3,   10.7,   10.7,   0.0);

 *** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

                                          *** DISCRETE CARTESIAN RECEPTORS ***
                                       (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
                                                (METERS)

     (656800.2, 4182461.3,   10.7,   10.7,   0.0);   (656839.3,
4182461.3,   10.7,   10.7,   0.0);
     (656878.5, 4182461.3,   10.7,   10.7,   0.0);   (656917.6,
4182461.3,   10.7,   10.7,   0.0);
     (656956.8, 4182461.3,   10.7,   10.7,   0.0);   (656995.9,
4182461.3,   10.7,   10.7,   0.0);
     (657035.1, 4182461.3,   10.7,   10.7,   0.0);   (657074.2,
4182461.3,   10.7,   10.7,   0.0);
     (657113.4, 4182461.3,   10.7,   10.7,   0.0);   (656761.0,
4182487.1,   10.7,   10.7,   0.0);
     (656800.2, 4182487.1,   10.7,   10.7,   0.0);   (656839.3,
4182487.1,   10.7,   10.7,   0.0);
     (656878.5, 4182487.1,   10.7,   10.7,   0.0);   (656917.6,
4182487.1,   10.7,   10.7,   0.0);
     (656956.8, 4182487.1,   10.7,   10.7,   0.0);   (656995.9,
4182487.1,   10.7,   10.7,   0.0);
     (657035.1, 4182487.1,   10.7,   10.7,   0.0);   (657074.2,
4182487.1,   10.7,   10.7,   0.0);
     (657113.4, 4182487.1,   10.7,   10.7,   0.0);   (656761.0,
4182512.9,   10.7,   10.7,   0.0);
     (656800.2, 4182512.9,   10.7,   10.7,   0.0);   (656839.3,
4182512.9,   10.7,   10.7,   0.0);
     (656878.5, 4182512.9,   10.7,   10.7,   0.0);   (656917.6,
4182512.9,   10.7,   10.7,   0.0);
     (656956.8, 4182512.9,   10.7,   10.7,   0.0);   (656995.9,
4182512.9,   10.7,   10.7,   0.0);
     (657035.1, 4182512.9,   10.7,   10.7,   0.0);   (657074.2,
4182512.9,   10.7,   10.7,   0.0);
     (657113.4, 4182512.9,   10.7,   10.7,   0.0);   (656761.0,
4182538.6,   10.7,   10.7,   0.0);
     (656800.2, 4182538.6,   10.7,   10.7,   0.0);   (656839.3,

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4182538.6,      10.7,      10.7,       0.0);
     ( 656878.5, 4182538.6,      10.7,      10.7,       0.0);         ( 656917.6,
4182538.6,      10.7,      10.7,       0.0);
     ( 656956.8, 4182538.6,      10.7,      10.7,       0.0);         ( 656995.9,
4182538.6,      10.7,      10.7,       0.0);
     ( 657035.1, 4182538.6,      10.7,      10.7,       0.0);         ( 657074.2,
4182538.6,      10.7,      10.7,       0.0);
     ( 657113.4, 4182538.6,      10.7,      10.7,       0.0);         ( 656761.0,
4182564.4,      10.6,      10.6,       0.0);
     ( 656800.2, 4182564.4,      10.7,      10.7,       0.0);         ( 656839.3,
4182564.4,      10.7,      10.7,       0.0);
     ( 656878.5, 4182564.4,      10.7,      10.7,       0.0);         ( 656917.6,
4182564.4,      10.7,      10.7,       0.0);
     ( 656956.8, 4182564.4,      10.7,      10.7,       0.0);         ( 656995.9,
4182564.4,      10.7,      10.7,       0.0);
     ( 657035.1, 4182564.4,      10.7,      10.7,       0.0);         ( 657074.2,
4182564.4,      10.7,      10.7,       0.0);
     ( 657113.4, 4182564.4,      10.7,      10.7,       0.0);         ( 656761.0,
4182590.1,      10.4,      10.4,       0.0);
     ( 656800.2, 4182590.1,      10.7,      10.7,       0.0);         ( 656839.3,
4182590.1,      10.7,      10.7,       0.0);
     ( 656878.5, 4182590.1,      10.7,      10.7,       0.0);         ( 656917.6,
4182590.1,      10.7,      10.7,       0.0);
     ( 656956.8, 4182590.1,      10.7,      10.7,       0.0);         ( 656995.9,
4182590.1,      10.7,      10.7,       0.0);
     ( 657035.1, 4182590.1,      10.7,      10.7,       0.0);         ( 657074.2,
4182590.1,      10.7,      10.7,       0.0);
     ( 657113.4, 4182590.1,      10.7,      10.7,       0.0);         ( 656761.0,
4182615.9,      10.4,      10.4,       0.0);
     ( 656800.2, 4182615.9,      10.5,      10.5,       0.0);         ( 656839.3,
4182615.9,      10.7,      10.7,       0.0);
     ( 656878.5, 4182615.9,      10.7,      10.7,       0.0);         ( 656917.6,
4182615.9,      10.7,      10.7,       0.0);
     ( 656956.8, 4182615.9,      10.7,      10.7,       0.0);         ( 656995.9,
4182615.9,      10.7,      10.7,       0.0);
     ( 657035.1, 4182615.9,      10.7,      10.7,       0.0);         ( 657074.2,
4182615.9,      10.7,      10.7,       0.0);
     ( 657113.4, 4182615.9,      10.7,      10.7,       0.0);         ( 656800.2,
4182641.7,      10.5,      10.5,       0.0);
     ( 656839.3, 4182641.7,      10.7,      10.7,       0.0);         ( 656878.5,
4182641.7,      10.7,      10.7,       0.0);
     ( 656917.6, 4182641.7,      10.7,      10.7,       0.0);         ( 656956.8,
4182641.7,      10.7,      10.7,       0.0);
     ( 656995.9, 4182641.7,      10.7,      10.7,       0.0);         ( 657035.1,
4182641.7,      10.7,      10.7,       0.0);
     ( 657074.2, 4182641.7,      10.7,      10.7,       0.0);         ( 657113.4,
4182641.7,      10.7,      10.7,       0.0);
     ( 656800.2, 4182667.4,      10.4,      10.4,       0.0);         ( 656839.3,
4182667.4,      10.6,      10.6,       0.0);
     ( 656878.5, 4182667.4,      10.7,      10.7,       0.0);         ( 656917.6,
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4182667.4,   10.7,   10.7,   0.0);
     (656956.8, 4182667.4,   10.7,   10.7,   0.0);   (656995.9,
4182667.4,   10.7,   10.7,   0.0);
     (657035.1, 4182667.4,   10.7,   10.7,   0.0);   (657074.2,
4182667.4,   10.7,   10.7,   0.0);
     (657113.4, 4182667.4,   10.7,   10.7,   0.0);

 *** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

                                          *** METEOROLOGICAL DAYS SELECTED FOR
PROCESSING ***
                                                              (1=YES; 0=NO)

           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1

                NOTE: METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON
WHAT IS INCLUDED IN THE DATA FILE.

                                      *** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED
CATEGORIES ***
                                                          (METERS/SEC)

                                                 1.54,   3.09,   5.14,   8.23,
10.80,

*** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

*** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

Surface file: ..\MantecaQuintal_offsite_Road\Stockton_2013-2017.SFC
Met Version: 18081
Profile file: ..\MantecaQuintal_offsite_Road\Stockton_2013-2017.PFL

Surface format: FREE

Profile format: FREE

Surface station no.: 23237 Upper air station no.: 23230
Name: UNKNOWN Name: OAKLAND/WSO_AP
Year: 2013 Year: 2013

First 24 hours of scalar data

YR	MO	DY	JDY	HR	H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS	WD	HT	REF TA	HT
13	01	01	1	01	-22.0	0.211	-9.000	-9.000	-999.	232.	48.8	0.07	2.20	1.00	2.78	149.	10.0	273.8	2.0
13	01	01	1	02	-14.6	0.158	-9.000	-9.000	-999.	152.	27.6	0.04	2.20	1.00	2.37	77.	10.0	273.8	2.0
13	01	01	1	03	-18.4	0.181	-9.000	-9.000	-999.	185.	36.0	0.06	2.20	1.00	2.52	97.	10.0	273.1	2.0
13	01	01	1	04	-6.7	0.105	-9.000	-9.000	-999.	84.	16.0	0.04	2.20	1.00	1.63	349.	10.0	272.5	2.0
13	01	01	1	05	-20.1	0.193	-9.000	-9.000	-999.	203.	40.9	0.04	2.20	1.00	2.86	356.	10.0	274.2	2.0
13	01	01	1	06	-3.9	0.081	-9.000	-9.000	-999.	64.	12.6	0.04	2.20	1.00	1.23	77.	10.0	273.8	2.0
13	01	01	1	07	-18.3	0.180	-9.000	-9.000	-999.	184.	35.8	0.06	2.20	1.00	2.52	255.	10.0	273.1	2.0
13	01	01	1	08	-26.9	0.259	-9.000	-9.000	-999.	316.	73.8	0.08	2.20	0.73	3.29	287.	10.0	274.2	2.0
13	01	01	1	09	-1.9	0.212	-9.000	-9.000	-999.	236.	461.6	0.05	2.20	0.39	2.81	315.	10.0	275.9	2.0
13	01	01	1	10	61.1	0.155	0.630	0.005	150.	147.	-5.5	0.04	2.20	0.27	1.60	336.	10.0	277.5	2.0
13	01	01	1	11	110.2	0.238	1.137	0.005	488.	279.	-11.2	0.06	2.20	0.23	2.45	228.	10.0	279.9	2.0
13	01	01	1	12	137.1	0.276	1.492	0.008	886.	347.	-14.0	0.08	2.20	0.22	2.69	286.	10.0	280.4	2.0
13	01	01	1	13	141.1	0.271	1.531	0.007	929.	339.	-12.9	0.05	2.20						

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0.21    2.88  325.   10.0  282.5    2.0
 13 01 01   1 14  121.3  0.232  1.475  0.006  965.  269.     -9.4  0.04   2.20
0.22    2.57  356.   10.0  283.8    2.0
 13 01 01   1 15   78.7  0.218  1.287  0.005  988.  244.    -12.0  0.04   2.20
0.26    2.47  357.   10.0  284.2    2.0
 13 01 01   1 16   17.6  0.265  0.783  0.005  993.  327.    -96.0  0.03   2.20
0.35    3.59    2.   10.0  284.2    2.0
 13 01 01   1 17  -11.2  0.143 -9.000 -9.000 -999.  139.     24.1  0.04   2.20
0.60    2.16  346.   10.0  282.5    2.0
 13 01 01   1 18   -8.7  0.125 -9.000 -9.000 -999.  107.     20.6  0.08   2.20
1.00    1.67  273.   10.0  279.2    2.0
 13 01 01   1 19  -13.3  0.154 -9.000 -9.000 -999.  145.     26.0  0.06   2.20
1.00    2.15  238.   10.0  278.1    2.0
 13 01 01   1 20  -10.2  0.134 -9.000 -9.000 -999.  117.     21.4  0.06   2.20
1.00    1.89  230.   10.0  275.9    2.0
 13 01 01   1 21  -12.5  0.148 -9.000 -9.000 -999.  137.     24.2  0.05   2.20
1.00    2.11  300.   10.0  276.4    2.0
 13 01 01   1 22 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.05   2.20
1.00    0.00    0.   10.0  275.9    2.0
 13 01 01   1 23  -24.0  0.230 -9.000 -9.000 -999.  264.     57.9  0.04   2.20
1.00    3.36   80.   10.0  274.2    2.0
 13 01 01   1 24  -16.1  0.169 -9.000 -9.000 -999.  167.     31.3  0.06   2.20
1.00    2.36  100.   10.0  274.2    2.0


 First hour of profile data
 YR MO DY HR HEIGHT F  WDIR    WSPD AMB_TMP sigmaA  sigmaW  sigmaV
 13 01 01 01   10.0 1  149.    2.78   273.8   99.0  -99.00  -99.00

 F indicates top of profile (=1) or below (=0)
 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuintal\MantecaQuintal.isc               ***        03/22/24
 *** AERMET - VERSION  18081 ***   ***
                       ***        08:43:47

                                  PAGE  17
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                   *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   5
YEARS FOR SOURCE GROUP: ALL      ***
                                  INCLUDING SOURCE(S):     PAREA1      ,

                                            *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                        ** CONC OF PM_10    IN MICROGRAMS/M**3
                    **

       X-COORD (M)   Y-COORD (M)        CONC                         X-COORD (M)
Y-COORD (M)        CONC
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657151.50 4182491.75 0.00462 657151.50
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4182551.00 0.00524
657151.50 4182570.75 0.00547 657151.50
4182590.50 0.00572
657151.50 4182610.25 0.00599 657151.50
4182630.00 0.00628
657151.50 4182649.75 0.00658 657171.25
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4182551.00 0.00542
657171.25 4182570.75 0.00567 657171.25
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4182630.00 0.00738

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4182590.50        0.00690
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4182630.00        0.00769
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         657270.00    4182531.25        0.00614                     657270.00
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View\MantecaQuintal\MantecaQuintal.isc               ***        03/22/24
 *** AERMET - VERSION  18081 ***   ***
                       ***        08:43:47

                                  PAGE  18
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                   *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   5
YEARS FOR SOURCE GROUP: ALL      ***
                                  INCLUDING SOURCE(S):     PAREA1      ,

                                           *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                          ** CONC OF PM_10    IN MICROGRAMS/M**3
                    **
```

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
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657309.44	4182531.25	0.00657	657309.44	4182551.00	0.00693
657309.44	4182570.75	0.00732	657309.44	4182590.50	0.00775
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657309.44	4182649.75	0.00931	657329.19	4182472.00	0.00584
657329.19	4182491.75	0.00613	657329.19	4182511.50	0.00645
657329.19	4182531.25	0.00680	657329.19	4182551.00	0.00718
657329.19	4182570.75	0.00760	657329.19	4182590.50	0.00806
657329.19	4182610.25	0.00857	657329.19	4182630.00	0.00913
657329.19	4182649.75	0.00975	657348.94	4182472.00	0.00601
657348.94	4182491.75	0.00633	657348.94	4182511.50	0.00667
657348.94	4182531.25	0.00704	657348.94	4182551.00	0.00744
657348.94	4182570.75	0.00789	657348.94	4182590.50	0.00839
657348.94	4182610.25	0.00894	657348.94	4182630.00	0.00955
657348.94	4182649.75	0.01022	657368.69	4182472.00	0.00620
657368.69	4182491.75	0.00653	657368.69	4182511.50	0.00689
657368.69	4182531.25	0.00728	657368.69	4182551.00	0.00772
657368.69	4182570.75	0.00819	657368.69	4182590.50	0.00873
657368.69	4182610.25	0.00932	657368.69	4182630.00	0.00998
657368.69	4182649.75	0.01072	657388.44	4182472.00	0.00639
657388.44	4182491.75	0.00673	657388.44	4182511.50	0.00711
657388.44	4182531.25	0.00753	657388.44	4182551.00	0.00799
657388.44	4182570.75	0.00851	657388.44	4182590.50	0.00908

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         657408.13    4182649.75        0.01178                      657427.88
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         657447.63    4182610.25        0.01103                      657447.63
4182630.00        0.01195
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View\MantecaQuintal\MantecaQuintal.isc               ***        03/22/24
 *** AERMET - VERSION  18081 ***   ***
                       ***        08:43:47

                                  PAGE  19
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                  *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   5
YEARS FOR SOURCE GROUP: ALL      ***
                                  INCLUDING SOURCE(S):     PAREA1      ,

                                            *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                          ** CONC OF PM_10    IN MICROGRAMS/M**3
```

**

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
657467.38	4182491.75	0.00761	657467.38	4182511.50	0.00809
657467.38	4182531.25	0.00863	657467.38	4182551.00	0.00923
657467.38	4182570.75	0.00990	657467.38	4182590.50	0.01066
657467.38	4182610.25	0.01153	657467.38	4182630.00	0.01253
657467.38	4182649.75	0.01369	657487.13	4182472.00	0.00737
657487.13	4182491.75	0.00783	657487.13	4182511.50	0.00834
657487.13	4182531.25	0.00891	657487.13	4182551.00	0.00955
657487.13	4182570.75	0.01028	657487.13	4182590.50	0.01110
657487.13	4182610.25	0.01205	657487.13	4182630.00	0.01315
657487.13	4182649.75	0.01444	657506.88	4182472.00	0.00756
657506.88	4182491.75	0.00805	657506.88	4182511.50	0.00859
657506.88	4182531.25	0.00920	657506.88	4182551.00	0.00988
657506.88	4182570.75	0.01066	657506.88	4182590.50	0.01155
657506.88	4182610.25	0.01258	657506.88	4182630.00	0.01379
657506.88	4182649.75	0.01523	657526.63	4182472.00	0.00775
657526.63	4182491.75	0.00826	657526.63	4182511.50	0.00883
657526.63	4182531.25	0.00947	657526.63	4182551.00	0.01020
657526.63	4182570.75	0.01103	657526.63	4182590.50	0.01199
657526.63	4182610.25	0.01311	657526.63	4182630.00	0.01443
657526.63	4182649.75	0.01603	657546.31	4182472.00	0.00794
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657546.31	4182531.25	0.00975	657546.31	4182551.00	0.01052

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         657585.81    4182570.75        0.01213                      657585.81
4182590.50        0.01330
         657585.81    4182610.25        0.01469                      657585.81
4182630.00        0.01638
         657585.81    4182649.75        0.01850                      657585.81
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4182709.00        0.03068
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View\MantecaQuintal\MantecaQuintal.isc               ***        03/22/24
 *** AERMET - VERSION  18081 ***   ***
                       ***        08:43:47

                                  PAGE  20
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                   *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   5
YEARS FOR SOURCE GROUP: ALL      ***
                                  INCLUDING SOURCE(S):     PAREA1      ,

                                              *** DISCRETE CARTESIAN RECEPTOR POINTS
***
```

** CONC OF PM_10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
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657605.56	4182491.75	0.00907	657605.56	4182511.50	0.00976
657605.56	4182531.25	0.01054	657605.56	4182551.00	0.01144
657605.56	4182570.75	0.01248	657605.56	4182590.50	0.01372
657605.56	4182610.25	0.01520	657605.56	4182630.00	0.01701
657605.56	4182649.75	0.01929	657605.56	4182669.50	0.02228
657605.56	4182689.25	0.02639	657605.56	4182709.00	0.03241
657605.56	4182728.75	0.04189	657625.31	4182472.00	0.00863
657625.31	4182491.75	0.00926	657625.31	4182511.50	0.00998
657625.31	4182531.25	0.01079	657625.31	4182551.00	0.01172
657625.31	4182570.75	0.01282	657625.31	4182590.50	0.01411
657625.31	4182610.25	0.01568	657625.31	4182630.00	0.01760
657625.31	4182649.75	0.02002	657625.31	4182669.50	0.02318
657625.31	4182689.25	0.02752	657625.31	4182709.00	0.03380
657625.31	4182728.75	0.04346	657645.06	4182472.00	0.00879
657645.06	4182491.75	0.00944	657645.06	4182511.50	0.01017
657645.06	4182531.25	0.01102	657645.06	4182551.00	0.01199
657645.06	4182570.75	0.01313	657645.06	4182590.50	0.01449
657645.06	4182610.25	0.01612	657645.06	4182630.00	0.01812
657645.06	4182649.75	0.02065	657645.06	4182669.50	0.02396
657645.06	4182689.25	0.02844	657645.06	4182709.00	0.03484

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         657684.50    4182610.25        0.01686                      657684.50
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         657684.50    4182728.75        0.04590                      657704.25
4182472.00        0.00915
         657704.25    4182491.75        0.00986                      657704.25
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         657704.25    4182531.25        0.01158                      657704.25
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         657704.25    4182570.75        0.01389                      657704.25
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 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuintal\MantecaQuintal.isc               ***        03/22/24
 *** AERMET - VERSION  18081 ***   ***
                       ***        08:43:47

                                  PAGE  21
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                   *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   5
YEARS FOR SOURCE GROUP: ALL      ***
                                  INCLUDING SOURCE(S):     PAREA1      ,
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*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
657704.25	4182649.75	0.02204	657704.25	4182669.50	0.02552
657704.25	4182689.25	0.03015	657704.25	4182709.00	0.03658
657704.25	4182728.75	0.04620	657724.00	4182472.00	0.00924
657724.00	4182491.75	0.00995	657724.00	4182511.50	0.01077
657724.00	4182531.25	0.01171	657724.00	4182551.00	0.01280
657724.00	4182570.75	0.01407	657724.00	4182590.50	0.01557
657724.00	4182610.25	0.01738	657724.00	4182630.00	0.01958
657724.00	4182649.75	0.02232	657724.00	4182669.50	0.02581
657724.00	4182689.25	0.03041	657724.00	4182709.00	0.03678
657724.00	4182728.75	0.04628	657743.75	4182472.00	0.00930
657743.75	4182491.75	0.01003	657743.75	4182511.50	0.01086
657743.75	4182531.25	0.01181	657743.75	4182551.00	0.01291
657743.75	4182570.75	0.01420	657743.75	4182590.50	0.01572
657743.75	4182610.25	0.01755	657743.75	4182630.00	0.01976
657743.75	4182649.75	0.02250	657743.75	4182669.50	0.02598
657743.75	4182689.25	0.03055	657743.75	4182709.00	0.03684
657743.75	4182728.75	0.04614	657763.50	4182472.00	0.00935
657763.50	4182491.75	0.01008	657763.50	4182511.50	0.01092
657763.50	4182531.25	0.01188	657763.50	4182551.00	0.01299
657763.50	4182570.75	0.01429	657763.50	4182590.50	0.01582

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         657763.50    4182610.25        0.01765                      657763.50
4182630.00        0.01986
         657763.50    4182649.75        0.02259                      657763.50
4182669.50        0.02604
         657763.50    4182689.25        0.03055                      657763.50
4182709.00        0.03674
         657763.50    4182728.75        0.04589                      657783.25
4182472.00        0.00937
         657783.25    4182491.75        0.01011                      657783.25
4182511.50        0.01095
         657783.25    4182531.25        0.01192                      657783.25
4182551.00        0.01303
         657783.25    4182570.75        0.01433                      657783.25
4182590.50        0.01586
         657783.25    4182610.25        0.01768                      657783.25
4182630.00        0.01988
         657783.25    4182649.75        0.02258                      657783.25
4182669.50        0.02599
         657783.25    4182689.25        0.03042                      657783.25
4182709.00        0.03650
         657783.25    4182728.75        0.04546                      657803.00
4182472.00        0.00938
         657803.00    4182491.75        0.01012                      657803.00
4182511.50        0.01096
         657803.00    4182531.25        0.01192                      657803.00
4182551.00        0.01304
         657803.00    4182570.75        0.01433                      657803.00
4182590.50        0.01585
         657803.00    4182610.25        0.01765                      657803.00
4182630.00        0.01982
         657803.00    4182649.75        0.02248                      657803.00
4182669.50        0.02582
         657803.00    4182689.25        0.03016                      657803.00
4182709.00        0.03610
         657803.00    4182728.75        0.04486                      657822.69
4182472.00        0.00938
         657822.69    4182491.75        0.01011                      657822.69
4182511.50        0.01095
         657822.69    4182531.25        0.01190                      657822.69
4182551.00        0.01300
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View\MantecaQuintal\MantecaQuintal.isc               ***        03/22/24
 *** AERMET - VERSION  18081 ***   ***
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                                  PAGE  22
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                   *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   5
YEARS FOR SOURCE GROUP: ALL      ***
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INCLUDING SOURCE(S): PAREA1 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
657822.69	4182570.75	0.01428	657822.69	4182590.50	0.01577
657822.69	4182610.25	0.01755	657822.69	4182630.00	0.01968
657822.69	4182649.75	0.02228	657822.69	4182669.50	0.02554
657822.69	4182689.25	0.02976	657822.69	4182709.00	0.03554
657822.69	4182728.75	0.04405	657842.44	4182472.00	0.00936
657842.44	4182491.75	0.01008	657842.44	4182511.50	0.01091
657842.44	4182531.25	0.01185	657842.44	4182551.00	0.01293
657842.44	4182570.75	0.01418	657842.44	4182590.50	0.01564
657842.44	4182610.25	0.01737	657842.44	4182630.00	0.01944
657842.44	4182649.75	0.02196	657842.44	4182669.50	0.02512
657842.44	4182689.25	0.02920	657842.44	4182709.00	0.03477
657842.44	4182728.75	0.04300	657862.19	4182472.00	0.00933
657862.19	4182491.75	0.01004	657862.19	4182511.50	0.01085
657862.19	4182531.25	0.01177	657862.19	4182551.00	0.01282
657862.19	4182570.75	0.01404	657862.19	4182590.50	0.01546
657862.19	4182610.25	0.01713	657862.19	4182630.00	0.01912
657862.19	4182649.75	0.02154	657862.19	4182669.50	0.02456
657862.19	4182689.25	0.02846	657862.19	4182709.00	0.03378
657862.19	4182728.75	0.04167	657881.94	4182472.00	0.00929

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         657881.94    4182491.75        0.00999                     657881.94
4182511.50        0.01078
         657881.94    4182531.25        0.01168                     657881.94
4182551.00        0.01270
         657881.94    4182570.75        0.01387                     657881.94
4182590.50        0.01524
         657881.94    4182610.25        0.01684                     657881.94
4182630.00        0.01874
         657881.94    4182649.75        0.02103                     657881.94
4182669.50        0.02388
         657881.94    4182689.25        0.02755                     657881.94
4182709.00        0.03253
         657881.94    4182728.75        0.03992                     657901.69
4182472.00        0.00924
         657901.69    4182491.75        0.00993                     657901.69
4182511.50        0.01070
         657901.69    4182531.25        0.01157                     657901.69
4182551.00        0.01256
         657901.69    4182570.75        0.01369                     657901.69
4182590.50        0.01500
         657901.69    4182610.25        0.01652                     657901.69
4182630.00        0.01832
         657901.69    4182649.75        0.02047                     657901.69
4182669.50        0.02313
         657901.69    4182689.25        0.02651                     657901.69
4182709.00        0.03106
         657901.69    4182728.75        0.03774                     657921.44
4182472.00        0.00919
         657921.44    4182491.75        0.00986                     657921.44
4182511.50        0.01061
         657921.44    4182531.25        0.01145                     657921.44
4182551.00        0.01241
         657921.44    4182570.75        0.01349                     657921.44
4182590.50        0.01473
         657921.44    4182610.25        0.01617                     657921.44
4182630.00        0.01786
         657921.44    4182649.75        0.01987                     657921.44
4182669.50        0.02231
         657921.44    4182689.25        0.02538                     657921.44
4182709.00        0.02942
         657921.44    4182728.75        0.03507                     657941.13
4182472.00        0.00913
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View\MantecaQuintal\MantecaQuintal.isc               ***        03/22/24
 *** AERMET - VERSION  18081 ***   ***
                       ***        08:43:47

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 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*
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*** THE ANNUAL AVERAGE CONCENTRATION VALUES AVERAGED OVER 5 YEARS FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): PAREA1 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
657941.13	4182491.75	0.00977	657941.13	4182511.50	0.01050
657941.13	4182531.25	0.01132	657941.13	4182551.00	0.01223
657941.13	4182570.75	0.01326	657941.13	4182590.50	0.01443
657941.13	4182610.25	0.01579	657941.13	4182630.00	0.01736
657941.13	4182649.75	0.01921	657941.13	4182669.50	0.02141
657941.13	4182689.25	0.02411	657941.13	4182709.00	0.02748
657941.13	4182728.75	0.03173	657941.13	4182748.25	0.03649
657941.13	4182768.00	0.04057	657941.13	4182787.75	0.04315
657941.13	4182807.50	0.04476	657941.13	4182827.25	0.04582
657941.13	4182847.00	0.04653	657941.13	4182866.75	0.04699
657941.13	4182886.50	0.04725	657941.13	4182906.25	0.04735
657941.13	4182926.00	0.04730	657941.13	4182945.75	0.04712
657941.13	4182965.50	0.04682	657941.13	4182985.25	0.04639
657941.13	4183005.00	0.04585	657941.13	4183024.75	0.04517
657941.13	4183064.25	0.04340	657941.13	4183084.00	0.04227
657941.13	4183103.75	0.04096	657960.88	4182472.00	0.00904
657960.88	4182491.75	0.00967	657960.88	4182511.50	0.01037
657960.88	4182531.25	0.01116	657960.88	4182551.00	0.01203

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         657960.88    4182570.75        0.01300                    657960.88
4182590.50        0.01410
         657960.88    4182610.25        0.01536                    657960.88
4182630.00        0.01680
         657960.88    4182649.75        0.01848                    657960.88
4182669.50        0.02042
         657960.88    4182689.25        0.02273                    657960.88
4182709.00        0.02544
         657960.88    4182728.75        0.02851                    657960.88
4182748.25        0.03163
         657960.88    4182768.00        0.03441                    657960.88
4182787.75        0.03646
         657960.88    4182807.50        0.03785                    657960.88
4182827.25        0.03879
         657960.88    4182847.00        0.03944                    657960.88
4182866.75        0.03986
         657960.88    4182886.50        0.04011                    657960.88
4182906.25        0.04020
         657960.88    4182926.00        0.04016                    657960.88
4182945.75        0.04000
         657960.88    4182965.50        0.03973                    657960.88
4182985.25        0.03933
         657960.88    4183005.00        0.03882                    657960.88
4183024.75        0.03820
         657960.88    4183044.50        0.03744                    657960.88
4183064.25        0.03655
         657960.88    4183084.00        0.03551                    657960.88
4183103.75        0.03430
         657980.63    4182472.00        0.00894                    657980.63
4182491.75        0.00955
         657980.63    4182511.50        0.01022                    657980.63
4182531.25        0.01097
         657980.63    4182551.00        0.01179                    657980.63
4182570.75        0.01271
         657980.63    4182590.50        0.01374                    657980.63
4182610.25        0.01489
         657980.63    4182630.00        0.01620                    657980.63
4182649.75        0.01769
         657980.63    4182669.50        0.01941                    657980.63
4182689.25        0.02135
         657980.63    4182709.00        0.02350                    657980.63
4182728.75        0.02579
         657980.63    4182748.25        0.02802                    657980.63
4182768.00        0.03005
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*** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

*** THE ANNUAL AVERAGE CONCENTRATION VALUES AVERAGED OVER 5 YEARS FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): PAREA1 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
657980.63	4182787.75	0.03167	657980.63	4182807.50	0.03286
657980.63	4182827.25	0.03369	657980.63	4182847.00	0.03427
657980.63	4182866.75	0.03465	657980.63	4182886.50	0.03487
657980.63	4182906.25	0.03495	657980.63	4182926.00	0.03491
657980.63	4182945.75	0.03476	657980.63	4182965.50	0.03449
657980.63	4182985.25	0.03412	657980.63	4183005.00	0.03364
657980.63	4183024.75	0.03305	657980.63	4183044.50	0.03235
657980.63	4183064.25	0.03152	657980.63	4183084.00	0.03056
657980.63	4183103.75	0.02944	657980.63	4183123.50	0.02816
658000.38	4182472.00	0.00883	658000.38	4182491.75	0.00941
658000.38	4182511.50	0.01005	658000.38	4182531.25	0.01075
658000.38	4182551.00	0.01153	658000.38	4182570.75	0.01239
658000.38	4182590.50	0.01335	658000.38	4182610.25	0.01440
658000.38	4182630.00	0.01558	658000.38	4182649.75	0.01690
658000.38	4182669.50	0.01837	658000.38	4182689.25	0.01999
658000.38	4182709.00	0.02172	658000.38	4182728.75	0.02348
658000.38	4182748.25	0.02517	658000.38	4182768.00	0.02673

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         658000.38    4182787.75        0.02805                    658000.38
4182807.50        0.02905
         658000.38    4182827.25        0.02978                    658000.38
4182847.00        0.03029
         658000.38    4182866.75        0.03063                    658000.38
4182886.50        0.03083
         658000.38    4182906.25        0.03090                    658000.38
4182926.00        0.03085
         658000.38    4182945.75        0.03070                    658000.38
4182965.50        0.03045
         658000.38    4182985.25        0.03009                    658000.38
4183005.00        0.02964
         658000.38    4183024.75        0.02909                    658000.38
4183044.50        0.02843
         658000.38    4183064.25        0.02766                    658000.38
4183103.75        0.02575
         658000.38    4183123.50        0.02459                    658020.13
4182472.00        0.00870
         658020.13    4182491.75        0.00926                    658020.13
4182511.50        0.00986
         658020.13    4182531.25        0.01053                    658020.13
4182551.00        0.01125
         658020.13    4182570.75        0.01205                    658020.13
4182590.50        0.01293
         658020.13    4182610.25        0.01389                    658020.13
4182630.00        0.01496
         658020.13    4182649.75        0.01612                    658020.13
4182669.50        0.01738
         658020.13    4182689.25        0.01872                    658020.13
4182709.00        0.02013
         658020.13    4182728.75        0.02153                    658020.13
4182748.25        0.02286
         658020.13    4182768.00        0.02410                    658020.13
4182787.75        0.02518
         658020.13    4182807.50        0.02603                    658020.13
4182827.25        0.02666
         658020.13    4182847.00        0.02712                    658020.13
4182866.75        0.02742
         658020.13    4182886.50        0.02759                    658020.13
4182906.25        0.02764
         658020.13    4182926.00        0.02759                    658020.13
4182945.75        0.02745
         658020.13    4182965.50        0.02720                    658020.13
4182985.25        0.02687
         658020.13    4183005.00        0.02644                    658020.13
4183024.75        0.02592
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*** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

*** THE ANNUAL AVERAGE CONCENTRATION VALUES AVERAGED OVER 5 YEARS FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): PAREA1 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
658020.13	4183044.50	0.02531	658020.13	4183064.25	0.02459
658020.13	4183084.00	0.02378	658020.13	4183103.75	0.02285
658020.13	4183123.50	0.02180	658020.13	4183143.25	0.02063
658039.88	4182472.00	0.00856	658039.88	4182491.75	0.00908
658039.88	4182511.50	0.00966	658039.88	4182531.25	0.01028
658039.88	4182551.00	0.01096	658039.88	4182570.75	0.01170
658039.88	4182590.50	0.01251	658039.88	4182610.25	0.01338
658039.88	4182630.00	0.01433	658039.88	4182649.75	0.01535
658039.88	4182669.50	0.01643	658039.88	4182689.25	0.01757
658039.88	4182709.00	0.01872	658039.88	4182728.75	0.01987
658039.88	4182748.25	0.02094	658039.88	4182768.00	0.02195
658039.88	4182787.75	0.02283	658039.88	4182807.50	0.02354
658039.88	4182827.25	0.02409	658039.88	4182847.00	0.02450
658039.88	4182866.75	0.02477	658039.88	4182886.50	0.02492
658039.88	4182906.25	0.02496	658039.88	4182926.00	0.02491
658039.88	4182945.75	0.02476	658039.88	4182965.50	0.02453

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         658039.88    4182985.25        0.02421                    658039.88
4183005.00        0.02381
         658039.88    4183024.75        0.02333                    658039.88
4183044.50        0.02275
         658039.88    4183064.25        0.02209                    658039.88
4183084.00        0.02134
         658039.88    4183123.50        0.01955                    658039.88
4183143.25        0.01852
         658039.88    4183163.00        0.01740                    658039.88
4183182.75        0.01621
         658039.88    4183202.50        0.01498                    658039.88
4183222.25        0.01373
         658039.88    4183242.00        0.01249                    658059.63
4182472.00        0.00840
         658059.63    4182491.75        0.00890                    658059.63
4182511.50        0.00944
         658059.63    4182531.25        0.01003                    658059.63
4182551.00        0.01066
         658059.63    4182570.75        0.01134                    658059.63
4182590.50        0.01208
         658059.63    4182610.25        0.01287                    658059.63
4182630.00        0.01372
         658059.63    4182649.75        0.01461                    658059.63
4182669.50        0.01554
         658059.63    4182689.25        0.01650                    658059.63
4182709.00        0.01747
         658059.63    4182728.75        0.01842                    658059.63
4182748.25        0.01931
         658059.63    4182768.00        0.02014                    658059.63
4182787.75        0.02086
         658059.63    4182807.50        0.02147                    658059.63
4182827.25        0.02195
         658059.63    4182847.00        0.02230                    658059.63
4182866.75        0.02254
         658059.63    4182886.50        0.02266                    658059.63
4182906.25        0.02270
         658059.63    4182926.00        0.02265                    658059.63
4182945.75        0.02251
         658059.63    4182965.50        0.02229                    658059.63
4182985.25        0.02199
         658059.63    4183005.00        0.02161                    658059.63
4183024.75        0.02115
         658059.63    4183044.50        0.02062                    658059.63
4183064.25        0.02001
         658059.63    4183084.00        0.01932                    658059.63
4183123.50        0.01770
         658059.63    4183143.25        0.01679                    658059.63
4183163.00        0.01581
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View\MantecaQuintal\MantecaQuintal.isc               ***        03/22/24
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*** THE ANNUAL AVERAGE CONCENTRATION   VALUES AVERAGED OVER   5 YEARS FOR SOURCE GROUP: ALL   ***
INCLUDING SOURCE(S):   PAREA1   ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_10   IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
658059.63	4183182.75	0.01478	658059.63	4183202.50	0.01372
658059.63	4183222.25	0.01266	658059.63	4183242.00	0.01160
658079.31	4182472.00	0.00824	658079.31	4182491.75	0.00871
658079.31	4182511.50	0.00922	658079.31	4182531.25	0.00977
658079.31	4182551.00	0.01035	658079.31	4182570.75	0.01099
658079.31	4182590.50	0.01166	658079.31	4182610.25	0.01237
658079.31	4182630.00	0.01312	658079.31	4182649.75	0.01390
658079.31	4182669.50	0.01471	658079.31	4182689.25	0.01553
658079.31	4182709.00	0.01635	658079.31	4182728.75	0.01715
658079.31	4182748.25	0.01789	658079.31	4182768.00	0.01859
658079.31	4182787.75	0.01919	658079.31	4182807.50	0.01971
658079.31	4182827.25	0.02013	658079.31	4182847.00	0.02043
658079.31	4182866.75	0.02063	658079.31	4182886.50	0.02074
658079.31	4182906.25	0.02078	658079.31	4182926.00	0.02072
658079.31	4182945.75	0.02059	658079.31	4182965.50	0.02038

658079.31 4182985.25 0.02009 658079.31
4183005.00 0.01974
658079.31 4183024.75 0.01931 658079.31
4183044.50 0.01882
658079.31 4183064.25 0.01825 658079.31
4183084.00 0.01762
658079.31 4183123.50 0.01616 658079.31
4183143.25 0.01535
658079.31 4183163.00 0.01449 658079.31
4183182.75 0.01359
658079.31 4183202.50 0.01268 658079.31
4183222.25 0.01175
658079.31 4183242.00 0.01084 658099.06
4182472.00 0.00807
658099.06 4182491.75 0.00851 658099.06
4182511.50 0.00899
658099.06 4182531.25 0.00950 658099.06
4182551.00 0.01005
658099.06 4182570.75 0.01063 658099.06
4182590.50 0.01124
658099.06 4182610.25 0.01188 658099.06
4182630.00 0.01254
658099.06 4182649.75 0.01323 658099.06
4182669.50 0.01394
658099.06 4182689.25 0.01465 658099.06
4182709.00 0.01534
658099.06 4182728.75 0.01602 658099.06
4182748.25 0.01664
658099.06 4182768.00 0.01722 658099.06
4182787.75 0.01775
658099.06 4182807.50 0.01819 658099.06
4182827.25 0.01854
658099.06 4182847.00 0.01881 658099.06
4182866.75 0.01899
658099.06 4182886.50 0.01908 658099.06
4182906.25 0.01910
658099.06 4182926.00 0.01904 658099.06
4182945.75 0.01892
658099.06 4182965.50 0.01872 658099.06
4182985.25 0.01845
658099.06 4183005.00 0.01812 658099.06
4183024.75 0.01772
658099.06 4183044.50 0.01726 658099.06
4183064.25 0.01674
658099.06 4183084.00 0.01617 658099.06
4183103.75 0.01554
658099.06 4183123.50 0.01485 658099.06
4183143.25 0.01413
658099.06 4183163.00 0.01337 658099.06
4183182.75 0.01258

*** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

*** THE ANNUAL AVERAGE CONCENTRATION VALUES AVERAGED OVER 5 YEARS FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): PAREA1 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
658099.06	4183202.50	0.01178	658099.06	4183222.25	0.01097
658099.06	4183242.00	0.01018	658118.81	4182472.00	0.00790
658118.81	4182491.75	0.00832	658118.81	4182511.50	0.00876
658118.81	4182531.25	0.00924	658118.81	4182551.00	0.00974
658118.81	4182570.75	0.01027	658118.81	4182590.50	0.01083
658118.81	4182610.25	0.01140	658118.81	4182630.00	0.01199
658118.81	4182649.75	0.01260	658118.81	4182669.50	0.01322
658118.81	4182689.25	0.01383	658118.81	4182709.00	0.01443
658118.81	4182728.75	0.01500	658118.81	4182748.25	0.01554
658118.81	4182768.00	0.01604	658118.81	4182787.75	0.01648
658118.81	4182807.50	0.01686	658118.81	4182827.25	0.01717
658118.81	4182847.00	0.01740	658118.81	4182866.75	0.01755
658118.81	4182886.50	0.01763	658118.81	4182906.25	0.01764
658118.81	4182926.00	0.01758	658118.81	4182945.75	0.01745

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        658118.81    4182965.50        0.01727                    658118.81
4182985.25        0.01702
        658118.81    4183005.00        0.01671                    658118.81
4183024.75        0.01634
        658118.81    4183044.50        0.01591                    658118.81
4183064.25        0.01544
        658118.81    4183084.00        0.01491                    658118.81
4183103.75        0.01434
        658118.81    4183123.50        0.01373                    658118.81
4183143.25        0.01308
        658118.81    4183163.00        0.01240                    658118.81
4183182.75        0.01171
        658118.81    4183202.50        0.01100                    658118.81
4183222.25        0.01029
        658118.81    4183242.00        0.00958                    658138.56
4182472.00        0.00772
        658138.56    4182491.75        0.00812                    658138.56
4182511.50        0.00853
        658138.56    4182531.25        0.00897                    658138.56
4182551.00        0.00944
        658138.56    4182570.75        0.00992                    658138.56
4182590.50        0.01042
        658138.56    4182610.25        0.01094                    658138.56
4182630.00        0.01147
        658138.56    4182649.75        0.01201                    658138.56
4182669.50        0.01255
        658138.56    4182689.25        0.01308                    658138.56
4182709.00        0.01360
        658138.56    4182728.75        0.01409                    658138.56
4182748.25        0.01455
        658138.56    4182768.00        0.01498                    658138.56
4182787.75        0.01536
        658138.56    4182807.50        0.01569                    658138.56
4182827.25        0.01595
        658138.56    4182847.00        0.01615                    658138.56
4182866.75        0.01628
        658138.56    4182886.50        0.01635                    658138.56
4182906.25        0.01635
        658138.56    4182926.00        0.01628                    658138.56
4182945.75        0.01616
        658138.56    4182965.50        0.01599                    658138.56
4182985.25        0.01576
        658138.56    4183005.00        0.01547                    658138.56
4183024.75        0.01513
        658138.56    4183044.50        0.01473                    658138.56
4183064.25        0.01430
        658138.56    4183084.00        0.01382                    658138.56
4183103.75        0.01330
        658138.56    4183123.50        0.01275                    658138.56
4183143.25        0.01217
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*** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

*** THE ANNUAL AVERAGE CONCENTRATION VALUES AVERAGED OVER 5
YEARS FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): PAREA1 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS
***

** CONC OF PM_10 IN MICROGRAMS/M**3
**

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
658138.56	4183202.50	0.01031	658138.56	4183222.25	0.00968
658138.56	4183242.00	0.00906	656770.14	4183459.54	0.00398
656742.76	4183470.49	0.00377	656777.44	4183412.09	0.00425
656777.44	4183371.93	0.00445	656739.11	4183386.53	0.00411
656740.94	4183430.34	0.00393	656750.06	4183550.80	0.00348
656753.71	4183523.42	0.00361	656750.06	4183496.05	0.00370
656773.79	4183501.52	0.00381	656706.26	4183413.91	0.00379
656691.66	4183392.01	0.00379	656686.18	4183373.76	0.00383
656700.78	4183355.50	0.00399	656717.21	4183344.55	0.00415
656660.63	4183362.80	0.00372	656761.01	4182461.34	0.00256
656800.16	4182461.34	0.00268	656839.31	4182461.34	0.00281
656878.46	4182461.34	0.00295	656917.61	4182461.34	0.00310
656956.76	4182461.34	0.00327	656995.91	4182461.34	0.00346

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         657035.06    4182461.34        0.00366                    657074.21
4182461.34        0.00388
         657113.36    4182461.34        0.00411                    656761.01
4182487.10        0.00265
         656800.16    4182487.10        0.00278                    656839.31
4182487.10        0.00292
         656878.46    4182487.10        0.00307                    656917.61
4182487.10        0.00323
         656956.76    4182487.10        0.00341                    656995.91
4182487.10        0.00361
         657035.06    4182487.10        0.00383                    657074.21
4182487.10        0.00406
         657113.36    4182487.10        0.00431                    656761.01
4182512.86        0.00275
         656800.16    4182512.86        0.00288                    656839.31
4182512.86        0.00303
         656878.46    4182512.86        0.00319                    656917.61
4182512.86        0.00337
         656956.76    4182512.86        0.00356                    656995.91
4182512.86        0.00377
         657035.06    4182512.86        0.00401                    657074.21
4182512.86        0.00426
         657113.36    4182512.86        0.00454                    656761.01
4182538.62        0.00285
         656800.16    4182538.62        0.00299                    656839.31
4182538.62        0.00315
         656878.46    4182538.62        0.00332                    656917.61
4182538.62        0.00351
         656956.76    4182538.62        0.00372                    656995.91
4182538.62        0.00395
         657035.06    4182538.62        0.00420                    657074.21
4182538.62        0.00448
         657113.36    4182538.62        0.00478                    656761.01
4182564.38        0.00296
         656800.16    4182564.38        0.00311                    656839.31
4182564.38        0.00328
         656878.46    4182564.38        0.00346                    656917.61
4182564.38        0.00366
         656956.76    4182564.38        0.00388                    656995.91
4182564.38        0.00413
         657035.06    4182564.38        0.00441                    657074.21
4182564.38        0.00471
         657113.36    4182564.38        0.00504                    656761.01
4182590.14        0.00306
         656800.16    4182590.14        0.00323                    656839.31
4182590.14        0.00341
         656878.46    4182590.14        0.00360                    656917.61
4182590.14        0.00382
         656956.76    4182590.14        0.00406                    656995.91
4182590.14        0.00433
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*** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

*** THE ANNUAL AVERAGE CONCENTRATION VALUES AVERAGED OVER 5 YEARS FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): PAREA1 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
656800.16	4182615.90	0.00336	656839.31	4182615.90	0.00355
656878.46	4182615.90	0.00376	656917.61	4182615.90	0.00399
656956.76	4182615.90	0.00425	656995.91	4182615.90	0.00455
657035.06	4182615.90	0.00487	657074.21	4182615.90	0.00524
657113.36	4182615.90	0.00564	656800.16	4182641.66	0.00349
656839.31	4182641.66	0.00370	656878.46	4182641.66	0.00392
656917.61	4182641.66	0.00417	656956.76	4182641.66	0.00446
656995.91	4182641.66	0.00477	657035.06	4182641.66	0.00513
657074.21	4182641.66	0.00553	657113.36	4182641.66	0.00598
656800.16	4182667.42	0.00363	656839.31	4182667.42	0.00385
656878.46	4182667.42	0.00409	656917.61	4182667.42	0.00437
656956.76	4182667.42	0.00467	656995.91	4182667.42	0.00502

*** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

*** THE 1ST HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): PAREA1 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
657151.50	4182491.75	0.31917	(16010309)	657151.50	4182511.50	0.32258	(16010309)
657151.50	4182531.25	0.32518	(16010309)	657151.50	4182551.00	0.32651	(16010309)
657151.50	4182570.75	0.32610	(16010309)	657151.50	4182590.50	0.32385	(16010309)
657151.50	4182610.25	0.31997	(16010309)	657151.50	4182630.00	0.32214	(15032607)
657151.50	4182649.75	0.33260	(15032607)	657171.25	4182472.00	0.32004	(16010309)
657171.25	4182491.75	0.32439	(16010309)	657171.25	4182511.50	0.32878	(16010309)
657171.25	4182531.25	0.33291	(16010309)	657171.25	4182551.00	0.33627	(16010309)
657171.25	4182570.75	0.33823	(16010309)	657171.25	4182590.50	0.33826	(16010309)
657171.25	4182610.25	0.33608	(16010309)	657171.25	4182630.00	0.33193	(16010309)
657171.25	4182649.75	0.33554	(15032607)	657191.00	4182472.00	0.32452	(16010309)
657191.00	4182491.75	0.32910	(16010309)	657191.00	4182511.50	0.33393	(16010309)
657191.00	4182531.25	0.33899	(16010309)	657191.00	4182551.00	0.34399	(16010309)

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       657191.00   4182570.75        0.34827  (16010309)              657191.00
4182590.50        0.35105  (16010309)
       657191.00   4182610.25        0.35159  (16010309)              657191.00
4182630.00        0.34952  (16010309)
       657191.00   4182649.75        0.34509  (16010309)              657210.75
4182472.00        0.32907  (16010309)
       657210.75   4182491.75        0.33384  (16010309)              657210.75
4182511.50        0.33870  (16010309)
       657210.75   4182531.25        0.34403  (16010309)              657210.75
4182551.00        0.34989  (16010309)
       657210.75   4182570.75        0.35589  (16010309)              657210.75
4182590.50        0.36130  (16010309)
       657210.75   4182610.25        0.36508  (16010309)              657210.75
4182630.00        0.36630  (16010309)
       657210.75   4182649.75        0.36443  (16010309)              657230.50
4182472.00        0.33363  (16010309)
       657230.50   4182491.75        0.33891  (16010309)              657230.50
4182511.50        0.34377  (16010309)
       657230.50   4182531.25        0.34890  (16010309)              657230.50
4182551.00        0.35478  (16010309)
       657230.50   4182570.75        0.36151  (16010309)              657230.50
4182590.50        0.36873  (16010309)
       657230.50   4182610.25        0.37549  (16010309)              657230.50
4182630.00        0.38053  (16010309)
       657230.50   4182649.75        0.38264  (16010309)              657250.25
4182472.00        0.33766  (16010309)
       657250.25   4182491.75        0.34419  (16010309)              657250.25
4182511.50        0.34951  (16010309)
       657250.25   4182531.25        0.35440  (16010309)              657250.25
4182551.00        0.35976  (16010309)
       657250.25   4182570.75        0.36621  (16010309)              657250.25
4182590.50        0.37397  (16010309)
       657250.25   4182610.25        0.38261  (16010309)              657250.25
4182630.00        0.39101  (16010309)
       657250.25   4182649.75        0.39766  (16010309)              657270.00
4182472.00        0.34026  (16010309)
       657270.00   4182491.75        0.34898  (16010309)              657270.00
4182511.50        0.35568  (16010309)
       657270.00   4182531.25        0.36095  (16010309)              657270.00
4182551.00        0.36583  (16010309)
       657270.00   4182570.75        0.37136  (16010309)              657270.00
4182590.50        0.37844  (16010309)
       657270.00   4182610.25        0.38734  (16010309)              657270.00
4182630.00        0.39765  (16010309)
       657270.00   4182649.75        0.40808  (16010309)              657289.69
4182472.00        0.34041  (16010309)
       657289.69   4182491.75        0.35216  (16010309)              657289.69
4182511.50        0.36136  (16010309)
       657289.69   4182531.25        0.36819  (16010309)              657289.69
4182551.00        0.37341  (16010309)
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*** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

*** THE 1ST HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): PAREA1 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
657289.69	4182570.75	0.37815	(16010309)	657289.69	4182590.50	0.38381	(16010309)
657289.69	4182610.25	0.39152	(16010309)	657289.69	4182630.00	0.40173	(16010309)
657289.69	4182649.75	0.41401	(16010309)	657309.44	4182472.00	0.33723	(16010309)
657309.44	4182491.75	0.35252	(16010309)	657309.44	4182511.50	0.36524	(16010309)
657309.44	4182531.25	0.37501	(16010309)	657309.44	4182551.00	0.38201	(16010309)
657309.44	4182570.75	0.38704	(16010309)	657309.44	4182590.50	0.39156	(16010309)
657309.44	4182610.25	0.39727	(16010309)	657309.44	4182630.00	0.40564	(16010309)
657309.44	4182649.75	0.41731	(16010309)	657329.19	4182472.00	0.33638	(14021408)
657329.19	4182491.75	0.34908	(16010309)	657329.19	4182511.50	0.36579	(16010309)
657329.19	4182531.25	0.37968	(16010309)	657329.19	4182551.00	0.39017	(16010309)
657329.19	4182570.75	0.39733	(16010309)	657329.19	4182590.50	0.40210	(16010309)
657329.19	4182610.25	0.40625	(16010309)	657329.19	4182630.00	0.41191	(16010309)
657329.19	4182649.75	0.42095	(16010309)	657348.94	4182472.00	0.34956	(14021408)
657348.94	4182491.75	0.35143	(14021408)	657348.94	4182511.50	0.36198	(16010309)

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       657348.94   4182531.25        0.38042  (16010309)              657348.94
4182551.00        0.39573  (16010309)
       657348.94   4182570.75        0.40712  (16010309)              657348.94
4182590.50        0.41448  (16010309)
       657348.94   4182610.25        0.41887  (16010309)              657348.94
4182630.00        0.42245  (16010309)
       657348.94   4182649.75        0.42797  (16010309)              657368.69
4182472.00        0.36278  (14021408)
       657368.69   4182491.75        0.36602  (14021408)              657368.69
4182511.50        0.36835  (14021408)
       657368.69   4182531.25        0.37610  (16010309)              657368.69
4182551.00        0.39660  (16010309)
       657368.69   4182570.75        0.41372  (16010309)              657368.69
4182590.50        0.42625  (16010309)
       657368.69   4182610.25        0.43384  (16010309)              657368.69
4182630.00        0.43768  (16010309)
       657368.69   4182649.75        0.44049  (16010309)              657388.44
4182472.00        0.37436  (14021408)
       657388.44   4182491.75        0.38008  (14021408)              657388.44
4182511.50        0.38446  (14021408)
       657388.44   4182531.25        0.38757  (14021408)              657388.44
4182551.00        0.39158  (16010309)
       657388.44   4182570.75        0.41460  (16010309)              657388.44
4182590.50        0.43403  (16010309)
       657388.44   4182610.25        0.44806  (16010309)              657388.44
4182630.00        0.45595  (16010309)
       657388.44   4182649.75        0.45900  (16010309)              657408.13
4182472.00        0.38250  (14021408)
       657408.13   4182491.75        0.39137  (14021408)              657408.13
4182511.50        0.39888  (14021408)
       657408.13   4182531.25        0.40481  (14021408)              657408.13
4182551.00        0.40946  (14021408)
       657408.13   4182570.75        0.41237  (14021408)              657408.13
4182590.50        0.43475  (16010309)
       657408.13   4182610.25        0.45713  (16010309)              657408.13
4182630.00        0.47318  (16010309)
       657408.13   4182649.75        0.48144  (16010309)              657427.88
4182472.00        0.38549  (14021408)
       657427.88   4182491.75        0.39746  (14021408)              657427.88
4182511.50        0.40878  (14021408)
       657427.88   4182531.25        0.41895  (14021408)              657427.88
4182551.00        0.42790  (14021408)
       657427.88   4182570.75        0.43499  (14021408)              657427.88
4182590.50        0.43981  (14021408)
       657427.88   4182610.25        0.45821  (16010309)              657427.88
4182630.00        0.48420  (16010309)
       657427.88   4182649.75        0.50262  (16010309)              657447.63
4182472.00        0.38360  (14021408)
       657447.63   4182491.75        0.39804  (14021408)              657447.63
4182511.50        0.41239  (14021408)
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*** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

*** THE 1ST HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): PAREA1 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
657467.38	4182491.75	0.39480	(13011517)	657467.38	4182511.50	0.41024	(14021408)
657467.38	4182531.25	0.42707	(14021408)	657467.38	4182551.00	0.44416	(14021408)
657467.38	4182570.75	0.46132	(14021408)	657467.38	4182590.50	0.47821	(14021408)
657467.38	4182610.25	0.49411	(14021408)	657467.38	4182630.00	0.50786	(14021408)
657467.38	4182649.75	0.51769	(14021408)	657487.13	4182472.00	0.39732	(17011609)
657487.13	4182491.75	0.40507	(17011609)	657487.13	4182511.50	0.41305	(17011609)
657487.13	4182531.25	0.42249	(13011517)	657487.13	4182551.00	0.44140	(14021408)
657487.13	4182570.75	0.46145	(14021408)	657487.13	4182590.50	0.48236	(14021408)
657487.13	4182610.25	0.50406	(14021408)	657487.13	4182630.00	0.52623	(14021408)
657487.13	4182649.75	0.54791	(14021408)	657506.88	4182472.00	0.41778	(17011609)

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       657506.88   4182491.75        0.42774  (17011609)              657506.88
4182511.50        0.43826  (17011609)
       657506.88   4182531.25        0.44939  (17011609)              657506.88
4182551.00        0.46113  (17011609)
       657506.88   4182570.75        0.47351  (17011609)              657506.88
4182590.50        0.48651  (17011609)
       657506.88   4182610.25        0.50293  (14021408)              657506.88
4182630.00        0.52929  (14021408)
       657506.88   4182649.75        0.55788  (14021408)              657526.63
4182472.00        0.43217  (17011609)
       657526.63   4182491.75        0.44380  (17011609)              657526.63
4182511.50        0.45630  (17011609)
       657526.63   4182531.25        0.46981  (17011609)              657526.63
4182551.00        0.48445  (17011609)
       657526.63   4182570.75        0.50037  (17011609)              657526.63
4182590.50        0.51777  (17011609)
       657526.63   4182610.25        0.53690  (17011609)              657526.63
4182630.00        0.55825  (17011609)
       657526.63   4182649.75        0.58193  (17011609)              657546.31
4182472.00        0.44001  (17011609)
       657546.31   4182491.75        0.45244  (17011609)              657546.31
4182511.50        0.46585  (17011609)
       657546.31   4182531.25        0.48040  (17011609)              657546.31
4182551.00        0.49624  (17011609)
       657546.31   4182570.75        0.51359  (17011609)              657546.31
4182590.50        0.53270  (17011609)
       657546.31   4182610.25        0.55384  (17011609)              657546.31
4182630.00        0.57756  (17011609)
       657546.31   4182649.75        0.60404  (17011609)              657546.31
4182669.50        0.63318  (17011609)
       657546.31   4182689.25        0.66455  (17011609)              657546.31
4182709.00        0.69342  (17011609)
       657546.31   4182728.75        0.73245  (13092307)              657566.06
4182472.00        0.44313  (17011609)
       657566.06   4182491.75        0.45574  (17011609)              657566.06
4182511.50        0.46933  (17011609)
       657566.06   4182531.25        0.48404  (17011609)              657566.06
4182551.00        0.50004  (17011609)
       657566.06   4182570.75        0.51752  (17011609)              657566.06
4182590.50        0.53670  (17011609)
       657566.06   4182610.25        0.55785  (17011609)              657566.06
4182630.00        0.58126  (17011609)
       657566.06   4182649.75        0.60724  (17011609)              657566.06
4182669.50        0.63936  (15011209)
       657566.06   4182689.25        0.67515  (15011209)              657566.06
4182709.00        0.71019  (15011209)
       657566.06   4182728.75        0.73228  (13092307)              657585.81
4182472.00        0.44350  (17011609)
       657585.81   4182491.75        0.45606  (17011609)              657585.81
4182511.50        0.46959  (17011609)
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*** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

*** THE 1ST HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): PAREA1 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
657585.81	4182728.75	0.73169	(15091807)	657605.56	4182472.00	0.44294	(17011609)
657605.56	4182491.75	0.45594	(15011209)	657605.56	4182511.50	0.47013	(15011209)
657605.56	4182531.25	0.48541	(15011209)	657605.56	4182551.00	0.50185	(15011209)
657605.56	4182570.75	0.51986	(15011209)	657605.56	4182590.50	0.53968	(15011209)
657605.56	4182610.25	0.56170	(15011209)	657605.56	4182630.00	0.58596	(15011209)
657605.56	4182649.75	0.61308	(15011209)	657605.56	4182669.50	0.64375	(15011209)
657605.56	4182689.25	0.67740	(15011209)	657605.56	4182709.00	0.71116	(15011209)
657625.31	4182728.75	0.73089	(15091807)	657625.31	4182472.00	0.44488	(15011209)
657625.31	4182491.75	0.45777	(15011209)	657625.31	4182511.50	0.47164	(15011209)
657585.81	4182531.25	0.48421	(17011609)	657585.81	4182551.00	0.50009	(17011609)
657585.81	4182570.75	0.51740	(17011609)	657585.81	4182590.50	0.53743	(15011209)
657585.81	4182610.25	0.55996	(15011209)	657585.81	4182630.00	0.58489	(15011209)
657585.81	4182649.75	0.61273	(15011209)	657585.81	4182669.50	0.64405	(15011209)
657585.81	4182689.25	0.67810	(15011209)	657585.81	4182709.00	0.71185	(15011209)

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       657625.31   4182531.25        0.48651  (15011209)              657625.31
4182551.00        0.50234  (15011209)
       657625.31   4182570.75        0.51991  (15011209)              657625.31
4182590.50        0.53944  (15011209)
       657625.31   4182610.25        0.56147  (15011209)              657625.31
4182630.00        0.58555  (15011209)
       657625.31   4182649.75        0.61232  (15011209)              657625.31
4182669.50        0.64234  (15011209)
       657625.31   4182689.25        0.67607  (15011209)              657625.31
4182709.00        0.70980  (15011209)
       657625.31   4182728.75        0.72950  (15011209)              657645.06
4182472.00        0.44530  (15011209)
       657645.06   4182491.75        0.45779  (15011209)              657645.06
4182511.50        0.47139  (15011209)
       657645.06   4182531.25        0.48614  (15011209)              657645.06
4182551.00        0.50204  (15011209)
       657645.06   4182570.75        0.51952  (15011209)              657645.06
4182590.50        0.53880  (15011209)
       657645.06   4182610.25        0.56028  (15011209)              657645.06
4182630.00        0.58403  (15011209)
       657645.06   4182649.75        0.61073  (15011209)              657645.06
4182669.50        0.64115  (15011209)
       657645.06   4182689.25        0.67446  (15011209)              657645.06
4182709.00        0.70824  (15011209)
       657645.06   4182728.75        0.72935  (15011209)              657664.81
4182472.00        0.44503  (15011209)
       657664.81   4182491.75        0.45732  (15011209)              657664.81
4182511.50        0.47082  (15011209)
       657664.81   4182531.25        0.48549  (15011209)              657664.81
4182551.00        0.50144  (15011209)
       657664.81   4182570.75        0.51888  (15011209)              657664.81
4182590.50        0.53804  (15011209)
       657664.81   4182610.25        0.55924  (15011209)              657664.81
4182630.00        0.58282  (15011209)
       657664.81   4182649.75        0.60935  (15011209)              657664.81
4182669.50        0.63955  (15011209)
       657664.81   4182689.25        0.67281  (15011209)              657664.81
4182709.00        0.70679  (15011209)
       657664.81   4182728.75        0.72930  (15011209)              657684.50
4182472.00        0.44447  (15011209)
       657684.50   4182491.75        0.45673  (15011209)              657684.50
4182511.50        0.47019  (15011209)
       657684.50   4182531.25        0.48482  (15011209)              657684.50
4182551.00        0.50073  (15011209)
       657684.50   4182570.75        0.51812  (15011209)              657684.50
4182590.50        0.53723  (15011209)
       657684.50   4182610.25        0.55837  (15011209)              657684.50
4182630.00        0.58188  (15011209)
       657684.50   4182649.75        0.60818  (15011209)              657684.50
4182669.50        0.63763  (15011209)
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*** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

*** THE 1ST HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): PAREA1 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
657684.50	4182689.25	0.67106	(15011209)	657684.50	4182709.00	0.70546	(15011209)
657684.50	4182728.75	0.72925	(15011209)	657704.25	4182472.00	0.44343	(15011209)
657704.25	4182491.75	0.45588	(15011209)	657704.25	4182511.50	0.46937	(15011209)
657704.25	4182531.25	0.48399	(15011209)	657704.25	4182551.00	0.49988	(15011209)
657704.25	4182570.75	0.51725	(15011209)	657704.25	4182590.50	0.53633	(15011209)
657704.25	4182610.25	0.55742	(15011209)	657704.25	4182630.00	0.58087	(15011209)
657704.25	4182649.75	0.60709	(15011209)	657704.25	4182669.50	0.63646	(15011209)
657704.25	4182689.25	0.66923	(15011209)	657704.25	4182709.00	0.70346	(15011209)
657704.25	4182728.75	0.72875	(15011209)	657724.00	4182472.00	0.44216	(15011209)
657724.00	4182491.75	0.45474	(15011209)	657724.00	4182511.50	0.46828	(15011209)
657724.00	4182531.25	0.48292	(15011209)	657724.00	4182551.00	0.49882	(15011209)
657724.00	4182570.75	0.51618	(15011209)	657724.00	4182590.50	0.53525	(15011209)
657724.00	4182610.25	0.55632	(15011209)	657724.00	4182630.00	0.57973	(15011209)
657724.00	4182649.75	0.60590	(15011209)	657724.00	4182669.50	0.63520	(15011209)

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       657724.00   4182689.25        0.66766  (15011209)              657724.00
4182709.00        0.70164  (15011209)
       657724.00   4182728.75        0.74630  (14012217)              657743.75
4182472.00        0.44035  (15011209)
       657743.75   4182491.75        0.45302  (15011209)              657743.75
4182511.50        0.46663  (15011209)
       657743.75   4182531.25        0.48134  (15011209)              657743.75
4182551.00        0.49731  (15011209)
       657743.75   4182570.75        0.51472  (15011209)              657743.75
4182590.50        0.53382  (15011209)
       657743.75   4182610.25        0.55490  (15011209)              657743.75
4182630.00        0.57832  (15011209)
       657743.75   4182649.75        0.60448  (15011209)              657743.75
4182669.50        0.63375  (15011209)
       657743.75   4182689.25        0.66617  (15011209)              657743.75
4182709.00        0.70009  (15011209)
       657743.75   4182728.75        0.76310  (14012217)              657763.50
4182472.00        0.43733  (15011209)
       657763.50   4182491.75        0.45016  (15011209)              657763.50
4182511.50        0.46393  (15011209)
       657763.50   4182531.25        0.47879  (15011209)              657763.50
4182551.00        0.49488  (15011209)
       657763.50   4182570.75        0.51242  (15011209)              657763.50
4182590.50        0.53163  (15011209)
       657763.50   4182610.25        0.55280  (15011209)              657763.50
4182630.00        0.57629  (15011209)
       657763.50   4182649.75        0.60250  (15011209)              657763.50
4182669.50        0.63180  (15011209)
       657763.50   4182689.25        0.66427  (15011209)              657763.50
4182709.00        0.69830  (15011209)
       657763.50   4182728.75        0.77700  (14012217)              657783.25
4182472.00        0.43214  (15011209)
       657783.25   4182491.75        0.44524  (15011209)              657783.25
4182511.50        0.45925  (15011209)
       657783.25   4182531.25        0.47436  (15011209)              657783.25
4182551.00        0.49070  (15011209)
       657783.25   4182570.75        0.50846  (15011209)              657783.25
4182590.50        0.52788  (15011209)
       657783.25   4182610.25        0.54926  (15011209)              657783.25
4182630.00        0.57293  (15011209)
       657783.25   4182649.75        0.59930  (15011209)              657783.25
4182669.50        0.62875  (15011209)
       657783.25   4182689.25        0.66135  (15011209)              657783.25
4182709.00        0.70914  (14012217)
       657783.25   4182728.75        0.78832  (14012217)              657803.00
4182472.00        0.42324  (15011209)
       657803.00   4182491.75        0.43665  (15011209)              657803.00
4182511.50        0.45104  (15011209)
       657803.00   4182531.25        0.46653  (15011209)              657803.00
4182551.00        0.48322  (15011209)
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       657803.00   4182570.75        0.50136  (15011209)               657803.00
 4182590.50        0.52114  (15011209)
       657803.00   4182610.25        0.54287  (15011209)               657803.00
 4182630.00        0.56689  (15011209)
       657803.00   4182649.75        0.59357  (15011209)               657803.00
 4182669.50        0.62333  (15011209)
       657803.00   4182689.25        0.65624  (15011209)               657803.00
 4182709.00        0.72097  (14012217)
       657803.00   4182728.75        0.79774  (14012217)               657822.69
 4182472.00        0.40833  (15011209)
       657822.69   4182491.75        0.42211  (15011209)               657822.69
 4182511.50        0.43689  (15011209)
       657822.69   4182531.25        0.45279  (15011209)               657822.69
 4182551.00        0.46995  (15011209)
1 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuintal\MantecaQuintal.isc               ***        03/22/24
 *** AERMET - VERSION  18081 ***   ***
                       ***        08:43:47

                                  PAGE  35
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                              *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP:  ALL      ***
                                 INCLUDING SOURCE(S):     PAREA1      ,

                                       *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                     ** CONC OF PM_10    IN MICROGRAMS/M**3
                   **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD (M)
Y-COORD (M)        CONC     (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
       657822.69   4182570.75        0.48858  (15011209)               657822.69
 4182590.50        0.50890  (15011209)
       657822.69   4182610.25        0.53114  (15011209)               657822.69
 4182630.00        0.55571  (15011209)
       657822.69   4182649.75        0.58292  (15011209)               657822.69
 4182669.50        0.61319  (15011209)
       657822.69   4182689.25        0.66345  (14012217)               657822.69
 4182709.00        0.73080  (14012217)
       657822.69   4182728.75        0.80572  (14012217)               657842.44
 4182472.00        0.38446  (15011209)
       657842.44   4182491.75        0.39819  (15011209)               657842.44
 4182511.50        0.41306  (15011209)
       657842.44   4182531.25        0.42917  (15011209)               657842.44
 4182551.00        0.44664  (15011209)
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       657842.44   4182570.75        0.46570  (15011209)              657842.44
4182590.50        0.48651  (15011209)
       657842.44   4182610.25        0.50933  (15011209)              657842.44
4182630.00        0.53453  (15011209)
       657842.44   4182649.75        0.56243  (15011209)              657842.44
4182669.50        0.61581  (14012217)
       657842.44   4182689.25        0.67351  (14012217)              657842.44
4182709.00        0.73876  (14012217)
       657842.44   4182728.75        0.81255  (14012217)              657862.19
4182472.00        0.34895  (15011209)
       657862.19   4182491.75        0.36170  (15011209)              657862.19
4182511.50        0.37582  (15011209)
       657862.19   4182531.25        0.39128  (15011209)              657862.19
4182551.00        0.41256  (14121216)
       657862.19   4182570.75        0.43774  (14121216)              657862.19
4182590.50        0.46333  (14121216)
       657862.19   4182610.25        0.49006  (14121216)              657862.19
4182630.00        0.52729  (14012217)
       657862.19   4182649.75        0.57526  (14012217)              657862.19
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       657862.19   4182689.25        0.68151  (14012217)              657862.19
4182709.00        0.74498  (14012217)
       657862.19   4182728.75        0.81833  (14012217)              657881.94
4182472.00        0.34066  (17022502)
       657881.94   4182491.75        0.35396  (17022502)              657881.94
4182511.50        0.37452  (14121216)
       657881.94   4182531.25        0.39808  (14121216)              657881.94
4182551.00        0.42125  (14121216)
       657881.94   4182570.75        0.44479  (14121216)              657881.94
4182590.50        0.46910  (14121216)
       657881.94   4182610.25        0.49666  (14012217)              657881.94
4182630.00        0.54049  (14012217)
       657881.94   4182649.75        0.58599  (14012217)              657881.94
4182669.50        0.63464  (14012217)
       657881.94   4182689.25        0.68819  (14012217)              657881.94
4182709.00        0.75000  (14012217)
       657881.94   4182728.75        0.82251  (14012217)              657901.69
4182472.00        0.34445  (17022502)
       657901.69   4182491.75        0.36286  (14121216)              657901.69
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       657901.69   4182531.25        0.40672  (14121216)              657901.69
4182551.00        0.42835  (14121216)
       657901.69   4182570.75        0.45056  (14121216)              657901.69
4182590.50        0.47384  (14121216)
       657901.69   4182610.25        0.51011  (14012217)              657901.69
4182630.00        0.55156  (14012217)
       657901.69   4182649.75        0.59498  (14012217)              657901.69
4182669.50        0.64164  (14012217)
       657901.69   4182689.25        0.69396  (14012217)              657901.69
4182709.00        0.75485  (14012217)
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       657941.13   4182728.75        0.80320  (14012217)               657941.13
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       657941.13   4182768.00        0.80271  (14012217)               657941.13
4182787.75        0.79141  (15060806)
       657941.13   4182807.50        0.80603  (15060806)               657941.13
4182827.25        0.81650  (15060806)
       657941.13   4182847.00        0.82345  (15060806)               657941.13
4182866.75        0.82695  (15060806)
       657941.13   4182886.50        0.82739  (15060806)               657941.13
4182906.25        0.82455  (15060806)
       657941.13   4182926.00        0.81859  (15060806)               657941.13
4182945.75        0.80975  (15060806)
       657941.13   4182965.50        0.79762  (15060806)               657941.13
4182985.25        0.78370  (15060806)
       657941.13   4183005.00        0.78672  (14092807)               657941.13
4183024.75        0.79559  (14092807)
       657941.13   4183064.25        0.80526  (14092807)               657941.13
4183084.00        0.80514  (14092807)
       657941.13   4183103.75        0.80120  (14092807)               657960.88
4182472.00        0.37017  (14121216)
       657960.88   4182491.75        0.38801  (14121216)               657960.88
4182511.50        0.40601  (14121216)
       657960.88   4182531.25        0.42433  (14121216)               657960.88
4182551.00        0.44320  (14121216)
       657960.88   4182570.75        0.47142  (14012217)               657960.88
4182590.50        0.50487  (14012217)
       657960.88   4182610.25        0.53930  (14012217)               657960.88
4182630.00        0.57523  (14012217)
       657960.88   4182649.75        0.61339  (14012217)               657960.88
4182669.50        0.65401  (14012217)
       657960.88   4182689.25        0.69606  (14012217)               657960.88
4182709.00        0.73243  (14012217)
       657960.88   4182728.75        0.74978  (14012217)               657960.88
4182748.25        0.74413  (14012217)
       657960.88   4182768.00        0.73000  (14012217)               657960.88
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       657960.88   4182886.50        0.77337  (15060806)               657960.88
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4182985.25        0.72777  (15060806)
       657960.88   4183005.00        0.73483  (14092807)               657960.88
4183024.75        0.74343  (14092807)
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4183064.25        0.75272  (14092807)
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       657980.63   4182551.00        0.45045  (14012217)                657980.63
 4182570.75        0.48194  (14012217)
       657980.63   4182590.50        0.51359  (14012217)                657980.63
 4182610.25        0.54580  (14012217)
       657980.63   4182630.00        0.57935  (14012217)                657980.63
 4182649.75        0.61396  (14012217)
       657980.63   4182669.50        0.64842  (14012217)                657980.63
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       657980.63   4182709.00        0.69432  (14012217)                657980.63
 4182728.75        0.69415  (14012217)
       657980.63   4182748.25        0.68291  (14012217)                657980.63
 4182768.00        0.67891  (15060806)
 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuintal\MantecaQuintal.isc               ***        03/22/24
 *** AERMET - VERSION  18081 ***   ***
                       ***        08:43:47

                                  PAGE  37
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                               *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP:  ALL      ***
                                  INCLUDING SOURCE(S):     PAREA1      ,

                                          *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                        ** CONC OF PM_10    IN MICROGRAMS/M**3
                   **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD (M)
Y-COORD (M)        CONC     (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - -
       657980.63   4182787.75        0.70046  (15060806)                657980.63
 4182807.50        0.71286  (15060806)
       657980.63   4182827.25        0.72103  (15060806)                657980.63
 4182847.00        0.72598  (15060806)
       657980.63   4182866.75        0.72779  (15060806)                657980.63
 4182886.50        0.72651  (15060806)
       657980.63   4182906.25        0.72226  (15060806)                657980.63
 4182926.00        0.71518  (15060806)
       657980.63   4182945.75        0.70547  (15060806)                657980.63
 4182965.50        0.69331  (15060806)
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       657980.63   4182985.25        0.68027  (14092807)               657980.63
4183005.00        0.69059  (14092807)
       657980.63   4183024.75        0.69892  (14092807)               657980.63
4183044.50        0.70482  (14092807)
       657980.63   4183064.25        0.70790  (14092807)               657980.63
4183084.00        0.70775  (14092807)
       657980.63   4183103.75        0.70395  (14092807)               657980.63
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       658000.38   4182472.00        0.38230  (14121216)               658000.38
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       658000.38   4182511.50        0.41467  (14121216)               658000.38
4182531.25        0.43134  (14121216)
       658000.38   4182551.00        0.46077  (14012217)               658000.38
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       658000.38   4182590.50        0.52048  (14012217)               658000.38
4182610.25        0.55026  (14012217)
       658000.38   4182630.00        0.58010  (14012217)               658000.38
4182649.75        0.60848  (14012217)
       658000.38   4182669.50        0.63232  (14012217)               658000.38
4182689.25        0.64734  (14012217)
       658000.38   4182709.00        0.65010  (14012217)               658000.38
4182728.75        0.64200  (14012217)
       658000.38   4182748.25        0.62882  (14012217)               658000.38
4182768.00        0.64512  (15060806)
       658000.38   4182787.75        0.66511  (15060806)               658000.38
4182807.50        0.67651  (15060806)
       658000.38   4182827.25        0.68364  (15060806)               658000.38
4182847.00        0.68760  (15060806)
       658000.38   4182866.75        0.68853  (15060806)               658000.38
4182886.50        0.68650  (15060806)
       658000.38   4182906.25        0.68162  (15060806)               658000.38
4182926.00        0.67404  (15060806)
       658000.38   4182945.75        0.66394  (15060806)               658000.38
4182965.50        0.65146  (15060806)
       658000.38   4182985.25        0.64325  (14092807)               658000.38
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       658000.38   4183024.75        0.66130  (14092807)               658000.38
4183044.50        0.66700  (14092807)
       658000.38   4183064.25        0.66996  (14092807)               658000.38
4183103.75        0.66600  (14092807)
       658000.38   4183123.50        0.65809  (14092807)               658020.13
4182472.00        0.38680  (14121216)
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       658020.13   4182531.25        0.44146  (14012217)               658020.13
4182551.00        0.46929  (14012217)
       658020.13   4182570.75        0.49716  (14012217)               658020.13
4182590.50        0.52471  (14012217)
       658020.13   4182610.25        0.55090  (14012217)               658020.13
4182630.00        0.57529  (14012217)
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       658020.13   4182649.75        0.59546  (14012217)                658020.13
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 4182709.00        0.60678  (14012217)
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       658020.13   4182768.00        0.61664  (15060806)                658020.13
 4182787.75        0.63481  (15060806)
       658020.13   4182807.50        0.64516  (15060806)                658020.13
 4182827.25        0.65130  (15060806)
       658020.13   4182847.00        0.65444  (15060806)                658020.13
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       658020.13   4182886.50        0.65184  (15060806)                658020.13
 4182906.25        0.64637  (15060806)
       658020.13   4182926.00        0.63830  (15060806)                658020.13
 4182945.75        0.62779  (15060806)
       658020.13   4182965.50        0.61496  (15060806)                658020.13
 4182985.25        0.61155  (14092807)
       658020.13   4183005.00        0.62123  (14092807)                658020.13
 4183024.75        0.62902  (14092807)
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                             *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP:  ALL      ***
                                INCLUDING SOURCE(S):     PAREA1      ,

                                          *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                       ** CONC OF PM_10    IN MICROGRAMS/M**3
                    **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)             X-COORD (M)
Y-COORD (M)        CONC     (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
       658020.13   4183044.50        0.63452  (14092807)                658020.13
 4183064.25        0.63734  (14092807)
       658020.13   4183084.00        0.63710  (14092807)                658020.13
 4183103.75        0.63333  (14092807)
       658020.13   4183123.50        0.62545  (14092807)                658020.13
 4183143.25        0.61257  (14092807)
       658039.88   4182472.00        0.39012  (14121216)                658039.88
 4182491.75        0.40413  (14121216)
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4182570.75        0.50122  (14012217)
       658039.88   4182590.50        0.52527  (14012217)               658039.88
4182610.25        0.54656  (14012217)
       658039.88   4182630.00        0.56418  (14012217)               658039.88
4182649.75        0.57589  (14012217)
       658039.88   4182669.50        0.57978  (14012217)               658039.88
4182689.25        0.57621  (14012217)
       658039.88   4182709.00        0.57571  (17011509)               658039.88
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       658039.88   4182748.25        0.56478  (17011509)               658039.88
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       658039.88   4182787.75        0.60833  (15060806)               658039.88
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4182886.50        0.62131  (15060806)
       658039.88   4182906.25        0.61526  (15060806)               658039.88
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       658039.88   4182945.75        0.59581  (15060806)               658039.88
4182965.50        0.58262  (15060806)
       658039.88   4182985.25        0.58397  (14092807)               658039.88
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4183044.50        0.60617  (14092807)
       658039.88   4183064.25        0.60885  (14092807)               658039.88
4183084.00        0.60853  (14092807)
       658039.88   4183123.50        0.59686  (14092807)               658039.88
4183143.25        0.58396  (14092807)
       658039.88   4183163.00        0.56442  (14092807)               658039.88
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       658039.88   4183202.50        0.54888  (16091407)               658039.88
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       658039.88   4183242.00        0.55465  (16091407)               658059.63
4182472.00        0.39192  (14121216)
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       658059.63   4182531.25        0.45666  (14012217)               658059.63
4182551.00        0.47986  (14012217)
       658059.63   4182570.75        0.50184  (14012217)               658059.63
4182590.50        0.52144  (14012217)
       658059.63   4182610.25        0.53695  (14012217)               658059.63
4182630.00        0.54756  (14012217)
       658059.63   4182649.75        0.55181  (14012217)               658059.63
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4182709.00        0.55188  (17011509)
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 4182827.25        0.59759  (15060806)
        658059.63   4182847.00        0.59912  (15060806)                658059.63
 4182866.75        0.59776  (15060806)
        658059.63   4182886.50        0.59371  (15060806)                658059.63
 4182906.25        0.58733  (15060806)
        658059.63   4182926.00        0.57842  (15060806)                658059.63
 4182945.75        0.56711  (15060806)
        658059.63   4182965.50        0.55353  (15060806)                658059.63
 4182985.25        0.55962  (14092807)
        658059.63   4183005.00        0.56871  (14092807)                658059.63
 4183024.75        0.57599  (14092807)
        658059.63   4183044.50        0.58107  (14092807)                658059.63
 4183064.25        0.58362  (14092807)
        658059.63   4183084.00        0.58321  (14092807)                658059.63
 4183123.50        0.57147  (14092807)
        658059.63   4183143.25        0.55852  (14092807)                658059.63
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 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuintal\MantecaQuintal.isc               ***        03/22/24
 *** AERMET - VERSION  18081 ***   ***
                       ***        08:43:47

                                  PAGE  39
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                              *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP:  ALL      ***
                                 INCLUDING SOURCE(S):     PAREA1      ,

                                            *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                       ** CONC OF PM_10    IN MICROGRAMS/M**3
                    **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD (M)
Y-COORD (M)        CONC     (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - -
        658059.63   4183182.75        0.51624  (16091407)                658059.63
 4183202.50        0.52432  (16091407)
        658059.63   4183222.25        0.53022  (16091407)                658059.63
 4183242.00        0.53125  (16091407)
        658079.31   4182472.00        0.39187  (14012217)                658079.31
 4182491.75        0.41560  (14012217)
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       658079.31   4182511.50        0.43866  (14012217)               658079.31
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       658079.31   4182551.00        0.48059  (14012217)               658079.31
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       658079.31   4182590.50        0.51310  (14012217)               658079.31
4182610.25        0.52266  (14012217)
       658079.31   4182630.00        0.52693  (14012217)               658079.31
4182649.75        0.52535  (14012217)
       658079.31   4182669.50        0.52556  (17011509)               658079.31
4182689.25        0.53155  (17011509)
       658079.31   4182709.00        0.52881  (17011509)               658079.31
4182728.75        0.52157  (17011509)
       658079.31   4182748.25        0.53041  (15060806)               658079.31
4182768.00        0.55182  (15060806)
       658079.31   4182787.75        0.56413  (15060806)               658079.31
4182807.50        0.57133  (15060806)
       658079.31   4182827.25        0.57502  (15060806)               658079.31
4182847.00        0.57563  (15060806)
       658079.31   4182866.75        0.57353  (15060806)               658079.31
4182886.50        0.56888  (15060806)
       658079.31   4182906.25        0.56207  (15060806)               658079.31
4182926.00        0.55276  (15060806)
       658079.31   4182945.75        0.54110  (15060806)               658079.31
4182965.50        0.52765  (14092807)
       658079.31   4182985.25        0.53794  (14092807)               658079.31
4183005.00        0.54676  (14092807)
       658079.31   4183024.75        0.55379  (14092807)               658079.31
4183044.50        0.55868  (14092807)
       658079.31   4183064.25        0.56107  (14092807)               658079.31
4183084.00        0.56057  (14092807)
       658079.31   4183123.50        0.54873  (14092807)               658079.31
4183143.25        0.53572  (14092807)
       658079.31   4183163.00        0.51609  (14092807)               658079.31
4183182.75        0.49420  (16091407)
       658079.31   4183202.50        0.50225  (16091407)               658079.31
4183222.25        0.50833  (16091407)
       658079.31   4183242.00        0.51017  (16091407)               658099.06
4182472.00        0.40031  (14012217)
       658099.06   4182491.75        0.42198  (14012217)               658099.06
4182511.50        0.44259  (14012217)
       658099.06   4182531.25        0.46147  (14012217)               658099.06
4182551.00        0.47780  (14012217)
       658099.06   4182570.75        0.49125  (14012217)               658099.06
4182590.50        0.50058  (14012217)
       658099.06   4182610.25        0.50462  (14012217)               658099.06
4182630.00        0.50364  (14012217)
       658099.06   4182649.75        0.50117  (17011509)               658099.06
4182669.50        0.51178  (17011509)
       658099.06   4182689.25        0.51235  (17011509)               658099.06
4182709.00        0.50665  (17011509)
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        658099.06   4182728.75        0.49846  (17011509)                658099.06
 4182748.25        0.51552  (15060806)
        658099.06   4182768.00        0.53414  (15060806)                658099.06
 4182787.75        0.54533  (15060806)
        658099.06   4182807.50        0.55149  (15060806)                658099.06
 4182827.25        0.55414  (15060806)
        658099.06   4182847.00        0.55423  (15060806)                658099.06
 4182866.75        0.55157  (15060806)
        658099.06   4182886.50        0.54633  (15060806)                658099.06
 4182906.25        0.53877  (15060806)
        658099.06   4182926.00        0.52903  (15060806)                658099.06
 4182945.75        0.51713  (15060806)
        658099.06   4182965.50        0.50832  (14092807)                658099.06
 4182985.25        0.51833  (14092807)
        658099.06   4183005.00        0.52688  (14092807)                658099.06
 4183024.75        0.53367  (14092807)
        658099.06   4183044.50        0.53836  (14092807)                658099.06
 4183064.25        0.54061  (14092807)
        658099.06   4183084.00        0.54000  (14092807)                658099.06
 4183103.75        0.53603  (14092807)
        658099.06   4183123.50        0.52803  (14092807)                658099.06
 4183143.25        0.51496  (14092807)
        658099.06   4183163.00        0.49532  (14092807)                658099.06
 4183182.75        0.47409  (16091407)
```



```
                              *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP:  ALL      ***
                                 INCLUDING SOURCE(S):     PAREA1      ,

                                          *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                        ** CONC OF PM_10    IN MICROGRAMS/M**3
                   **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)             X-COORD (M)
Y-COORD (M)        CONC     (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - -
        658099.06   4183202.50        0.48211  (16091407)                658099.06
 4183222.25        0.48833  (16091407)
        658099.06   4183242.00        0.49086  (16091407)                658118.81
 4182472.00        0.40666  (14012217)
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       658118.81   4182491.75        0.42609  (14012217)               658118.81
4182511.50        0.44377  (14012217)
       658118.81   4182531.25        0.45913  (14012217)               658118.81
4182551.00        0.47142  (14012217)
       658118.81   4182570.75        0.48024  (14012217)               658118.81
4182590.50        0.48466  (14012217)
       658118.81   4182610.25        0.48401  (14012217)               658118.81
4182630.00        0.47901  (14012217)
       658118.81   4182649.75        0.49083  (17011509)               658118.81
4182669.50        0.49583  (17011509)
       658118.81   4182689.25        0.49290  (17011509)               658118.81
4182709.00        0.48547  (17011509)
       658118.81   4182728.75        0.47629  (15060806)               658118.81
4182748.25        0.50175  (15060806)
       658118.81   4182768.00        0.51823  (15060806)               658118.81
4182787.75        0.52798  (15060806)
       658118.81   4182807.50        0.53323  (15060806)               658118.81
4182827.25        0.53519  (15060806)
       658118.81   4182847.00        0.53444  (15060806)               658118.81
4182866.75        0.53118  (15060806)
       658118.81   4182886.50        0.52551  (15060806)               658118.81
4182906.25        0.51741  (15060806)
       658118.81   4182926.00        0.50716  (15060806)               658118.81
4182945.75        0.49475  (15060806)
       658118.81   4182965.50        0.49070  (14092807)               658118.81
4182985.25        0.50051  (14092807)
       658118.81   4183005.00        0.50881  (14092807)               658118.81
4183024.75        0.51537  (14092807)
       658118.81   4183044.50        0.51987  (14092807)               658118.81
4183064.25        0.52196  (14092807)
       658118.81   4183084.00        0.52124  (14092807)               658118.81
4183103.75        0.51718  (14092807)
       658118.81   4183123.50        0.50911  (14092807)               658118.81
4183143.25        0.49598  (14092807)
       658118.81   4183163.00        0.47637  (14092807)               658118.81
4183182.75        0.45568  (16091407)
       658118.81   4183202.50        0.46366  (16091407)               658118.81
4183222.25        0.47001  (16091407)
       658118.81   4183242.00        0.47313  (16091407)               658138.56
4182472.00        0.41069  (14012217)
       658138.56   4182491.75        0.42745  (14012217)               658138.56
4182511.50        0.44192  (14012217)
       658138.56   4182531.25        0.45353  (14012217)               658138.56
4182551.00        0.46168  (14012217)
       658138.56   4182570.75        0.46612  (14012217)               658138.56
4182590.50        0.46627  (14012217)
       658138.56   4182610.25        0.46187  (14012217)               658138.56
4182630.00        0.47029  (17011509)
       658138.56   4182649.75        0.47828  (17011509)               658138.56
4182669.50        0.47905  (17011509)
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       658138.56   4182689.25        0.47382  (17011509)               658138.56
 4182709.00        0.46532  (17011509)
       658138.56   4182728.75        0.46652  (15060806)               658138.56
 4182748.25        0.48889  (15060806)
       658138.56   4182768.00        0.50352  (15060806)               658138.56
 4182787.75        0.51192  (15060806)
       658138.56   4182807.50        0.51632  (15060806)               658138.56
 4182827.25        0.51759  (15060806)
       658138.56   4182847.00        0.51601  (15060806)               658138.56
 4182866.75        0.51216  (15060806)
       658138.56   4182886.50        0.50609  (15060806)               658138.56
 4182906.25        0.49752  (15060806)
       658138.56   4182926.00        0.48677  (15060806)               658138.56
 4182945.75        0.47385  (15060806)
       658138.56   4182965.50        0.47454  (14092807)               658138.56
 4182985.25        0.48415  (14092807)
       658138.56   4183005.00        0.49225  (14092807)               658138.56
 4183024.75        0.49860  (14092807)
       658138.56   4183044.50        0.50291  (14092807)               658138.56
 4183064.25        0.50484  (14092807)
       658138.56   4183084.00        0.50400  (14092807)               658138.56
 4183103.75        0.49985  (14092807)
       658138.56   4183123.50        0.49169  (14092807)               658138.56
 4183143.25        0.47853  (14092807)
       658138.56   4183163.00        0.45901  (14092807)               658138.56
 4183182.75        0.43871  (16091407)
 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuintal\MantecaQuintal.isc               ***        03/22/24
 *** AERMET - VERSION  18081 ***   ***
                       ***        08:43:47

                                  PAGE  41
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                               *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP:  ALL      ***
                                  INCLUDING SOURCE(S):     PAREA1      ,

                                              *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                           ** CONC OF PM_10    IN MICROGRAMS/M**3
                   **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD (M)
Y-COORD (M)        CONC     (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
       658138.56   4183202.50        0.44666  (16091407)               658138.56
 4183222.25        0.45311  (16091407)
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       658138.56   4183242.00        0.45672  (16091407)               656770.14
4183459.54        0.33219  (14060906)
       656742.76   4183470.49        0.32029  (16010209)               656777.44
4183412.09        0.33597  (14022108)
       656777.44   4183371.93        0.35497  (14022108)               656739.11
4183386.53        0.34114  (14022108)
       656740.94   4183430.34        0.32262  (14022108)               656750.06
4183550.80        0.35201  (14060906)
       656753.71   4183523.42        0.34877  (14060906)               656750.06
4183496.05        0.33595  (14060906)
       656773.79   4183501.52        0.35531  (14060906)               656706.26
4183413.91        0.32550  (14022108)
       656691.66   4183392.01        0.32719  (14022108)               656686.18
4183373.76        0.32614  (14022108)
       656700.78   4183355.50        0.33040  (14022108)               656717.21
4183344.55        0.33613  (14022108)
       656660.63   4183362.80        0.31373  (14022108)               656761.01
4182461.34        0.22332  (15032607)
       656800.16   4182461.34        0.22936  (15032607)               656839.31
4182461.34        0.23444  (15032607)
       656878.46   4182461.34        0.23833  (15032607)               656917.61
4182461.34        0.24078  (15032607)
       656956.76   4182461.34        0.24158  (15032607)               656995.91
4182461.34        0.25168  (16010309)
       657035.06   4182461.34        0.27076  (16010309)               657074.21
4182461.34        0.28879  (16010309)
       657113.36   4182461.34        0.30315  (16010309)               656761.01
4182487.10        0.22411  (15032607)
       656800.16   4182487.10        0.23137  (15032607)               656839.31
4182487.10        0.23782  (15032607)
       656878.46   4182487.10        0.24335  (15032607)               656917.61
4182487.10        0.24761  (15032607)
       656956.76   4182487.10        0.25031  (15032607)               656995.91
4182487.10        0.25125  (15032607)
       657035.06   4182487.10        0.26736  (16010309)               657074.21
4182487.10        0.28777  (16010309)
       657113.36   4182487.10        0.30562  (16010309)               656761.01
4182512.86        0.22396  (15032607)
       656800.16   4182512.86        0.23236  (15032607)               656839.31
4182512.86        0.24005  (15032607)
       656878.46   4182512.86        0.24702  (15032607)               656917.61
4182512.86        0.25307  (15032607)
       656956.76   4182512.86        0.25777  (15032607)               656995.91
4182512.86        0.26071  (15032607)
       657035.06   4182512.86        0.26321  (16010309)               657074.21
4182512.86        0.28499  (16010309)
       657113.36   4182512.86        0.30636  (16010309)               656761.01
4182538.62        0.22595  (17120608)
       656800.16   4182538.62        0.23244  (15032607)               656839.31
4182538.62        0.24124  (15032607)
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       656878.46   4182538.62        0.24945  (15032607)               656917.61
 4182538.62        0.25707  (15032607)
       656956.76   4182538.62        0.26377  (15032607)               656995.91
 4182538.62        0.26896  (15032607)
       657035.06   4182538.62        0.27214  (15032607)               657074.21
 4182538.62        0.28080  (16010309)
       657113.36   4182538.62        0.30486  (16010309)               656761.01
 4182564.38        0.24126  (13040307)
       656800.16   4182564.38        0.23879  (13040307)               656839.31
 4182564.38        0.24156  (15032607)
       656878.46   4182564.38        0.25083  (15032607)               656917.61
 4182564.38        0.25970  (15032607)
       656956.76   4182564.38        0.26812  (15032607)               656995.91
 4182564.38        0.27561  (15032607)
       657035.06   4182564.38        0.28135  (15032607)               657074.21
 4182564.38        0.28472  (15032607)
       657113.36   4182564.38        0.30112  (16010309)               656761.01
 4182590.14        0.25970  (13040307)
       656800.16   4182590.14        0.25882  (13040307)               656839.31
 4182590.14        0.25735  (13040307)
       656878.46   4182590.14        0.25531  (13040307)               656917.61
 4182590.14        0.26125  (15032607)
       656956.76   4182590.14        0.27093  (15032607)               656995.91
 4182590.14        0.28038  (15032607)
       657035.06   4182590.14        0.28885  (15032607)               657074.21
 4182590.14        0.29520  (15032607)
       657113.36   4182590.14        0.29868  (15032607)               656761.01
 4182615.90        0.27672  (13040307)
 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuintal\MantecaQuintal.isc               ***        03/22/24
 *** AERMET - VERSION  18081 ***   ***
                       ***        08:43:47

                                  PAGE  42
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                               *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP:  ALL      ***
                                  INCLUDING SOURCE(S):     PAREA1      ,

                                            *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                         ** CONC OF PM_10    IN MICROGRAMS/M**3
                   **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD (M)
Y-COORD (M)        CONC     (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
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       656800.16   4182615.90        0.27718  (13040307)               656839.31
 4182615.90        0.27731  (13040307)
       656878.46   4182615.90        0.27699  (13040307)               656917.61
 4182615.90        0.27618  (13040307)
       656956.76   4182615.90        0.27480  (13040307)               656995.91
 4182615.90        0.28336  (15032607)
       657035.06   4182615.90        0.29413  (15032607)               657074.21
 4182615.90        0.30382  (15032607)
       657113.36   4182615.90        0.31082  (15032607)               656800.16
 4182641.66        0.29408  (13040307)
       656839.31   4182641.66        0.29559  (13040307)               656878.46
 4182641.66        0.29681  (13040307)
       656917.61   4182641.66        0.29779  (13040307)               656956.76
 4182641.66        0.29840  (13040307)
       656995.91   4182641.66        0.29852  (13040307)               657035.06
 4182641.66        0.29809  (13040307)
       657074.21   4182641.66        0.30971  (15032607)               657113.36
 4182641.66        0.32093  (15032607)
       656800.16   4182667.42        0.30955  (13040307)               656839.31
 4182667.42        0.31231  (13040307)
       656878.46   4182667.42        0.31489  (13040307)               656917.61
 4182667.42        0.31746  (13040307)
       656956.76   4182667.42        0.31994  (13040307)               656995.91
 4182667.42        0.32218  (13040307)
       657035.06   4182667.42        0.32400  (13040307)               657074.21
 4182667.42        0.32535  (13040307)
       657113.36   4182667.42        0.32761  (15032607)

 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuintal\MantecaQuintal.isc               ***        03/22/24
 *** AERMET - VERSION  18081 ***   ***
                       ***        08:43:47

                                  PAGE  43
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                                  *** THE SUMMARY OF MAXIMUM ANNUAL RESULTS
AVERAGED OVER   5 YEARS ***


                                   ** CONC OF PM_10    IN MICROGRAMS/M**3
              **


                        NETWORK
GROUP ID                      AVERAGE CONC               RECEPTOR  (XR, YR,
ZELEV, ZHILL, ZFLAG)  OF TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - -
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ALL       1ST HIGHEST VALUE IS       0.04735 AT (  657941.13,  4182906.25,
12.19,    12.19,    0.00)  DC
          2ND HIGHEST VALUE IS       0.04730 AT (  657941.13,  4182926.00,
12.19,    12.19,    0.00)  DC
          3RD HIGHEST VALUE IS       0.04725 AT (  657941.13,  4182886.50,
12.19,    12.19,    0.00)  DC
          4TH HIGHEST VALUE IS       0.04712 AT (  657941.13,  4182945.75,
12.19,    12.19,    0.00)  DC
          5TH HIGHEST VALUE IS       0.04699 AT (  657941.13,  4182866.75,
12.19,    12.19,    0.00)  DC
          6TH HIGHEST VALUE IS       0.04682 AT (  657941.13,  4182965.50,
12.19,    12.19,    0.00)  DC
          7TH HIGHEST VALUE IS       0.04653 AT (  657941.13,  4182847.00,
12.19,    12.19,    0.00)  DC
          8TH HIGHEST VALUE IS       0.04639 AT (  657941.13,  4182985.25,
12.19,    12.19,    0.00)  DC
          9TH HIGHEST VALUE IS       0.04628 AT (  657724.00,  4182728.75,
12.04,    12.04,    0.00)  DC
         10TH HIGHEST VALUE IS       0.04620 AT (  657704.25,  4182728.75,
11.93,    11.93,    0.00)  DC


 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuintal\MantecaQuintal.isc               ***        03/22/24
 *** AERMET - VERSION  18081 ***   ***
                       ***        08:43:47

                                  PAGE  44
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                                                *** THE SUMMARY OF HIGHEST  1-HR
RESULTS ***


                                   ** CONC OF PM_10    IN MICROGRAMS/M**3
              **

                                                      DATE
                                         NETWORK
GROUP ID                           AVERAGE CONC     (YYMMDDHH)             RECEPTOR
(XR, YR, ZELEV, ZHILL, ZFLAG)    OF TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - -

ALL      HIGH   1ST HIGH VALUE IS       0.82961  ON 14012217: AT (  657921.44,
4182728.75,    12.56,    12.56,    0.00)  DC
```

*** Message Summary : AERMOD Model Execution ***

 --------- Summary of Total Messages --------

A Total of   0 Fatal Error Message(s)
A Total of   11 Warning Message(s)
A Total of   971 Informational Message(s)

A Total of   43824 Hours Were Processed

A Total of   442 Calm Hours Identified

A Total of   529 Missing Hours Identified (1.21 Percent)

   ******** FATAL ERROR MESSAGES ********
              *** NONE ***

   ********   WARNING MESSAGES   ********
ME W186   68   MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used
     0.50
ME W187   68   MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET

MX W420   34276   METQA: Wind Speed Out-of-Range.   KURDAT =
 16112904
MX W420   34282   METQA: Wind Speed Out-of-Range.   KURDAT =
 16112910
MX W420   34288   METQA: Wind Speed Out-of-Range.   KURDAT =
 16112916
MX W420   34294   METQA: Wind Speed Out-of-Range.   KURDAT =
 16112922
MX W420   34300   METQA: Wind Speed Out-of-Range.   KURDAT =
 16113004
MX W420   40768   METQA: Wind Speed Out-of-Range.   KURDAT =
 17082616

```
MX W420   40792        METQA: Wind Speed Out-of-Range.   KURDAT =
 17082716
MX W420   40798        METQA: Wind Speed Out-of-Range.   KURDAT =
 17082722
MX W420   40804        METQA: Wind Speed Out-of-Range.   KURDAT =
 17082804

   ************************************
   *** AERMOD Finishes Successfully ***
   ************************************
```

Off-Site Roadway Construction AERMOD Files

```
**
**************************************
**
** AERMOD Input Produced by:
** AERMOD View Ver. 10.0.0
** Lakes Environmental Software Inc.
** Date: 3/22/2024
** File: C:\Lakes\AERMOD
View\MantecaQuintal_offsite_Road\MantecaQuintal_offsite_Road.ADI
**
**************************************
**
**
**************************************
** AERMOD Control Pathway
**************************************
**
**
CO STARTING
   TITLEONE C:\Lakes\AERMOD View\MantecaQuinta_onsite_mitigated\MantecaQuinta_on
   MODELOPT DFAULT CONC
   AVERTIME 1 ANNUAL
   POLLUTID PM_10
   RUNORNOT RUN
   ERRORFIL MantecaQuintal_offsite_Road.err
CO FINISHED
**
**************************************
** AERMOD Source Pathway
**************************************
**
**
SO STARTING
** Source Location **
** Source ID - Type - X Coord. - Y Coord. **
** ------------------------------------------------------------------------
** Line Source Represented by Adjacent Volume Sources
** LINE VOLUME Source ID = SLINE1
** DESCRSRC
** PREFIX
** Length of Side = 36.48
** Configuration = Adjacent
** Emission Rate = 0.0013
** Vertical Dimension = 3.40
** SZINIT = 1.58
** Nodes = 2
** 657121.247, 4182832.809, 10.67, 1.70, 16.97
** 657096.574, 4183543.704, 10.99, 1.70, 16.97
** ------------------------------------------------------------------------
   LOCATION L0000001     VOLUME   657120.614 4182851.038 10.68
```

```
   LOCATION L0000002     VOLUME   657119.349 4182887.496 10.69
   LOCATION L0000003     VOLUME   657118.083 4182923.954 10.71
   LOCATION L0000004     VOLUME   657116.818 4182960.412 10.73
   LOCATION L0000005     VOLUME   657115.553 4182996.870 10.74
   LOCATION L0000006     VOLUME   657114.287 4183033.328 10.76
   LOCATION L0000007     VOLUME   657113.022 4183069.787 10.78
   LOCATION L0000008     VOLUME   657111.757 4183106.245 10.79
   LOCATION L0000009     VOLUME   657110.491 4183142.703 10.81
   LOCATION L0000010     VOLUME   657109.226 4183179.161 10.83
   LOCATION L0000011     VOLUME   657107.961 4183215.619 10.84
   LOCATION L0000012     VOLUME   657106.695 4183252.077 10.86
   LOCATION L0000013     VOLUME   657105.430 4183288.535 10.88
   LOCATION L0000014     VOLUME   657104.165 4183324.993 10.89
   LOCATION L0000015     VOLUME   657102.899 4183361.451 10.91
   LOCATION L0000016     VOLUME   657101.634 4183397.909 10.92
   LOCATION L0000017     VOLUME   657100.368 4183434.367 10.94
   LOCATION L0000018     VOLUME   657099.103 4183470.825 10.96
   LOCATION L0000019     VOLUME   657097.838 4183507.283 10.97
** End of LINE VOLUME Source ID = SLINE1
** Source Parameters **
** LINE VOLUME Source ID = SLINE1
   SRCPARAM L0000001     0.0000684211      1.70     16.97      1.58
   SRCPARAM L0000002     0.0000684211      1.70     16.97      1.58
   SRCPARAM L0000003     0.0000684211      1.70     16.97      1.58
   SRCPARAM L0000004     0.0000684211      1.70     16.97      1.58
   SRCPARAM L0000005     0.0000684211      1.70     16.97      1.58
   SRCPARAM L0000006     0.0000684211      1.70     16.97      1.58
   SRCPARAM L0000007     0.0000684211      1.70     16.97      1.58
   SRCPARAM L0000008     0.0000684211      1.70     16.97      1.58
   SRCPARAM L0000009     0.0000684211      1.70     16.97      1.58
   SRCPARAM L0000010     0.0000684211      1.70     16.97      1.58
   SRCPARAM L0000011     0.0000684211      1.70     16.97      1.58
   SRCPARAM L0000012     0.0000684211      1.70     16.97      1.58
   SRCPARAM L0000013     0.0000684211      1.70     16.97      1.58
   SRCPARAM L0000014     0.0000684211      1.70     16.97      1.58
   SRCPARAM L0000015     0.0000684211      1.70     16.97      1.58
   SRCPARAM L0000016     0.0000684211      1.70     16.97      1.58
   SRCPARAM L0000017     0.0000684211      1.70     16.97      1.58
   SRCPARAM L0000018     0.0000684211      1.70     16.97      1.58
   SRCPARAM L0000019     0.0000684211      1.70     16.97      1.58
** ------------------------------------------------------------------
   SRCGROUP ALL
SO FINISHED
**
**************************************
** AERMOD Receptor Pathway
**************************************
**
**
RE STARTING
```

```
   INCLUDED MantecaQuintal_offsite_Road.rou
RE FINISHED
**
**************************************
** AERMOD Meteorology Pathway
**************************************
**
**
ME STARTING
   SURFFILE Stockton_2013-2017.SFC
   PROFFILE Stockton_2013-2017.PFL
   SURFDATA 23237 2013
   UAIRDATA 23230 2013 OAKLAND/WSO_AP
   PROFBASE 7.9 METERS
ME FINISHED
**
**************************************
** AERMOD Output Pathway
**************************************
**
**
OU STARTING
   RECTABLE ALLAVE 1ST
   RECTABLE 1 1ST
** Auto-Generated Plotfiles
   PLOTFILE 1 ALL 1ST MANTECAQUINTAL_OFFSITE_ROAD.AD\01H1GALL.PLT 31
   PLOTFILE ANNUAL ALL MANTECAQUINTAL_OFFSITE_ROAD.AD\AN00GALL.PLT 32
   SUMMFILE MantecaQuintal_offsite_Road.sum
OU FINISHED
**
**************************************
** Project Parameters
**************************************
** PROJCTN  CoordinateSystemUTM
** DESCPTN  UTM: Universal Transverse Mercator
** DATUM    World Geodetic System 1984
** DTMRGN   Global Definition
** UNITS    m
** ZONE     10
** ZONEINX  0
**
```

```
**
**************************************
**
** AERMOD Input Produced by:
** AERMOD View Ver. 10.0.0
** Lakes Environmental Software Inc.
** Date: 3/22/2024
** File: C:\Lakes\AERMOD
View\MantecaQuintal_offsite_Road\MantecaQuintal_offsite_Road.ADI
**
**************************************
**
**
**************************************
** AERMOD Control Pathway
**************************************
**
**
CO STARTING
   TITLEONE C:\Lakes\AERMOD View\MantecaQuinta_onsite_mitigated\MantecaQuinta_on
   MODELOPT DFAULT CONC
   AVERTIME 1 ANNUAL
   POLLUTID PM_10
   RUNORNOT RUN
   ERRORFIL MantecaQuintal_offsite_Road.err
CO FINISHED
**
**************************************
** AERMOD Source Pathway
**************************************
**
**
SO STARTING
** Source Location **
** Source ID - Type - X Coord. - Y Coord. **
** ------------------------------------------------------------------------
** Line Source Represented by Adjacent Volume Sources
** LINE VOLUME Source ID = SLINE1
** DESCRSRC
** PREFIX
** Length of Side = 36.48
** Configuration = Adjacent
** Emission Rate = 0.0013
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** 657121.247, 4182832.809, 10.67, 1.70, 16.97
** 657096.574, 4183543.704, 10.99, 1.70, 16.97
** ------------------------------------------------------------------------
   LOCATION L0000001     VOLUME   657120.614 4182851.038 10.68
```

```
   LOCATION L0000002     VOLUME   657119.349 4182887.496 10.69
   LOCATION L0000003     VOLUME   657118.083 4182923.954 10.71
   LOCATION L0000004     VOLUME   657116.818 4182960.412 10.73
   LOCATION L0000005     VOLUME   657115.553 4182996.870 10.74
   LOCATION L0000006     VOLUME   657114.287 4183033.328 10.76
   LOCATION L0000007     VOLUME   657113.022 4183069.787 10.78
   LOCATION L0000008     VOLUME   657111.757 4183106.245 10.79
   LOCATION L0000009     VOLUME   657110.491 4183142.703 10.81
   LOCATION L0000010     VOLUME   657109.226 4183179.161 10.83
   LOCATION L0000011     VOLUME   657107.961 4183215.619 10.84
   LOCATION L0000012     VOLUME   657106.695 4183252.077 10.86
   LOCATION L0000013     VOLUME   657105.430 4183288.535 10.88
   LOCATION L0000014     VOLUME   657104.165 4183324.993 10.89
   LOCATION L0000015     VOLUME   657102.899 4183361.451 10.91
   LOCATION L0000016     VOLUME   657101.634 4183397.909 10.92
   LOCATION L0000017     VOLUME   657100.368 4183434.367 10.94
   LOCATION L0000018     VOLUME   657099.103 4183470.825 10.96
   LOCATION L0000019     VOLUME   657097.838 4183507.283 10.97
** End of LINE VOLUME Source ID = SLINE1
** Source Parameters **
** LINE VOLUME Source ID = SLINE1
   SRCPARAM L0000001     0.0000684211      1.70     16.97      1.58
   SRCPARAM L0000002     0.0000684211      1.70     16.97      1.58
   SRCPARAM L0000003     0.0000684211      1.70     16.97      1.58
   SRCPARAM L0000004     0.0000684211      1.70     16.97      1.58
   SRCPARAM L0000005     0.0000684211      1.70     16.97      1.58
   SRCPARAM L0000006     0.0000684211      1.70     16.97      1.58
   SRCPARAM L0000007     0.0000684211      1.70     16.97      1.58
   SRCPARAM L0000008     0.0000684211      1.70     16.97      1.58
   SRCPARAM L0000009     0.0000684211      1.70     16.97      1.58
   SRCPARAM L0000010     0.0000684211      1.70     16.97      1.58
   SRCPARAM L0000011     0.0000684211      1.70     16.97      1.58
   SRCPARAM L0000012     0.0000684211      1.70     16.97      1.58
   SRCPARAM L0000013     0.0000684211      1.70     16.97      1.58
   SRCPARAM L0000014     0.0000684211      1.70     16.97      1.58
   SRCPARAM L0000015     0.0000684211      1.70     16.97      1.58
   SRCPARAM L0000016     0.0000684211      1.70     16.97      1.58
   SRCPARAM L0000017     0.0000684211      1.70     16.97      1.58
   SRCPARAM L0000018     0.0000684211      1.70     16.97      1.58
   SRCPARAM L0000019     0.0000684211      1.70     16.97      1.58
** ------------------------------------------------------------------
   SRCGROUP ALL
SO FINISHED
**
**************************************
** AERMOD Receptor Pathway
**************************************
**
**
RE STARTING
```

```
   INCLUDED MantecaQuintal_offsite_Road.rou
RE FINISHED
**
**************************************
** AERMOD Meteorology Pathway
**************************************
**
**
ME STARTING
   SURFFILE Stockton_2013-2017.SFC
   PROFFILE Stockton_2013-2017.PFL
   SURFDATA 23237 2013
   UAIRDATA 23230 2013 OAKLAND/WSO_AP
   PROFBASE 7.9 METERS
ME FINISHED
**
**************************************
** AERMOD Output Pathway
**************************************
**
**
OU STARTING
   RECTABLE ALLAVE 1ST
   RECTABLE 1 1ST
** Auto-Generated Plotfiles
   PLOTFILE 1 ALL 1ST MANTECAQUINTAL_OFFSITE_ROAD.AD\01H1GALL.PLT 31
   PLOTFILE ANNUAL ALL MANTECAQUINTAL_OFFSITE_ROAD.AD\AN00GALL.PLT 32
   SUMMFILE MantecaQuintal_offsite_Road.sum
OU FINISHED


  *** Message Summary For AERMOD Model Setup ***

  --------- Summary of Total Messages --------

 A Total of            0 Fatal Error Message(s)
 A Total of            2 Warning Message(s)
 A Total of            0 Informational Message(s)


    ******** FATAL ERROR MESSAGES ********
               ***  NONE  ***


    ********   WARNING MESSAGES   ********
 ME W186     114       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used
      0.50
 ME W187     114       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET
```

```
 **********************************
 *** SETUP Finishes Successfully ***
 **********************************

 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuinta_onsite_mitigated\MantecaQuinta_on ***        03/22/24
 *** AERMET - VERSION  18081 ***   ***
                        ***       08:23:22

                                  PAGE   1
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                                          ***     MODEL SETUP OPTIONS SUMMARY
  ***
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - -

 **Model Is Setup For Calculation of Average CONCentration Values.

   --  DEPOSITION LOGIC  --
 **NO GAS DEPOSITION Data Provided.
 **NO PARTICLE DEPOSITION Data Provided.
 **Model Uses NO DRY DEPLETION.  DRYDPLT  =  F
 **Model Uses NO WET DEPLETION.  WETDPLT  =  F

 **Model Uses RURAL Dispersion Only.

 **Model Uses Regulatory DEFAULT Options:
        1. Stack-tip Downwash.
        2. Model Accounts for ELEVated Terrain Effects.
        3. Use Calms Processing Routine.
        4. Use Missing Data Processing Routine.
        5. No Exponential Decay.

 **Other Options Specified:
        ADJ_U*   - Use ADJ_U* option for SBL in AERMET
        CCVR_Sub - Meteorological data includes CCVR substitutions
        TEMP_Sub - Meteorological data includes TEMP substitutions

 **Model Assumes No FLAGPOLE Receptor Heights.

 **The User Specified a Pollutant Type of:  PM_10

 **Model Calculates  1 Short Term Average(s) of:   1-HR
     and Calculates ANNUAL Averages

 **This Run Includes:     19 Source(s);       1 Source Group(s); and     987
Receptor(s)

                with:      0 POINT(s), including
```

```
                          0 POINTCAP(s) and      0 POINTHOR(s)
                and:     19 VOLUME source(s)
                and:      0 AREA type source(s)
                and:      0 LINE source(s)
                and:      0 RLINE/RLINEXT source(s)
                and:      0 OPENPIT source(s)
                and:      0 BUOYANT LINE source(s) with a total of     0 line(s)


 **Model Set To Continue RUNning After the Setup Testing.

 **The AERMET Input Meteorological Data Version Date:  18081

 **Output Options Selected:
          Model Outputs Tables of ANNUAL Averages by Receptor
          Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE
Keyword)
          Model Outputs External File(s) of High Values for Plotting (PLOTFILE
Keyword)
          Model Outputs Separate Summary File of High Ranked Values (SUMMFILE
Keyword)

 **NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                 m for Missing
Hours
                                                                 b for Both Calm
and Missing Hours

 **Misc. Inputs:  Base Elev. for Pot. Temp. Profile (m MSL) =     7.90 ;  Decay
Coef. =    0.000     ;  Rot. Angle =     0.0
                  Emission Units = GRAMS/SEC                                 ;
Emission Rate Unit Factor =   0.10000E+07
                  Output Units   = MICROGRAMS/M**3

 **Approximate Storage Requirements of Model =      3.6 MB of RAM.

 **Input Runstream File:          aermod.inp

 **Output Print File:             aermod.out


 **Detailed Error/Message File:   MantecaQuintal_offsite_Road.err

 **File for Summary of Results:   MantecaQuintal_offsite_Road.sum

 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuinta_onsite_mitigated\MantecaQuinta_on ***        03/22/24
 *** AERMET - VERSION  18081 ***   ***
                        ***       08:23:22
```

*** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER EMISSION RATE PART. SCALAR CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	URBAN SOURCE BY
L0000001	0	0.68421E-04	657120.6	4182851.0	10.7	1.70	16.97	1.58	NO
L0000002	0	0.68421E-04	657119.3	4182887.5	10.7	1.70	16.97	1.58	NO
L0000003	0	0.68421E-04	657118.1	4182924.0	10.7	1.70	16.97	1.58	NO
L0000004	0	0.68421E-04	657116.8	4182960.4	10.7	1.70	16.97	1.58	NO
L0000005	0	0.68421E-04	657115.6	4182996.9	10.7	1.70	16.97	1.58	NO
L0000006	0	0.68421E-04	657114.3	4183033.3	10.8	1.70	16.97	1.58	NO
L0000007	0	0.68421E-04	657113.0	4183069.8	10.8	1.70	16.97	1.58	NO
L0000008	0	0.68421E-04	657111.8	4183106.2	10.8	1.70	16.97	1.58	NO
L0000009	0	0.68421E-04	657110.5	4183142.7	10.8	1.70	16.97	1.58	NO
L0000010	0	0.68421E-04	657109.2	4183179.2	10.8	1.70	16.97	1.58	NO
L0000011	0	0.68421E-04	657108.0	4183215.6	10.8	1.70	16.97	1.58	NO
L0000012	0	0.68421E-04	657106.7	4183252.1	10.9	1.70	16.97	1.58	NO
L0000013	0	0.68421E-04	657105.4	4183288.5	10.9	1.70	16.97	1.58	NO
L0000014	0	0.68421E-04	657104.2	4183325.0	10.9	1.70	16.97	1.58	NO
L0000015	0	0.68421E-04	657102.9	4183361.5	10.9	1.70	16.97	1.58	NO
L0000016	0	0.68421E-04	657101.6	4183397.9	10.9	1.70	16.97	1.58	NO
L0000017	0	0.68421E-04	657100.4	4183434.4	10.9	1.70	16.97	1.58	NO
L0000018	0	0.68421E-04	657099.1	4183470.8	11.0	1.70	16.97		

                                          *** SOURCE IDs DEFINING SOURCE GROUPS
***

 SRCGROUP ID   SOURCE IDs
 -----------   ----------

  ALL   L0000001   , L0000002   , L0000003   , L0000004   , L0000005   ,
L0000006   , L0000007   , L0000008   ,

             L0000009   , L0000010   , L0000011   , L0000012   , L0000013   ,
L0000014   , L0000015   , L0000016   ,

             L0000017   , L0000018   , L0000019   ,

                                        *** DISCRETE CARTESIAN RECEPTORS ***
                                       (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
                                                 (METERS)

     (657151.5, 4182491.8,   10.7,   10.7,   0.0);   (657151.5,
4182511.5,   10.7,   10.7,   0.0);
     (657151.5, 4182531.2,   10.7,   10.7,   0.0);   (657151.5,
4182551.0,   10.7,   10.7,   0.0);
     (657151.5, 4182570.8,   10.7,   10.7,   0.0);   (657151.5,
4182590.5,   10.7,   10.7,   0.0);
     (657151.5, 4182610.2,   10.7,   10.7,   0.0);   (657151.5,
4182630.0,   10.7,   10.7,   0.0);
     (657151.5, 4182649.8,   10.7,   10.7,   0.0);   (657171.2,
4182472.0,   10.7,   10.7,   0.0);
     (657171.2, 4182491.8,   10.7,   10.7,   0.0);   (657171.2,
4182511.5,   10.7,   10.7,   0.0);

```
     ( 657171.2, 4182531.2,      10.7,      10.7,       0.0);         ( 657171.2,
4182551.0,      10.7,      10.7,       0.0);
     ( 657171.2, 4182570.8,      10.7,      10.7,       0.0);         ( 657171.2,
4182590.5,      10.7,      10.7,       0.0);
     ( 657171.2, 4182610.2,      10.7,      10.7,       0.0);         ( 657171.2,
4182630.0,      10.7,      10.7,       0.0);
     ( 657171.2, 4182649.8,      10.7,      10.7,       0.0);         ( 657191.0,
4182472.0,      10.7,      10.7,       0.0);
     ( 657191.0, 4182491.8,      10.7,      10.7,       0.0);         ( 657191.0,
4182511.5,      10.7,      10.7,       0.0);
     ( 657191.0, 4182531.2,      10.7,      10.7,       0.0);         ( 657191.0,
4182551.0,      10.7,      10.7,       0.0);
     ( 657191.0, 4182570.8,      10.7,      10.7,       0.0);         ( 657191.0,
4182590.5,      10.7,      10.7,       0.0);
     ( 657191.0, 4182610.2,      10.7,      10.7,       0.0);         ( 657191.0,
4182630.0,      10.7,      10.7,       0.0);
     ( 657191.0, 4182649.8,      10.7,      10.7,       0.0);         ( 657210.8,
4182472.0,      10.7,      10.7,       0.0);
     ( 657210.8, 4182491.8,      10.7,      10.7,       0.0);         ( 657210.8,
4182511.5,      10.7,      10.7,       0.0);
     ( 657210.8, 4182531.2,      10.7,      10.7,       0.0);         ( 657210.8,
4182551.0,      10.7,      10.7,       0.0);
     ( 657210.8, 4182570.8,      10.7,      10.7,       0.0);         ( 657210.8,
4182590.5,      10.7,      10.7,       0.0);
     ( 657210.8, 4182610.2,      10.7,      10.7,       0.0);         ( 657210.8,
4182630.0,      10.7,      10.7,       0.0);
     ( 657210.8, 4182649.8,      10.7,      10.7,       0.0);         ( 657230.5,
4182472.0,      10.7,      10.7,       0.0);
     ( 657230.5, 4182491.8,      10.7,      10.7,       0.0);         ( 657230.5,
4182511.5,      10.7,      10.7,       0.0);
     ( 657230.5, 4182531.2,      10.7,      10.7,       0.0);         ( 657230.5,
4182551.0,      10.7,      10.7,       0.0);
     ( 657230.5, 4182570.8,      10.7,      10.7,       0.0);         ( 657230.5,
4182590.5,      10.7,      10.7,       0.0);
     ( 657230.5, 4182610.2,      10.7,      10.7,       0.0);         ( 657230.5,
4182630.0,      10.7,      10.7,       0.0);
     ( 657230.5, 4182649.8,      10.7,      10.7,       0.0);         ( 657250.2,
4182472.0,      10.7,      10.7,       0.0);
     ( 657250.2, 4182491.8,      10.7,      10.7,       0.0);         ( 657250.2,
4182511.5,      10.7,      10.7,       0.0);
     ( 657250.2, 4182531.2,      10.7,      10.7,       0.0);         ( 657250.2,
4182551.0,      10.7,      10.7,       0.0);
     ( 657250.2, 4182570.8,      10.7,      10.7,       0.0);         ( 657250.2,
4182590.5,      10.7,      10.7,       0.0);
     ( 657250.2, 4182610.2,      10.7,      10.7,       0.0);         ( 657250.2,
4182630.0,      10.7,      10.7,       0.0);
     ( 657250.2, 4182649.8,      10.7,      10.7,       0.0);         ( 657270.0,
4182472.0,      10.7,      10.7,       0.0);
     ( 657270.0, 4182491.8,      10.7,      10.7,       0.0);         ( 657270.0,
4182511.5,      10.7,      10.7,       0.0);
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     ( 657270.0, 4182531.2,      10.7,      10.7,       0.0);         ( 657270.0,
4182551.0,      10.7,      10.7,       0.0);
     ( 657270.0, 4182570.8,      10.7,      10.7,       0.0);         ( 657270.0,
4182590.5,      10.7,      10.7,       0.0);
     ( 657270.0, 4182610.2,      10.7,      10.7,       0.0);         ( 657270.0,
4182630.0,      10.7,      10.7,       0.0);
     ( 657270.0, 4182649.8,      10.7,      10.7,       0.0);         ( 657289.7,
4182472.0,      10.7,      10.7,       0.0);
     ( 657289.7, 4182491.8,      10.7,      10.7,       0.0);         ( 657289.7,
4182511.5,      10.7,      10.7,       0.0);
     ( 657289.7, 4182531.2,      10.7,      10.7,       0.0);         ( 657289.7,
4182551.0,      10.7,      10.7,       0.0);
     ( 657289.7, 4182570.8,      10.7,      10.7,       0.0);         ( 657289.7,
4182590.5,      10.7,      10.7,       0.0);
     ( 657289.7, 4182610.2,      10.7,      10.7,       0.0);         ( 657289.7,
4182630.0,      10.7,      10.7,       0.0);
     ( 657289.7, 4182649.8,      10.7,      10.7,       0.0);         ( 657309.4,
4182472.0,      10.7,      10.7,       0.0);
     ( 657309.4, 4182491.8,      10.7,      10.7,       0.0);         ( 657309.4,
4182511.5,      10.7,      10.7,       0.0);
     ( 657309.4, 4182531.2,      10.7,      10.7,       0.0);         ( 657309.4,
4182551.0,      10.7,      10.7,       0.0);
     ( 657309.4, 4182570.8,      10.7,      10.7,       0.0);         ( 657309.4,
4182590.5,      10.7,      10.7,       0.0);
     ( 657309.4, 4182610.2,      10.7,      10.7,       0.0);         ( 657309.4,
4182630.0,      10.7,      10.7,       0.0);
     ( 657309.4, 4182649.8,      10.7,      10.7,       0.0);         ( 657329.2,
4182472.0,      10.7,      10.7,       0.0);
 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuinta_onsite_mitigated\MantecaQuinta_on ***        03/22/24
 *** AERMET - VERSION  18081 ***   ***
                        ***       08:23:22

                                  PAGE   5
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                                     *** DISCRETE CARTESIAN RECEPTORS ***
                                   (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
                                                (METERS)

     ( 657329.2, 4182491.8,      10.7,      10.7,       0.0);         ( 657329.2,
4182511.5,      10.7,      10.7,       0.0);
     ( 657329.2, 4182531.2,      10.7,      10.7,       0.0);         ( 657329.2,
4182551.0,      10.7,      10.7,       0.0);
     ( 657329.2, 4182570.8,      10.7,      10.7,       0.0);         ( 657329.2,
4182590.5,      10.7,      10.7,       0.0);
     ( 657329.2, 4182610.2,      10.7,      10.7,       0.0);         ( 657329.2,
4182630.0,      10.7,      10.7,       0.0);
     ( 657329.2, 4182649.8,      10.7,      10.7,       0.0);         ( 657348.9,
4182472.0,      10.7,      10.7,       0.0);
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     ( 657348.9, 4182491.8,      10.7,      10.7,       0.0);         ( 657348.9,
4182511.5,      10.7,      10.7,       0.0);
     ( 657348.9, 4182531.2,      10.7,      10.7,       0.0);         ( 657348.9,
4182551.0,      10.7,      10.7,       0.0);
     ( 657348.9, 4182570.8,      10.7,      10.7,       0.0);         ( 657348.9,
4182590.5,      10.7,      10.7,       0.0);
     ( 657348.9, 4182610.2,      10.7,      10.7,       0.0);         ( 657348.9,
4182630.0,      10.7,      10.7,       0.0);
     ( 657348.9, 4182649.8,      10.7,      10.7,       0.0);         ( 657368.7,
4182472.0,      10.7,      10.7,       0.0);
     ( 657368.7, 4182491.8,      10.7,      10.7,       0.0);         ( 657368.7,
4182511.5,      10.7,      10.7,       0.0);
     ( 657368.7, 4182531.2,      10.7,      10.7,       0.0);         ( 657368.7,
4182551.0,      10.7,      10.7,       0.0);
     ( 657368.7, 4182570.8,      10.7,      10.7,       0.0);         ( 657368.7,
4182590.5,      10.7,      10.7,       0.0);
     ( 657368.7, 4182610.2,      10.7,      10.7,       0.0);         ( 657368.7,
4182630.0,      10.7,      10.7,       0.0);
     ( 657368.7, 4182649.8,      10.7,      10.7,       0.0);         ( 657388.4,
4182472.0,      10.7,      10.7,       0.0);
     ( 657388.4, 4182491.8,      10.7,      10.7,       0.0);         ( 657388.4,
4182511.5,      10.7,      10.7,       0.0);
     ( 657388.4, 4182531.2,      10.7,      10.7,       0.0);         ( 657388.4,
4182551.0,      10.7,      10.7,       0.0);
     ( 657388.4, 4182570.8,      10.7,      10.7,       0.0);         ( 657388.4,
4182590.5,      10.7,      10.7,       0.0);
     ( 657388.4, 4182610.2,      10.7,      10.7,       0.0);         ( 657388.4,
4182630.0,      10.7,      10.7,       0.0);
     ( 657388.4, 4182649.8,      10.7,      10.7,       0.0);         ( 657408.1,
4182472.0,      10.9,      10.9,       0.0);
     ( 657408.1, 4182491.8,      10.9,      10.9,       0.0);         ( 657408.1,
4182511.5,      10.8,      10.8,       0.0);
     ( 657408.1, 4182531.2,      10.7,      10.7,       0.0);         ( 657408.1,
4182551.0,      10.7,      10.7,       0.0);
     ( 657408.1, 4182570.8,      10.7,      10.7,       0.0);         ( 657408.1,
4182590.5,      10.7,      10.7,       0.0);
     ( 657408.1, 4182610.2,      10.7,      10.7,       0.0);         ( 657408.1,
4182630.0,      10.7,      10.7,       0.0);
     ( 657408.1, 4182649.8,      10.7,      10.7,       0.0);         ( 657427.9,
4182472.0,      11.0,      11.0,       0.0);
     ( 657427.9, 4182491.8,      11.0,      11.0,       0.0);         ( 657427.9,
4182511.5,      10.9,      10.9,       0.0);
     ( 657427.9, 4182531.2,      10.8,      10.8,       0.0);         ( 657427.9,
4182551.0,      10.8,      10.8,       0.0);
     ( 657427.9, 4182570.8,      10.8,      10.8,       0.0);         ( 657427.9,
4182590.5,      10.8,      10.8,       0.0);
     ( 657427.9, 4182610.2,      10.8,      10.8,       0.0);         ( 657427.9,
4182630.0,      10.7,      10.7,       0.0);
     ( 657427.9, 4182649.8,      10.7,      10.7,       0.0);         ( 657447.6,
4182472.0,      11.0,      11.0,       0.0);
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     ( 657447.6, 4182491.8,      11.0,      11.0,       0.0);         ( 657447.6,
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     ( 657447.6, 4182531.2,      11.0,      11.0,       0.0);         ( 657447.6,
4182551.0,      11.0,      11.0,       0.0);
     ( 657447.6, 4182570.8,      11.0,      11.0,       0.0);         ( 657447.6,
4182590.5,      11.0,      11.0,       0.0);
     ( 657447.6, 4182610.2,      11.0,      11.0,       0.0);         ( 657447.6,
4182630.0,      10.8,      10.8,       0.0);
     ( 657447.6, 4182649.8,      10.7,      10.7,       0.0);         ( 657467.4,
4182472.0,      11.0,      11.0,       0.0);
     ( 657467.4, 4182491.8,      11.0,      11.0,       0.0);         ( 657467.4,
4182511.5,      11.0,      11.0,       0.0);
     ( 657467.4, 4182531.2,      11.0,      11.0,       0.0);         ( 657467.4,
4182551.0,      11.0,      11.0,       0.0);
     ( 657467.4, 4182570.8,      11.0,      11.0,       0.0);         ( 657467.4,
4182590.5,      11.0,      11.0,       0.0);
     ( 657467.4, 4182610.2,      11.0,      11.0,       0.0);         ( 657467.4,
4182630.0,      10.9,      10.9,       0.0);
     ( 657467.4, 4182649.8,      10.9,      10.9,       0.0);         ( 657487.1,
4182472.0,      11.1,      11.1,       0.0);
     ( 657487.1, 4182491.8,      11.1,      11.1,       0.0);         ( 657487.1,
4182511.5,      11.1,      11.1,       0.0);
     ( 657487.1, 4182531.2,      11.1,      11.1,       0.0);         ( 657487.1,
4182551.0,      11.1,      11.1,       0.0);
     ( 657487.1, 4182570.8,      11.1,      11.1,       0.0);         ( 657487.1,
4182590.5,      11.1,      11.1,       0.0);
     ( 657487.1, 4182610.2,      11.1,      11.1,       0.0);         ( 657487.1,
4182630.0,      11.1,      11.1,       0.0);
     ( 657487.1, 4182649.8,      11.1,      11.1,       0.0);         ( 657506.9,
4182472.0,      11.3,      11.3,       0.0);
 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuinta_onsite_mitigated\MantecaQuinta_on ***        03/22/24
 *** AERMET - VERSION  18081 ***   ***
                        ***        08:23:22

                                   PAGE   6
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                                          *** DISCRETE CARTESIAN RECEPTORS ***
                                        (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
                                                    (METERS)

     ( 657506.9, 4182491.8,      11.3,      11.3,       0.0);         ( 657506.9,
4182511.5,      11.3,      11.3,       0.0);
     ( 657506.9, 4182531.2,      11.3,      11.3,       0.0);         ( 657506.9,
4182551.0,      11.3,      11.3,       0.0);
     ( 657506.9, 4182570.8,      11.3,      11.3,       0.0);         ( 657506.9,
4182590.5,      11.3,      11.3,       0.0);
     ( 657506.9, 4182610.2,      11.3,      11.3,       0.0);         ( 657506.9,
4182630.0,      11.3,      11.3,       0.0);
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     ( 657506.9, 4182649.8,      11.2,      11.2,       0.0);         ( 657526.6,
4182472.0,      11.5,      11.5,       0.0);
     ( 657526.6, 4182491.8,      11.5,      11.5,       0.0);         ( 657526.6,
4182511.5,      11.5,      11.5,       0.0);
     ( 657526.6, 4182531.2,      11.5,      11.5,       0.0);         ( 657526.6,
4182551.0,      11.5,      11.5,       0.0);
     ( 657526.6, 4182570.8,      11.5,      11.5,       0.0);         ( 657526.6,
4182590.5,      11.5,      11.5,       0.0);
     ( 657526.6, 4182610.2,      11.5,      11.5,       0.0);         ( 657526.6,
4182630.0,      11.4,      11.4,       0.0);
     ( 657526.6, 4182649.8,      11.3,      11.3,       0.0);         ( 657546.3,
4182472.0,      11.6,      11.6,       0.0);
     ( 657546.3, 4182491.8,      11.6,      11.6,       0.0);         ( 657546.3,
4182511.5,      11.6,      11.6,       0.0);
     ( 657546.3, 4182531.2,      11.6,      11.6,       0.0);         ( 657546.3,
4182551.0,      11.6,      11.6,       0.0);
     ( 657546.3, 4182570.8,      11.6,      11.6,       0.0);         ( 657546.3,
4182590.5,      11.6,      11.6,       0.0);
     ( 657546.3, 4182610.2,      11.6,      11.6,       0.0);         ( 657546.3,
4182630.0,      11.5,      11.5,       0.0);
     ( 657546.3, 4182649.8,      11.4,      11.4,       0.0);         ( 657546.3,
4182669.5,      11.4,      11.4,       0.0);
     ( 657546.3, 4182689.2,      11.4,      11.4,       0.0);         ( 657546.3,
4182709.0,      11.3,      11.3,       0.0);
     ( 657546.3, 4182728.8,      11.1,      11.1,       0.0);         ( 657566.1,
4182472.0,      11.6,      11.6,       0.0);
     ( 657566.1, 4182491.8,      11.6,      11.6,       0.0);         ( 657566.1,
4182511.5,      11.6,      11.6,       0.0);
     ( 657566.1, 4182531.2,      11.6,      11.6,       0.0);         ( 657566.1,
4182551.0,      11.6,      11.6,       0.0);
     ( 657566.1, 4182570.8,      11.6,      11.6,       0.0);         ( 657566.1,
4182590.5,      11.6,      11.6,       0.0);
     ( 657566.1, 4182610.2,      11.6,      11.6,       0.0);         ( 657566.1,
4182630.0,      11.6,      11.6,       0.0);
     ( 657566.1, 4182649.8,      11.6,      11.6,       0.0);         ( 657566.1,
4182669.5,      11.6,      11.6,       0.0);
     ( 657566.1, 4182689.2,      11.5,      11.5,       0.0);         ( 657566.1,
4182709.0,      11.3,      11.3,       0.0);
     ( 657566.1, 4182728.8,      11.3,      11.3,       0.0);         ( 657585.8,
4182472.0,      11.8,      11.8,       0.0);
     ( 657585.8, 4182491.8,      11.8,      11.8,       0.0);         ( 657585.8,
4182511.5,      11.8,      11.8,       0.0);
     ( 657585.8, 4182531.2,      11.8,      11.8,       0.0);         ( 657585.8,
4182551.0,      11.8,      11.8,       0.0);
     ( 657585.8, 4182570.8,      11.8,      11.8,       0.0);         ( 657585.8,
4182590.5,      11.8,      11.8,       0.0);
     ( 657585.8, 4182610.2,      11.8,      11.8,       0.0);         ( 657585.8,
4182630.0,      11.8,      11.8,       0.0);
     ( 657585.8, 4182649.8,      11.8,      11.8,       0.0);         ( 657585.8,
4182669.5,      11.6,      11.6,       0.0);
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     ( 657585.8, 4182689.2,      11.6,      11.6,       0.0);         ( 657585.8,
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     ( 657585.8, 4182728.8,      11.3,      11.3,       0.0);         ( 657605.6,
4182472.0,      11.9,      11.9,       0.0);
     ( 657605.6, 4182491.8,      11.9,      11.9,       0.0);         ( 657605.6,
4182511.5,      11.9,      11.9,       0.0);
     ( 657605.6, 4182531.2,      11.9,      11.9,       0.0);         ( 657605.6,
4182551.0,      12.0,      12.0,       0.0);
     ( 657605.6, 4182570.8,      12.0,      12.0,       0.0);         ( 657605.6,
4182590.5,      12.0,      12.0,       0.0);
     ( 657605.6, 4182610.2,      11.9,      11.9,       0.0);         ( 657605.6,
4182630.0,      11.9,      11.9,       0.0);
     ( 657605.6, 4182649.8,      11.9,      11.9,       0.0);         ( 657605.6,
4182669.5,      11.7,      11.7,       0.0);
     ( 657605.6, 4182689.2,      11.7,      11.7,       0.0);         ( 657605.6,
4182709.0,      11.6,      11.6,       0.0);
     ( 657605.6, 4182728.8,      11.4,      11.4,       0.0);         ( 657625.3,
4182472.0,      11.9,      11.9,       0.0);
     ( 657625.3, 4182491.8,      11.9,      11.9,       0.0);         ( 657625.3,
4182511.5,      11.9,      11.9,       0.0);
     ( 657625.3, 4182531.2,      12.0,      12.0,       0.0);         ( 657625.3,
4182551.0,      12.2,      12.2,       0.0);
     ( 657625.3, 4182570.8,      12.2,      12.2,       0.0);         ( 657625.3,
4182590.5,      12.1,      12.1,       0.0);
     ( 657625.3, 4182610.2,      12.0,      12.0,       0.0);         ( 657625.3,
4182630.0,      11.9,      11.9,       0.0);
     ( 657625.3, 4182649.8,      11.9,      11.9,       0.0);         ( 657625.3,
4182669.5,      11.9,      11.9,       0.0);
     ( 657625.3, 4182689.2,      11.8,      11.8,       0.0);         ( 657625.3,
4182709.0,      11.6,      11.6,       0.0);
     ( 657625.3, 4182728.8,      11.6,      11.6,       0.0);         ( 657645.1,
4182472.0,      11.9,      11.9,       0.0);
 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuinta_onsite_mitigated\MantecaQuinta_on ***        03/22/24
 *** AERMET - VERSION  18081 ***   ***
                         ***       08:23:22

                                   PAGE   7
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                                          *** DISCRETE CARTESIAN RECEPTORS ***
                                        (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
                                                    (METERS)

     ( 657645.1, 4182491.8,      12.1,      12.1,       0.0);         ( 657645.1,
4182511.5,      12.1,      12.1,       0.0);
     ( 657645.1, 4182531.2,      12.1,      12.1,       0.0);         ( 657645.1,
4182551.0,      12.2,      12.2,       0.0);
     ( 657645.1, 4182570.8,      12.2,      12.2,       0.0);         ( 657645.1,
4182590.5,      12.2,      12.2,       0.0);
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     ( 657645.1, 4182649.8,      12.1,      12.1,       0.0);         ( 657645.1,
4182669.5,      11.9,      11.9,       0.0);
     ( 657645.1, 4182689.2,      11.9,      11.9,       0.0);         ( 657645.1,
4182709.0,      11.8,      11.8,       0.0);
     ( 657645.1, 4182728.8,      11.6,      11.6,       0.0);         ( 657664.8,
4182472.0,      12.0,      12.0,       0.0);
     ( 657664.8, 4182491.8,      12.2,      12.2,       0.0);         ( 657664.8,
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     ( 657684.5, 4182531.2,      12.2,      12.2,       0.0);         ( 657684.5,
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     ( 657684.5, 4182570.8,      12.2,      12.2,       0.0);         ( 657684.5,
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     ( 657684.5, 4182610.2,      12.2,      12.2,       0.0);         ( 657684.5,
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     ( 657684.5, 4182649.8,      12.2,      12.2,       0.0);         ( 657684.5,
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 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuinta_onsite_mitigated\MantecaQuinta_on ***        03/22/24
 *** AERMET - VERSION  18081 ***   ***
                        ***       08:23:22

                                  PAGE   8
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                                     *** DISCRETE CARTESIAN RECEPTORS ***
                                    (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
                                                (METERS)

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 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuinta_onsite_mitigated\MantecaQuinta_on ***        03/22/24
 *** AERMET - VERSION  18081 ***   ***
                        ***       08:23:22

                                  PAGE   9
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                                        *** DISCRETE CARTESIAN RECEPTORS ***
                                      (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
                                                (METERS)

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     ( 657960.9, 4182965.5,      12.2,      12.2,       0.0);         ( 657960.9,
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     ( 657960.9, 4183005.0,      12.2,      12.2,       0.0);         ( 657960.9,
4183024.8,      12.2,      12.2,       0.0);
↟ *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuinta_onsite_mitigated\MantecaQuinta_on ***       03/22/24
 *** AERMET - VERSION  18081 ***   ***
                        ***       08:23:22

                                  PAGE  10
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                                    *** DISCRETE CARTESIAN RECEPTORS ***
                                  (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
                                               (METERS)
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     ( 657980.6, 4182511.5,      13.0,      13.0,       0.0);         ( 657980.6,
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     ( 657980.6, 4182551.0,      13.1,      13.1,       0.0);         ( 657980.6,
4182570.8,      13.3,      13.3,       0.0);
     ( 657980.6, 4182590.5,      13.5,      13.5,       0.0);         ( 657980.6,
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     ( 657980.6, 4182630.0,      13.7,      13.7,       0.0);         ( 657980.6,
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     ( 657980.6, 4182669.5,      13.5,      13.5,       0.0);         ( 657980.6,
4182689.2,      13.3,      13.3,       0.0);
     ( 657980.6, 4182709.0,      13.1,      13.1,       0.0);         ( 657980.6,
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     ( 658020.1, 4182768.0,      12.8,      12.8,       0.0);         ( 658020.1,
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 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuinta_onsite_mitigated\MantecaQuinta_on ***        03/22/24
 *** AERMET - VERSION  18081 ***   ***
                        ***       08:23:22

                                  PAGE  11
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                                    *** DISCRETE CARTESIAN RECEPTORS ***
                                  (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
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(METERS)

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     ( 658020.1, 4183005.0,      12.2,      12.2,       0.0);         ( 658020.1,
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↟ *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuinta_onsite_mitigated\MantecaQuinta_on ***        03/22/24
 *** AERMET - VERSION  18081 ***   ***
                        ***        08:23:22

                                   PAGE  12
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*
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*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

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(658079.3, 4182590.5, 13.5, 13.5, 0.0); (658079.3, 4182610.2, 13.7, 13.7, 0.0);
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     ( 658099.1, 4182965.5,      12.2,      12.2,       0.0);         ( 658099.1,
4182985.2,      12.2,      12.2,       0.0);
     ( 658099.1, 4183005.0,      12.2,      12.2,       0.0);         ( 658099.1,
4183024.8,      12.2,      12.2,       0.0);
     ( 658099.1, 4183044.5,      12.2,      12.2,       0.0);         ( 658099.1,
4183064.2,      12.2,      12.2,       0.0);
     ( 658099.1, 4183084.0,      12.2,      12.2,       0.0);         ( 658099.1,
4183103.8,      12.2,      12.2,       0.0);
     ( 658099.1, 4183123.5,      12.2,      12.2,       0.0);         ( 658099.1,
4183143.2,      12.2,      12.2,       0.0);
     ( 658099.1, 4183163.0,      12.2,      12.2,       0.0);         ( 658099.1,
4183182.8,      12.2,      12.2,       0.0);
     ( 658099.1, 4183202.5,      12.2,      12.2,       0.0);         ( 658099.1,
4183222.2,      12.2,      12.2,       0.0);
     ( 658099.1, 4183242.0,      12.2,      12.2,       0.0);         ( 658118.8,
4182472.0,      12.8,      12.8,       0.0);
     ( 658118.8, 4182491.8,      12.9,      12.9,       0.0);         ( 658118.8,
4182511.5,      13.0,      13.0,       0.0);
     ( 658118.8, 4182531.2,      13.2,      13.2,       0.0);         ( 658118.8,
4182551.0,      13.4,      13.4,       0.0);
     ( 658118.8, 4182570.8,      13.4,      13.4,       0.0);         ( 658118.8,
4182590.5,      13.5,      13.5,       0.0);
 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuinta_onsite_mitigated\MantecaQuinta_on ***       03/22/24
 *** AERMET - VERSION  18081 ***   ***
                       ***       08:23:22
```

*** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(658118.8, 4182610.2, 13.7, 13.7, 0.0); (658118.8, 4182630.0, 13.7, 13.7, 0.0);
(658118.8, 4182649.8, 13.7, 13.7, 0.0); (658118.8, 4182669.5, 13.5, 13.5, 0.0);
(658118.8, 4182689.2, 13.4, 13.4, 0.0); (658118.8, 4182709.0, 13.4, 13.4, 0.0);
(658118.8, 4182728.8, 13.3, 13.3, 0.0); (658118.8, 4182748.2, 13.2, 13.2, 0.0);
(658118.8, 4182768.0, 13.1, 13.1, 0.0); (658118.8, 4182787.8, 13.0, 13.0, 0.0);
(658118.8, 4182807.5, 12.9, 12.9, 0.0); (658118.8, 4182827.2, 12.8, 12.8, 0.0);
(658118.8, 4182847.0, 12.7, 12.7, 0.0); (658118.8, 4182866.8, 12.6, 12.6, 0.0);
(658118.8, 4182886.5, 12.5, 12.5, 0.0); (658118.8, 4182906.2, 12.5, 12.5, 0.0);
(658118.8, 4182926.0, 12.4, 12.4, 0.0); (658118.8, 4182945.8, 12.3, 12.3, 0.0);
(658118.8, 4182965.5, 12.2, 12.2, 0.0); (658118.8, 4182985.2, 12.2, 12.2, 0.0);
(658118.8, 4183005.0, 12.2, 12.2, 0.0); (658118.8, 4183024.8, 12.2, 12.2, 0.0);
(658118.8, 4183044.5, 12.2, 12.2, 0.0); (658118.8, 4183064.2, 12.2, 12.2, 0.0);
(658118.8, 4183084.0, 12.2, 12.2, 0.0); (658118.8, 4183103.8, 12.2, 12.2, 0.0);
(658118.8, 4183123.5, 12.2, 12.2, 0.0); (658118.8, 4183143.2, 12.2, 12.2, 0.0);
(658118.8, 4183163.0, 12.2, 12.2, 0.0); (658118.8, 4183182.8, 12.2, 12.2, 0.0);
(658118.8, 4183202.5, 12.2, 12.2, 0.0); (658118.8, 4183222.2, 12.2, 12.2, 0.0);
(658118.8, 4183242.0, 12.2, 12.2, 0.0); (658138.6, 4182472.0, 12.8, 12.8, 0.0);
(658138.6, 4182491.8, 12.9, 12.9, 0.0); (658138.6, 4182511.5, 13.0, 13.0, 0.0);
(658138.6, 4182531.2, 13.2, 13.2, 0.0); (658138.6, 4182551.0, 13.4, 13.4, 0.0);
(658138.6, 4182570.8, 13.4, 13.4, 0.0); (658138.6, 4182590.5, 13.5, 13.5, 0.0);
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(658138.6, 4182649.8, 13.7, 13.7, 0.0); (658138.6, 4182669.5, 13.5, 13.5, 0.0);

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     ( 658138.6, 4182689.2,      13.4,      13.4,       0.0);         ( 658138.6,
4182709.0,      13.4,      13.4,       0.0);
     ( 658138.6, 4182728.8,      13.4,      13.4,       0.0);         ( 658138.6,
4182748.2,      13.3,      13.3,       0.0);
     ( 658138.6, 4182768.0,      13.2,      13.2,       0.0);         ( 658138.6,
4182787.8,      13.1,      13.1,       0.0);
     ( 658138.6, 4182807.5,      13.0,      13.0,       0.0);         ( 658138.6,
4182827.2,      12.9,      12.9,       0.0);
     ( 658138.6, 4182847.0,      12.9,      12.9,       0.0);         ( 658138.6,
4182866.8,      12.7,      12.7,       0.0);
     ( 658138.6, 4182886.5,      12.6,      12.6,       0.0);         ( 658138.6,
4182906.2,      12.6,      12.6,       0.0);
     ( 658138.6, 4182926.0,      12.5,      12.5,       0.0);         ( 658138.6,
4182945.8,      12.5,      12.5,       0.0);
     ( 658138.6, 4182965.5,      12.3,      12.3,       0.0);         ( 658138.6,
4182985.2,      12.2,      12.2,       0.0);
     ( 658138.6, 4183005.0,      12.2,      12.2,       0.0);         ( 658138.6,
4183024.8,      12.2,      12.2,       0.0);
     ( 658138.6, 4183044.5,      12.2,      12.2,       0.0);         ( 658138.6,
4183064.2,      12.2,      12.2,       0.0);
     ( 658138.6, 4183084.0,      12.2,      12.2,       0.0);         ( 658138.6,
4183103.8,      12.2,      12.2,       0.0);
     ( 658138.6, 4183123.5,      12.2,      12.2,       0.0);         ( 658138.6,
4183143.2,      12.2,      12.2,       0.0);
     ( 658138.6, 4183163.0,      12.2,      12.2,       0.0);         ( 658138.6,
4183182.8,      12.2,      12.2,       0.0);
     ( 658138.6, 4183202.5,      12.2,      12.2,       0.0);         ( 658138.6,
4183222.2,      12.2,      12.2,       0.0);
     ( 658138.6, 4183242.0,      12.2,      12.2,       0.0);         ( 656770.1,
4183459.5,      12.2,      12.2,       0.0);
     ( 656742.8, 4183470.5,      12.3,      12.3,       0.0);         ( 656777.4,
4183412.1,      12.2,      12.2,       0.0);
     ( 656777.4, 4183371.9,      12.1,      12.1,       0.0);         ( 656739.1,
4183386.5,      12.0,      12.0,       0.0);
     ( 656740.9, 4183430.3,      12.2,      12.2,       0.0);         ( 656750.1,
4183550.8,      11.2,      11.2,       0.0);
     ( 656753.7, 4183523.4,      11.7,      11.7,       0.0);         ( 656750.1,
4183496.0,      12.1,      12.1,       0.0);
     ( 656773.8, 4183501.5,      12.0,      12.0,       0.0);         ( 656706.3,
4183413.9,      12.2,      12.2,       0.0);
     ( 656691.7, 4183392.0,      12.2,      12.2,       0.0);         ( 656686.2,
4183373.8,      11.9,      11.9,       0.0);
     ( 656700.8, 4183355.5,      11.5,      11.5,       0.0);         ( 656717.2,
4183344.5,      11.2,      11.2,       0.0);
     ( 656660.6, 4183362.8,      11.2,      11.2,       0.0);         ( 656761.0,
4182461.3,      10.7,      10.7,       0.0);
 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuinta_onsite_mitigated\MantecaQuinta_on ***        03/22/24
 *** AERMET - VERSION  18081 ***   ***
                         ***       08:23:22
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*** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(656800.2, 4182461.3, 10.7, 10.7, 0.0); (656839.3, 4182461.3, 10.7, 10.7, 0.0);
(656878.5, 4182461.3, 10.7, 10.7, 0.0); (656917.6, 4182461.3, 10.7, 10.7, 0.0);
(656956.8, 4182461.3, 10.7, 10.7, 0.0); (656995.9, 4182461.3, 10.7, 10.7, 0.0);
(657035.1, 4182461.3, 10.7, 10.7, 0.0); (657074.2, 4182461.3, 10.7, 10.7, 0.0);
(657113.4, 4182461.3, 10.7, 10.7, 0.0); (656761.0, 4182487.1, 10.7, 10.7, 0.0);
(656800.2, 4182487.1, 10.7, 10.7, 0.0); (656839.3, 4182487.1, 10.7, 10.7, 0.0);
(656878.5, 4182487.1, 10.7, 10.7, 0.0); (656917.6, 4182487.1, 10.7, 10.7, 0.0);
(656956.8, 4182487.1, 10.7, 10.7, 0.0); (656995.9, 4182487.1, 10.7, 10.7, 0.0);
(657035.1, 4182487.1, 10.7, 10.7, 0.0); (657074.2, 4182487.1, 10.7, 10.7, 0.0);
(657113.4, 4182487.1, 10.7, 10.7, 0.0); (656761.0, 4182512.9, 10.7, 10.7, 0.0);
(656800.2, 4182512.9, 10.7, 10.7, 0.0); (656839.3, 4182512.9, 10.7, 10.7, 0.0);
(656878.5, 4182512.9, 10.7, 10.7, 0.0); (656917.6, 4182512.9, 10.7, 10.7, 0.0);
(656956.8, 4182512.9, 10.7, 10.7, 0.0); (656995.9, 4182512.9, 10.7, 10.7, 0.0);
(657035.1, 4182512.9, 10.7, 10.7, 0.0); (657074.2, 4182512.9, 10.7, 10.7, 0.0);
(657113.4, 4182512.9, 10.7, 10.7, 0.0); (656761.0, 4182538.6, 10.7, 10.7, 0.0);
(656800.2, 4182538.6, 10.7, 10.7, 0.0); (656839.3, 4182538.6, 10.7, 10.7, 0.0);
(656878.5, 4182538.6, 10.7, 10.7, 0.0); (656917.6, 4182538.6, 10.7, 10.7, 0.0);
(656956.8, 4182538.6, 10.7, 10.7, 0.0); (656995.9, 4182538.6, 10.7, 10.7, 0.0);
(657035.1, 4182538.6, 10.7, 10.7, 0.0); (657074.2, 4182538.6, 10.7, 10.7, 0.0);
(657113.4, 4182538.6, 10.7, 10.7, 0.0); (656761.0, 4182564.4, 10.6, 10.6, 0.0);
(656800.2, 4182564.4, 10.7, 10.7, 0.0); (656839.3, 4182564.4, 10.7, 10.7, 0.0);

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     ( 656878.5, 4182564.4,      10.7,      10.7,       0.0);         ( 656917.6,
4182564.4,      10.7,      10.7,       0.0);
     ( 656956.8, 4182564.4,      10.7,      10.7,       0.0);         ( 656995.9,
4182564.4,      10.7,      10.7,       0.0);
     ( 657035.1, 4182564.4,      10.7,      10.7,       0.0);         ( 657074.2,
4182564.4,      10.7,      10.7,       0.0);
     ( 657113.4, 4182564.4,      10.7,      10.7,       0.0);         ( 656761.0,
4182590.1,      10.4,      10.4,       0.0);
     ( 656800.2, 4182590.1,      10.7,      10.7,       0.0);         ( 656839.3,
4182590.1,      10.7,      10.7,       0.0);
     ( 656878.5, 4182590.1,      10.7,      10.7,       0.0);         ( 656917.6,
4182590.1,      10.7,      10.7,       0.0);
     ( 656956.8, 4182590.1,      10.7,      10.7,       0.0);         ( 656995.9,
4182590.1,      10.7,      10.7,       0.0);
     ( 657035.1, 4182590.1,      10.7,      10.7,       0.0);         ( 657074.2,
4182590.1,      10.7,      10.7,       0.0);
     ( 657113.4, 4182590.1,      10.7,      10.7,       0.0);         ( 656761.0,
4182615.9,      10.4,      10.4,       0.0);
     ( 656800.2, 4182615.9,      10.5,      10.5,       0.0);         ( 656839.3,
4182615.9,      10.7,      10.7,       0.0);
     ( 656878.5, 4182615.9,      10.7,      10.7,       0.0);         ( 656917.6,
4182615.9,      10.7,      10.7,       0.0);
     ( 656956.8, 4182615.9,      10.7,      10.7,       0.0);         ( 656995.9,
4182615.9,      10.7,      10.7,       0.0);
     ( 657035.1, 4182615.9,      10.7,      10.7,       0.0);         ( 657074.2,
4182615.9,      10.7,      10.7,       0.0);
     ( 657113.4, 4182615.9,      10.7,      10.7,       0.0);         ( 656800.2,
4182641.7,      10.5,      10.5,       0.0);
     ( 656839.3, 4182641.7,      10.7,      10.7,       0.0);         ( 656878.5,
4182641.7,      10.7,      10.7,       0.0);
     ( 656917.6, 4182641.7,      10.7,      10.7,       0.0);         ( 656956.8,
4182641.7,      10.7,      10.7,       0.0);
     ( 656995.9, 4182641.7,      10.7,      10.7,       0.0);         ( 657035.1,
4182641.7,      10.7,      10.7,       0.0);
     ( 657074.2, 4182641.7,      10.7,      10.7,       0.0);         ( 657113.4,
4182641.7,      10.7,      10.7,       0.0);
     ( 656800.2, 4182667.4,      10.4,      10.4,       0.0);         ( 656839.3,
4182667.4,      10.6,      10.6,       0.0);
     ( 656878.5, 4182667.4,      10.7,      10.7,       0.0);         ( 656917.6,
4182667.4,      10.7,      10.7,       0.0);
     ( 656956.8, 4182667.4,      10.7,      10.7,       0.0);         ( 656995.9,
4182667.4,      10.7,      10.7,       0.0);
     ( 657035.1, 4182667.4,      10.7,      10.7,       0.0);         ( 657074.2,
4182667.4,      10.7,      10.7,       0.0);
     ( 657113.4, 4182667.4,      10.7,      10.7,       0.0);

 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuinta_onsite_mitigated\MantecaQuinta_on ***        03/22/24
 *** AERMET - VERSION  18081 ***   ***
                         ***        08:23:22
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*** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
(1=YES; 0=NO)

1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
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1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1

NOTE: METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.

*** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
(METERS/SEC)

1.54, 3.09, 5.14, 8.23, 10.80,

*** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

Surface file: Stockton_2013-2017.SFC
Met Version: 18081
Profile file: Stockton_2013-2017.PFL

Surface format: FREE

Profile format: FREE

Surface station no.: 23237 Upper air station no.: 23230
Name: UNKNOWN Name: OAKLAND/WSO_AP
Year: 2013 Year: 2013

First 24 hours of scalar data

YR	MO	DY	JDY	HR	H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS	WD	HT	REF TA	HT
13	01	01	1	01	-22.0	0.211	-9.000	-9.000	-999.	232.	48.8	0.07	2.20	1.00	2.78	149.	10.0	273.8	2.0
13	01	01	1	02	-14.6	0.158	-9.000	-9.000	-999.	152.	27.6	0.04	2.20	1.00	2.37	77.	10.0	273.8	2.0
13	01	01	1	03	-18.4	0.181	-9.000	-9.000	-999.	185.	36.0	0.06	2.20	1.00	2.52	97.	10.0	273.1	2.0
13	01	01	1	04	-6.7	0.105	-9.000	-9.000	-999.	84.	16.0	0.04	2.20	1.00	1.63	349.	10.0	272.5	2.0
13	01	01	1	05	-20.1	0.193	-9.000	-9.000	-999.	203.	40.9	0.04	2.20	1.00	2.86	356.	10.0	274.2	2.0
13	01	01	1	06	-3.9	0.081	-9.000	-9.000	-999.	64.	12.6	0.04	2.20	1.00	1.23	77.	10.0	273.8	2.0
13	01	01	1	07	-18.3	0.180	-9.000	-9.000	-999.	184.	35.8	0.06	2.20	1.00	2.52	255.	10.0	273.1	2.0
13	01	01	1	08	-26.9	0.259	-9.000	-9.000	-999.	316.	73.8	0.08	2.20	0.73	3.29	287.	10.0	274.2	2.0
13	01	01	1	09	-1.9	0.212	-9.000	-9.000	-999.	236.	461.6	0.05	2.20	0.39	2.81	315.	10.0	275.9	2.0
13	01	01	1	10	61.1	0.155	0.630	0.005	150.	147.	-5.5	0.04	2.20	0.27	1.60	336.	10.0	277.5	2.0
13	01	01	1	11	110.2	0.238	1.137	0.005	488.	279.	-11.2	0.06	2.20	0.23	2.45	228.	10.0	279.9	2.0
13	01	01	1	12	137.1	0.276	1.492	0.008	886.	347.	-14.0	0.08	2.20	0.22	2.69	286.	10.0	280.4	2.0
13	01	01	1	13	141.1	0.271	1.531	0.007	929.	339.	-12.9	0.05	2.20	0.21	2.88	325.	10.0	282.5	2.0
13	01	01	1	14	121.3	0.232	1.475	0.006	965.	269.	-9.4	0.04	2.20	0.22	2.57	356.	10.0	283.8	2.0
13	01	01	1	15	78.7	0.218	1.287	0.005	988.	244.	-12.0	0.04	2.20	0.26	2.47	357.	10.0	284.2	2.0
13	01	01	1	16	17.6	0.265	0.783	0.005	993.	327.	-96.0	0.03	2.20	0.35	3.59	2.	10.0	284.2	2.0
13	01	01	1	17	-11.2	0.143	-9.000	-9.000	-999.	139.	24.1	0.04	2.20	0.60	2.16	346.	10.0	282.5	2.0
13	01	01	1	18	-8.7	0.125	-9.000	-9.000	-999.	107.	20.6	0.08	2.20	1.00	1.67	273.	10.0	279.2	2.0

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 13 01 01   1 19  -13.3  0.154 -9.000 -9.000 -999.  145.     26.0  0.06   2.20
1.00    2.15  238.   10.0  278.1    2.0
 13 01 01   1 20  -10.2  0.134 -9.000 -9.000 -999.  117.     21.4  0.06   2.20
1.00    1.89  230.   10.0  275.9    2.0
 13 01 01   1 21  -12.5  0.148 -9.000 -9.000 -999.  137.     24.2  0.05   2.20
1.00    2.11  300.   10.0  276.4    2.0
 13 01 01   1 22 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.05   2.20
1.00    0.00    0.   10.0  275.9    2.0
 13 01 01   1 23  -24.0  0.230 -9.000 -9.000 -999.  264.     57.9  0.04   2.20
1.00    3.36   80.   10.0  274.2    2.0
 13 01 01   1 24  -16.1  0.169 -9.000 -9.000 -999.  167.     31.3  0.06   2.20
1.00    2.36  100.   10.0  274.2    2.0


 First hour of profile data
 YR MO DY HR HEIGHT F  WDIR    WSPD AMB_TMP sigmaA  sigmaW  sigmaV
 13 01 01 01   10.0 1  149.    2.78   273.8   99.0  -99.00  -99.00

 F indicates top of profile (=1) or below (=0)
🡅 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuinta_onsite_mitigated\MantecaQuinta_on ***        03/22/24
 *** AERMET - VERSION  18081 ***   ***
                        ***       08:23:22

                                  PAGE  17
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                  *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   5
YEARS FOR SOURCE GROUP: ALL      ***
                                  INCLUDING SOURCE(S):     L0000001    , L0000002
 , L0000003    , L0000004    , L0000005    ,
                L0000006    , L0000007    , L0000008    , L0000009    , L0000010
 , L0000011    , L0000012    , L0000013    ,
                L0000014    , L0000015    , L0000016    , L0000017    , L0000018
 , L0000019    ,

                                            *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                        ** CONC OF PM_10    IN MICROGRAMS/M**3
                   **

       X-COORD (M)   Y-COORD (M)        CONC                       X-COORD (M)
Y-COORD (M)        CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - -
         657151.50    4182491.75        0.00473                      657151.50
4182511.50        0.00506
         657151.50    4182531.25        0.00544                      657151.50
4182551.00        0.00587
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         657151.50    4182570.75        0.00636                    657151.50
4182590.50        0.00694
         657151.50    4182610.25        0.00761                    657151.50
4182630.00        0.00842
         657151.50    4182649.75        0.00939                    657171.25
4182472.00        0.00452
         657171.25    4182491.75        0.00482                    657171.25
4182511.50        0.00517
         657171.25    4182531.25        0.00556                    657171.25
4182551.00        0.00601
         657171.25    4182570.75        0.00652                    657171.25
4182590.50        0.00712
         657171.25    4182610.25        0.00783                    657171.25
4182630.00        0.00867
         657171.25    4182649.75        0.00969                    657191.00
4182472.00        0.00461
         657191.00    4182491.75        0.00493                    657191.00
4182511.50        0.00529
         657191.00    4182531.25        0.00569                    657191.00
4182551.00        0.00616
         657191.00    4182570.75        0.00669                    657191.00
4182590.50        0.00731
         657191.00    4182610.25        0.00803                    657191.00
4182630.00        0.00890
         657191.00    4182649.75        0.00994                    657210.75
4182472.00        0.00471
         657210.75    4182491.75        0.00503                    657210.75
4182511.50        0.00540
         657210.75    4182531.25        0.00581                    657210.75
4182551.00        0.00629
         657210.75    4182570.75        0.00683                    657210.75
4182590.50        0.00746
         657210.75    4182610.25        0.00819                    657210.75
4182630.00        0.00906
         657210.75    4182649.75        0.01009                    657230.50
4182472.00        0.00479
         657230.50    4182491.75        0.00512                    657230.50
4182511.50        0.00549
         657230.50    4182531.25        0.00591                    657230.50
4182551.00        0.00639
         657230.50    4182570.75        0.00693                    657230.50
4182590.50        0.00756
         657230.50    4182610.25        0.00828                    657230.50
4182630.00        0.00913
         657230.50    4182649.75        0.01013                    657250.25
4182472.00        0.00485
         657250.25    4182491.75        0.00519                    657250.25
4182511.50        0.00556
         657250.25    4182531.25        0.00598                    657250.25
4182551.00        0.00645
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         657250.25    4182570.75        0.00699                      657250.25
4182590.50        0.00760
         657250.25    4182610.25        0.00830                      657250.25
4182630.00        0.00912
         657250.25    4182649.75        0.01008                      657270.00
4182472.00        0.00490
         657270.00    4182491.75        0.00523                      657270.00
4182511.50        0.00560
         657270.00    4182531.25        0.00601                      657270.00
4182551.00        0.00647
         657270.00    4182570.75        0.00699                      657270.00
4182590.50        0.00759
         657270.00    4182610.25        0.00826                      657270.00
4182630.00        0.00904
         657270.00    4182649.75        0.00996                      657289.69
4182472.00        0.00493
         657289.69    4182491.75        0.00525                      657289.69
4182511.50        0.00561
         657289.69    4182531.25        0.00601                      657289.69
4182551.00        0.00646
         657289.69    4182570.75        0.00696                      657289.69
4182590.50        0.00753
         657289.69    4182610.25        0.00818                      657289.69
4182630.00        0.00893
         657289.69    4182649.75        0.00979                      657309.44
4182472.00        0.00494
 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuinta_onsite_mitigated\MantecaQuinta_on ***        03/22/24
 *** AERMET - VERSION  18081 ***   ***
                       ***        08:23:22

                                  PAGE  18
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                   *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   5
YEARS FOR SOURCE GROUP: ALL      ***
                                  INCLUDING SOURCE(S):     L0000001    , L0000002
 , L0000003    , L0000004    , L0000005    ,
                   L0000006    , L0000007    , L0000008    , L0000009    , L0000010
 , L0000011    , L0000012    , L0000013    ,
                   L0000014    , L0000015    , L0000016    , L0000017    , L0000018
 , L0000019    ,

                                             *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                          ** CONC OF PM_10    IN MICROGRAMS/M**3
                    **

       X-COORD (M)   Y-COORD (M)        CONC                      X-COORD (M)
```

Y-COORD (M)   CONC
- -
- -
657309.44   4182491.75   0.00525   657309.44
4182511.50   0.00560
657309.44   4182531.25   0.00599   657309.44
4182551.00   0.00642
657309.44   4182570.75   0.00690   657309.44
4182590.50   0.00745
657309.44   4182610.25   0.00807   657309.44
4182630.00   0.00878
657309.44   4182649.75   0.00960   657329.19
4182472.00   0.00492
657329.19   4182491.75   0.00523   657329.19
4182511.50   0.00557
657329.19   4182531.25   0.00594   657329.19
4182551.00   0.00636
657329.19   4182570.75   0.00682   657329.19
4182590.50   0.00735
657329.19   4182610.25   0.00794   657329.19
4182630.00   0.00862
657329.19   4182649.75   0.00938   657348.94
4182472.00   0.00490
657348.94   4182491.75   0.00519   657348.94
4182511.50   0.00552
657348.94   4182531.25   0.00588   657348.94
4182551.00   0.00628
657348.94   4182570.75   0.00673   657348.94
4182590.50   0.00723
657348.94   4182610.25   0.00780   657348.94
4182630.00   0.00844
657348.94   4182649.75   0.00915   657368.69
4182472.00   0.00485
657368.69   4182491.75   0.00514   657368.69
4182511.50   0.00546
657368.69   4182531.25   0.00581   657368.69
4182551.00   0.00619
657368.69   4182570.75   0.00663   657368.69
4182590.50   0.00711
657368.69   4182610.25   0.00765   657368.69
4182630.00   0.00824
657368.69   4182649.75   0.00890   657388.44
4182472.00   0.00481
657388.44   4182491.75   0.00508   657388.44
4182511.50   0.00539
657388.44   4182531.25   0.00573   657388.44
4182551.00   0.00610
657388.44   4182570.75   0.00652   657388.44
4182590.50   0.00698
657388.44   4182610.25   0.00748   657388.44

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4182630.00        0.00804
         657388.44    4182649.75        0.00864                    657408.13
4182472.00        0.00475
         657408.13    4182491.75        0.00502                    657408.13
4182511.50        0.00532
         657408.13    4182531.25        0.00565                    657408.13
4182551.00        0.00601
         657408.13    4182570.75        0.00640                    657408.13
4182590.50        0.00684
         657408.13    4182610.25        0.00731                    657408.13
4182630.00        0.00782
         657408.13    4182649.75        0.00837                    657427.88
4182472.00        0.00469
         657427.88    4182491.75        0.00496                    657427.88
4182511.50        0.00525
         657427.88    4182531.25        0.00556                    657427.88
4182551.00        0.00590
         657427.88    4182570.75        0.00628                    657427.88
4182590.50        0.00669
         657427.88    4182610.25        0.00713                    657427.88
4182630.00        0.00760
         657427.88    4182649.75        0.00811                    657447.63
4182472.00        0.00463
         657447.63    4182491.75        0.00489                    657447.63
4182511.50        0.00517
         657447.63    4182531.25        0.00547                    657447.63
4182551.00        0.00580
         657447.63    4182570.75        0.00615                    657447.63
4182590.50        0.00653
         657447.63    4182610.25        0.00694                    657447.63
4182630.00        0.00738
         657447.63    4182649.75        0.00784                    657467.38
4182472.00        0.00457
 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuinta_onsite_mitigated\MantecaQuinta_on ***        03/22/24
 *** AERMET - VERSION  18081 ***   ***
                       ***        08:23:22

                                  PAGE  19
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                   *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   5
YEARS FOR SOURCE GROUP: ALL      ***
                                  INCLUDING SOURCE(S):     L0000001    , L0000002
 , L0000003    , L0000004    , L0000005    ,
                   L0000006    , L0000007    , L0000008    , L0000009    , L0000010
 , L0000011    , L0000012    , L0000013    ,
                   L0000014    , L0000015    , L0000016    , L0000017    , L0000018
 , L0000019    ,
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*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
657467.38	4182491.75	0.00482	657467.38	4182511.50	0.00508
657467.38	4182531.25	0.00537	657467.38	4182551.00	0.00568
657467.38	4182570.75	0.00601	657467.38	4182590.50	0.00637
657467.38	4182610.25	0.00675	657467.38	4182630.00	0.00715
657467.38	4182649.75	0.00757	657487.13	4182472.00	0.00451
657487.13	4182491.75	0.00474	657487.13	4182511.50	0.00500
657487.13	4182531.25	0.00527	657487.13	4182551.00	0.00556
657487.13	4182570.75	0.00588	657487.13	4182590.50	0.00621
657487.13	4182610.25	0.00656	657487.13	4182630.00	0.00693
657487.13	4182649.75	0.00731	657506.88	4182472.00	0.00444
657506.88	4182491.75	0.00466	657506.88	4182511.50	0.00491
657506.88	4182531.25	0.00517	657506.88	4182551.00	0.00544
657506.88	4182570.75	0.00574	657506.88	4182590.50	0.00604
657506.88	4182610.25	0.00637	657506.88	4182630.00	0.00671
657506.88	4182649.75	0.00706	657526.63	4182472.00	0.00437
657526.63	4182491.75	0.00458	657526.63	4182511.50	0.00481
657526.63	4182531.25	0.00506	657526.63	4182551.00	0.00532
657526.63	4182570.75	0.00559	657526.63	4182590.50	0.00588
657526.63	4182610.25	0.00618	657526.63	4182630.00	0.00649
657526.63	4182649.75	0.00681	657546.31	4182472.00	0.00429

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         657546.31    4182491.75        0.00450                      657546.31
4182511.50        0.00472
         657546.31    4182531.25        0.00495                      657546.31
4182551.00        0.00519
         657546.31    4182570.75        0.00545                      657546.31
4182590.50        0.00572
         657546.31    4182610.25        0.00600                      657546.31
4182630.00        0.00628
         657546.31    4182649.75        0.00658                      657546.31
4182669.50        0.00688
         657546.31    4182689.25        0.00718                      657546.31
4182709.00        0.00749
         657546.31    4182728.75        0.00780                      657566.06
4182472.00        0.00422
         657566.06    4182491.75        0.00441                      657566.06
4182511.50        0.00462
         657566.06    4182531.25        0.00484                      657566.06
4182551.00        0.00507
         657566.06    4182570.75        0.00531                      657566.06
4182590.50        0.00556
         657566.06    4182610.25        0.00582                      657566.06
4182630.00        0.00608
         657566.06    4182649.75        0.00635                      657566.06
4182669.50        0.00663
         657566.06    4182689.25        0.00690                      657566.06
4182709.00        0.00718
         657566.06    4182728.75        0.00747                      657585.81
4182472.00        0.00414
         657585.81    4182491.75        0.00433                      657585.81
4182511.50        0.00452
         657585.81    4182531.25        0.00473                      657585.81
4182551.00        0.00495
         657585.81    4182570.75        0.00517                      657585.81
4182590.50        0.00540
         657585.81    4182610.25        0.00564                      657585.81
4182630.00        0.00588
         657585.81    4182649.75        0.00613                      657585.81
4182669.50        0.00639
         657585.81    4182689.25        0.00664                      657585.81
4182709.00        0.00690
 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuinta_onsite_mitigated\MantecaQuinta_on ***        03/22/24
 *** AERMET - VERSION  18081 ***   ***
                       ***        08:23:22

                                  PAGE  20
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                   *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   5
YEARS FOR SOURCE GROUP: ALL      ***
```

INCLUDING SOURCE(S): L0000001 , L0000002
, L0000003 , L0000004 , L0000005 ,
L0000006 , L0000007 , L0000008 , L0000009 , L0000010
, L0000011 , L0000012 , L0000013 ,
L0000014 , L0000015 , L0000016 , L0000017 , L0000018
, L0000019 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS
***

** CONC OF PM_10 IN MICROGRAMS/M**3
**

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
657585.81	4182728.75	0.00715	657605.56	4182472.00	0.00406
657605.56	4182491.75	0.00424	657605.56	4182511.50	0.00443
657605.56	4182531.25	0.00462	657605.56	4182551.00	0.00482
657605.56	4182570.75	0.00503	657605.56	4182590.50	0.00525
657605.56	4182610.25	0.00547	657605.56	4182630.00	0.00570
657605.56	4182649.75	0.00593	657605.56	4182669.50	0.00616
657605.56	4182689.25	0.00639	657605.56	4182709.00	0.00663
657605.56	4182728.75	0.00686	657625.31	4182472.00	0.00399
657625.31	4182491.75	0.00416	657625.31	4182511.50	0.00433
657625.31	4182531.25	0.00452	657625.31	4182551.00	0.00470
657625.31	4182570.75	0.00490	657625.31	4182590.50	0.00510
657625.31	4182610.25	0.00531	657625.31	4182630.00	0.00552
657625.31	4182649.75	0.00573	657625.31	4182669.50	0.00594
657625.31	4182689.25	0.00616	657625.31	4182709.00	0.00637
657625.31	4182728.75	0.00659	657645.06	4182472.00	0.00391
657645.06	4182491.75	0.00407	657645.06	4182511.50	0.00424
657645.06	4182531.25	0.00441	657645.06		

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4182551.00        0.00459
         657645.06    4182570.75        0.00477                     657645.06
4182590.50        0.00496
         657645.06    4182610.25        0.00515                     657645.06
4182630.00        0.00534
         657645.06    4182649.75        0.00554                     657645.06
4182669.50        0.00574
         657645.06    4182689.25        0.00593                     657645.06
4182709.00        0.00613
         657645.06    4182728.75        0.00633                     657664.81
4182472.00        0.00383
         657664.81    4182491.75        0.00399                     657664.81
4182511.50        0.00414
         657664.81    4182531.25        0.00431                     657664.81
4182551.00        0.00447
         657664.81    4182570.75        0.00465                     657664.81
4182590.50        0.00482
         657664.81    4182610.25        0.00500                     657664.81
4182630.00        0.00518
         657664.81    4182649.75        0.00536                     657664.81
4182669.50        0.00554
         657664.81    4182689.25        0.00572                     657664.81
4182709.00        0.00591
         657664.81    4182728.75        0.00609                     657684.50
4182472.00        0.00376
         657684.50    4182491.75        0.00390                     657684.50
4182511.50        0.00405
         657684.50    4182531.25        0.00421                     657684.50
4182551.00        0.00436
         657684.50    4182570.75        0.00452                     657684.50
4182590.50        0.00469
         657684.50    4182610.25        0.00485                     657684.50
4182630.00        0.00502
         657684.50    4182649.75        0.00519                     657684.50
4182669.50        0.00536
         657684.50    4182689.25        0.00552                     657684.50
4182709.00        0.00569
         657684.50    4182728.75        0.00586                     657704.25
4182472.00        0.00368
         657704.25    4182491.75        0.00382                     657704.25
4182511.50        0.00396
         657704.25    4182531.25        0.00411                     657704.25
4182551.00        0.00426
         657704.25    4182570.75        0.00441                     657704.25
4182590.50        0.00456
         657704.25    4182610.25        0.00471                     657704.25
4182630.00        0.00487
 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuinta_onsite_mitigated\MantecaQuinta_on ***        03/22/24
 *** AERMET - VERSION  18081 ***   ***
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*** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

*** THE ANNUAL AVERAGE CONCENTRATION VALUES AVERAGED OVER 5 YEARS FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): L0000001 , L0000002 , L0000003 , L0000004 , L0000005 , L0000006 , L0000007 , L0000008 , L0000009 , L0000010 , L0000011 , L0000012 , L0000013 , L0000014 , L0000015 , L0000016 , L0000017 , L0000018 , L0000019 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
657704.25	4182649.75	0.00502	657704.25	4182669.50	0.00518
657704.25	4182689.25	0.00533	657704.25	4182709.00	0.00549
657704.25	4182728.75	0.00564	657724.00	4182472.00	0.00361
657724.00	4182491.75	0.00374	657724.00	4182511.50	0.00388
657724.00	4182531.25	0.00401	657724.00	4182551.00	0.00415
657724.00	4182570.75	0.00429	657724.00	4182590.50	0.00443
657724.00	4182610.25	0.00458	657724.00	4182630.00	0.00472
657724.00	4182649.75	0.00487	657724.00	4182669.50	0.00501
657724.00	4182689.25	0.00515	657724.00	4182709.00	0.00529
657724.00	4182728.75	0.00543	657743.75	4182472.00	0.00354
657743.75	4182491.75	0.00366	657743.75	4182511.50	0.00379
657743.75	4182531.25	0.00392	657743.75	4182551.00	0.00405
657743.75	4182570.75	0.00418	657743.75	4182590.50	0.00431

657743.75 4182610.25 0.00445 657743.75
4182630.00 0.00458
657743.75 4182649.75 0.00472 657743.75
4182669.50 0.00485
657743.75 4182689.25 0.00498 657743.75
4182709.00 0.00511
657743.75 4182728.75 0.00524 657763.50
4182472.00 0.00347
657763.50 4182491.75 0.00359 657763.50
4182511.50 0.00371
657763.50 4182531.25 0.00383 657763.50
4182551.00 0.00395
657763.50 4182570.75 0.00407 657763.50
4182590.50 0.00420
657763.50 4182610.25 0.00432 657763.50
4182630.00 0.00445
657763.50 4182649.75 0.00457 657763.50
4182669.50 0.00469
657763.50 4182689.25 0.00481 657763.50
4182709.00 0.00493
657763.50 4182728.75 0.00505 657783.25
4182472.00 0.00340
657783.25 4182491.75 0.00351 657783.25
4182511.50 0.00362
657783.25 4182531.25 0.00374 657783.25
4182551.00 0.00385
657783.25 4182570.75 0.00397 657783.25
4182590.50 0.00408
657783.25 4182610.25 0.00420 657783.25
4182630.00 0.00432
657783.25 4182649.75 0.00443 657783.25
4182669.50 0.00454
657783.25 4182689.25 0.00466 657783.25
4182709.00 0.00477
657783.25 4182728.75 0.00487 657803.00
4182472.00 0.00333
657803.00 4182491.75 0.00344 657803.00
4182511.50 0.00354
657803.00 4182531.25 0.00365 657803.00
4182551.00 0.00376
657803.00 4182570.75 0.00387 657803.00
4182590.50 0.00397
657803.00 4182610.25 0.00408 657803.00
4182630.00 0.00419
657803.00 4182649.75 0.00430 657803.00
4182669.50 0.00440
657803.00 4182689.25 0.00451 657803.00
4182709.00 0.00461
657803.00 4182728.75 0.00471 657822.69
4182472.00 0.00327

*** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

*** THE ANNUAL AVERAGE CONCENTRATION VALUES AVERAGED OVER 5 YEARS FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): L0000001 , L0000002 , L0000003 , L0000004 , L0000005 , L0000006 , L0000007 , L0000008 , L0000009 , L0000010 , L0000011 , L0000012 , L0000013 , L0000014 , L0000015 , L0000016 , L0000017 , L0000018 , L0000019 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
657822.69	4182491.75	0.00336	657822.69	4182511.50	0.00346
657822.69	4182531.25	0.00357	657822.69	4182551.00	0.00367
657822.69	4182570.75	0.00377	657822.69	4182590.50	0.00387
657822.69	4182610.25	0.00397	657822.69	4182630.00	0.00407
657822.69	4182649.75	0.00417	657822.69	4182669.50	0.00427
657822.69	4182689.25	0.00436	657822.69	4182709.00	0.00446
657822.69	4182728.75	0.00455	657842.44	4182472.00	0.00320
657842.44	4182491.75	0.00329	657842.44	4182511.50	0.00339
657842.44	4182531.25	0.00348	657842.44	4182551.00	0.00358
657842.44	4182570.75	0.00367	657842.44	4182590.50	0.00376
657842.44	4182610.25	0.00386	657842.44	4182630.00	0.00395
657842.44	4182649.75	0.00404	657842.44		

4182669.50 0.00413
657842.44 4182689.25 0.00422 657842.44
4182709.00 0.00431
657842.44 4182728.75 0.00439 657862.19
4182472.00 0.00313
657862.19 4182491.75 0.00322 657862.19
4182511.50 0.00331
657862.19 4182531.25 0.00340 657862.19
4182551.00 0.00349
657862.19 4182570.75 0.00358 657862.19
4182590.50 0.00366
657862.19 4182610.25 0.00375 657862.19
4182630.00 0.00384
657862.19 4182649.75 0.00392 657862.19
4182669.50 0.00401
657862.19 4182689.25 0.00409 657862.19
4182709.00 0.00417
657862.19 4182728.75 0.00425 657881.94
4182472.00 0.00307
657881.94 4182491.75 0.00315 657881.94
4182511.50 0.00324
657881.94 4182531.25 0.00332 657881.94
4182551.00 0.00340
657881.94 4182570.75 0.00348 657881.94
4182590.50 0.00357
657881.94 4182610.25 0.00365 657881.94
4182630.00 0.00373
657881.94 4182649.75 0.00381 657881.94
4182669.50 0.00388
657881.94 4182689.25 0.00396 657881.94
4182709.00 0.00404
657881.94 4182728.75 0.00411 657901.69
4182472.00 0.00301
657901.69 4182491.75 0.00308 657901.69
4182511.50 0.00316
657901.69 4182531.25 0.00324 657901.69
4182551.00 0.00332
657901.69 4182570.75 0.00339 657901.69
4182590.50 0.00347
657901.69 4182610.25 0.00355 657901.69
4182630.00 0.00362
657901.69 4182649.75 0.00370 657901.69
4182669.50 0.00377
657901.69 4182689.25 0.00384 657901.69
4182709.00 0.00391
657901.69 4182728.75 0.00398 657921.44
4182472.00 0.00294
657921.44 4182491.75 0.00302 657921.44
4182511.50 0.00309
657921.44 4182531.25 0.00316 657921.44

4182551.00   0.00324
         657921.44   4182570.75   0.00331   657921.44
4182590.50   0.00338
         657921.44   4182610.25   0.00345   657921.44
4182630.00   0.00352
         657921.44   4182649.75   0.00359   657921.44
4182669.50   0.00366
         657921.44   4182689.25   0.00372   657921.44
4182709.00   0.00379
         657921.44   4182728.75   0.00385   657941.13
4182472.00   0.00288

 *** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

                  *** THE ANNUAL AVERAGE CONCENTRATION   VALUES AVERAGED OVER   5
YEARS FOR SOURCE GROUP: ALL   ***
                                INCLUDING SOURCE(S):   L0000001   , L0000002
 , L0000003   , L0000004   , L0000005   ,
                  L0000006   , L0000007   , L0000008   , L0000009   , L0000010
 , L0000011   , L0000012   , L0000013   ,
                  L0000014   , L0000015   , L0000016   , L0000017   , L0000018
 , L0000019   ,

                                       *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                     ** CONC OF PM_10   IN MICROGRAMS/M**3
                   **

       X-COORD (M)   Y-COORD (M)   CONC   X-COORD (M)
Y-COORD (M)   CONC
 -
- -
         657941.13   4182491.75   0.00295   657941.13
4182511.50   0.00302
         657941.13   4182531.25   0.00309   657941.13
4182551.00   0.00316
         657941.13   4182570.75   0.00322   657941.13
4182590.50   0.00329
         657941.13   4182610.25   0.00336   657941.13
4182630.00   0.00342
         657941.13   4182649.75   0.00348   657941.13
4182669.50   0.00355
         657941.13   4182689.25   0.00361   657941.13
4182709.00   0.00367

```
         657941.13    4182728.75        0.00373                    657941.13
4182748.25        0.00378
         657941.13    4182768.00        0.00384                    657941.13
4182787.75        0.00388
         657941.13    4182807.50        0.00393                    657941.13
4182827.25        0.00397
         657941.13    4182847.00        0.00401                    657941.13
4182866.75        0.00405
         657941.13    4182886.50        0.00408                    657941.13
4182906.25        0.00410
         657941.13    4182926.00        0.00413                    657941.13
4182945.75        0.00414
         657941.13    4182965.50        0.00416                    657941.13
4182985.25        0.00416
         657941.13    4183005.00        0.00416                    657941.13
4183024.75        0.00416
         657941.13    4183064.25        0.00413                    657941.13
4183084.00        0.00411
         657941.13    4183103.75        0.00408                    657960.88
4182472.00        0.00282
         657960.88    4182491.75        0.00289                    657960.88
4182511.50        0.00295
         657960.88    4182531.25        0.00302                    657960.88
4182551.00        0.00308
         657960.88    4182570.75        0.00314                    657960.88
4182590.50        0.00320
         657960.88    4182610.25        0.00326                    657960.88
4182630.00        0.00333
         657960.88    4182649.75        0.00339                    657960.88
4182669.50        0.00344
         657960.88    4182689.25        0.00350                    657960.88
4182709.00        0.00356
         657960.88    4182728.75        0.00361                    657960.88
4182748.25        0.00366
         657960.88    4182768.00        0.00371                    657960.88
4182787.75        0.00376
         657960.88    4182807.50        0.00380                    657960.88
4182827.25        0.00384
         657960.88    4182847.00        0.00387                    657960.88
4182866.75        0.00391
         657960.88    4182886.50        0.00393                    657960.88
4182906.25        0.00396
         657960.88    4182926.00        0.00398                    657960.88
4182945.75        0.00399
         657960.88    4182965.50        0.00401                    657960.88
4182985.25        0.00401
         657960.88    4183005.00        0.00401                    657960.88
4183024.75        0.00400
         657960.88    4183044.50        0.00399                    657960.88
4183064.25        0.00398
```

```
         657960.88    4183084.00        0.00396                      657960.88
4183103.75        0.00393
         657980.63    4182472.00        0.00276                      657980.63
4182491.75        0.00282
         657980.63    4182511.50        0.00288                      657980.63
4182531.25        0.00294
         657980.63    4182551.00        0.00300                      657980.63
4182570.75        0.00306
         657980.63    4182590.50        0.00312                      657980.63
4182610.25        0.00318
         657980.63    4182630.00        0.00323                      657980.63
4182649.75        0.00329
         657980.63    4182669.50        0.00335                      657980.63
4182689.25        0.00340
         657980.63    4182709.00        0.00345                      657980.63
4182728.75        0.00350
         657980.63    4182748.25        0.00355                      657980.63
4182768.00        0.00359
 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuinta_onsite_mitigated\MantecaQuinta_on ***        03/22/24
 *** AERMET - VERSION  18081 ***   ***
                       ***        08:23:22

                                  PAGE  24
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                   *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   5
YEARS FOR SOURCE GROUP: ALL      ***
                                  INCLUDING SOURCE(S):     L0000001    , L0000002
 , L0000003    , L0000004    , L0000005    ,
                   L0000006    , L0000007    , L0000008    , L0000009    , L0000010
 , L0000011    , L0000012    , L0000013    ,
                   L0000014    , L0000015    , L0000016    , L0000017    , L0000018
 , L0000019    ,

                                               *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                       ** CONC OF PM_10    IN MICROGRAMS/M**3
                    **

       X-COORD (M)   Y-COORD (M)        CONC                         X-COORD (M)
Y-COORD (M)        CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - -
         657980.63    4182787.75        0.00364                      657980.63
4182807.50        0.00368
         657980.63    4182827.25        0.00371                      657980.63
4182847.00        0.00374
         657980.63    4182866.75        0.00377                      657980.63
```

4182886.50 0.00380
657980.63 4182906.25 0.00382 657980.63
4182926.00 0.00384
657980.63 4182945.75 0.00385 657980.63
4182965.50 0.00386
657980.63 4182985.25 0.00387 657980.63
4183005.00 0.00387
657980.63 4183024.75 0.00386 657980.63
4183044.50 0.00385
657980.63 4183064.25 0.00383 657980.63
4183084.00 0.00381
657980.63 4183103.75 0.00379 657980.63
4183123.50 0.00376
658000.38 4182472.00 0.00270 658000.38
4182491.75 0.00276
658000.38 4182511.50 0.00282 658000.38
4182531.25 0.00287
658000.38 4182551.00 0.00293 658000.38
4182570.75 0.00299
658000.38 4182590.50 0.00304 658000.38
4182610.25 0.00309
658000.38 4182630.00 0.00315 658000.38
4182649.75 0.00320
658000.38 4182669.50 0.00325 658000.38
4182689.25 0.00330
658000.38 4182709.00 0.00335 658000.38
4182728.75 0.00340
658000.38 4182748.25 0.00344 658000.38
4182768.00 0.00348
658000.38 4182787.75 0.00352 658000.38
4182807.50 0.00356
658000.38 4182827.25 0.00359 658000.38
4182847.00 0.00362
658000.38 4182866.75 0.00365 658000.38
4182886.50 0.00367
658000.38 4182906.25 0.00369 658000.38
4182926.00 0.00371
658000.38 4182945.75 0.00372 658000.38
4182965.50 0.00373
658000.38 4182985.25 0.00373 658000.38
4183005.00 0.00373
658000.38 4183024.75 0.00372 658000.38
4183044.50 0.00371
658000.38 4183064.25 0.00370 658000.38
4183103.75 0.00365
658000.38 4183123.50 0.00363 658020.13
4182472.00 0.00265
658020.13 4182491.75 0.00270 658020.13
4182511.50 0.00275
658020.13 4182531.25 0.00281 658020.13

4182551.00   0.00286
         658020.13   4182570.75   0.00291   658020.13
4182590.50   0.00296
         658020.13   4182610.25   0.00301   658020.13
4182630.00   0.00306
         658020.13   4182649.75   0.00311   658020.13
4182669.50   0.00316
         658020.13   4182689.25   0.00320   658020.13
4182709.00   0.00325
         658020.13   4182728.75   0.00329   658020.13
4182748.25   0.00333
         658020.13   4182768.00   0.00337   658020.13
4182787.75   0.00341
         658020.13   4182807.50   0.00344   658020.13
4182827.25   0.00347
         658020.13   4182847.00   0.00350   658020.13
4182866.75   0.00353
         658020.13   4182886.50   0.00355   658020.13
4182906.25   0.00357
         658020.13   4182926.00   0.00358   658020.13
4182945.75   0.00359
         658020.13   4182965.50   0.00360   658020.13
4182985.25   0.00360
         658020.13   4183005.00   0.00360   658020.13
4183024.75   0.00359

 *** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

                   *** THE ANNUAL AVERAGE CONCENTRATION   VALUES AVERAGED OVER   5 YEARS FOR SOURCE GROUP: ALL   ***
                                    INCLUDING SOURCE(S):   L0000001   , L0000002
 , L0000003   , L0000004   , L0000005   ,
                   L0000006   , L0000007   , L0000008   , L0000009   , L0000010
 , L0000011   , L0000012   , L0000013   ,
                   L0000014   , L0000015   , L0000016   , L0000017   , L0000018
 , L0000019   ,

                                                 *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                             ** CONC OF PM_10   IN MICROGRAMS/M**3
                    **

       X-COORD (M)   Y-COORD (M)   CONC   X-COORD (M)
Y-COORD (M)   CONC

- -

658020.13	4183044.50	0.00358	658020.13	4183064.25	0.00357
658020.13	4183084.00	0.00355	658020.13	4183103.75	0.00353
658020.13	4183123.50	0.00350	658020.13	4183143.25	0.00347
658039.88	4182472.00	0.00259	658039.88	4182491.75	0.00264
658039.88	4182511.50	0.00269	658039.88	4182531.25	0.00274
658039.88	4182551.00	0.00279	658039.88	4182570.75	0.00284
658039.88	4182590.50	0.00289	658039.88	4182610.25	0.00293
658039.88	4182630.00	0.00298	658039.88	4182649.75	0.00303
658039.88	4182669.50	0.00307	658039.88	4182689.25	0.00311
658039.88	4182709.00	0.00316	658039.88	4182728.75	0.00320
658039.88	4182748.25	0.00324	658039.88	4182768.00	0.00327
658039.88	4182787.75	0.00330	658039.88	4182807.50	0.00334
658039.88	4182827.25	0.00336	658039.88	4182847.00	0.00339
658039.88	4182866.75	0.00341	658039.88	4182886.50	0.00343
658039.88	4182906.25	0.00345	658039.88	4182926.00	0.00346
658039.88	4182945.75	0.00347	658039.88	4182965.50	0.00348
658039.88	4182985.25	0.00348	658039.88	4183005.00	0.00348
658039.88	4183024.75	0.00347	658039.88	4183044.50	0.00346
658039.88	4183064.25	0.00345	658039.88	4183084.00	0.00343
658039.88	4183123.50	0.00338	658039.88	4183143.25	0.00335
658039.88	4183163.00	0.00332	658039.88	4183182.75	0.00329
658039.88	4183202.50	0.00325	658039.88	4183222.25	0.00321
658039.88	4183242.00	0.00317	658059.63	4182472.00	0.00253
658059.63	4182491.75	0.00258	658059.63	4182511.50	0.00263

```
         658059.63    4182531.25        0.00268                      658059.63
4182551.00        0.00272
         658059.63    4182570.75        0.00277                      658059.63
4182590.50        0.00281
         658059.63    4182610.25        0.00286                      658059.63
4182630.00        0.00290
         658059.63    4182649.75        0.00294                      658059.63
4182669.50        0.00299
         658059.63    4182689.25        0.00303                      658059.63
4182709.00        0.00307
         658059.63    4182728.75        0.00310                      658059.63
4182748.25        0.00314
         658059.63    4182768.00        0.00317                      658059.63
4182787.75        0.00320
         658059.63    4182807.50        0.00323                      658059.63
4182827.25        0.00326
         658059.63    4182847.00        0.00328                      658059.63
4182866.75        0.00330
         658059.63    4182886.50        0.00332                      658059.63
4182906.25        0.00334
         658059.63    4182926.00        0.00335                      658059.63
4182945.75        0.00336
         658059.63    4182965.50        0.00336                      658059.63
4182985.25        0.00336
         658059.63    4183005.00        0.00336                      658059.63
4183024.75        0.00336
         658059.63    4183044.50        0.00335                      658059.63
4183064.25        0.00333
         658059.63    4183084.00        0.00332                      658059.63
4183123.50        0.00327
         658059.63    4183143.25        0.00324                      658059.63
4183163.00        0.00321
 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuinta_onsite_mitigated\MantecaQuinta_on ***        03/22/24
 *** AERMET - VERSION  18081 ***   ***
                       ***        08:23:22

                                  PAGE  26
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                   *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   5
YEARS FOR SOURCE GROUP: ALL      ***
                                   INCLUDING SOURCE(S):     L0000001    , L0000002
 , L0000003    , L0000004    , L0000005    ,
                  L0000006    , L0000007    , L0000008    , L0000009    , L0000010
 , L0000011    , L0000012    , L0000013    ,
                  L0000014    , L0000015    , L0000016    , L0000017    , L0000018
 , L0000019    ,

                                              *** DISCRETE CARTESIAN RECEPTOR POINTS
```

***

** CONC OF PM_10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
658059.63	4183182.75	0.00318	658059.63	4183202.50	0.00314
658059.63	4183222.25	0.00311	658059.63	4183242.00	0.00306
658079.31	4182472.00	0.00248	658079.31	4182491.75	0.00253
658079.31	4182511.50	0.00257	658079.31	4182531.25	0.00262
658079.31	4182551.00	0.00266	658079.31	4182570.75	0.00270
658079.31	4182590.50	0.00274	658079.31	4182610.25	0.00279
658079.31	4182630.00	0.00283	658079.31	4182649.75	0.00287
658079.31	4182669.50	0.00291	658079.31	4182689.25	0.00294
658079.31	4182709.00	0.00298	658079.31	4182728.75	0.00302
658079.31	4182748.25	0.00305	658079.31	4182768.00	0.00308
658079.31	4182787.75	0.00311	658079.31	4182807.50	0.00313
658079.31	4182827.25	0.00316	658079.31	4182847.00	0.00318
658079.31	4182866.75	0.00320	658079.31	4182886.50	0.00322
658079.31	4182906.25	0.00323	658079.31	4182926.00	0.00324
658079.31	4182945.75	0.00325	658079.31	4182965.50	0.00325
658079.31	4182985.25	0.00325	658079.31	4183005.00	0.00325
658079.31	4183024.75	0.00325	658079.31	4183044.50	0.00324
658079.31	4183064.25	0.00322	658079.31	4183084.00	0.00321
658079.31	4183123.50	0.00317	658079.31	4183143.25	0.00314
658079.31	4183163.00	0.00311	658079.31	4183182.75	0.00308
658079.31	4183202.50	0.00304	658079.31		

4183222.25   0.00301
         658079.31   4183242.00   0.00297   658099.06
4182472.00   0.00243
         658099.06   4182491.75   0.00247   658099.06
4182511.50   0.00251
         658099.06   4182531.25   0.00256   658099.06
4182551.00   0.00260
         658099.06   4182570.75   0.00264   658099.06
4182590.50   0.00268
         658099.06   4182610.25   0.00272   658099.06
4182630.00   0.00275
         658099.06   4182649.75   0.00279   658099.06
4182669.50   0.00283
         658099.06   4182689.25   0.00286   658099.06
4182709.00   0.00290
         658099.06   4182728.75   0.00293   658099.06
4182748.25   0.00296
         658099.06   4182768.00   0.00299   658099.06
4182787.75   0.00302
         658099.06   4182807.50   0.00304   658099.06
4182827.25   0.00306
         658099.06   4182847.00   0.00308   658099.06
4182866.75   0.00310
         658099.06   4182886.50   0.00311   658099.06
4182906.25   0.00313
         658099.06   4182926.00   0.00314   658099.06
4182945.75   0.00315
         658099.06   4182965.50   0.00315   658099.06
4182985.25   0.00315
         658099.06   4183005.00   0.00315   658099.06
4183024.75   0.00314
         658099.06   4183044.50   0.00313   658099.06
4183064.25   0.00312
         658099.06   4183084.00   0.00311   658099.06
4183103.75   0.00309
         658099.06   4183123.50   0.00306   658099.06
4183143.25   0.00304
         658099.06   4183163.00   0.00301   658099.06
4183182.75   0.00298

 *** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

                   *** THE ANNUAL AVERAGE CONCENTRATION   VALUES AVERAGED OVER   5
YEARS FOR SOURCE GROUP: ALL   ***
                                   INCLUDING SOURCE(S):   L0000001   , L0000002

```
 , L0000003    , L0000004    , L0000005    ,
                L0000006    , L0000007    , L0000008    , L0000009    , L0000010
 , L0000011    , L0000012    , L0000013    ,
                L0000014    , L0000015    , L0000016    , L0000017    , L0000018
 , L0000019    ,

                                          *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                     ** CONC OF PM_10    IN MICROGRAMS/M**3
                   **

       X-COORD (M)   Y-COORD (M)        CONC                       X-COORD (M)
Y-COORD (M)        CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - -
         658099.06    4183202.50        0.00295                       658099.06
4183222.25        0.00292
         658099.06    4183242.00        0.00288                       658118.81
4182472.00        0.00238
         658118.81    4182491.75        0.00242                       658118.81
4182511.50        0.00246
         658118.81    4182531.25        0.00250                       658118.81
4182551.00        0.00254
         658118.81    4182570.75        0.00257                       658118.81
4182590.50        0.00261
         658118.81    4182610.25        0.00265                       658118.81
4182630.00        0.00268
         658118.81    4182649.75        0.00272                       658118.81
4182669.50        0.00275
         658118.81    4182689.25        0.00279                       658118.81
4182709.00        0.00282
         658118.81    4182728.75        0.00285                       658118.81
4182748.25        0.00288
         658118.81    4182768.00        0.00290                       658118.81
4182787.75        0.00293
         658118.81    4182807.50        0.00295                       658118.81
4182827.25        0.00297
         658118.81    4182847.00        0.00299                       658118.81
4182866.75        0.00301
         658118.81    4182886.50        0.00302                       658118.81
4182906.25        0.00303
         658118.81    4182926.00        0.00304                       658118.81
4182945.75        0.00305
         658118.81    4182965.50        0.00305                       658118.81
4182985.25        0.00305
         658118.81    4183005.00        0.00305                       658118.81
4183024.75        0.00304
         658118.81    4183044.50        0.00303                       658118.81
4183064.25        0.00302
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         658118.81    4183084.00        0.00301                    658118.81
4183103.75        0.00299
         658118.81    4183123.50        0.00297                    658118.81
4183143.25        0.00295
         658118.81    4183163.00        0.00292                    658118.81
4183182.75        0.00289
         658118.81    4183202.50        0.00286                    658118.81
4183222.25        0.00283
         658118.81    4183242.00        0.00279                    658138.56
4182472.00        0.00233
         658138.56    4182491.75        0.00237                    658138.56
4182511.50        0.00240
         658138.56    4182531.25        0.00244                    658138.56
4182551.00        0.00248
         658138.56    4182570.75        0.00251                    658138.56
4182590.50        0.00255
         658138.56    4182610.25        0.00258                    658138.56
4182630.00        0.00262
         658138.56    4182649.75        0.00265                    658138.56
4182669.50        0.00268
         658138.56    4182689.25        0.00271                    658138.56
4182709.00        0.00274
         658138.56    4182728.75        0.00277                    658138.56
4182748.25        0.00280
         658138.56    4182768.00        0.00282                    658138.56
4182787.75        0.00284
         658138.56    4182807.50        0.00287                    658138.56
4182827.25        0.00288
         658138.56    4182847.00        0.00290                    658138.56
4182866.75        0.00292
         658138.56    4182886.50        0.00293                    658138.56
4182906.25        0.00294
         658138.56    4182926.00        0.00295                    658138.56
4182945.75        0.00295
         658138.56    4182965.50        0.00296                    658138.56
4182985.25        0.00296
         658138.56    4183005.00        0.00295                    658138.56
4183024.75        0.00295
         658138.56    4183044.50        0.00294                    658138.56
4183064.25        0.00293
         658138.56    4183084.00        0.00291                    658138.56
4183103.75        0.00290
         658138.56    4183123.50        0.00288                    658138.56
4183143.25        0.00286
         658138.56    4183163.00        0.00283                    658138.56
4183182.75        0.00280
 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuinta_onsite_mitigated\MantecaQuinta_on ***        03/22/24
 *** AERMET - VERSION  18081 ***   ***
                       ***        08:23:22
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*** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

*** THE ANNUAL AVERAGE CONCENTRATION VALUES AVERAGED OVER 5 YEARS FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): L0000001 , L0000002 , L0000003 , L0000004 , L0000005 ,
L0000006 , L0000007 , L0000008 , L0000009 , L0000010 , L0000011 , L0000012 , L0000013 ,
L0000014 , L0000015 , L0000016 , L0000017 , L0000018 , L0000019 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
658138.56	4183202.50	0.00277	658138.56	4183222.25	0.00274
658138.56	4183242.00	0.00271	656770.14	4183459.54	0.01010
656742.76	4183470.49	0.00907	656777.44	4183412.09	0.01102
656777.44	4183371.93	0.01143	656739.11	4183386.53	0.00986
656740.94	4183430.34	0.00951	656750.06	4183550.80	0.00797
656753.71	4183523.42	0.00855	656750.06	4183496.05	0.00890
656773.79	4183501.52	0.00951	656706.26	4183413.91	0.00864
656691.66	4183392.01	0.00841	656686.18	4183373.76	0.00837
656700.78	4183355.50	0.00887	656717.21	4183344.55	0.00942
656660.63	4183362.80	0.00780	656761.01	4182461.34	0.00303
656800.16	4182461.34	0.00325	656839.31	4182461.34	0.00347
656878.46	4182461.34	0.00371	656917.61	4182461.34	0.00394
656956.76	4182461.34	0.00413	656995.91	4182461.34	0.00425
657035.06	4182461.34	0.00429	657074.21		

4182461.34 0.00424
657113.36 4182461.34 0.00421 656761.01
4182487.10 0.00317
656800.16 4182487.10 0.00340 656839.31
4182487.10 0.00365
656878.46 4182487.10 0.00392 656917.61
4182487.10 0.00418
656956.76 4182487.10 0.00442 656995.91
4182487.10 0.00458
657035.06 4182487.10 0.00464 657074.21
4182487.10 0.00460
657113.36 4182487.10 0.00456 656761.01
4182512.86 0.00333
656800.16 4182512.86 0.00358 656839.31
4182512.86 0.00385
656878.46 4182512.86 0.00415 656917.61
4182512.86 0.00445
656956.76 4182512.86 0.00473 656995.91
4182512.86 0.00494
657035.06 4182512.86 0.00504 657074.21
4182512.86 0.00501
657113.36 4182512.86 0.00498 656761.01
4182538.62 0.00350
656800.16 4182538.62 0.00377 656839.31
4182538.62 0.00407
656878.46 4182538.62 0.00439 656917.61
4182538.62 0.00474
656956.76 4182538.62 0.00508 656995.91
4182538.62 0.00536
657035.06 4182538.62 0.00550 657074.21
4182538.62 0.00549
657113.36 4182538.62 0.00546 656761.01
4182564.38 0.00368
656800.16 4182564.38 0.00397 656839.31
4182564.38 0.00430
656878.46 4182564.38 0.00467 656917.61
4182564.38 0.00507
656956.76 4182564.38 0.00547 656995.91
4182564.38 0.00582
657035.06 4182564.38 0.00604 657074.21
4182564.38 0.00606
657113.36 4182564.38 0.00604 656761.01
4182590.14 0.00388
656800.16 4182590.14 0.00420 656839.31
4182590.14 0.00457
656878.46 4182590.14 0.00497 656917.61
4182590.14 0.00542
656956.76 4182590.14 0.00590 656995.91
4182590.14 0.00635
657035.06 4182590.14 0.00666 657074.21

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4182590.14        0.00674
         657113.36    4182590.14        0.00673                      656761.01
4182615.90        0.00411
🡅 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuinta_onsite_mitigated\MantecaQuinta_on ***        03/22/24
 *** AERMET - VERSION  18081 ***   ***
                        ***        08:23:22

                                   PAGE  29
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                   *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   5
YEARS FOR SOURCE GROUP: ALL      ***
                                  INCLUDING SOURCE(S):     L0000001    , L0000002
 , L0000003    , L0000004    , L0000005    ,
                 L0000006    , L0000007    , L0000008    , L0000009    , L0000010
 , L0000011    , L0000012    , L0000013    ,
                 L0000014    , L0000015    , L0000016    , L0000017    , L0000018
 , L0000019    ,

                                              *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                         ** CONC OF PM_10    IN MICROGRAMS/M**3
                    **

       X-COORD (M)   Y-COORD (M)        CONC                      X-COORD (M)
Y-COORD (M)        CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - -
         656800.16    4182615.90        0.00446                      656839.31
4182615.90        0.00486
         656878.46    4182615.90        0.00531                      656917.61
4182615.90        0.00583
         656956.76    4182615.90        0.00639                      656995.91
4182615.90        0.00696
         657035.06    4182615.90        0.00739                      657074.21
4182615.90        0.00756
         657113.36    4182615.90        0.00757                      656800.16
4182641.66        0.00475
         656839.31    4182641.66        0.00519                      656878.46
4182641.66        0.00570
         656917.61    4182641.66        0.00629                      656956.76
4182641.66        0.00695
         656995.91    4182641.66        0.00765                      657035.06
4182641.66        0.00827
         657074.21    4182641.66        0.00856                      657113.36
4182641.66        0.00863
         656800.16    4182667.42        0.00506                      656839.31
4182667.42        0.00556
```

*** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

*** THE 1ST HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): L0000001 , L0000002 , L0000003 , L0000004 , L0000005 , L0000006 , L0000007 , L0000008 , L0000009 , L0000010 , L0000011 , L0000012 , L0000013 , L0000014 , L0000015 , L0000016 , L0000017 , L0000018 , L0000019 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
657151.50	4182491.75	0.58145	(15011509)	657151.50	4182511.50	0.60935	(15011509)
657151.50	4182531.25	0.63919	(15011509)	657151.50	4182551.00	0.67114	(15011509)
657151.50	4182570.75	0.70535	(15011509)	657151.50	4182590.50	0.74198	(15011509)
657151.50	4182610.25	0.78118	(15011509)	657151.50	4182630.00	0.82308	(15011509)
657151.50	4182649.75	0.86777	(15011509)	657171.25	4182472.00	0.52978	(17120822)
657171.25	4182491.75	0.55821	(17120822)	657171.25	4182511.50	0.58809	(17120822)
657171.25	4182531.25	0.61936	(17120822)	657171.25	4182551.00	0.65192	(17120822)
657171.25	4182570.75	0.68823	(17122917)	657171.25

4182590.50 0.73722 (17122917)
657171.25 4182610.25 0.78777 (17122917) 657171.25
4182630.00 0.83908 (17122917)
657171.25 4182649.75 0.89006 (17122917) 657191.00
4182472.00 0.55529 (17122917)
657191.00 4182491.75 0.58547 (17122917) 657191.00
4182511.50 0.61592 (17122917)
657191.00 4182531.25 0.64621 (17122917) 657191.00
4182551.00 0.67581 (17122917)
657191.00 4182570.75 0.70408 (17122917) 657191.00
4182590.50 0.73029 (17122917)
657191.00 4182610.25 0.75360 (17122917) 657191.00
4182630.00 0.77314 (17122917)
657191.00 4182649.75 0.78806 (17122917) 657210.75
4182472.00 0.55949 (17122917)
657210.75 4182491.75 0.57605 (17122917) 657210.75
4182511.50 0.59085 (17122917)
657210.75 4182531.25 0.60347 (17122917) 657210.75
4182551.00 0.61348 (17122917)
657210.75 4182570.75 0.62049 (17122917) 657210.75
4182590.50 0.62418 (17122917)
657210.75 4182610.25 0.63449 (17013024) 657210.75
4182630.00 0.66181 (17013024)
657210.75 4182649.75 0.68295 (17013024) 657230.50
4182472.00 0.50190 (17122917)
657230.50 4182491.75 0.50472 (17122917) 657230.50
4182511.50 0.50533 (17011203)
657230.50 4182531.25 0.52637 (17013024) 657230.50
4182551.00 0.54934 (17013024)
657230.50 4182570.75 0.56859 (17013024) 657230.50
4182590.50 0.58350 (17013024)
657230.50 4182610.25 0.59368 (17013024) 657230.50
4182630.00 0.59907 (17013024)
657230.50 4182649.75 0.60019 (17122701) 657250.25
4182472.00 0.46734 (17013024)
657250.25 4182491.75 0.48409 (17013024) 657250.25
4182511.50 0.49798 (17013024)
657250.25 4182531.25 0.50864 (17013024) 657250.25
4182551.00 0.51583 (17013024)
657250.25 4182570.75 0.51947 (17013024) 657250.25
4182590.50 0.52548 (17122701)
657250.25 4182610.25 0.53010 (17122701) 657250.25
4182630.00 0.53096 (17122701)
657250.25 4182649.75 0.52876 (17122701) 657270.00
4182472.00 0.44963 (17013024)
657270.00 4182491.75 0.45458 (17013024) 657270.00
4182511.50 0.45881 (17122701)
657270.00 4182531.25 0.46668 (17122701) 657270.00
4182551.00 0.47119 (17122701)
657270.00 4182570.75 0.47256 (17122701) 657270.00

*** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

*** THE 1ST HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): L0000001 , L0000002 , L0000003 , L0000004 , L0000005 , L0000006 , L0000007 , L0000008 , L0000009 , L0000010 , L0000011 , L0000012 , L0000013 , L0000014 , L0000015 , L0000016 , L0000017 , L0000018 , L0000019 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
657309.44	4182491.75	0.38154	(17122701)	657309.44	4182511.50	0.37731	(17122701)
657309.44	4182531.25	0.37924	(17122318)	657309.44	4182551.00	0.38723	(17122318)
657309.44	4182570.75	0.39201	(17122318)	657309.44	4182590.50	0.39419	(17122318)
657309.44	4182610.25	0.39447	(17122318)	657309.44	4182630.00	0.39346	(17122318)

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       657309.44   4182649.75        0.39165  (17122318)               657329.19
4182472.00        0.34569  (17012804)
       657329.19   4182491.75        0.35259  (17122318)               657329.19
4182511.50        0.35961  (17122318)
       657329.19   4182531.25        0.36392  (17122318)               657329.19
4182551.00        0.36593  (17122318)
       657329.19   4182570.75        0.36617  (17122318)               657329.19
4182590.50        0.36511  (17122318)
       657329.19   4182610.25        0.36315  (17122318)               657329.19
4182630.00        0.36055  (17122318)
       657329.19   4182649.75        0.35743  (17122318)               657348.94
4182472.00        0.33582  (17122318)
       657348.94   4182491.75        0.33964  (17122318)               657348.94
4182511.50        0.34142  (17122318)
       657348.94   4182531.25        0.34156  (17122318)               657348.94
4182551.00        0.34043  (17122318)
       657348.94   4182570.75        0.33835  (17122318)               657348.94
4182590.50        0.33555  (17122318)
       657348.94   4182610.25        0.33215  (17122318)               657348.94
4182630.00        0.32894  (17012903)
       657348.94   4182649.75        0.32807  (17012903)               657368.69
4182472.00        0.31987  (17122318)
       657368.69   4182491.75        0.31986  (17122318)               657368.69
4182511.50        0.31863  (17122318)
       657368.69   4182531.25        0.31643  (17122318)               657368.69
4182551.00        0.31346  (17122318)
       657368.69   4182570.75        0.31079  (17012903)               657368.69
4182590.50        0.31032  (17012903)
       657368.69   4182610.25        0.30943  (17012903)               657368.69
4182630.00        0.30823  (17012903)
       657368.69   4182649.75        0.30675  (17012903)               657388.44
4182472.00        0.29920  (17122318)
       657388.44   4182491.75        0.29689  (17122318)               657388.44
4182511.50        0.29464  (17122920)
       657388.44   4182531.25        0.29416  (17012903)               657388.44
4182551.00        0.29385  (17012903)
       657388.44   4182570.75        0.29299  (17012903)               657388.44
4182590.50        0.29173  (17012903)
       657388.44   4182610.25        0.29014  (17012903)               657388.44
4182630.00        0.28821  (17012903)
       657388.44   4182649.75        0.28588  (17012903)               657408.13
4182472.00        0.27874  (17122920)
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4182511.50        0.27922  (17012903)
       657408.13   4182531.25        0.27835  (17012903)               657408.13
4182551.00        0.27709  (17012903)
       657408.13   4182570.75        0.27543  (17012903)               657408.13
4182590.50        0.27339  (17012903)
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4182630.00        0.26802  (17012903)
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       657427.88   4182531.25        0.26226  (17012903)               657427.88
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 4182590.50        0.25461  (17012903)
       657427.88   4182610.25        0.25106  (17012903)               657427.88
 4182630.00        0.24861  (17020801)
       657427.88   4182649.75        0.24764  (17020801)               657447.63
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       657447.63   4182531.25        0.24552  (17012903)               657447.63
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       657447.63   4182570.75        0.23912  (17020801)               657447.63
 4182590.50        0.23841  (17020801)
       657447.63   4182610.25        0.23751  (17020801)               657447.63
 4182630.00        0.23636  (17020801)
       657447.63   4182649.75        0.23480  (17020801)               657467.38
 4182472.00        0.23712  (17012903)
 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuinta_onsite_mitigated\MantecaQuinta_on ***        03/22/24
 *** AERMET - VERSION  18081 ***   ***
                       ***        08:23:22

                                  PAGE  32
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                              *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP:  ALL      ***
                                 INCLUDING SOURCE(S):     L0000001    , L0000002
 , L0000003    , L0000004    , L0000005    ,
                L0000006    , L0000007    , L0000008    , L0000009    , L0000010
 , L0000011    , L0000012    , L0000013    ,
                L0000014    , L0000015    , L0000016    , L0000017    , L0000018
 , L0000019    ,

                                          *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                        ** CONC OF PM_10    IN MICROGRAMS/M**3
                  **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD (M)
Y-COORD (M)        CONC     (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
       657467.38   4182491.75        0.23450  (17012903)               657467.38
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4182511.50 0.23140 (17012903)
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4182551.00 0.22911 (17020801)
657467.38 4182570.75 0.22821 (17020801) 657467.38
4182590.50 0.22707 (17020801)
657467.38 4182610.25 0.22563 (17020801) 657467.38
4182630.00 0.22382 (17020801)
657467.38 4182649.75 0.22153 (17020801) 657487.13
4182472.00 0.22174 (17020801)
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4182511.50 0.22062 (17020801)
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4182590.50 0.21541 (17020801)
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4182551.00 0.19603 (17020801)
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4182590.50 0.19221 (17011208)
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4182472.00 0.19422 (17020801)
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4182551.00 0.18605 (17011208)
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4182590.50 0.18392 (17011208)
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4182630.00 0.18044 (17011208)
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4182669.50 0.18172 (17011509)
657546.31 4182689.25 0.18601 (17011509) 657546.31

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 4182472.00        0.18393  (17020801)
       657566.06   4182491.75        0.18108  (17020801)               657566.06
 4182511.50        0.18035  (17011208)
       657566.06   4182531.25        0.17949  (17011208)               657566.06
 4182551.00        0.17838  (17011208)
       657566.06   4182570.75        0.17697  (17011208)               657566.06
 4182590.50        0.17518  (17011208)
       657566.06   4182610.25        0.17294  (17011208)               657566.06
 4182630.00        0.17017  (17011208)
       657566.06   4182649.75        0.17235  (17011509)               657566.06
 4182669.50        0.17825  (17011509)
       657566.06   4182689.25        0.18114  (17011509)               657566.06
 4182709.00        0.18237  (17011509)
       657566.06   4182728.75        0.18286  (17011509)               657585.81
 4182472.00        0.17503  (17011208)
       657585.81   4182491.75        0.17424  (17011208)               657585.81
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       657585.81   4182531.25        0.17192  (17011208)               657585.81
 4182551.00        0.17028  (17011208)
       657585.81   4182570.75        0.16824  (17011208)               657585.81
 4182590.50        0.16573  (17011208)
       657585.81   4182610.25        0.16322  (17120120)               657585.81
 4182630.00        0.16262  (17011509)
       657585.81   4182649.75        0.17028  (17011509)               657585.81
 4182669.50        0.17440  (17011509)
       657585.81   4182689.25        0.17630  (17011509)               657585.81
 4182709.00        0.17710  (17011509)
↑ *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuinta_onsite_mitigated\MantecaQuinta_on ***        03/22/24
 *** AERMET - VERSION  18081 ***   ***
                        ***        08:23:22

                                   PAGE  33
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                               *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP:  ALL      ***
                                  INCLUDING SOURCE(S):     L0000001    , L0000002
 , L0000003    , L0000004    , L0000005    ,
                 L0000006    , L0000007    , L0000008    , L0000009    , L0000010
 , L0000011    , L0000012    , L0000013    ,
                 L0000014    , L0000015    , L0000016    , L0000017    , L0000018
 , L0000019    ,

                                        *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                     ** CONC OF PM_10    IN MICROGRAMS/M**3
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**

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
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657605.56	4182491.75	0.16724	(17011208)	657605.56	4182511.50	0.16574	(17011208)
657605.56	4182531.25	0.16387	(17011208)	657605.56	4182551.00	0.16157	(17011208)
657605.56	4182570.75	0.15922	(17120120)	657605.56	4182590.50	0.15793	(17012908)
657605.56	4182610.25	0.15787	(17012908)	657605.56	4182630.00	0.16203	(17011509)
657605.56	4182649.75	0.16751	(17011509)	657605.56	4182669.50	0.17033	(17011509)
657605.56	4182689.25	0.17159	(17011509)	657605.56	4182709.00	0.17214	(17011509)
657605.56	4182728.75	0.17241	(17011509)	657625.31	4182472.00	0.16150	(17011208)
657625.31	4182491.75	0.15980	(17011208)	657625.31	4182511.50	0.15771	(17011208)
657625.31	4182531.25	0.15548	(17120120)	657625.31	4182551.00	0.15371	(17012908)
657625.31	4182570.75	0.15363	(17012908)	657625.31	4182590.50	0.15355	(17012908)
657625.31	4182610.25	0.15349	(17011509)	657625.31	4182630.00	0.16047	(17011509)
657625.31	4182649.75	0.16433	(17011509)	657625.31	4182669.50	0.16620	(17011509)
657625.31	4182689.25	0.16707	(17011509)	657625.31	4182709.00	0.16747	(17011509)
657625.31	4182728.75	0.16765	(17011509)	657645.06	4182472.00	0.15405	(17011208)
657645.06	4182491.75	0.15191	(17120120)	657645.06	4182511.50	0.15026	(17120120)
657645.06	4182531.25	0.14974	(17012908)	657645.06	4182551.00	0.14965	(17012908)
657645.06	4182570.75	0.14955	(17012908)	657645.06	4182590.50	0.14942	(17012908)
657645.06	4182610.25	0.15308	(17011509)	657645.06	4182630.00	0.15817	(17011509)
657645.06	4182649.75	0.16087	(17011509)	657645.06	4182669.50	0.16219	(17011509)
657645.06	4182689.25	0.16276	(17011509)	657645.06	4182709.00	0.16303	(17011509)
657645.06	4182728.75	0.16322	(17011509)	657664.81	4182472.00	0.14711	(17120120)

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       657664.81   4182570.75        0.14564  (17012908)               657664.81
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       657664.81   4182610.25        0.15184  (17011509)               657664.81
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       657664.81   4182649.75        0.15737  (17011509)               657664.81
 4182669.50        0.15826  (17011509)
       657664.81   4182689.25        0.15866  (17011509)               657664.81
 4182709.00        0.15887  (17011509)
       657664.81   4182728.75        0.15902  (17011509)               657684.50
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       657704.25   4182491.75        0.13904  (17012908)               657704.25
 4182511.50        0.13890  (17012908)
       657704.25   4182531.25        0.13871  (17012908)               657704.25
 4182551.00        0.13845  (17012908)
       657704.25   4182570.75        0.13849  (17011509)               657704.25
 4182590.50        0.14435  (17011509)
       657704.25   4182610.25        0.14782  (17011509)               657704.25
 4182630.00        0.14965  (17011509)
 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuinta_onsite_mitigated\MantecaQuinta_on ***        03/22/24
 *** AERMET - VERSION  18081 ***   ***
                       ***        08:23:22

                                  PAGE  34
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                               *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP:  ALL      ***
                                  INCLUDING SOURCE(S):     L0000001    , L0000002
 , L0000003    , L0000004    , L0000005    ,
                 L0000006    , L0000007    , L0000008    , L0000009    , L0000010
 , L0000011    , L0000012    , L0000013    ,
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L0000014 , L0000015 , L0000016 , L0000017 , L0000018 , L0000019 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
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657704.25	4182689.25	0.15110	(17011509)	657704.25	4182709.00	0.15123	(17011509)
657704.25	4182728.75	0.15136	(17011509)	657724.00	4182472.00	0.13587	(17012908)
657724.00	4182491.75	0.13572	(17012908)	657724.00	4182511.50	0.13551	(17012908)
657724.00	4182531.25	0.13522	(17012908)	657724.00	4182551.00	0.13480	(17012908)
657724.00	4182570.75	0.13844	(17011509)	657724.00	4182590.50	0.14285	(17011509)
657724.00	4182610.25	0.14535	(17011509)	657724.00	4182630.00	0.14663	(17011509)
657724.00	4182649.75	0.14723	(17011509)	657724.00	4182669.50	0.14749	(17011509)
657724.00	4182689.25	0.14763	(17011509)	657724.00	4182709.00	0.14772	(17011509)
657724.00	4182728.75	0.14783	(17011509)	657743.75	4182472.00	0.13270	(17012908)
657743.75	4182491.75	0.13247	(17012908)	657743.75	4182511.50	0.13214	(17012908)
657743.75	4182531.25	0.13168	(17012908)	657743.75	4182551.00	0.13228	(17011509)
657743.75	4182570.75	0.13769	(17011509)	657743.75	4182590.50	0.14097	(17011509)
657743.75	4182610.25	0.14276	(17011509)	657743.75	4182630.00	0.14365	(17011509)
657743.75	4182649.75	0.14406	(17011509)	657743.75	4182669.50	0.14424	(17011509)
657743.75	4182689.25	0.14434	(17011509)	657743.75	4182709.00	0.14441	(17011509)
657743.75	4182728.75	0.14447	(17011509)	657763.50	4182472.00	0.12957	(17012908)
657763.50	4182491.75	0.12921	(17012908)	657763.50	4182511.50	0.12870	(17012908)
657763.50	4182531.25	0.12801	(17012908)	657763.50			

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       657763.50   4182689.25         0.14122  (17011509)                657763.50
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       657822.69   4182491.75         0.11851  (17012908)                657822.69
 4182511.50         0.12170  (17011509)
       657822.69   4182531.25         0.12633  (17011509)                657822.69
 4182551.00         0.12928  (17011509)
 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuinta_onsite_mitigated\MantecaQuinta_on ***        03/22/24
 *** AERMET - VERSION  18081 ***   ***
                       ***        08:23:22

                                  PAGE  35
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*
```

*** THE 1ST HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***

INCLUDING SOURCE(S): L0000001 , L0000002 , L0000003 , L0000004 , L0000005 , L0000006 , L0000007 , L0000008 , L0000009 , L0000010 , L0000011 , L0000012 , L0000013 , L0000014 , L0000015 , L0000016 , L0000017 , L0000018 , L0000019 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
657822.69	4182570.75	0.13098	(17011509)	657822.69	4182590.50	0.13189	(17011509)
657822.69	4182610.25	0.13233	(17011509)	657822.69	4182630.00	0.13254	(17011509)
657822.69	4182649.75	0.13264	(17011509)	657822.69	4182669.50	0.13270	(17011509)
657822.69	4182689.25	0.13274	(17011509)	657822.69	4182709.00	0.13278	(17011509)
657822.69	4182728.75	0.13281	(17011509)	657842.44	4182472.00	0.11603	(17022501)
657842.44	4182491.75	0.11639	(17011509)	657842.44	4182511.50	0.12180	(17011509)
657842.44	4182531.25	0.12542	(17011509)	657842.44	4182551.00	0.12763	(17011509)
657842.44	4182570.75	0.12888	(17011509)	657842.44	4182590.50	0.12953	(17011509)
657842.44	4182610.25	0.12984	(17011509)	657842.44	4182630.00	0.12998	(17011509)
657842.44	4182649.75	0.13006	(17011509)	657842.44	4182669.50	0.13010	(17011509)
657842.44	4182689.25	0.13014	(17011509)	657842.44	4182709.00	0.13017	(17011509)
657842.44	4182728.75	0.13022	(17011509)	657862.19	4182472.00	0.11404	(17022501)
657862.19	4182491.75	0.11707	(17011509)	657862.19	4182511.50	0.12138	(17011509)
657862.19	4182531.25	0.12416	(17011509)	657862.19	4182551.00	0.12582	(17011509)
657862.19	4182570.75	0.12672	(17011509)	657862.19	4182590.50	0.12718	(17011509)

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       657862.19   4182610.25        0.12740  (17011509)              657862.19
4182630.00        0.12750  (17011509)
       657862.19   4182649.75        0.12756  (17011509)              657862.19
4182669.50        0.12760  (17011509)
       657862.19   4182689.25        0.12763  (17011509)              657862.19
4182709.00        0.12766  (17011509)
       657862.19   4182728.75        0.12773  (17011509)              657881.94
4182472.00        0.11224  (17011509)
       657881.94   4182491.75        0.11723  (17011509)              657881.94
4182511.50        0.12061  (17011509)
       657881.94   4182531.25        0.12273  (17011509)              657881.94
4182551.00        0.12392  (17011509)
       657881.94   4182570.75        0.12456  (17011509)              657881.94
4182590.50        0.12489  (17011509)
       657881.94   4182610.25        0.12504  (17011509)              657881.94
4182630.00        0.12512  (17011509)
       657881.94   4182649.75        0.12516  (17011509)              657881.94
4182669.50        0.12519  (17011509)
       657881.94   4182689.25        0.12522  (17011509)              657881.94
4182709.00        0.12525  (17011509)
       657881.94   4182728.75        0.12531  (17011509)              657901.69
4182472.00        0.11291  (17011509)
       657901.69   4182491.75        0.11691  (17011509)              657901.69
4182511.50        0.11955  (17011509)
       657901.69   4182531.25        0.12114  (17011509)              657901.69
4182551.00        0.12200  (17011509)
       657901.69   4182570.75        0.12244  (17011509)              657901.69
4182590.50        0.12266  (17011509)
       657901.69   4182610.25        0.12277  (17011509)              657901.69
4182630.00        0.12283  (17011509)
       657901.69   4182649.75        0.12286  (17011509)              657901.69
4182669.50        0.12289  (17011509)
       657901.69   4182689.25        0.12291  (17011509)              657901.69
4182709.00        0.12295  (17011509)
       657901.69   4182728.75        0.12301  (17011509)              657921.44
4182472.00        0.11308  (17011509)
       657921.44   4182491.75        0.11622  (17011509)              657921.44
4182511.50        0.11824  (17011509)
       657921.44   4182531.25        0.11944  (17011509)              657921.44
4182551.00        0.12009  (17011509)
       657921.44   4182570.75        0.12038  (17011509)              657921.44
4182590.50        0.12050  (17011509)
       657921.44   4182610.25        0.12058  (17011509)              657921.44
4182630.00        0.12063  (17011509)
       657921.44   4182649.75        0.12065  (17011509)              657921.44
4182669.50        0.12067  (17011509)
       657921.44   4182689.25        0.12072  (17011509)              657921.44
4182709.00        0.12078  (17011509)
       657921.44   4182728.75        0.12081  (17011509)              657941.13
4182472.00        0.11285  (17011509)
```

 *** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

                            *** THE   1ST HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL   ***
                               INCLUDING SOURCE(S):   L0000001   , L0000002 , L0000003   , L0000004   , L0000005   ,
                 L0000006   , L0000007   , L0000008   , L0000009   , L0000010 , L0000011   , L0000012   , L0000013   ,
                 L0000014   , L0000015   , L0000016   , L0000017   , L0000018 , L0000019   ,

                                                *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                             ** CONC OF PM_10   IN MICROGRAMS/M**3
                  **

      X-COORD (M) Y-COORD (M)   CONC   (YYMMDDHH)   X-COORD (M) Y-COORD (M)   CONC   (YYMMDDHH)
 -
        657941.13   4182491.75   0.11530 (17011509)   657941.13   4182511.50   0.11684 (17011509)
        657941.13   4182531.25   0.11773 (17011509)   657941.13   4182551.00   0.11817 (17011509)
        657941.13   4182570.75   0.11835 (17011509)   657941.13   4182590.50   0.11842 (17011509)
        657941.13   4182610.25   0.11848 (17011509)   657941.13   4182630.00   0.11851 (17011509)
        657941.13   4182649.75   0.11853 (17011509)   657941.13   4182669.50   0.11854 (17011509)
        657941.13   4182689.25   0.11859 (17011509)   657941.13   4182709.00   0.11864 (17011509)
        657941.13   4182728.75   0.11865 (17011509)   657941.13   4182748.25   0.11860 (17011509)
        657941.13   4182768.00   0.11847 (17011509)   657941.13   4182787.75   0.11818 (17011509)
        657941.13   4182807.50   0.11767 (17011509)   657941.13   4182827.25   0.11684 (17011509)
        657941.13   4182847.00   0.11555 (17011509)   657941.13   4182866.75   0.11364 (17011509)
        657941.13   4182886.50   0.11090 (17011509)   657941.13   4182906.25   0.10713 (17011509)
        657941.13   4182926.00   0.10215 (17011509)   657941.13

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4182945.75        0.09585  (17011509)
       657941.13   4182965.50        0.08821  (17011509)                657941.13
4182985.25        0.08612  (17121906)
       657941.13   4183005.00        0.08827  (14022208)                657941.13
4183024.75        0.08957  (14022208)
       657941.13   4183064.25        0.09062  (14022208)                657941.13
4183084.00        0.09076  (14022208)
       657941.13   4183103.75        0.09080  (14022208)                657960.88
4182472.00        0.11228  (17011509)
       657960.88   4182491.75        0.11419  (17011509)                657960.88
4182511.50        0.11534  (17011509)
       657960.88   4182531.25        0.11598  (17011509)                657960.88
4182551.00        0.11629  (17011509)
       657960.88   4182570.75        0.11640  (17011509)                657960.88
4182590.50        0.11643  (17011509)
       657960.88   4182610.25        0.11645  (17011509)                657960.88
4182630.00        0.11647  (17011509)
       657960.88   4182649.75        0.11649  (17011509)                657960.88
4182669.50        0.11650  (17011509)
       657960.88   4182689.25        0.11654  (17011509)                657960.88
4182709.00        0.11657  (17011509)
       657960.88   4182728.75        0.11654  (17011509)                657960.88
4182748.25        0.11644  (17011509)
       657960.88   4182768.00        0.11622  (17011509)                657960.88
4182787.75        0.11581  (17011509)
       657960.88   4182807.50        0.11510  (17011509)                657960.88
4182827.25        0.11398  (17011509)
       657960.88   4182847.00        0.11230  (17011509)                657960.88
4182866.75        0.10990  (17011509)
       657960.88   4182886.50        0.10656  (17011509)                657960.88
4182906.25        0.10212  (17011509)
       657960.88   4182926.00        0.09644  (17011509)                657960.88
4182945.75        0.08947  (17011509)
       657960.88   4182965.50        0.08488  (17121906)                657960.88
4182985.25        0.08436  (17122621)
       657960.88   4183005.00        0.08649  (14022208)                657960.88
4183024.75        0.08788  (14022208)
       657960.88   4183044.50        0.08864  (14022208)                657960.88
4183064.25        0.08903  (14022208)
       657960.88   4183084.00        0.08919  (14022208)                657960.88
4183103.75        0.08925  (14022208)
       657980.63   4182472.00        0.11143  (17011509)                657980.63
4182491.75        0.11293  (17011509)
       657980.63   4182511.50        0.11377  (17011509)                657980.63
4182531.25        0.11422  (17011509)
       657980.63   4182551.00        0.11447  (17011509)                657980.63
4182570.75        0.11454  (17011509)
       657980.63   4182590.50        0.11454  (17011509)                657980.63
4182610.25        0.11450  (17011509)
       657980.63   4182630.00        0.11450  (17011509)                657980.63
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*** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

*** THE 1ST HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): L0000001 , L0000002 , L0000003 , L0000004 , L0000005 ,
L0000006 , L0000007 , L0000008 , L0000009 , L0000010 , L0000011 , L0000012 , L0000013 ,
L0000014 , L0000015 , L0000016 , L0000017 , L0000018 , L0000019 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
657980.63	4182787.75	0.11339	(17011509)	657980.63	4182807.50	0.11242	(17011509)
657980.63	4182827.25	0.11096	(17011509)	657980.63	4182847.00	0.10884	(17011509)
657980.63	4182866.75	0.10589	(17011509)	657980.63	4182886.50	0.10193	(17011509)
657980.63	4182906.25	0.09682	(17011509)	657980.63	4182926.00	0.09048	(17011509)
657980.63	4182945.75	0.08365	(17121906)	657980.63	4182965.50	0.08324	(17121906)
657980.63	4182985.25	0.08295	(17122621)	657980.63	4183005.00	0.08477	(14022208)
657980.63	4183024.75	0.08624	(14022208)	657980.63	4183044.50	0.08706	(14022208)
657980.63	4183064.25	0.08749	(14022208)	657980.63	4183084.00	0.08768	(14022208)

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       657980.63   4183103.75        0.08775  (14022208)               657980.63
4183123.50        0.08776  (14022208)
       658000.38   4182472.00        0.11044  (17011509)               658000.38
4182491.75        0.11158  (17011509)
       658000.38   4182511.50        0.11220  (17011509)               658000.38
4182531.25        0.11251  (17011509)
       658000.38   4182551.00        0.11266  (17011509)               658000.38
4182570.75        0.11271  (17011509)
       658000.38   4182590.50        0.11272  (17011509)               658000.38
4182610.25        0.11267  (17011509)
       658000.38   4182630.00        0.11266  (17011509)               658000.38
4182649.75        0.11266  (17011509)
       658000.38   4182669.50        0.11266  (17011509)               658000.38
4182689.25        0.11266  (17011509)
       658000.38   4182709.00        0.11260  (17011509)               658000.38
4182728.75        0.11245  (17011509)
       658000.38   4182748.25        0.11216  (17011509)               658000.38
4182768.00        0.11166  (17011509)
       658000.38   4182787.75        0.11087  (17011509)               658000.38
4182807.50        0.10961  (17011509)
       658000.38   4182827.25        0.10774  (17011509)               658000.38
4182847.00        0.10513  (17011509)
       658000.38   4182866.75        0.10161  (17011509)               658000.38
4182886.50        0.09701  (17011509)
       658000.38   4182906.25        0.09126  (17011509)               658000.38
4182926.00        0.08435  (17011509)
       658000.38   4182945.75        0.08211  (17121906)               658000.38
4182965.50        0.08160  (17121906)
       658000.38   4182985.25        0.08158  (17122621)               658000.38
4183005.00        0.08311  (14022208)
       658000.38   4183024.75        0.08465  (14022208)               658000.38
4183044.50        0.08554  (14022208)
       658000.38   4183064.25        0.08601  (14022208)               658000.38
4183103.75        0.08632  (14022208)
       658000.38   4183123.50        0.08633  (14022208)               658020.13
4182472.00        0.10931  (17011509)
       658020.13   4182491.75        0.11017  (17011509)               658020.13
4182511.50        0.11062  (17011509)
       658020.13   4182531.25        0.11084  (17011509)               658020.13
4182551.00        0.11091  (17011509)
       658020.13   4182570.75        0.11096  (17011509)               658020.13
4182590.50        0.11097  (17011509)
       658020.13   4182610.25        0.11092  (17011509)               658020.13
4182630.00        0.11089  (17011509)
       658020.13   4182649.75        0.11087  (17011509)               658020.13
4182669.50        0.11081  (17011509)
       658020.13   4182689.25        0.11076  (17011509)               658020.13
4182709.00        0.11064  (17011509)
       658020.13   4182728.75        0.11040  (17011509)               658020.13
4182748.25        0.10998  (17011509)
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       658020.13   4182768.00        0.10928  (17011509)               658020.13
 4182787.75        0.10822  (17011509)
       658020.13   4182807.50        0.10661  (17011509)               658020.13
 4182827.25        0.10430  (17011509)
       658020.13   4182847.00        0.10117  (17011509)               658020.13
 4182866.75        0.09705  (17011509)
       658020.13   4182886.50        0.09184  (17011509)               658020.13
 4182906.25        0.08551  (17011509)
       658020.13   4182926.00        0.08099  (17121906)               658020.13
 4182945.75        0.08058  (17121906)
       658020.13   4182965.50        0.07993  (17121906)               658020.13
 4182985.25        0.08027  (17122621)
       658020.13   4183005.00        0.08149  (14022208)               658020.13
 4183024.75        0.08311  (14022208)
 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuinta_onsite_mitigated\MantecaQuinta_on ***        03/22/24
 *** AERMET - VERSION  18081 ***   ***
                       ***        08:23:22

                                  PAGE  38
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                              *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP:  ALL      ***
                                 INCLUDING SOURCE(S):     L0000001    , L0000002
 , L0000003    , L0000004    , L0000005    ,
                 L0000006    , L0000007    , L0000008    , L0000009    , L0000010
 , L0000011    , L0000012    , L0000013    ,
                 L0000014    , L0000015    , L0000016    , L0000017    , L0000018
 , L0000019    ,

                                       *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                    ** CONC OF PM_10    IN MICROGRAMS/M**3
                  **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD (M)
Y-COORD (M)        CONC     (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
       658020.13   4183044.50        0.08406  (14022208)               658020.13
 4183064.25        0.08457  (14022208)
       658020.13   4183084.00        0.08483  (14022208)               658020.13
 4183103.75        0.08493  (14022208)
       658020.13   4183123.50        0.08496  (14022208)               658020.13
 4183143.25        0.08495  (14022208)
       658039.88   4182472.00        0.10808  (17011509)               658039.88
 4182491.75        0.10869  (17011509)
       658039.88   4182511.50        0.10904  (17011509)               658039.88
```

4182531.25 0.10921 (17011509)
658039.88 4182551.00 0.10924 (17011509) 658039.88
4182570.75 0.10927 (17011509)
658039.88 4182590.50 0.10927 (17011509) 658039.88
4182610.25 0.10921 (17011509)
658039.88 4182630.00 0.10917 (17011509) 658039.88
4182649.75 0.10913 (17011509)
658039.88 4182669.50 0.10904 (17011509) 658039.88
4182689.25 0.10893 (17011509)
658039.88 4182709.00 0.10873 (17011509) 658039.88
4182728.75 0.10836 (17011509)
658039.88 4182748.25 0.10776 (17011509) 658039.88
4182768.00 0.10682 (17011509)
658039.88 4182787.75 0.10542 (17011509) 658039.88
4182807.50 0.10339 (17011509)
658039.88 4182827.25 0.10060 (17011509) 658039.88
4182847.00 0.09693 (17011509)
658039.88 4182866.75 0.09223 (17011509) 658039.88
4182886.50 0.08645 (17011509)
658039.88 4182906.25 0.07987 (17121906) 658039.88
4182926.00 0.07955 (17121906)
658039.88 4182945.75 0.07904 (17121906) 658039.88
4182965.50 0.07865 (17122621)
658039.88 4182985.25 0.07900 (17122621) 658039.88
4183005.00 0.07992 (14022208)
658039.88 4183024.75 0.08161 (14022208) 658039.88
4183044.50 0.08262 (14022208)
658039.88 4183064.25 0.08318 (14022208) 658039.88
4183084.00 0.08347 (14022208)
658039.88 4183123.50 0.08363 (14022208) 658039.88
4183143.25 0.08363 (14022208)
658039.88 4183163.00 0.08360 (14022208) 658039.88
4183182.75 0.08357 (14022208)
658039.88 4183202.50 0.08353 (14022208) 658039.88
4183222.25 0.08349 (14022208)
658039.88 4183242.00 0.08344 (14022208) 658059.63
4182472.00 0.10680 (17011509)
658059.63 4182491.75 0.10724 (17011509) 658059.63
4182511.50 0.10750 (17011509)
658059.63 4182531.25 0.10762 (17011509) 658059.63
4182551.00 0.10763 (17011509)
658059.63 4182570.75 0.10764 (17011509) 658059.63
4182590.50 0.10763 (17011509)
658059.63 4182610.25 0.10756 (17011509) 658059.63
4182630.00 0.10750 (17011509)
658059.63 4182649.75 0.10742 (17011509) 658059.63
4182669.50 0.10729 (17011509)
658059.63 4182689.25 0.10710 (17011509) 658059.63
4182709.00 0.10679 (17011509)
658059.63 4182728.75 0.10627 (17011509) 658059.63

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 4182748.25         0.10545  (17011509)
       658059.63   4182768.00         0.10422  (17011509)                658059.63
 4182787.75         0.10243  (17011509)
       658059.63   4182807.50         0.09996  (17011509)                658059.63
 4182827.25         0.09667  (17011509)
       658059.63   4182847.00         0.09244  (17011509)                658059.63
 4182866.75         0.08717  (17011509)
       658059.63   4182886.50         0.08088  (17011509)                658059.63
 4182906.25         0.07851  (17121906)
       658059.63   4182926.00         0.07811  (17121906)                658059.63
 4182945.75         0.07748  (17121906)
       658059.63   4182965.50         0.07742  (17122621)                658059.63
 4182985.25         0.07778  (17122621)
       658059.63   4183005.00         0.07840  (14022208)                658059.63
 4183024.75         0.08016  (14022208)
       658059.63   4183044.50         0.08123  (14022208)                658059.63
 4183064.25         0.08184  (14022208)
       658059.63   4183084.00         0.08216  (14022208)                658059.63
 4183123.50         0.08235  (14022208)
       658059.63   4183143.25         0.08236  (14022208)                658059.63
 4183163.00         0.08234  (14022208)
 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuinta_onsite_mitigated\MantecaQuinta_on ***        03/22/24
 *** AERMET - VERSION  18081 ***   ***
                       ***        08:23:22

                                  PAGE  39
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                               *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP:  ALL      ***
                                  INCLUDING SOURCE(S):     L0000001    , L0000002
 , L0000003    , L0000004    , L0000005    ,
                 L0000006    , L0000007    , L0000008    , L0000009    , L0000010
 , L0000011    , L0000012    , L0000013    ,
                 L0000014    , L0000015    , L0000016    , L0000017    , L0000018
 , L0000019    ,

                                            *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                         ** CONC OF PM_10    IN MICROGRAMS/M**3
                   **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD (M)
Y-COORD (M)        CONC     (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
       658059.63   4183182.75         0.08230  (14022208)                658059.63
 4183202.50         0.08227  (14022208)
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       658059.63   4183222.25        0.08222  (14022208)               658059.63
4183242.00        0.08218  (14022208)
       658079.31   4182472.00        0.10549  (17011509)               658079.31
4182491.75        0.10581  (17011509)
       658079.31   4182511.50        0.10599  (17011509)               658079.31
4182531.25        0.10607  (17011509)
       658079.31   4182551.00        0.10606  (17011509)               658079.31
4182570.75        0.10606  (17011509)
       658079.31   4182590.50        0.10604  (17011509)               658079.31
4182610.25        0.10595  (17011509)
       658079.31   4182630.00        0.10587  (17011509)               658079.31
4182649.75        0.10575  (17011509)
       658079.31   4182669.50        0.10556  (17011509)               658079.31
4182689.25        0.10528  (17011509)
       658079.31   4182709.00        0.10482  (17011509)               658079.31
4182728.75        0.10410  (17011509)
       658079.31   4182748.25        0.10303  (17011509)               658079.31
4182768.00        0.10146  (17011509)
       658079.31   4182787.75        0.09926  (17011509)               658079.31
4182807.50        0.09632  (17011509)
       658079.31   4182827.25        0.09252  (17011509)               658079.31
4182847.00        0.08773  (17011509)
       658079.31   4182866.75        0.08195  (17011509)               658079.31
4182886.50        0.07747  (17121906)
       658079.31   4182906.25        0.07716  (17121906)               658079.31
4182926.00        0.07666  (17121906)
       658079.31   4182945.75        0.07589  (17121906)               658079.31
4182965.50        0.07624  (17122621)
       658079.31   4182985.25        0.07660  (17122621)               658079.31
4183005.00        0.07693  (14022208)
       658079.31   4183024.75        0.07875  (14022208)               658079.31
4183044.50        0.07988  (14022208)
       658079.31   4183064.25        0.08054  (14022208)               658079.31
4183084.00        0.08089  (14022208)
       658079.31   4183123.50        0.08112  (14022208)               658079.31
4183143.25        0.08113  (14022208)
       658079.31   4183163.00        0.08111  (14022208)               658079.31
4183182.75        0.08109  (14022208)
       658079.31   4183202.50        0.08105  (14022208)               658079.31
4183222.25        0.08101  (14022208)
       658079.31   4183242.00        0.08097  (14022208)               658099.06
4182472.00        0.10415  (17011509)
       658099.06   4182491.75        0.10438  (17011509)               658099.06
4182511.50        0.10451  (17011509)
       658099.06   4182531.25        0.10456  (17011509)               658099.06
4182551.00        0.10454  (17011509)
       658099.06   4182570.75        0.10453  (17011509)               658099.06
4182590.50        0.10448  (17011509)
       658099.06   4182610.25        0.10437  (17011509)               658099.06
4182630.00        0.10425  (17011509)
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       658099.06   4182649.75        0.10409  (17011509)               658099.06
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       658099.06   4182689.25        0.10343  (17011509)               658099.06
 4182709.00        0.10277  (17011509)
       658099.06   4182728.75        0.10182  (17011509)               658099.06
 4182748.25        0.10044  (17011509)
       658099.06   4182768.00        0.09849  (17011509)               658099.06
 4182787.75        0.09587  (17011509)
       658099.06   4182807.50        0.09244  (17011509)               658099.06
 4182827.25        0.08810  (17011509)
       658099.06   4182847.00        0.08282  (17011509)               658099.06
 4182866.75        0.07660  (17011509)
       658099.06   4182886.50        0.07620  (17121906)               658099.06
 4182906.25        0.07580  (17121906)
       658099.06   4182926.00        0.07518  (17121906)               658099.06
 4182945.75        0.07441  (17122621)
       658099.06   4182965.50        0.07509  (17122621)               658099.06
 4182985.25        0.07546  (17122621)
       658099.06   4183005.00        0.07566  (17122621)               658099.06
 4183024.75        0.07738  (14022208)
       658099.06   4183044.50        0.07857  (14022208)               658099.06
 4183064.25        0.07927  (14022208)
       658099.06   4183084.00        0.07966  (14022208)               658099.06
 4183103.75        0.07985  (14022208)
       658099.06   4183123.50        0.07992  (14022208)               658099.06
 4183143.25        0.07994  (14022208)
       658099.06   4183163.00        0.07993  (14022208)               658099.06
 4183182.75        0.07991  (14022208)
 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuinta_onsite_mitigated\MantecaQuinta_on ***        03/22/24
 *** AERMET - VERSION  18081 ***   ***
                       ***        08:23:22

                                  PAGE  40
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                              *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP:  ALL      ***
                                 INCLUDING SOURCE(S):     L0000001    , L0000002
 , L0000003    , L0000004    , L0000005    ,
                 L0000006    , L0000007    , L0000008    , L0000009    , L0000010
 , L0000011    , L0000012    , L0000013    ,
                 L0000014    , L0000015    , L0000016    , L0000017    , L0000018
 , L0000019    ,

                                       *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                     ** CONC OF PM_10    IN MICROGRAMS/M**3
                   **
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X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
658099.06	4183202.50	0.07987	(14022208)	658099.06	4183222.25	0.07983	(14022208)
658099.06	4183242.00	0.07979	(14022208)	658118.81	4182472.00	0.10283	(17011509)
658118.81	4182491.75	0.10301	(17011509)	658118.81	4182511.50	0.10308	(17011509)
658118.81	4182531.25	0.10310	(17011509)	658118.81	4182551.00	0.10306	(17011509)
658118.81	4182570.75	0.10303	(17011509)	658118.81	4182590.50	0.10296	(17011509)
658118.81	4182610.25	0.10282	(17011509)	658118.81	4182630.00	0.10265	(17011509)
658118.81	4182649.75	0.10242	(17011509)	658118.81	4182669.50	0.10208	(17011509)
658118.81	4182689.25	0.10150	(17011509)	658118.81	4182709.00	0.10063	(17011509)
658118.81	4182728.75	0.09939	(17011509)	658118.81	4182748.25	0.09768	(17011509)
658118.81	4182768.00	0.09534	(17011509)	658118.81	4182787.75	0.09225	(17011509)
658118.81	4182807.50	0.08833	(17011509)	658118.81	4182827.25	0.08350	(17011509)
658118.81	4182847.00	0.07776	(17011509)	658118.81	4182866.75	0.07524	(17121906)
658118.81	4182886.50	0.07493	(17121906)	658118.81	4182906.25	0.07443	(17121906)
658118.81	4182926.00	0.07368	(17121906)	658118.81	4182945.75	0.07329	(17122621)
658118.81	4182965.50	0.07398	(17122621)	658118.81	4182985.25	0.07436	(17122621)
658118.81	4183005.00	0.07456	(17122621)	658118.81	4183024.75	0.07604	(14022208)
658118.81	4183044.50	0.07729	(14022208)	658118.81	4183064.25	0.07804	(14022208)
658118.81	4183084.00	0.07846	(14022208)	658118.81	4183103.75	0.07867	(14022208)
658118.81	4183123.50	0.07877	(14022208)	658118.81	4183143.25	0.07879	(14022208)
658118.81	4183163.00	0.07879	(14022208)	658118.81	4183182.75	0.07877	(14022208)
658118.81	4183202.50	0.07873	(14022208)	658118.81	4183222.25	0.07870	(14022208)
658118.81	4183242.00	0.07866	(14022208)	658138.56	4182472.00	0.10151	(17011509)
658138.56	4182491.75	0.10164	(17011509)	658138.56

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 4182511.50         0.10168  (17011509)
        658138.56   4182531.25         0.10167  (17011509)                658138.56
 4182551.00         0.10161  (17011509)
        658138.56   4182570.75         0.10156  (17011509)                658138.56
 4182590.50         0.10147  (17011509)
        658138.56   4182610.25         0.10128  (17011509)                658138.56
 4182630.00         0.10105  (17011509)
        658138.56   4182649.75         0.10072  (17011509)                658138.56
 4182669.50         0.10024  (17011509)
        658138.56   4182689.25         0.09948  (17011509)                658138.56
 4182709.00         0.09837  (17011509)
        658138.56   4182728.75         0.09681  (17011509)                658138.56
 4182748.25         0.09474  (17011509)
        658138.56   4182768.00         0.09198  (17011509)                658138.56
 4182787.75         0.08841  (17011509)
        658138.56   4182807.50         0.08401  (17011509)                658138.56
 4182827.25         0.07873  (17011509)
        658138.56   4182847.00         0.07428  (17121906)                658138.56
 4182866.75         0.07403  (17121906)
        658138.56   4182886.50         0.07365  (17121906)                658138.56
 4182906.25         0.07304  (17121906)
        658138.56   4182926.00         0.07215  (17121906)                658138.56
 4182945.75         0.07220  (17122621)
        658138.56   4182965.50         0.07290  (17122621)                658138.56
 4182985.25         0.07330  (17122621)
        658138.56   4183005.00         0.07350  (17122621)                658138.56
 4183024.75         0.07474  (14022208)
        658138.56   4183044.50         0.07604  (14022208)                658138.56
 4183064.25         0.07684  (14022208)
        658138.56   4183084.00         0.07730  (14022208)                658138.56
 4183103.75         0.07754  (14022208)
        658138.56   4183123.50         0.07765  (14022208)                658138.56
 4183143.25         0.07768  (14022208)
        658138.56   4183163.00         0.07768  (14022208)                658138.56
 4183182.75         0.07766  (14022208)
 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuinta_onsite_mitigated\MantecaQuinta_on ***        03/22/24
 *** AERMET - VERSION  18081 ***   ***
                       ***        08:23:22

                                  PAGE  41
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                               *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP:  ALL      ***
                                  INCLUDING SOURCE(S):     L0000001    , L0000002
 , L0000003    , L0000004    , L0000005    ,
                 L0000006    , L0000007    , L0000008    , L0000009    , L0000010
 , L0000011    , L0000012    , L0000013    ,
                 L0000014    , L0000015    , L0000016    , L0000017    , L0000018
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, L0000019 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
658138.56	4183202.50	0.07763	(14022208)	658138.56	4183222.25	0.07760	(14022208)
658138.56	4183242.00	0.07756	(14022208)	656770.14	4183459.54	0.20194	(17122909)
656742.76	4183470.49	0.18832	(17020404)	656777.44	4183412.09	0.20354	(17122909)
656777.44	4183371.93	0.20286	(17121402)	656739.11	4183386.53	0.18754	(17121402)
656740.94	4183430.34	0.18790	(17121402)	656750.06	4183550.80	0.19321	(17122909)
656753.71	4183523.42	0.19486	(17122909)	656750.06	4183496.05	0.19280	(17122909)
656773.79	4183501.52	0.20423	(17122909)	656706.26	4183413.91	0.17626	(17020404)
656691.66	4183392.01	0.17194	(17020404)	656686.18	4183373.76	0.17050	(17020404)
656700.78	4183355.50	0.17490	(17020404)	656717.21	4183344.55	0.18025	(17121402)
656660.63	4183362.80	0.16381	(17020404)	656761.01	4182461.34	0.20126	(17123007)
656800.16	4182461.34	0.22418	(17123007)	656839.31	4182461.34	0.24653	(14012608)
656878.46	4182461.34	0.27522	(14021105)	656917.61	4182461.34	0.31043	(13012120)
656956.76	4182461.34	0.35652	(15010901)	656995.91	4182461.34	0.43079	(17011609)
657035.06	4182461.34	0.50832	(17011609)	657074.21	4182461.34	0.50342	(17122820)
657113.36	4182461.34	0.64742	(17123009)	656761.01	4182487.10	0.19949	(14021408)
656800.16	4182487.10	0.22375	(17123007)	656839.31	4182487.10	0.24653	(14012608)
656878.46	4182487.10	0.27519	(14021105)	656917.61	4182487.10	0.31300	(13012120)
656956.76	4182487.10	0.35935	(15010901)	656995.91	4182487.10	0.43433	(17011609)
657035.06	4182487.10	0.53419	(17011609)	657074.21	4182487.10	0.53539	(17122820)

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       657113.36   4182487.10        0.68548  (17123009)                656761.01
4182512.86        0.19968  (14021408)
       656800.16   4182512.86        0.22294  (17123007)                656839.31
4182512.86        0.24720  (17123007)
       656878.46   4182512.86        0.27598  (14012608)                656917.61
4182512.86        0.31413  (14021105)
       656956.76   4182512.86        0.36021  (15010901)                656995.91
4182512.86        0.43608  (17011609)
       657035.06   4182512.86        0.55953  (17011609)                657074.21
4182512.86        0.56976  (17122820)
       657113.36   4182512.86        0.72783  (17123009)                656761.01
4182538.62        0.19956  (14021408)
       656800.16   4182538.62        0.22172  (17123007)                656839.31
4182538.62        0.24747  (17123007)
       656878.46   4182538.62        0.27727  (14012608)                656917.61
4182538.62        0.31666  (14021105)
       656956.76   4182538.62        0.36403  (16120719)                656995.91
4182538.62        0.43644  (14012501)
       657035.06   4182538.62        0.58377  (17011609)                657074.21
4182538.62        0.60657  (17122820)
       657113.36   4182538.62        0.77523  (17123009)                656761.01
4182564.38        0.19909  (14021408)
       656800.16   4182564.38        0.22011  (13011517)                656839.31
4182564.38        0.24744  (17123007)
       656878.46   4182564.38        0.27778  (14012608)                656917.61
4182564.38        0.31778  (14021105)
       656956.76   4182564.38        0.36954  (13012120)                656995.91
4182564.38        0.44683  (15010901)
       657035.06   4182564.38        0.60627  (17011609)                657074.21
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       657113.36   4182564.38        0.82864  (17123009)                656761.01
4182590.14        0.19818  (14021408)
       656800.16   4182590.14        0.21955  (14021408)                656839.31
4182590.14        0.24712  (17123007)
       656878.46   4182590.14        0.27780  (14012608)                656917.61
4182590.14        0.31797  (14021105)
       656956.76   4182590.14        0.37292  (13012120)                656995.91
4182590.14        0.45492  (15010901)
       657035.06   4182590.14        0.62636  (17011609)                657074.21
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       657113.36   4182590.14        0.88927  (17123009)                656761.01
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 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuinta_onsite_mitigated\MantecaQuinta_on ***        03/22/24
 *** AERMET - VERSION  18081 ***   ***
                       ***        08:23:22

                                  PAGE  42
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*
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                              *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP:  ALL      ***
                                 INCLUDING SOURCE(S):     L0000001    , L0000002
 , L0000003    , L0000004    , L0000005    ,
                L0000006    , L0000007    , L0000008    , L0000009    , L0000010
 , L0000011    , L0000012    , L0000013    ,
                L0000014    , L0000015    , L0000016    , L0000017    , L0000018
 , L0000019    ,

                                          *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                        ** CONC OF PM_10    IN MICROGRAMS/M**3
                    **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD (M)
Y-COORD (M)        CONC     (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - -
        656800.16   4182615.90        0.21973  (14021408)                656839.31
 4182615.90        0.24711  (13011517)
        656878.46   4182615.90        0.27746  (14012608)                656917.61
 4182615.90        0.31757  (14021105)
        656956.76   4182615.90        0.37452  (13012120)                656995.91
 4182615.90        0.45974  (15010901)
        657035.06   4182615.90        0.64343  (17011609)                657074.21
 4182615.90        0.73108  (17122820)
        657113.36   4182615.90        0.95871  (17123009)                656800.16
 4182641.66        0.21973  (14021408)
        656839.31   4182641.66        0.24687  (13011517)                656878.46
 4182641.66        0.27853  (13011517)
        656917.61   4182641.66        0.31807  (14012608)                656956.76
 4182641.66        0.37505  (13012120)
        656995.91   4182641.66        0.46194  (15010901)                657035.06
 4182641.66        0.65706  (17011609)
        657074.21   4182641.66        0.78781  (17011609)                657113.36
 4182641.66        1.03905  (17123009)
        656800.16   4182667.42        0.21928  (14021408)                656839.31
 4182667.42        0.24621  (13011517)
        656878.46   4182667.42        0.27971  (13011517)                656917.61
 4182667.42        0.31899  (14012608)
        656956.76   4182667.42        0.37592  (14021105)                656995.91
 4182667.42        0.46230  (15010901)
        657035.06   4182667.42        0.66714  (17011609)                657074.21
 4182667.42        0.86070  (17011609)
        657113.36   4182667.42        1.13311  (17123009)
```

*** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

*** THE SUMMARY OF MAXIMUM ANNUAL RESULTS AVERAGED OVER 5 YEARS ***

** CONC OF PM_10 IN MICROGRAMS/M**3 **

GROUP ID	NETWORK AVERAGE CONC			RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	OF TYPE	GRID-ID
ALL	1ST HIGHEST VALUE IS	0.01143	AT (	656777.44, 4183371.93, 12.14, 12.14, 0.00)	DC	
	2ND HIGHEST VALUE IS	0.01102	AT (	656777.44, 4183412.09, 12.19, 12.19, 0.00)	DC	
	3RD HIGHEST VALUE IS	0.01013	AT (	657230.50, 4182649.75, 10.67, 10.67, 0.00)	DC	
	4TH HIGHEST VALUE IS	0.01010	AT (	656770.14, 4183459.54, 12.19, 12.19, 0.00)	DC	
	5TH HIGHEST VALUE IS	0.01009	AT (	657210.75, 4182649.75, 10.67, 10.67, 0.00)	DC	
	6TH HIGHEST VALUE IS	0.01008	AT (	657250.25, 4182649.75, 10.67, 10.67, 0.00)	DC	
	7TH HIGHEST VALUE IS	0.00999	AT (	657113.36, 4182667.42, 10.67, 10.67, 0.00)	DC	
	8TH HIGHEST VALUE IS	0.00996	AT (	657270.00, 4182649.75, 10.67, 10.67, 0.00)	DC	
	9TH HIGHEST VALUE IS	0.00994	AT (	657191.00, 4182649.75, 10.67, 10.67, 0.00)	DC	
	10TH HIGHEST VALUE IS	0.00986	AT (	656739.11, 4183386.53, 12.00, 12.00, 0.00)	DC	

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR

 *** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

*** THE SUMMARY OF HIGHEST 1-HR RESULTS ***

** CONC OF PM_10   IN MICROGRAMS/M**3 **

GROUP ID	AVERAGE	CONC	DATE (YYMMDDHH)	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	OF TYPE	NETWORK GRID-ID
ALL	HIGH 1ST HIGH VALUE IS	1.13311	ON 17123009:	AT (657113.36, 4182667.42, 10.67, 10.67, 0.00)	DC	

 *** RECEPTOR TYPES: GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR

 *** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

 *** Message Summary : AERMOD Model Execution ***

  --------- Summary of Total Messages --------

 A Total of   0 Fatal Error Message(s)
 A Total of   11 Warning Message(s)
 A Total of   971 Informational Message(s)

 A Total of   43824 Hours Were Processed

 A Total of   442 Calm Hours Identified

 A Total of   529 Missing Hours Identified (1.21 Percent)

    ******** FATAL ERROR MESSAGES ********
               *** NONE ***

```
   ********   WARNING MESSAGES   ********
ME W186     114       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used
     0.50
ME W187     114       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET

MX W420   34276        METQA: Wind Speed Out-of-Range.   KURDAT =
 16112904
MX W420   34282        METQA: Wind Speed Out-of-Range.   KURDAT =
 16112910
MX W420   34288        METQA: Wind Speed Out-of-Range.   KURDAT =
 16112916
MX W420   34294        METQA: Wind Speed Out-of-Range.   KURDAT =
 16112922
MX W420   34300        METQA: Wind Speed Out-of-Range.   KURDAT =
 16113004
MX W420   40768        METQA: Wind Speed Out-of-Range.   KURDAT =
 17082616
MX W420   40792        METQA: Wind Speed Out-of-Range.   KURDAT =
 17082716
MX W420   40798        METQA: Wind Speed Out-of-Range.   KURDAT =
 17082722
MX W420   40804        METQA: Wind Speed Out-of-Range.   KURDAT =
 17082804

   ************************************
   *** AERMOD Finishes Successfully ***
   ************************************
```

Construction HRA Calculations

A. Equation 5.4.1.1: $\text{Dose-air} = C_{air} \times \{BR/BW\} \times A \times EF \times 10^{-6}$

1. Dose-air = Dose through inhalation (mg/kg/d)
2. C_{air} = Concentration in air ($\mu g/m^3$)
3. {BR/BW} = Daily Breathing rate normalized to body weight (L/kg body weight - day)
4. A = Inhalation absorption factor (unitless)
5. EF = Exposure frequency (unitless), days/365 days
6. 10^{-6} = Micrograms to milligrams conversion, liters to cubic meters conversion

a: Recommended default values for EQ 5.4.1.1:

1. {BR/BW} = Daily breathing rates by age groupings, see As supplemental information, the assessor may wish to evaluate the inhalation dose by using the mean point estimates in Table 5.6 to provide a range of breathing rates for cancer risk assessment to the risk manager.
2. Table (point estimates) and Table 5.7 (parametric model distributions for Tier III stochastic risk assessment). For Tier 1 residential estimates, use 95th percentile breathing rates in Table 5.6.
3. A = 1
4. EF = 0.96 (350 days/365 days in a year for a resident)

A. Equation 8.2.4 A: $\text{RISK}_{\text{inh-res}} = \text{DOSE}_{\text{air}} \times \text{CPF} \times \text{ASF} \times \text{ED/AT} \times \text{FAH}$

7. $\text{RISK}_{\text{inh-res}}$ = Residential inhalation cancer risk
8. DOSE_{air} = Daily inhalation dose (mg/kg-day)
9. CPF = Inhalation cancer potency factor (mg/kg-day^{-1})
10. ASF = Age sensitivity factor for a specified age group (unitless)
11. ED = Exposure duration (in years) for a specified age group
12. AT = Averaging time for lifetime cancer risk (years)
13. FAH = Fraction of time spent at home (unitless)

a: Recommended default values for EQ 8.2.4 A:

5. DOSE_{air} = Calculated for each age group from Eq. 5.4.1
6. CPF = Substance-specific (see Table 7.1)
7. ASF = See Section 8.2.1
8. ED = 0.25 years for 3rd trimester, 2 years for 0<2, 7 years for 2<9, 14 years for 2<16, 14 years for 16<30, 54 years for 16-70
9. AT = 70 years*
10. FAH = See Table 8.4

CANCER RISK CALCULATIONS

Dose (Equation 5.4.1.1)

Exposure Age	Concentration (ug/m3)	Breathing Rate L/kg body weight-day)	Inhalation Absorption Factor	EF	Multiplier	DOSE (mg/kg/day)
Unmitigated						
3rd Trimester - Preconstruction	0.082	361	1	0.95890411	0.000001	2.83855E-05
3rd Trimester - Onsite	0.04735	361	2	0.95890411	0.000001	3.27818E-05
Infant	0.04735	1090	1	0.95890411	0.000001	4.94905E-05
Child - Onsite	0.04735	572	1	0.95890411	0.000001	2.59712E-05
Child - Offsite	0.05878	572	1	0.95890411	0.000001	3.22404E-05

Cancer Risk (Equation 8.2.4A)

Exposure Age	DOSE (mg/kg/day)	CPF (mg/kg-day^-1)	ASF	Exposure Duration (years)/Averaging Time (years)	RISK	Threshold (in one million)	Exceed
Unmitigated							
3rd Trimester - Preconstruction	2.83855E-05	1.1	10	0.002428571	7.58E-07	20	NO
3rd Trimester - Onsite	3.27818E-05	1.1	10	0.001142857	4.12E-07	20	NO
Infant	4.94905E-05	1.1	10	0.028571429	1.56E-05	20	NO
Child - Onsite	2.59712E-05	1.1	3	0.004428571	3.80E-07	20	NO
Child - Offsite	3.22404E-05	1.1	3	0.009428571	1.00E-06	20	NO
				TOTAL	**1.77E-05**	**20**	NO

Duration of Exposure

	Duration (years)	Concentration at the MEIR (ug/m3)	Third Trimester	Infant	Child	
Preconstruction	**0.17**	**0.082**	**0.17**			0.0164
On-Site	**2.39**	**0.04735**	0.08	2	0.31	0.00947
Overlap of On-Site and Off-site	0.66	0.05878	-	-	0.66	0.011756

each phase has a different MEIR, the maximum concentration was chosen for each model run to include a conservative analysis.

The concentration for the overlap of on-site and off-site is a combination of the concentration at the MEIR for the on-site and off-site modeling.

Operational HRA

Caltrans - Truck and Vehicle Trips on Highway 120 segment

RTE	CNTY	POSTMILE_PFX	POSTMILE	POSTMILE_SFX	LEG	DESCRIPTION	VEHICLE_AADT_TOTAL	TRUCK_AADT_TOTAL	TRK_PERCENT_TOT
120	SJ		6.197		A	MANTECA, NORTH JCT. RTE. 99	14100	2073	14.70

*Caltrans. 2020. Truck Traffic. https://dot.ca.gov/programs/traffic-operations/census

DPM Emissions on Highway 120

Source: EMFAC2021 (v1.0.2) Emission Rates
Region Type: County
Region: San Joaquin
Calendar Year: 2025
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/year for CVMT and EVMT, trips/day for Trips, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HOTSOAK and RUNLOSS, g/vehicle/day for IDLEX and DIURN. PHEV calculated based on total VMT.

Region	Calendar Year	Vehicle Category	Model Year	Speed	Fuel	Total VMT	Percentage	Amount of Trips on Highway 120	PM10_RUNEX	PM10 Exhaust (grams/day)
Vehicle Trips (Excluding Trucks) = 14,100 trips										
San Joaquin	2025	LDA	Aggregate	Aggregate	Gasoline	10065418.68	0.515201039	7,264	0.001401571	10.18148373
San Joaquin	**2025**	**LDA**	**Aggregate**	**Aggregate**	**Diesel**	**19917.73747**	**0.001019495**	**14**	**0.013694368**	**0.196854796**
San Joaquin	2025	LDA	Aggregate	Aggregate	Electricity	568591.8142	0.029103518	410	0	0
San Joaquin	2025	LDA	Aggregate	Aggregate	Plug-in Hybrid	342468.7613	0.017529351	247	0.000701525	0.173391568
San Joaquin	2025	LDT1	Aggregate	Aggregate	Gasoline	704503.5262	0.036060194	508	0.002082961	1.059078998
San Joaquin	**2025**	**LDT1**	**Aggregate**	**Aggregate**	**Diesel**	**54.79857187**	**2.80488E-06**	**0**	**0.239684972**	**0.009479251**
San Joaquin	2025	LDT1	Aggregate	Aggregate	Electricity	1820.919278	9.32042E-05	1	0	0
San Joaquin	2025	LDT1	Aggregate	Aggregate	Plug-in Hybrid	1865.567756	9.54896E-05	1	0.000430399	0.00057949
San Joaquin	2025	LDT2	Aggregate	Aggregate	Gasoline	4297523.941	0.219969866	3,102	0.001427964	4.428938528
San Joaquin	**2025**	**LDT2**	**Aggregate**	**Aggregate**	**Diesel**	**13558.41861**	**0.000693991**	**10**	**0.005050351**	**0.04941907**
San Joaquin	2025	LDT2	Aggregate	Aggregate	Electricity	26331.51348	0.001347785	19	0	0
San Joaquin	2025	LDT2	Aggregate	Aggregate	Plug-in Hybrid	47402.79271	0.002426324	34	0.00052488	0.017956763
San Joaquin	2025	MCY	Aggregate	Aggregate	Gasoline	64631.08274	0.003308159	47	0.002024615	0.094438256
San Joaquin	2025	MDV	Aggregate	Aggregate	Gasoline	3253692.896	0.166541106	2,348	0.001486921	3.491631607
San Joaquin	**2025**	**MDV**	**Aggregate**	**Aggregate**	**Diesel**	**51951.9772**	**0.002659175**	**37**	**0.007242416**	**0.271549847**
San Joaquin	2025	MDV	Aggregate	Aggregate	Electricity	28882.85403	0.001478376	21	0	0
San Joaquin	2025	MDV	Aggregate	Aggregate	Plug-in Hybrid	31067.11976	0.001590179	22	0.00068415	0.015339679
San Joaquin	2025	MH	Aggregate	Aggregate	Gasoline	11738.09809	0.000600818	8	0.001623557	0.013754008
San Joaquin	**2025**	**MH**	**Aggregate**	**Aggregate**	**Diesel**	**5453.241177**	**0.000279126**	**4**	**0.1269765**	**0.499737633**
						19536875.74	*SUBTOTAL DAILY DIESEL PM10 EXHAUST EMISSIONS PER MILE OF FREEWAY*			*1.027040597*
Truck Trips = 2,073										
San Joaquin	2025	HHDT	Aggregate	Aggregate	Gasoline	54.29517764	2.3018E-05	0	0.005944469	0.000283648
San Joaquin	**2025**	**HHDT**	**Aggregate**	**Aggregate**	**Diesel**	**1240767.372**	**0.52601288**	**1,090**	**0.02814705**	**30.69223811**
San Joaquin	2025	HHDT	Aggregate	Aggregate	Electricity	7163.940202	0.003037092	6	0	0
San Joaquin	2025	HHDT	Aggregate	Aggregate	Natural Gas	15043.96	0.00637776	13	0.003020369	0.039932593
San Joaquin	2025	LHDT1	Aggregate	Aggregate	Gasoline	335570.0181	0.142262084	295	0.001664226	0.490795603
San Joaquin	**2025**	**LHDT1**	**Aggregate**	**Aggregate**	**Diesel**	**292201.982**	**0.12387657**	**257**	**0.047614525**	**12.22722575**
San Joaquin	2025	LHDT1	Aggregate	Aggregate	Electricity	4326.683512	0.001834261	4	0	0
San Joaquin	2025	LHDT2	Aggregate	Aggregate	Gasoline	39496.24366	0.0167441	35	0.001511724	0.052472716
San Joaquin	**2025**	**LHDT2**	**Aggregate**	**Aggregate**	**Diesel**	**112092.227**	**0.047520556**	**99**	**0.039208996**	**3.862482629**
San Joaquin	2025	LHDT2	Aggregate	Aggregate	Electricity	1043.683705	0.000442461	1	0	0
San Joaquin	2025	MHDT	Aggregate	Aggregate	Gasoline	27321.53996	0.011582737	24	0.00155005	0.03721828
San Joaquin	**2025**	**MHDT**	**Aggregate**	**Aggregate**	**Diesel**	**277483.8298**	**0.117636933**	**244**	**0.012153239**	**2.963705463**
San Joaquin	2025	MHDT	Aggregate	Aggregate	Electricity	2613.081012	0.001107794	2	0	0
San Joaquin	2025	MHDT	Aggregate	Aggregate	Natural Gas	3636.715774	0.001541755	3	0.001586174	0.005069503
						2358815.572	*SUBTOTAL DAILY DIESEL PM10 EXHAUST EMISSIONS PER MILE OF FREEWAY*			*49.74565195*

Vehicle Type	PM10 Exhaust (g/day)	PM10 Exhaust (g/s)
Passenger	1.027040597	1.18829E-05
Truck	49.74565195	0.000575557
Total Average Emission Rate		***0.00058744***

Benzene from Gas Station - Spillage, Refueling, Loading, and Breathing Emissions

Table I-I

Current and Revised TOG Emission Factors for Gasoline Dispensing Facilities

Sub Category	Current[a] (lbs/kgal)[b]		Revised (lbs/kgal)[a]		
	UEF	Pre-EVR	UEF	Pre-EVR	EVR
Phase II Fueling					
Non-ORVR Vehicles	8.4	0.74	8.4	2.4	0.42
ORVR Vehicles	NA	NA	0.42	0.12	0.021
Phase I Bulk Transfer Losses	8.4	0.42	7.7	0.38	0.15
Pressure Driven Losses	0.84	0.1	0.76	0.092	0.024
Phase II Fueling - Spillage	0.64	0.42	0.61	0.42	0.24
Gasoline Dispensing Hose Permeation					
Year 2013	NA	NA	0.062	0.062	0.062
Year 2017	NA	NA	0.009	0.009	0.009

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https://ww3.arb.ca.gov/vapor/gdf-emisfactor/gdfumbrella.pdf

Most vehicles refueling will be equipped with ORVR technology

With current gas station regulation, use Phase II EVR spillage factors

Pressure Driven is equivalent to breathing loss

Volume Sources

Emissions from Spillage				
Annual Throughput (kgal)	**Spillage Loss TOG (lbs/kgal)**	**Annual Spillage Loss TOG (lbs/year)**	**TOG Emission Rate (g/s)**	**Benzene Emission Rate (g/s)***
1,500	0.24	360	**0.0051768**	0.000051768
Emissions from Refueling				
Annual Throughput (kgal)	**Refueling TOG (lbs/kgal)**	**Annual Refueling Loss TOG (lbs/year)**	**Tog Emission Rate (g/s)**	**Benzene Emission Rate (g/s)***
1,500	0.021	31.5	**0.00045297**	4.5297E-06
		Total TOG Emissions from Volume On-Site Sources	***0.00562977***	***5.62977E-05***

*According to CARB, benzene makes up less than 1% of TOG emissions based on 2009 data, see: https://ww3.arb.ca.gov/ei/speciate/profilereference/headspacee6_og683&684.pdf

According to the EPA, the average gas dispensing facility has a monthly throughput of 125,000 gallons: https://www.epa.gov/sites/default/files/2016-05/documents/gasolinedispensingbackgrounddocument.pdf#:~:text=The%20average%20GDF%20dispenses%20about%20125%2C000%20gallons%20per,concluded%20that%20gasoline%20throughput%20at%20GDFs%20varies%20significantly.

Point Sources

Emissions from Bulk Loading				
Annual Throughput (kgal)	**Bulk Transfer TOG (lbs/kgal)***	**Annual Refueling Loss TOG (lbs/year)**	**TOG Emission Rate (g/s)**	**Benzene Emission Rate (g/s)****
1,500	0.15	225	**0.0032355**	0.000032355
Emissions from Pressure Driven (Breathing) Losses				
Annual Throughput (kgal)	**Pressure Driven Loss TOG (lbs/kgal)**	**Annual Refueling Loss TOG (lbs/year)**	**TOG Emission Rate (g/s)**	**Benzene Emission Rate (g/s)****
1,500	0.024	36	**0.00051768**	5.1768E-06
		Total TOG Emissions from Point On-Site Sources	***0.00375318***	***3.75318E-05***

*assume Phase 1 because Phase 2 estimates are not provided by CARB

According to the EPA, the average gas dispensing facility has a monthly throughput of 125,000 gallons: https://www.epa.gov/sites/default/files/2016-05/documents/gasolinedispensingbackgrounddocument.pdf#:~:text=The%20average%20GDF%20dispenses%20about%20125%2C000%20gallons%20per,concluded%20that%20gasoline%20throughput%20at%20GDFs%20varies%20significantly.

Total from Volume and Point **9.38295E-05**

Highway 120 AERMOD
Output Files

```
**
**************************************
**
** AERMOD Input Produced by:
** AERMOD View Ver. 10.0.0
** Lakes Environmental Software Inc.
** Date: 9/27/2022
** File: C:\Lakes\AERMOD
View\MantecaQuintal_Highway120\MantecaQuintal_Highway120.ADI
**
**************************************
**
**
**************************************
** AERMOD Control Pathway
**************************************
**
**
CO STARTING
   TITLEONE C:\Lakes\AERMOD View\MantecaQuintal_Highway120\MantecaQuintal_Highwa
   MODELOPT DFAULT CONC
   AVERTIME 1 ANNUAL
   POLLUTID PM_10
   RUNORNOT RUN
   ERRORFIL MantecaQuintal_Highway120.err
CO FINISHED
**
**************************************
** AERMOD Source Pathway
**************************************
**
**
SO STARTING
** Source Location **
** Source ID - Type - X Coord. - Y Coord. **
** ----------------------------------------------------------------------
** Line Source Represented by Adjacent Volume Sources
** LINE VOLUME Source ID = SLINE1
** DESCRSRC
** PREFIX
** Length of Side = 166.00
** Configuration = Adjacent
** Emission Rate = 0.00058
** Vertical Dimension = 5.10
** SZINIT = 2.37
** Nodes = 2
** 656781.370, 4183283.056, 10.94, 2.55, 77.21
** 658468.939, 4183308.168, 12.51, 2.55, 77.21
** ----------------------------------------------------------------------
   LOCATION L0000001     VOLUME   656864.361 4183284.291 11.79
```

```
   LOCATION L0000002     VOLUME   657030.342 4183286.761 12.19
   LOCATION L0000003     VOLUME   657196.324 4183289.231 11.62
   LOCATION L0000004     VOLUME   657362.306 4183291.701 10.97
   LOCATION L0000005     VOLUME   657528.287 4183294.171 11.28
   LOCATION L0000006     VOLUME   657694.269 4183296.641 11.89
   LOCATION L0000007     VOLUME   657860.251 4183299.111 11.89
   LOCATION L0000008     VOLUME   658026.232 4183301.580 12.19
   LOCATION L0000009     VOLUME   658192.214 4183304.050 12.19
   LOCATION L0000010     VOLUME   658358.195 4183306.520 12.19
** End of LINE VOLUME Source ID = SLINE1
** Source Parameters **
** LINE VOLUME Source ID = SLINE1
   SRCPARAM L0000001      0.000058      2.55     77.21      2.37
   SRCPARAM L0000002      0.000058      2.55     77.21      2.37
   SRCPARAM L0000003      0.000058      2.55     77.21      2.37
   SRCPARAM L0000004      0.000058      2.55     77.21      2.37
   SRCPARAM L0000005      0.000058      2.55     77.21      2.37
   SRCPARAM L0000006      0.000058      2.55     77.21      2.37
   SRCPARAM L0000007      0.000058      2.55     77.21      2.37
   SRCPARAM L0000008      0.000058      2.55     77.21      2.37
   SRCPARAM L0000009      0.000058      2.55     77.21      2.37
   SRCPARAM L0000010      0.000058      2.55     77.21      2.37
** ----------------------------------------------------------------------
   SRCGROUP ALL
SO FINISHED
**
**************************************
** AERMOD Receptor Pathway
**************************************
**
**
RE STARTING
   INCLUDED MantecaQuintal_Highway120.rou
RE FINISHED
**
**************************************
** AERMOD Meteorology Pathway
**************************************
**
**
ME STARTING
   SURFFILE "C:\Users\kheck\Meteorological_Data\AERMET
v18081_UStar\Stockton_23237\Stockton_2013-2017.SFC"
   PROFFILE "C:\Users\kheck\Meteorological_Data\AERMET
v18081_UStar\Stockton_23237\Stockton_2013-2017.PFL"
   SURFDATA 23237 2013 Stockton
   UAIRDATA 23230 2013 OAKLAND/WSO_AP
   PROFBASE 7.9 METERS
ME FINISHED
**
```

```
**************************************
** AERMOD Output Pathway
**************************************
**
**
OU STARTING
   RECTABLE ALLAVE 1ST
   RECTABLE 1 1ST
** Auto-Generated Plotfiles
   PLOTFILE 1 ALL 1ST MANTECAQUINTAL_HIGHWAY120.AD\01H1GALL.PLT 31
   PLOTFILE ANNUAL ALL MANTECAQUINTAL_HIGHWAY120.AD\AN00GALL.PLT 32
   SUMMFILE MantecaQuintal_Highway120.sum
OU FINISHED
**
**************************************
** Project Parameters
**************************************
** PROJCTN  CoordinateSystemUTM
** DESCPTN  UTM: Universal Transverse Mercator
** DATUM    World Geodetic System 1984
** DTMRGN   Global Definition
** UNITS    m
** ZONE     10
** ZONEINX  0
**
```

```
**
**************************************
**
** AERMOD Input Produced by:
** AERMOD View Ver. 10.0.0
** Lakes Environmental Software Inc.
** Date: 9/27/2022
** File: C:\Lakes\AERMOD
View\MantecaQuintal_Highway120\MantecaQuintal_Highway120.ADI
**
**************************************
**
**
**************************************
** AERMOD Control Pathway
**************************************
**
**
CO STARTING
   TITLEONE C:\Lakes\AERMOD View\MantecaQuintal_Highway120\MantecaQuintal_Highwa
   MODELOPT DFAULT CONC
   AVERTIME 1 ANNUAL
   POLLUTID PM_10
   RUNORNOT RUN
   ERRORFIL MantecaQuintal_Highway120.err
CO FINISHED
**
**************************************
** AERMOD Source Pathway
**************************************
**
**
SO STARTING
** Source Location **
** Source ID - Type - X Coord. - Y Coord. **
** ----------------------------------------------------------------------
** Line Source Represented by Adjacent Volume Sources
** LINE VOLUME Source ID = SLINE1
** DESCRSRC
** PREFIX
** Length of Side = 166.00
** Configuration = Adjacent
** Emission Rate = 0.00058
** Vertical Dimension = 5.10
** SZINIT = 2.37
** Nodes = 2
** 656781.370, 4183283.056, 10.94, 2.55, 77.21
** 658468.939, 4183308.168, 12.51, 2.55, 77.21
** ----------------------------------------------------------------------
   LOCATION L0000001     VOLUME   656864.361 4183284.291 11.79
```

```
   LOCATION L0000002     VOLUME   657030.342 4183286.761 12.19
   LOCATION L0000003     VOLUME   657196.324 4183289.231 11.62
   LOCATION L0000004     VOLUME   657362.306 4183291.701 10.97
   LOCATION L0000005     VOLUME   657528.287 4183294.171 11.28
   LOCATION L0000006     VOLUME   657694.269 4183296.641 11.89
   LOCATION L0000007     VOLUME   657860.251 4183299.111 11.89
   LOCATION L0000008     VOLUME   658026.232 4183301.580 12.19
   LOCATION L0000009     VOLUME   658192.214 4183304.050 12.19
   LOCATION L0000010     VOLUME   658358.195 4183306.520 12.19
** End of LINE VOLUME Source ID = SLINE1
** Source Parameters **
** LINE VOLUME Source ID = SLINE1
   SRCPARAM L0000001      0.000058      2.55     77.21      2.37
   SRCPARAM L0000002      0.000058      2.55     77.21      2.37
   SRCPARAM L0000003      0.000058      2.55     77.21      2.37
   SRCPARAM L0000004      0.000058      2.55     77.21      2.37
   SRCPARAM L0000005      0.000058      2.55     77.21      2.37
   SRCPARAM L0000006      0.000058      2.55     77.21      2.37
   SRCPARAM L0000007      0.000058      2.55     77.21      2.37
   SRCPARAM L0000008      0.000058      2.55     77.21      2.37
   SRCPARAM L0000009      0.000058      2.55     77.21      2.37
   SRCPARAM L0000010      0.000058      2.55     77.21      2.37
** ----------------------------------------------------------------------
   SRCGROUP ALL
SO FINISHED
**
**************************************
** AERMOD Receptor Pathway
**************************************
**
**
RE STARTING
   INCLUDED MantecaQuintal_Highway120.rou
RE FINISHED
**
**************************************
** AERMOD Meteorology Pathway
**************************************
**
**
ME STARTING
   SURFFILE "C:\Users\kheck\Meteorological_Data\AERMET
v18081_UStar\Stockton_23237\Stockton_2013-2017.SFC"
   PROFFILE "C:\Users\kheck\Meteorological_Data\AERMET
v18081_UStar\Stockton_23237\Stockton_2013-2017.PFL"
   SURFDATA 23237 2013 Stockton
   UAIRDATA 23230 2013 OAKLAND/WSO_AP
   PROFBASE 7.9 METERS
ME FINISHED
**
```

```
************************************
** AERMOD Output Pathway
************************************
**
**
OU STARTING
   RECTABLE ALLAVE 1ST
   RECTABLE 1 1ST
** Auto-Generated Plotfiles
   PLOTFILE 1 ALL 1ST MANTECAQUINTAL_HIGHWAY120.AD\01H1GALL.PLT 31
   PLOTFILE ANNUAL ALL MANTECAQUINTAL_HIGHWAY120.AD\AN00GALL.PLT 32
   SUMMFILE MantecaQuintal_Highway120.sum
OU FINISHED


  *** Message Summary For AERMOD Model Setup ***

  --------- Summary of Total Messages --------

 A Total of            0 Fatal Error Message(s)
 A Total of            2 Warning Message(s)
 A Total of            0 Informational Message(s)


    ******** FATAL ERROR MESSAGES ********
               ***  NONE  ***


    ********   WARNING MESSAGES   ********
 ME W186      96       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used
      0.50
 ME W187      96       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET


 *********************************
 *** SETUP Finishes Successfully ***
 *********************************

↟ *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuintal_Highway120\MantecaQuintal_Highwa ***        09/27/22
 *** AERMET - VERSION  18081 ***   ***
                       ***        17:09:08

                                  PAGE   1
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                                          ***     MODEL SETUP OPTIONS SUMMARY
  ***
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - -
```

```
 **Model Is Setup For Calculation of Average CONCentration Values.

   --  DEPOSITION LOGIC  --
 **NO GAS DEPOSITION Data Provided.
 **NO PARTICLE DEPOSITION Data Provided.
 **Model Uses NO DRY DEPLETION.  DRYDPLT  =  F
 **Model Uses NO WET DEPLETION.  WETDPLT  =  F

 **Model Uses RURAL Dispersion Only.

 **Model Uses Regulatory DEFAULT Options:
        1. Stack-tip Downwash.
        2. Model Accounts for ELEVated Terrain Effects.
        3. Use Calms Processing Routine.
        4. Use Missing Data Processing Routine.
        5. No Exponential Decay.

 **Other Options Specified:
        ADJ_U*   - Use ADJ_U* option for SBL in AERMET
        CCVR_Sub - Meteorological data includes CCVR substitutions
        TEMP_Sub - Meteorological data includes TEMP substitutions

 **Model Assumes No FLAGPOLE Receptor Heights.

 **The User Specified a Pollutant Type of:  PM_10

 **Model Calculates  1 Short Term Average(s) of:   1-HR
     and Calculates ANNUAL Averages

 **This Run Includes:     10 Source(s);       1 Source Group(s); and     661
Receptor(s)

                with:      0 POINT(s), including
                           0 POINTCAP(s) and      0 POINTHOR(s)
                 and:     10 VOLUME source(s)
                 and:      0 AREA type source(s)
                 and:      0 LINE source(s)
                 and:      0 RLINE/RLINEXT source(s)
                 and:      0 OPENPIT source(s)
                 and:      0 BUOYANT LINE source(s) with a total of     0 line(s)


 **Model Set To Continue RUNning After the Setup Testing.

 **The AERMET Input Meteorological Data Version Date:  18081

 **Output Options Selected:
         Model Outputs Tables of ANNUAL Averages by Receptor
         Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE
```

Keyword)
          Model Outputs External File(s) of High Values for Plotting (PLOTFILE
Keyword)
          Model Outputs Separate Summary File of High Ranked Values (SUMMFILE
Keyword)

 **NOTE: The Following Flags May Appear Following CONC Values: c for Calm Hours
                                                                 m for Missing
Hours
                                                                 b for Both Calm
and Missing Hours

 **Misc. Inputs: Base Elev. for Pot. Temp. Profile (m MSL) =   7.90 ; Decay
Coef. =   0.000   ; Rot. Angle =   0.0
                  Emission Units = GRAMS/SEC   ;
Emission Rate Unit Factor =   0.10000E+07
                  Output Units   = MICROGRAMS/M**3

 **Approximate Storage Requirements of Model =   3.6 MB of RAM.

 **Input Runstream File: aermod.inp

 **Output Print File: aermod.out

 **Detailed Error/Message File: MantecaQuintal_Highway120.err

 **File for Summary of Results: MantecaQuintal_Highway120.sum

 *** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

                                                *** VOLUME SOURCE DATA ***

              NUMBER EMISSION RATE   BASE   RELEASE   INIT.
INIT.   URBAN EMISSION RATE
   SOURCE   PART. (GRAMS/SEC)   X   Y   ELEV.   HEIGHT   SY
SZ   SOURCE SCALAR VARY
     ID   CATS.   (METERS) (METERS) (METERS) (METERS) (METERS)
(METERS)   BY
 -
- - - - - - - - - - - - - - - - - - - -

 L0000001   0   0.58000E-04 656864.4 4183284.3   11.8   2.55   77.21

2.37   NO
 L0000002   0   0.58000E-04 657030.3 4183286.8   12.2   2.55   77.21
2.37   NO
 L0000003   0   0.58000E-04 657196.3 4183289.2   11.6   2.55   77.21
2.37   NO
 L0000004   0   0.58000E-04 657362.3 4183291.7   11.0   2.55   77.21
2.37   NO
 L0000005   0   0.58000E-04 657528.3 4183294.2   11.3   2.55   77.21
2.37   NO
 L0000006   0   0.58000E-04 657694.3 4183296.6   11.9   2.55   77.21
2.37   NO
 L0000007   0   0.58000E-04 657860.3 4183299.1   11.9   2.55   77.21
2.37   NO
 L0000008   0   0.58000E-04 658026.2 4183301.6   12.2   2.55   77.21
2.37   NO
 L0000009   0   0.58000E-04 658192.2 4183304.0   12.2   2.55   77.21
2.37   NO
 L0000010   0   0.58000E-04 658358.2 4183306.5   12.2   2.55   77.21
2.37   NO

 *** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

                                          *** SOURCE IDs DEFINING SOURCE GROUPS
***

 SRCGROUP ID   SOURCE IDs
 -----------   ----------

  ALL   L0000001   , L0000002   , L0000003   , L0000004   , L0000005   ,
L0000006   , L0000007   , L0000008   ,

             L0000009   , L0000010   ,

 *** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

                                            *** DISCRETE CARTESIAN RECEPTORS ***
                                          (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
                                                       (METERS)

```
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     ( 657658.8, 4182763.3,      11.6,      11.6,       0.0);         ( 657678.8,
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     ( 657858.8, 4182763.3,      12.2,      12.2,       0.0);         ( 657878.8,
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     ( 657898.8, 4182763.3,      12.2,      12.2,       0.0);         ( 657538.8,
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     ( 657558.8, 4182783.3,      11.1,      11.1,       0.0);         ( 657578.8,
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     ( 657598.8, 4182783.3,      11.3,      11.3,       0.0);         ( 657618.8,
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     ( 657638.8, 4182783.3,      11.5,      11.5,       0.0);         ( 657658.8,
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     ( 657678.8, 4182783.3,      11.6,      11.6,       0.0);         ( 657698.8,
4182783.3,      11.6,      11.6,       0.0);
     ( 657718.8, 4182783.3,      11.7,      11.7,       0.0);         ( 657738.8,
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     ( 657758.8, 4182783.3,      11.9,      11.9,       0.0);         ( 657778.8,
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     ( 657798.8, 4182783.3,      12.1,      12.1,       0.0);         ( 657818.8,
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     ( 657838.8, 4182783.3,      12.2,      12.2,       0.0);         ( 657858.8,
4182783.3,      12.2,      12.2,       0.0);
     ( 657878.8, 4182783.3,      12.2,      12.2,       0.0);         ( 657898.8,
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     ( 657538.8, 4182803.3,      10.9,      10.9,       0.0);         ( 657558.8,
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     ( 657578.8, 4182803.3,      11.1,      11.1,       0.0);         ( 657598.8,
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     ( 657658.8, 4182803.3,      11.5,      11.5,       0.0);         ( 657678.8,
4182803.3,      11.6,      11.6,       0.0);
     ( 657698.8, 4182803.3,      11.6,      11.6,       0.0);         ( 657718.8,
4182803.3,      11.6,      11.6,       0.0);
     ( 657738.8, 4182803.3,      11.8,      11.8,       0.0);         ( 657758.8,
```

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4182803.3,   12.2,   12.2,   0.0);
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4182823.3,   11.2,   11.2,   0.0);
     (657638.8, 4182823.3,   11.3,   11.3,   0.0);   (657658.8,
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     (657678.8, 4182823.3,   11.5,   11.5,   0.0);   (657698.8,
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     (657758.8, 4182823.3,   12.0,   12.0,   0.0);   (657778.8,
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4182823.3,   12.2,   12.2,   0.0);
     (657878.8, 4182823.3,   12.2,   12.2,   0.0);   (657898.8,
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     (657578.8, 4182843.3,   10.9,   10.9,   0.0);   (657598.8,
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     (657618.8, 4182843.3,   11.1,   11.1,   0.0);   (657638.8,
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     (657658.8, 4182843.3,   11.3,   11.3,   0.0);   (657678.8,
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4182843.3,   11.6,   11.6,   0.0);
     (657738.8, 4182843.3,   11.8,   11.8,   0.0);   (657758.8,
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     (657778.8, 4182843.3,   12.2,   12.2,   0.0);   (657798.8,
4182843.3,   12.2,   12.2,   0.0);

                                          *** DISCRETE CARTESIAN RECEPTORS ***

(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

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(657538.8, 4182883.3, 10.7, 10.7, 0.0); (657558.8, 4182883.3, 10.7, 10.7, 0.0);
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(657658.8, 4182883.3, 11.3, 11.3, 0.0); (657678.8, 4182883.3, 11.5, 11.5, 0.0);
(657698.8, 4182883.3, 11.6, 11.6, 0.0); (657718.8, 4182883.3, 11.6, 11.6, 0.0);
(657738.8, 4182883.3, 11.8, 11.8, 0.0); (657758.8,

```
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     ( 657818.8, 4182883.3,      12.2,      12.2,       0.0);         ( 657838.8,
4182883.3,      12.2,      12.2,       0.0);
     ( 657858.8, 4182883.3,      12.2,      12.2,       0.0);         ( 657878.8,
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     ( 657478.8, 4182903.3,      10.7,      10.7,       0.0);         ( 657498.8,
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     ( 657518.8, 4182903.3,      10.7,      10.7,       0.0);         ( 657538.8,
4182903.3,      10.7,      10.7,       0.0);
     ( 657558.8, 4182903.3,      10.7,      10.7,       0.0);         ( 657578.8,
4182903.3,      10.8,      10.8,       0.0);
     ( 657598.8, 4182903.3,      11.0,      11.0,       0.0);         ( 657618.8,
4182903.3,      11.0,      11.0,       0.0);
     ( 657638.8, 4182903.3,      11.1,      11.1,       0.0);         ( 657658.8,
4182903.3,      11.3,      11.3,       0.0);
     ( 657678.8, 4182903.3,      11.5,      11.5,       0.0);         ( 657698.8,
4182903.3,      11.6,      11.6,       0.0);
     ( 657718.8, 4182903.3,      11.6,      11.6,       0.0);         ( 657738.8,
4182903.3,      11.8,      11.8,       0.0);
     ( 657758.8, 4182903.3,      12.0,      12.0,       0.0);         ( 657778.8,
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     ( 657798.8, 4182903.3,      12.2,      12.2,       0.0);         ( 657818.8,
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     ( 657838.8, 4182903.3,      12.2,      12.2,       0.0);         ( 657858.8,
4182903.3,      12.2,      12.2,       0.0);
     ( 657878.8, 4182903.3,      12.2,      12.2,       0.0);         ( 657898.8,
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     ( 657418.8, 4182923.3,      10.7,      10.7,       0.0);         ( 657438.8,
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     ( 657458.8, 4182923.3,      10.7,      10.7,       0.0);         ( 657478.8,
4182923.3,      10.7,      10.7,       0.0);
     ( 657498.8, 4182923.3,      10.7,      10.7,       0.0);         ( 657518.8,
4182923.3,      10.7,      10.7,       0.0);
     ( 657538.8, 4182923.3,      10.7,      10.7,       0.0);         ( 657558.8,
4182923.3,      10.7,      10.7,       0.0);
     ( 657578.8, 4182923.3,      10.9,      10.9,       0.0);         ( 657598.8,
4182923.3,      11.0,      11.0,       0.0);
 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuintal_Highway120\MantecaQuintal_Highwa ***        09/27/22
 *** AERMET - VERSION  18081 ***   ***
                        ***        17:09:08

                                   PAGE   6
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*
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*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

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(657738.8, 4182923.3, 11.9, 11.9, 0.0); (657758.8, 4182923.3, 12.0, 12.0, 0.0);
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(657598.8, 4182943.3, 11.0, 11.0, 0.0); (657618.8, 4182943.3, 11.2, 11.2, 0.0);
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(657838.8, 4182943.3, 12.2, 12.2, 0.0); (657858.8, 4182943.3, 12.2, 12.2, 0.0);
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     ( 657658.8, 4182963.3,      11.3,      11.3,       0.0);         ( 657678.8,
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     ( 657858.8, 4182963.3,      12.2,      12.2,       0.0);         ( 657878.8,
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     ( 657898.8, 4182963.3,      12.2,      12.2,       0.0);         ( 657298.8,
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     ( 657438.8, 4182983.3,      11.0,      11.0,       0.0);         ( 657458.8,
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     ( 657478.8, 4182983.3,      11.0,      11.0,       0.0);         ( 657498.8,
4182983.3,      11.0,      11.0,       0.0);
     ( 657518.8, 4182983.3,      11.0,      11.0,       0.0);         ( 657538.8,
4182983.3,      11.0,      11.0,       0.0);
     ( 657558.8, 4182983.3,      11.0,      11.0,       0.0);         ( 657578.8,
4182983.3,      11.2,      11.2,       0.0);
     ( 657598.8, 4182983.3,      11.3,      11.3,       0.0);         ( 657618.8,
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     ( 657758.8, 4182983.3,      12.0,      12.0,       0.0);         ( 657778.8,
4182983.3,      12.2,      12.2,       0.0);
 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuintal_Highway120\MantecaQuintal_Highwa ***        09/27/22
 *** AERMET - VERSION  18081 ***   ***
                        ***       17:09:08
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*** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

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(657878.8, 4182983.3, 12.2, 12.2, 0.0); (657898.8, 4182983.3, 12.2, 12.2, 0.0);
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(657358.8, 4183003.3, 10.7, 10.7, 0.0); (657378.8, 4183003.3, 10.9, 10.9, 0.0);
(657398.8, 4183003.3, 11.0, 11.0, 0.0); (657418.8, 4183003.3, 11.0, 11.0, 0.0);
(657438.8, 4183003.3, 11.0, 11.0, 0.0); (657458.8, 4183003.3, 11.0, 11.0, 0.0);
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(657558.8, 4183003.3, 11.2, 11.2, 0.0); (657578.8, 4183003.3, 11.3, 11.3, 0.0);
(657598.8, 4183003.3, 11.3, 11.3, 0.0); (657618.8, 4183003.3, 11.3, 11.3, 0.0);
(657638.8, 4183003.3, 11.4, 11.4, 0.0); (657658.8, 4183003.3, 11.6, 11.6, 0.0);
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(657838.8, 4183003.3, 12.2, 12.2, 0.0); (657858.8, 4183003.3, 12.2, 12.2, 0.0);
(657878.8, 4183003.3, 12.2, 12.2, 0.0); (657898.8, 4183003.3, 12.2, 12.2, 0.0);
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     ( 657498.8, 4183023.3,      11.0,      11.0,       0.0);         ( 657518.8,
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     ( 657538.8, 4183023.3,      11.0,      11.0,       0.0);         ( 657558.8,
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     ( 657578.8, 4183023.3,      11.3,      11.3,       0.0);         ( 657598.8,
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     ( 657618.8, 4183023.3,      11.4,      11.4,       0.0);         ( 657638.8,
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     ( 657698.8, 4183023.3,      11.8,      11.8,       0.0);         ( 657718.8,
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     ( 657778.8, 4183023.3,      12.2,      12.2,       0.0);         ( 657798.8,
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     ( 657858.8, 4183023.3,      12.2,      12.2,       0.0);         ( 657878.8,
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     ( 657898.8, 4183023.3,      12.2,      12.2,       0.0);         ( 657178.8,
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     ( 657238.8, 4183043.3,      10.7,      10.7,       0.0);         ( 657298.8,
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     ( 657318.8, 4183043.3,      10.7,      10.7,       0.0);         ( 657338.8,
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     ( 657358.8, 4183043.3,      10.7,      10.7,       0.0);         ( 657378.8,
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     ( 657438.8, 4183043.3,      11.0,      11.0,       0.0);         ( 657458.8,
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     ( 657518.8, 4183043.3,      11.0,      11.0,       0.0);         ( 657538.8,
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     ( 657558.8, 4183043.3,      11.2,      11.2,       0.0);         ( 657578.8,
4183043.3,      11.3,      11.3,       0.0);
 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuintal_Highway120\MantecaQuintal_Highwa ***        09/27/22
 *** AERMET - VERSION  18081 ***   ***
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*** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

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(657758.8, 4183043.3, 12.2, 12.2, 0.0); (657778.8, 4183043.3, 12.2, 12.2, 0.0);
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     ( 657858.8, 4183063.3,      12.2,      12.2,       0.0);         ( 657878.8,
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     ( 657898.8, 4183063.3,      12.2,      12.2,       0.0);         ( 657238.8,
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     ( 657258.8, 4183083.3,      10.7,      10.7,       0.0);         ( 657278.8,
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     ( 657298.8, 4183083.3,      10.7,      10.7,       0.0);         ( 657318.8,
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     ( 657338.8, 4183083.3,      10.7,      10.7,       0.0);         ( 657358.8,
4183083.3,      10.7,      10.7,       0.0);
     ( 657378.8, 4183083.3,      10.9,      10.9,       0.0);         ( 657398.8,
4183083.3,      11.0,      11.0,       0.0);
     ( 657418.8, 4183083.3,      11.0,      11.0,       0.0);         ( 657438.8,
4183083.3,      11.0,      11.0,       0.0);
     ( 657458.8, 4183083.3,      11.0,      11.0,       0.0);         ( 657478.8,
4183083.3,      11.0,      11.0,       0.0);
     ( 657498.8, 4183083.3,      11.1,      11.1,       0.0);         ( 657518.8,
4183083.3,      11.2,      11.2,       0.0);
     ( 657538.8, 4183083.3,      11.3,      11.3,       0.0);         ( 657558.8,
4183083.3,      11.3,      11.3,       0.0);
     ( 657578.8, 4183083.3,      11.4,      11.4,       0.0);         ( 657598.8,
4183083.3,      11.6,      11.6,       0.0);
     ( 657618.8, 4183083.3,      11.6,      11.6,       0.0);         ( 657638.8,
4183083.3,      11.7,      11.7,       0.0);
     ( 657658.8, 4183083.3,      11.8,      11.8,       0.0);         ( 657678.8,
4183083.3,      11.9,      11.9,       0.0);
     ( 657698.8, 4183083.3,      12.0,      12.0,       0.0);         ( 657718.8,
4183083.3,      12.1,      12.1,       0.0);
     ( 657738.8, 4183083.3,      12.2,      12.2,       0.0);         ( 657758.8,
4183083.3,      12.2,      12.2,       0.0);
     ( 657778.8, 4183083.3,      12.2,      12.2,       0.0);         ( 657798.8,
4183083.3,      12.2,      12.2,       0.0);
     ( 657818.8, 4183083.3,      12.2,      12.2,       0.0);         ( 657838.8,
4183083.3,      12.2,      12.2,       0.0);
     ( 657858.8, 4183083.3,      12.2,      12.2,       0.0);         ( 657878.8,
4183083.3,      12.2,      12.2,       0.0);
     ( 657898.8, 4183083.3,      12.2,      12.2,       0.0);         ( 657258.8,
4183103.3,      10.7,      10.7,       0.0);
     ( 657278.8, 4183103.3,      10.7,      10.7,       0.0);         ( 657298.8,
4183103.3,      10.7,      10.7,       0.0);
     ( 657318.8, 4183103.3,      10.7,      10.7,       0.0);         ( 657338.8,
4183103.3,      10.7,      10.7,       0.0);
↟ *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
```

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(657358.8, 4183103.3, 10.7, 10.7, 0.0); (657378.8, 4183103.3, 10.9, 10.9, 0.0);
(657398.8, 4183103.3, 10.9, 10.9, 0.0); (657418.8, 4183103.3, 11.0, 11.0, 0.0);
(657438.8, 4183103.3, 11.0, 11.0, 0.0); (657458.8, 4183103.3, 11.0, 11.0, 0.0);
(657478.8, 4183103.3, 11.0, 11.0, 0.0); (657498.8, 4183103.3, 11.2, 11.2, 0.0);
(657518.8, 4183103.3, 11.3, 11.3, 0.0); (657538.8, 4183103.3, 11.3, 11.3, 0.0);
(657558.8, 4183103.3, 11.3, 11.3, 0.0); (657578.8, 4183103.3, 11.4, 11.4, 0.0);
(657598.8, 4183103.3, 11.6, 11.6, 0.0); (657618.8, 4183103.3, 11.6, 11.6, 0.0);
(657638.8, 4183103.3, 11.7, 11.7, 0.0); (657658.8, 4183103.3, 11.9, 11.9, 0.0);
(657678.8, 4183103.3, 11.9, 11.9, 0.0); (657698.8, 4183103.3, 12.0, 12.0, 0.0);
(657718.8, 4183103.3, 12.1, 12.1, 0.0); (657738.8, 4183103.3, 12.2, 12.2, 0.0);
(657758.8, 4183103.3, 12.2, 12.2, 0.0); (657778.8, 4183103.3, 12.2, 12.2, 0.0);
(657798.8, 4183103.3, 12.2, 12.2, 0.0); (657818.8, 4183103.3, 12.2, 12.2, 0.0);
(657838.8, 4183103.3, 12.2, 12.2, 0.0); (657858.8, 4183103.3, 12.2, 12.2, 0.0);
(657878.8, 4183103.3, 12.2, 12.2, 0.0); (657898.8, 4183103.3, 12.2, 12.2, 0.0);
(657298.8, 4183123.3, 10.7, 10.7, 0.0); (657318.8, 4183123.3, 10.7, 10.7, 0.0);
(657338.8, 4183123.3, 10.7, 10.7, 0.0); (657358.8, 4183123.3, 10.7, 10.7, 0.0);
(657378.8, 4183123.3, 10.7, 10.7, 0.0); (657398.8, 4183123.3, 10.8, 10.8, 0.0);
(657418.8, 4183123.3, 11.0, 11.0, 0.0); (657438.8, 4183123.3, 11.0, 11.0, 0.0);
(657458.8, 4183123.3, 11.0, 11.0, 0.0); (657478.8, 4183123.3, 11.0, 11.0, 0.0);
(657498.8, 4183123.3, 11.2, 11.2, 0.0); (657518.8,

```
4183123.3,      11.3,      11.3,       0.0);
     ( 657538.8, 4183123.3,      11.3,      11.3,       0.0);         ( 657558.8,
4183123.3,      11.3,      11.3,       0.0);
     ( 657578.8, 4183123.3,      11.4,      11.4,       0.0);         ( 657598.8,
4183123.3,      11.6,      11.6,       0.0);
     ( 657618.8, 4183123.3,      11.6,      11.6,       0.0);         ( 657638.8,
4183123.3,      11.7,      11.7,       0.0);
     ( 657658.8, 4183123.3,      11.9,      11.9,       0.0);         ( 657678.8,
4183123.3,      11.9,      11.9,       0.0);
     ( 657698.8, 4183123.3,      11.9,      11.9,       0.0);         ( 657718.8,
4183123.3,      12.0,      12.0,       0.0);
     ( 657738.8, 4183123.3,      12.2,      12.2,       0.0);         ( 657758.8,
4183123.3,      12.2,      12.2,       0.0);
     ( 657778.8, 4183123.3,      12.2,      12.2,       0.0);         ( 657798.8,
4183123.3,      12.2,      12.2,       0.0);
     ( 657818.8, 4183123.3,      12.2,      12.2,       0.0);         ( 657838.8,
4183123.3,      12.2,      12.2,       0.0);
     ( 657858.8, 4183123.3,      12.2,      12.2,       0.0);         ( 657878.8,
4183123.3,      12.2,      12.2,       0.0);
     ( 657898.8, 4183123.3,      12.2,      12.2,       0.0);         ( 657318.8,
4183143.3,      10.7,      10.7,       0.0);
     ( 657338.8, 4183143.3,      10.7,      10.7,       0.0);         ( 657358.8,
4183143.3,      10.7,      10.7,       0.0);
     ( 657378.8, 4183143.3,      10.7,      10.7,       0.0);         ( 657398.8,
4183143.3,      10.8,      10.8,       0.0);
     ( 657418.8, 4183143.3,      11.0,      11.0,       0.0);         ( 657438.8,
4183143.3,      11.0,      11.0,       0.0);
     ( 657458.8, 4183143.3,      11.0,      11.0,       0.0);         ( 657478.8,
4183143.3,      11.0,      11.0,       0.0);
     ( 657498.8, 4183143.3,      11.2,      11.2,       0.0);         ( 657518.8,
4183143.3,      11.3,      11.3,       0.0);
     ( 657538.8, 4183143.3,      11.3,      11.3,       0.0);         ( 657558.8,
4183143.3,      11.3,      11.3,       0.0);
     ( 657578.8, 4183143.3,      11.4,      11.4,       0.0);         ( 657598.8,
4183143.3,      11.6,      11.6,       0.0);
     ( 657618.8, 4183143.3,      11.6,      11.6,       0.0);         ( 657638.8,
4183143.3,      11.7,      11.7,       0.0);
     ( 657658.8, 4183143.3,      11.9,      11.9,       0.0);         ( 657678.8,
4183143.3,      11.9,      11.9,       0.0);
     ( 657698.8, 4183143.3,      11.9,      11.9,       0.0);         ( 657718.8,
4183143.3,      11.9,      11.9,       0.0);
     ( 657738.8, 4183143.3,      12.0,      12.0,       0.0);         ( 657758.8,
4183143.3,      12.1,      12.1,       0.0);
     ( 657778.8, 4183143.3,      12.2,      12.2,       0.0);         ( 657798.8,
4183143.3,      12.2,      12.2,       0.0);
     ( 657818.8, 4183143.3,      12.2,      12.2,       0.0);         ( 657838.8,
4183143.3,      12.2,      12.2,       0.0);
     ( 657858.8, 4183143.3,      12.2,      12.2,       0.0);         ( 657878.8,
4183143.3,      12.2,      12.2,       0.0);
     ( 657898.8, 4183143.3,      12.2,      12.2,       0.0);         ( 657358.8,
```

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

```
     ( 657378.8, 4183163.3,      10.7,      10.7,       0.0);         ( 657398.8,
4183163.3,      10.8,      10.8,       0.0);
     ( 657418.8, 4183163.3,      10.9,      10.9,       0.0);         ( 657438.8,
4183163.3,      11.0,      11.0,       0.0);
     ( 657458.8, 4183163.3,      11.0,      11.0,       0.0);         ( 657478.8,
4183163.3,      11.0,      11.0,       0.0);
     ( 657498.8, 4183163.3,      11.2,      11.2,       0.0);         ( 657518.8,
4183163.3,      11.3,      11.3,       0.0);
     ( 657538.8, 4183163.3,      11.3,      11.3,       0.0);         ( 657558.8,
4183163.3,      11.3,      11.3,       0.0);
     ( 657578.8, 4183163.3,      11.4,      11.4,       0.0);         ( 657598.8,
4183163.3,      11.6,      11.6,       0.0);
     ( 657618.8, 4183163.3,      11.6,      11.6,       0.0);         ( 657638.8,
4183163.3,      11.7,      11.7,       0.0);
     ( 657658.8, 4183163.3,      11.9,      11.9,       0.0);         ( 657678.8,
4183163.3,      11.9,      11.9,       0.0);
     ( 657698.8, 4183163.3,      11.9,      11.9,       0.0);         ( 657718.8,
4183163.3,      11.9,      11.9,       0.0);
     ( 657738.8, 4183163.3,      11.9,      11.9,       0.0);         ( 657758.8,
4183163.3,      12.0,      12.0,       0.0);
     ( 657778.8, 4183163.3,      12.2,      12.2,       0.0);         ( 657798.8,
4183163.3,      12.2,      12.2,       0.0);
     ( 657818.8, 4183163.3,      12.2,      12.2,       0.0);         ( 657838.8,
4183163.3,      12.2,      12.2,       0.0);
     ( 657858.8, 4183163.3,      12.2,      12.2,       0.0);         ( 657878.8,
4183163.3,      12.2,      12.2,       0.0);
     ( 657898.8, 4183163.3,      12.2,      12.2,       0.0);         ( 657398.8,
4183183.3,      10.7,      10.7,       0.0);
     ( 657418.8, 4183183.3,      10.7,      10.7,       0.0);         ( 657438.8,
4183183.3,      10.9,      10.9,       0.0);
     ( 657458.8, 4183183.3,      11.0,      11.0,       0.0);         ( 657478.8,
4183183.3,      11.0,      11.0,       0.0);
     ( 657498.8, 4183183.3,      11.2,      11.2,       0.0);         ( 657518.8,
4183183.3,      11.3,      11.3,       0.0);
     ( 657538.8, 4183183.3,      11.3,      11.3,       0.0);         ( 657558.8,
4183183.3,      11.3,      11.3,       0.0);
     ( 657578.8, 4183183.3,      11.4,      11.4,       0.0);         ( 657598.8,
```

```
4183183.3,      11.6,      11.6,       0.0);
     ( 657618.8, 4183183.3,      11.6,      11.6,       0.0);         ( 657638.8,
4183183.3,      11.7,      11.7,       0.0);
     ( 657658.8, 4183183.3,      11.9,      11.9,       0.0);         ( 657678.8,
4183183.3,      11.9,      11.9,       0.0);
     ( 657698.8, 4183183.3,      11.9,      11.9,       0.0);         ( 657718.8,
4183183.3,      11.9,      11.9,       0.0);
     ( 657738.8, 4183183.3,      11.9,      11.9,       0.0);         ( 657758.8,
4183183.3,      12.0,      12.0,       0.0);
     ( 657778.8, 4183183.3,      12.2,      12.2,       0.0);         ( 657798.8,
4183183.3,      12.2,      12.2,       0.0);
     ( 657818.8, 4183183.3,      12.2,      12.2,       0.0);         ( 657838.8,
4183183.3,      12.2,      12.2,       0.0);
     ( 657858.8, 4183183.3,      12.2,      12.2,       0.0);         ( 657878.8,
4183183.3,      12.2,      12.2,       0.0);
     ( 657898.8, 4183183.3,      12.2,      12.2,       0.0);         ( 657418.8,
4183203.3,      10.9,      10.9,       0.0);
     ( 657438.8, 4183203.3,      11.0,      11.0,       0.0);         ( 657458.8,
4183203.3,      11.0,      11.0,       0.0);
     ( 657478.8, 4183203.3,      11.0,      11.0,       0.0);         ( 657498.8,
4183203.3,      11.2,      11.2,       0.0);
     ( 657518.8, 4183203.3,      11.3,      11.3,       0.0);         ( 657538.8,
4183203.3,      11.3,      11.3,       0.0);
     ( 657558.8, 4183203.3,      11.3,      11.3,       0.0);         ( 657578.8,
4183203.3,      11.4,      11.4,       0.0);
     ( 657598.8, 4183203.3,      11.6,      11.6,       0.0);         ( 657618.8,
4183203.3,      11.6,      11.6,       0.0);
     ( 657638.8, 4183203.3,      11.7,      11.7,       0.0);         ( 657658.8,
4183203.3,      11.9,      11.9,       0.0);
     ( 657678.8, 4183203.3,      11.9,      11.9,       0.0);         ( 657698.8,
4183203.3,      11.9,      11.9,       0.0);
     ( 657718.8, 4183203.3,      11.9,      11.9,       0.0);         ( 657738.8,
4183203.3,      11.9,      11.9,       0.0);
     ( 657758.8, 4183203.3,      12.0,      12.0,       0.0);         ( 657778.8,
4183203.3,      12.0,      12.0,       0.0);
     ( 657798.8, 4183203.3,      12.0,      12.0,       0.0);         ( 657818.8,
4183203.3,      12.1,      12.1,       0.0);
     ( 657838.8, 4183203.3,      12.2,      12.2,       0.0);         ( 657858.8,
4183203.3,      12.2,      12.2,       0.0);
     ( 657878.8, 4183203.3,      12.2,      12.2,       0.0);         ( 657898.8,
4183203.3,      12.2,      12.2,       0.0);
     ( 657458.8, 4183223.3,      11.0,      11.0,       0.0);         ( 657478.8,
4183223.3,      11.0,      11.0,       0.0);
     ( 657498.8, 4183223.3,      11.2,      11.2,       0.0);         ( 657518.8,
4183223.3,      11.3,      11.3,       0.0);
     ( 657538.8, 4183223.3,      11.3,      11.3,       0.0);         ( 657558.8,
4183223.3,      11.3,      11.3,       0.0);
     ( 657578.8, 4183223.3,      11.4,      11.4,       0.0);         ( 657598.8,
4183223.3,      11.6,      11.6,       0.0);
     ( 657618.8, 4183223.3,      11.6,      11.6,       0.0);         ( 657638.8,
```

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

     (657698.8, 4183223.3,   11.9,   11.9,   0.0);   (657718.8,
4183223.3,   11.9,   11.9,   0.0);
     (657738.8, 4183223.3,   11.9,   11.9,   0.0);   (657758.8,
4183223.3,   11.9,   11.9,   0.0);
     (657778.8, 4183223.3,   11.9,   11.9,   0.0);   (657798.8,
4183223.3,   11.9,   11.9,   0.0);
     (657818.8, 4183223.3,   12.0,   12.0,   0.0);   (657838.8,
4183223.3,   12.1,   12.1,   0.0);
     (657858.8, 4183223.3,   12.2,   12.2,   0.0);   (657878.8,
4183223.3,   12.2,   12.2,   0.0);
     (657898.8, 4183223.3,   12.2,   12.2,   0.0);   (657518.8,
4183243.3,   11.3,   11.3,   0.0);
     (657538.8, 4183243.3,   11.3,   11.3,   0.0);   (657558.8,
4183243.3,   11.3,   11.3,   0.0);
     (657578.8, 4183243.3,   11.4,   11.4,   0.0);   (657598.8,
4183243.3,   11.6,   11.6,   0.0);
     (657618.8, 4183243.3,   11.6,   11.6,   0.0);   (657638.8,
4183243.3,   11.7,   11.7,   0.0);
     (657658.8, 4183243.3,   11.9,   11.9,   0.0);   (657678.8,
4183243.3,   11.9,   11.9,   0.0);
     (657698.8, 4183243.3,   11.9,   11.9,   0.0);   (657718.8,
4183243.3,   11.9,   11.9,   0.0);
     (657738.8, 4183243.3,   11.9,   11.9,   0.0);   (657758.8,
4183243.3,   11.9,   11.9,   0.0);
     (657778.8, 4183243.3,   11.9,   11.9,   0.0);   (657798.8,
4183243.3,   11.9,   11.9,   0.0);
     (657818.8, 4183243.3,   11.9,   11.9,   0.0);   (657838.8,
4183243.3,   12.0,   12.0,   0.0);
     (657858.8, 4183243.3,   12.2,   12.2,   0.0);   (657878.8,
4183243.3,   12.2,   12.2,   0.0);
     (657898.8, 4183243.3,   12.2,   12.2,   0.0);

*** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

* SOURCE-RECEPTOR COMBINATIONS FOR WHICH CALCULATIONS MAY NOT BE PERFORMED *

LESS THAN 1.0 METER; WITHIN OPENPIT; OR BEYOND 80KM FOR FASTAREA/FASTALL

SOURCE ID	- - RECEPTOR LOCATION - - XR (METERS)	YR (METERS)	DISTANCE (METERS)
L0000004	657318.8	4183143.3	-11.32
L0000004	657338.8	4183143.3	-15.72
L0000004	657358.8	4183143.3	-17.54
L0000004	657378.8	4183143.3	-16.67
L0000004	657398.8	4183143.3	-13.17
L0000004	657418.8	4183143.3	-7.21
L0000004	657438.8	4183143.3	0.95
L0000004	657358.8	4183163.3	-37.53
L0000004	657378.8	4183163.3	-36.53
L0000004	657398.8	4183163.3	-32.51
L0000004	657418.8	4183163.3	-25.72
L0000004	657438.8	4183163.3	-16.55
L0000004	657458.8	4183163.3	-5.40
L0000004	657398.8	4183183.3	-51.62
L0000004	657418.8	4183183.3	-43.77
L0000004	657438.8	4183183.3	-33.34

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                         L0000004           657458.8     4183183.3
-20.89
                         L0000004           657478.8     4183183.3
-6.90
                         L0000004           657418.8     4183203.3
-61.10
                         L0000004           657438.8     4183203.3
-49.12
                         L0000004           657458.8     4183203.3
-35.16
                         L0000004           657478.8     4183203.3
-19.79
                         L0000004           657498.8     4183203.3
-3.41
                         L0000004           657458.8     4183223.3
-47.75
                         L0000004           657478.8     4183223.3
-30.94
                         L0000004           657498.8     4183223.3
-13.36
                         L0000004           657518.8     4183243.3
-2.24
                         L0000005           657458.8     4183143.3
0.14
                         L0000005           657478.8     4183143.3
-7.19
                         L0000005           657498.8     4183143.3
-12.25
                         L0000005           657518.8     4183143.3
-14.81
                         L0000005           657538.8     4183143.3
-14.75
                         L0000005           657558.8     4183143.3
-12.07
                         L0000005           657578.8     4183143.3
-6.90
                         L0000005           657598.8     4183143.3
0.53
                         L0000005           657438.8     4183163.3
-7.42
                         L0000005           657458.8     4183163.3
-17.79
                         L0000005           657478.8     4183163.3
-26.05
                         L0000005           657498.8     4183163.3
-31.82
                         L0000005           657518.8     4183163.3
-34.76
```

*** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

                    * SOURCE-RECEPTOR COMBINATIONS FOR WHICH CALCULATIONS MAY NOT BE PERFORMED *
                      LESS THAN 1.0 METER; WITHIN OPENPIT; OR BEYOND 80KM FOR FASTAREA/FASTALL

SOURCE ID	- - RECEPTOR LOCATION - - XR (METERS)	YR (METERS)	DISTANCE (METERS)
L0000005	657538.8	4183163.3	-34.69
L0000005	657558.8	4183163.3	-31.61
L0000005	657578.8	4183163.3	-25.72
L0000005	657598.8	4183163.3	-17.35
L0000005	657618.8	4183163.3	-6.89
L0000005	657418.8	4183183.3	-10.13
L0000005	657438.8	4183183.3	-23.48
L0000005	657458.8	4183183.3	-35.11
L0000005	657478.8	4183183.3	-44.55
L0000005	657498.8	4183183.3	-51.24
L0000005	657518.8	4183183.3	-54.70
L0000005	657538.8	4183183.3	-54.62
L0000005	657558.8	4183183.3	-51.00
L0000005	657578.8	4183183.3	-44.17
L0000005	657598.8	4183183.3	-34.62
L0000005	657618.8	4183183.3	

```
-22.89
                         L0000005            657638.8     4183183.3
-9.48
                         L0000005            657418.8     4183203.3
-23.67
                         L0000005            657438.8     4183203.3
-38.42
                         L0000005            657458.8     4183203.3
-51.56
                         L0000005            657478.8     4183203.3
-62.49
                         L0000005            657498.8     4183203.3
-70.43
                         L0000005            657518.8     4183203.3
-74.61
                         L0000005            657538.8     4183203.3
-74.51
                         L0000005            657558.8     4183203.3
-70.14
                         L0000005            657578.8     4183203.3
-62.04
                         L0000005            657598.8     4183203.3
-51.00
                         L0000005            657618.8     4183203.3
-37.76
                         L0000005            657638.8     4183203.3
-22.95
                         L0000005            657658.8     4183203.3
-7.00
                         L0000005            657458.8     4183223.3
-66.70
                         L0000005            657478.8     4183223.3
-79.52
                         L0000005            657498.8     4183223.3
-89.20
                         L0000005            657518.8     4183223.3
-94.47
                         L0000005            657538.8     4183223.3
-94.34
                         L0000005            657558.8     4183223.3
-88.84
                         L0000005            657578.8     4183223.3
-78.98
                         L0000005            657598.8     4183223.3
-66.05
                         L0000005            657618.8     4183223.3
-51.07
                         L0000005            657638.8     4183223.3
-34.75
 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
```

 *** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

                    * SOURCE-RECEPTOR COMBINATIONS FOR WHICH CALCULATIONS MAY NOT BE PERFORMED *
                      LESS THAN 1.0 METER; WITHIN OPENPIT; OR BEYOND 80KM FOR FASTAREA/FASTALL

SOURCE ID	- - RECEPTOR LOCATION - - XR (METERS)	YR (METERS)	DISTANCE (METERS)
L0000005	657658.8	4183223.3	-17.52
L0000005	657678.8	4183223.3	0.33
L0000005	657518.8	4183243.3	-114.22
L0000005	657538.8	4183243.3	-114.05
L0000005	657558.8	4183243.3	-106.69
L0000005	657578.8	4183243.3	-94.33
L0000005	657598.8	4183243.3	-79.08
L0000005	657618.8	4183243.3	-62.21
L0000005	657638.8	4183243.3	-44.38
L0000005	657658.8	4183243.3	-25.96
L0000005	657678.8	4183243.3	-7.17
L0000006	657638.8	4183143.3	-2.90
L0000006	657658.8	4183143.3	-8.58
L0000006	657678.8	4183143.3	-11.86
L0000006	657698.8	4183143.3	-12.58

	L0000006	657718.8	4183143.3
-10.70			
	L0000006	657738.8	4183143.3
-6.32			
	L0000006	657758.8	4183143.3
0.36			
	L0000006	657598.8	4183163.3
-1.96			
	L0000006	657618.8	4183163.3
-12.74			
	L0000006	657638.8	4183163.3
-21.55			
	L0000006	657658.8	4183163.3
-27.99			
	L0000006	657678.8	4183163.3
-31.74			
	L0000006	657698.8	4183163.3
-32.57			
	L0000006	657718.8	4183163.3
-30.41			
	L0000006	657738.8	4183163.3
-25.42			
	L0000006	657758.8	4183163.3
-17.87			
	L0000006	657778.8	4183163.3
-8.13			
	L0000006	657578.8	4183183.3
-4.15			
	L0000006	657598.8	4183183.3
-17.76			
	L0000006	657618.8	4183183.3
-29.79			
	L0000006	657638.8	4183183.3
-39.78			
	L0000006	657658.8	4183183.3
-47.21			
	L0000006	657678.8	4183183.3
-51.58			
	L0000006	657698.8	4183183.3
-52.55			
	L0000006	657718.8	4183183.3
-50.03			
	L0000006	657738.8	4183183.3
-44.23			
	L0000006	657758.8	4183183.3
-35.58			
	L0000006	657778.8	4183183.3
-24.62			
	L0000006	657798.8	4183183.3
-11.84			

*** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

* SOURCE-RECEPTOR COMBINATIONS FOR WHICH CALCULATIONS MAY NOT BE PERFORMED *
LESS THAN 1.0 METER; WITHIN OPENPIT; OR BEYOND 80KM FOR FASTAREA/FASTALL

SOURCE ID	- - RECEPTOR LOCATION - - XR (METERS)	YR (METERS)	DISTANCE (METERS)
L0000006	657558.8	4183203.3	-1.44
L0000006	657578.8	4183203.3	-17.47
L0000006	657598.8	4183203.3	-32.43
L0000006	657618.8	4183203.3	-45.92
L0000006	657638.8	4183203.3	-57.38
L0000006	657658.8	4183203.3	-66.11
L0000006	657678.8	4183203.3	-71.36
L0000006	657698.8	4183203.3	-72.53
L0000006	657718.8	4183203.3	-69.48
L0000006	657738.8	4183203.3	-62.59
L0000006	657758.8	4183203.3	-52.54
L0000006	657778.8	4183203.3	-40.09
L0000006	657798.8	4183203.3	-25.89
L0000006	657818.8	4183203.3	-10.40
L0000006	657558.8	4183223.3	

-11.90			
	L0000006	657578.8	4183223.3
-29.16			
	L0000006	657598.8	4183223.3
-45.56			
	L0000006	657618.8	4183223.3
-60.72			
	L0000006	657638.8	4183223.3
-74.00			
	L0000006	657658.8	4183223.3
-84.49			
	L0000006	657678.8	4183223.3
-91.02			
	L0000006	657698.8	4183223.3
-92.50			
	L0000006	657718.8	4183223.3
-88.66			
	L0000006	657738.8	4183223.3
-80.21			
	L0000006	657758.8	4183223.3
-68.33			
	L0000006	657778.8	4183223.3
-54.11			
	L0000006	657798.8	4183223.3
-38.34			
	L0000006	657818.8	4183223.3
-21.51			
	L0000006	657838.8	4183223.3
-3.96			
	L0000006	657538.8	4183243.3
-1.58			
	L0000006	657558.8	4183243.3
-20.36			
	L0000006	657578.8	4183243.3
-38.75			
	L0000006	657598.8	4183243.3
-56.59			
	L0000006	657618.8	4183243.3
-73.53			
	L0000006	657638.8	4183243.3
-89.00			
	L0000006	657658.8	4183243.3
-101.90			
	L0000006	657678.8	4183243.3
-110.43			
	L0000006	657698.8	4183243.3
-112.45			
	L0000006	657718.8	4183243.3
-107.29			
	L0000006	657738.8	4183243.3

*** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

* SOURCE-RECEPTOR COMBINATIONS FOR WHICH CALCULATIONS MAY NOT BE PERFORMED *
LESS THAN 1.0 METER; WITHIN OPENPIT; OR BEYOND 80KM FOR FASTAREA/FASTALL

SOURCE ID	- - RECEPTOR LOCATION - - XR (METERS)	YR (METERS)	DISTANCE (METERS)
L0000006	657758.8	4183243.3	-82.30
L0000006	657778.8	4183243.3	-66.08
L0000006	657798.8	4183243.3	-48.68
L0000006	657818.8	4183243.3	-30.57
L0000006	657838.8	4183243.3	-11.98
L0000007	657818.8	4183143.3	-4.74
L0000007	657838.8	4183143.3	-8.69
L0000007	657858.8	4183143.3	-10.16
L0000007	657878.8	4183143.3	-9.08
L0000007	657898.8	4183143.3	-5.49
L0000007	657778.8	4183163.3	-7.60
L0000007	657798.8	4183163.3	-16.90
L0000007	657818.8	4183163.3	-23.97
L0000007	657838.8	4183163.3	-28.48

	L0000007	657858.8	4183163.3
-30.16			
	L0000007	657878.8	4183163.3
-28.92			
	L0000007	657898.8	4183163.3
-24.82			
	L0000007	657758.8	4183183.3
-11.99			
	L0000007	657778.8	4183183.3
-24.37			
	L0000007	657798.8	4183183.3
-34.86			
	L0000007	657818.8	4183183.3
-42.96			
	L0000007	657838.8	4183183.3
-48.19			
	L0000007	657858.8	4183183.3
-50.16			
	L0000007	657878.8	4183183.3
-48.70			
	L0000007	657898.8	4183183.3
-43.94			
	L0000007	657738.8	4183203.3
-11.26			
	L0000007	657758.8	4183203.3
-26.41			
	L0000007	657778.8	4183203.3
-40.20			
	L0000007	657798.8	4183203.3
-52.13			
	L0000007	657818.8	4183203.3
-61.57			
	L0000007	657838.8	4183203.3
-67.79			
	L0000007	657858.8	4183203.3
-70.16			
	L0000007	657878.8	4183203.3
-68.40			
	L0000007	657898.8	4183203.3
-62.73			
	L0000007	657718.8	4183223.3
-5.46			
	L0000007	657738.8	4183223.3
-22.78			
	L0000007	657758.8	4183223.3
-39.30			
	L0000007	657778.8	4183223.3
-54.68			
	L0000007	657798.8	4183223.3
-68.37			

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                              L0000007            657818.8     4183223.3
-79.56
↑ *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuintal_Highway120\MantecaQuintal_Highwa ***        09/27/22
 *** AERMET - VERSION  18081 ***   ***
                        ***        17:09:08

                                   PAGE  17
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                      * SOURCE-RECEPTOR COMBINATIONS FOR WHICH CALCULATIONS MAY NOT
BE PERFORMED *
                        LESS THAN 1.0 METER; WITHIN OPENPIT; OR BEYOND 80KM FOR
FASTAREA/FASTALL


                               SOURCE          - - RECEPTOR LOCATION - -
DISTANCE
                                 ID            XR (METERS)   YR (METERS)
(METERS)
                             - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - -

                              L0000007            657838.8     4183223.3
-87.18
                              L0000007            657858.8     4183223.3
-90.16
                              L0000007            657878.8     4183223.3
-87.95
                              L0000007            657898.8     4183223.3
-80.96
                              L0000007            657718.8     4183243.3
-13.88
                              L0000007            657738.8     4183243.3
-32.29
                              L0000007            657758.8     4183243.3
-50.16
                              L0000007            657778.8     4183243.3
-67.21
                              L0000007            657798.8     4183243.3
-82.94
                              L0000007            657818.8     4183243.3
-96.44
                              L0000007            657838.8     4183243.3
-106.17
                              L0000007            657858.8     4183243.3
-110.15
                              L0000007            657878.8     4183243.3
-107.19
                              L0000007            657898.8     4183243.3
```

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-98.18
                              L0000008            657898.8     4183203.3
-5.02
                              L0000008            657878.8     4183223.3
0.98
                              L0000008            657898.8     4183223.3
-16.39
                              L0000008            657878.8     4183243.3
-7.41
                              L0000008            657898.8     4183243.3
-25.82
```



```
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                                            *** METEOROLOGICAL DAYS SELECTED FOR
PROCESSING ***
                                                              (1=YES; 0=NO)

            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1
1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1
1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1
1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1
1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1
1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1
1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1
1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1

                NOTE:  METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON
WHAT IS INCLUDED IN THE DATA FILE.



                                   *** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED
CATEGORIES ***
                                                           (METERS/SEC)

                                                 1.54,   3.09,   5.14,   8.23,
10.80,
```

*** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

*** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

Surface file: C:\Users\kheck\Meteorological_Data\AERMET v18081_UStar\Stockton_23237\Stockton_2 Met Version: 18081
Profile file: C:\Users\kheck\Meteorological_Data\AERMET v18081_UStar\Stockton_23237\Stockton_2
Surface format: FREE

Profile format: FREE

Surface station no.: 23237 Upper air station no.: 23230
Name: STOCKTON Name: OAKLAND/WSO_AP
Year: 2013 Year: 2013

First 24 hours of scalar data

YR	MO	DY	JDY	HR	H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS	WD	HT	REF TA	HT
13	01	01	1	01	-22.0	0.211	-9.000	-9.000	-999.	232.	48.8	0.07	2.20	1.00	2.78	149.	10.0	273.8	2.0
13	01	01	1	02	-14.6	0.158	-9.000	-9.000	-999.	152.	27.6	0.04	2.20	1.00	2.37	77.	10.0	273.8	2.0
13	01	01	1	03	-18.4	0.181	-9.000	-9.000	-999.	185.	36.0	0.06	2.20	1.00	2.52	97.	10.0	273.1	2.0
13	01	01	1	04	-6.7	0.105	-9.000	-9.000	-999.	84.	16.0	0.04	2.20	1.00	1.63	349.	10.0	272.5	2.0
13	01	01	1	05	-20.1	0.193	-9.000	-9.000	-999.	203.	40.9	0.04	2.20	1.00	2.86	356.	10.0	274.2	2.0
13	01	01	1	06	-3.9	0.081	-9.000	-9.000	-999.	64.	12.6	0.04	2.20	1.00	1.23	77.	10.0	273.8	2.0
13	01	01	1	07	-18.3	0.180	-9.000	-9.000	-999.	184.	35.8	0.06	2.20	1.00	2.52	255.	10.0	273.1	2.0
13	01	01	1	08	-26.9	0.259	-9.000	-9.000	-999.	316.	73.8	0.08	2.20	0.73	3.29	287.	10.0	274.2	2.0
13	01	01	1	09	-1.9	0.212	-9.000	-9.000	-999.	236.	461.6	0.05	2.20	0.39	2.81	315.	10.0	275.9	2.0
13	01	01	1	10	61.1	0.155	0.630	0.005	150.	147.	-5.5	0.04	2.20	0.27	1.60	336.	10.0	277.5	2.0
13	01	01	1	11	110.2	0.238	1.137	0.005	488.	279.	-11.2	0.06	2.20						

```
0.23    2.45  228.   10.0  279.9    2.0
 13 01 01   1 12  137.1  0.276  1.492  0.008  886.  347.    -14.0  0.08   2.20
0.22    2.69  286.   10.0  280.4    2.0
 13 01 01   1 13  141.1  0.271  1.531  0.007  929.  339.    -12.9  0.05   2.20
0.21    2.88  325.   10.0  282.5    2.0
 13 01 01   1 14  121.3  0.232  1.475  0.006  965.  269.     -9.4  0.04   2.20
0.22    2.57  356.   10.0  283.8    2.0
 13 01 01   1 15   78.7  0.218  1.287  0.005  988.  244.    -12.0  0.04   2.20
0.26    2.47  357.   10.0  284.2    2.0
 13 01 01   1 16   17.6  0.265  0.783  0.005  993.  327.    -96.0  0.03   2.20
0.35    3.59    2.   10.0  284.2    2.0
 13 01 01   1 17  -11.2  0.143 -9.000 -9.000 -999.  139.     24.1  0.04   2.20
0.60    2.16  346.   10.0  282.5    2.0
 13 01 01   1 18   -8.7  0.125 -9.000 -9.000 -999.  107.     20.6  0.08   2.20
1.00    1.67  273.   10.0  279.2    2.0
 13 01 01   1 19  -13.3  0.154 -9.000 -9.000 -999.  145.     26.0  0.06   2.20
1.00    2.15  238.   10.0  278.1    2.0
 13 01 01   1 20  -10.2  0.134 -9.000 -9.000 -999.  117.     21.4  0.06   2.20
1.00    1.89  230.   10.0  275.9    2.0
 13 01 01   1 21  -12.5  0.148 -9.000 -9.000 -999.  137.     24.2  0.05   2.20
1.00    2.11  300.   10.0  276.4    2.0
 13 01 01   1 22 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.05   2.20
1.00    0.00    0.   10.0  275.9    2.0
 13 01 01   1 23  -24.0  0.230 -9.000 -9.000 -999.  264.     57.9  0.04   2.20
1.00    3.36   80.   10.0  274.2    2.0
 13 01 01   1 24  -16.1  0.169 -9.000 -9.000 -999.  167.     31.3  0.06   2.20
1.00    2.36  100.   10.0  274.2    2.0


 First hour of profile data
 YR MO DY HR HEIGHT F  WDIR    WSPD AMB_TMP sigmaA  sigmaW  sigmaV
 13 01 01 01   10.0 1  149.    2.78   273.8   99.0  -99.00  -99.00

 F indicates top of profile (=1) or below (=0)
 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuintal_Highway120\MantecaQuintal_Highwa ***        09/27/22
 *** AERMET - VERSION  18081 ***   ***
                       ***        17:09:08

                                  PAGE  20
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                   *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   5
YEARS FOR SOURCE GROUP: ALL      ***
                                  INCLUDING SOURCE(S):     L0000001    , L0000002
 , L0000003    , L0000004    , L0000005    ,
                 L0000006    , L0000007    , L0000008    , L0000009    , L0000010
 ,

                                             *** DISCRETE CARTESIAN RECEPTOR POINTS
```

***

** CONC OF PM_10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
657538.75	4182763.28	0.00205	657558.75	4182763.28	0.00206
657578.75	4182763.28	0.00207	657598.75	4182763.28	0.00208
657618.75	4182763.28	0.00208	657638.75	4182763.28	0.00209
657658.75	4182763.28	0.00210	657678.75	4182763.28	0.00210
657698.75	4182763.28	0.00211	657718.75	4182763.28	0.00211
657738.75	4182763.28	0.00211	657758.75	4182763.28	0.00212
657778.75	4182763.28	0.00212	657798.75	4182763.28	0.00212
657818.75	4182763.28	0.00212	657838.75	4182763.28	0.00212
657858.75	4182763.28	0.00212	657878.75	4182763.28	0.00211
657898.75	4182763.28	0.00211	657538.75	4182783.28	0.00216
657558.75	4182783.28	0.00217	657578.75	4182783.28	0.00218
657598.75	4182783.28	0.00219	657618.75	4182783.28	0.00219
657638.75	4182783.28	0.00220	657658.75	4182783.28	0.00221
657678.75	4182783.28	0.00221	657698.75	4182783.28	0.00222
657718.75	4182783.28	0.00222	657738.75	4182783.28	0.00222
657758.75	4182783.28	0.00222	657778.75	4182783.28	0.00223
657798.75	4182783.28	0.00223	657818.75	4182783.28	0.00223
657838.75	4182783.28	0.00222	657858.75	4182783.28	0.00222
657878.75	4182783.28	0.00222	657898.75	4182783.28	0.00222
657538.75	4182803.28	0.00227	657558.75	4182803.28	0.00228
657578.75	4182803.28	0.00229	657598.75		

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4182803.28        0.00230
         657618.75    4182803.28        0.00231                       657638.75
4182803.28        0.00232
         657658.75    4182803.28        0.00232                       657678.75
4182803.28        0.00233
         657698.75    4182803.28        0.00233                       657718.75
4182803.28        0.00234
         657738.75    4182803.28        0.00234                       657758.75
4182803.28        0.00234
         657778.75    4182803.28        0.00234                       657798.75
4182803.28        0.00234
         657818.75    4182803.28        0.00234                       657838.75
4182803.28        0.00234
         657858.75    4182803.28        0.00234                       657878.75
4182803.28        0.00233
         657898.75    4182803.28        0.00233                       657538.75
4182823.28        0.00240
         657558.75    4182823.28        0.00241                       657578.75
4182823.28        0.00242
         657598.75    4182823.28        0.00243                       657618.75
4182823.28        0.00244
         657638.75    4182823.28        0.00244                       657658.75
4182823.28        0.00245
         657678.75    4182823.28        0.00246                       657698.75
4182823.28        0.00246
         657718.75    4182823.28        0.00246                       657738.75
4182823.28        0.00247
         657758.75    4182823.28        0.00247                       657778.75
4182823.28        0.00247
         657798.75    4182823.28        0.00247                       657818.75
4182823.28        0.00247
         657838.75    4182823.28        0.00246                       657858.75
4182823.28        0.00246
         657878.75    4182823.28        0.00246                       657898.75
4182823.28        0.00245
         657538.75    4182843.28        0.00254                       657558.75
4182843.28        0.00255
         657578.75    4182843.28        0.00256                       657598.75
4182843.28        0.00257
 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
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 *** AERMET - VERSION  18081 ***   ***
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                                  PAGE  21
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                   *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   5
YEARS FOR SOURCE GROUP: ALL      ***
                                  INCLUDING SOURCE(S):     L0000001    , L0000002
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 , L0000003    , L0000004    , L0000005    ,
                 L0000006    , L0000007    , L0000008    , L0000009    , L0000010
 ,

                                          *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                       ** CONC OF PM_10    IN MICROGRAMS/M**3
                  **

       X-COORD (M)   Y-COORD (M)        CONC                        X-COORD (M)
Y-COORD (M)        CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
         657618.75    4182843.28        0.00258                       657638.75
4182843.28        0.00258
         657658.75    4182843.28        0.00259                       657678.75
4182843.28        0.00259
         657698.75    4182843.28        0.00260                       657718.75
4182843.28        0.00260
         657738.75    4182843.28        0.00260                       657758.75
4182843.28        0.00261
         657778.75    4182843.28        0.00261                       657798.75
4182843.28        0.00260
         657818.75    4182843.28        0.00260                       657838.75
4182843.28        0.00260
         657858.75    4182843.28        0.00260                       657878.75
4182843.28        0.00259
         657898.75    4182843.28        0.00259                       657418.75
4182863.28        0.00260
         657438.75    4182863.28        0.00262                       657458.75
4182863.28        0.00264
         657478.75    4182863.28        0.00265                       657498.75
4182863.28        0.00267
         657518.75    4182863.28        0.00268                       657538.75
4182863.28        0.00269
         657558.75    4182863.28        0.00270                       657578.75
4182863.28        0.00271
         657598.75    4182863.28        0.00272                       657618.75
4182863.28        0.00273
         657638.75    4182863.28        0.00274                       657658.75
4182863.28        0.00274
         657678.75    4182863.28        0.00275                       657698.75
4182863.28        0.00275
         657718.75    4182863.28        0.00275                       657738.75
4182863.28        0.00275
         657758.75    4182863.28        0.00276                       657778.75
4182863.28        0.00276
         657798.75    4182863.28        0.00275                       657818.75
4182863.28        0.00275
```

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         657838.75    4182863.28        0.00275                    657858.75
4182863.28        0.00274
         657878.75    4182863.28        0.00274                    657898.75
4182863.28        0.00273
         657418.75    4182883.28        0.00277                    657438.75
4182883.28        0.00279
         657458.75    4182883.28        0.00280                    657478.75
4182883.28        0.00282
         657498.75    4182883.28        0.00283                    657518.75
4182883.28        0.00285
         657538.75    4182883.28        0.00286                    657558.75
4182883.28        0.00287
         657578.75    4182883.28        0.00288                    657598.75
4182883.28        0.00289
         657618.75    4182883.28        0.00289                    657638.75
4182883.28        0.00290
         657658.75    4182883.28        0.00291                    657678.75
4182883.28        0.00291
         657698.75    4182883.28        0.00292                    657718.75
4182883.28        0.00292
         657738.75    4182883.28        0.00292                    657758.75
4182883.28        0.00292
         657778.75    4182883.28        0.00292                    657798.75
4182883.28        0.00292
         657818.75    4182883.28        0.00291                    657838.75
4182883.28        0.00291
         657858.75    4182883.28        0.00291                    657878.75
4182883.28        0.00290
         657898.75    4182883.28        0.00289                    657418.75
4182903.28        0.00295
         657438.75    4182903.28        0.00297                    657458.75
4182903.28        0.00299
         657478.75    4182903.28        0.00300                    657498.75
4182903.28        0.00302
         657518.75    4182903.28        0.00303                    657538.75
4182903.28        0.00304
         657558.75    4182903.28        0.00305                    657578.75
4182903.28        0.00306
         657598.75    4182903.28        0.00307                    657618.75
4182903.28        0.00308
         657638.75    4182903.28        0.00309                    657658.75
4182903.28        0.00309
         657678.75    4182903.28        0.00310                    657698.75
4182903.28        0.00310
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 *** AERMET - VERSION  18081 ***   ***
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*** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

*** THE ANNUAL AVERAGE CONCENTRATION VALUES AVERAGED OVER 5 YEARS FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): L0000001 , L0000002 , L0000003 , L0000004 , L0000005 ,
L0000006 , L0000007 , L0000008 , L0000009 , L0000010 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
657718.75	4182903.28	0.00310	657738.75	4182903.28	0.00310
657758.75	4182903.28	0.00310	657778.75	4182903.28	0.00310
657798.75	4182903.28	0.00310	657818.75	4182903.28	0.00310
657838.75	4182903.28	0.00309	657858.75	4182903.28	0.00308
657878.75	4182903.28	0.00308	657898.75	4182903.28	0.00307
657418.75	4182923.28	0.00316	657438.75	4182923.28	0.00318
657458.75	4182923.28	0.00319	657478.75	4182923.28	0.00321
657498.75	4182923.28	0.00322	657518.75	4182923.28	0.00324
657538.75	4182923.28	0.00325	657558.75	4182923.28	0.00326
657578.75	4182923.28	0.00327	657598.75	4182923.28	0.00328
657618.75	4182923.28	0.00328	657638.75	4182923.28	0.00329
657658.75	4182923.28	0.00330	657678.75	4182923.28	0.00330
657698.75	4182923.28	0.00330	657718.75	4182923.28	0.00330
657738.75	4182923.28	0.00331	657758.75	4182923.28	0.00330
657778.75	4182923.28	0.00330	657798.75	4182923.28	0.00330
657818.75	4182923.28	0.00329	657838.75		

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4182923.28        0.00329
         657858.75    4182923.28        0.00328                    657878.75
4182923.28        0.00327
         657898.75    4182923.28        0.00327                    657418.75
4182943.28        0.00339
         657438.75    4182943.28        0.00341                    657458.75
4182943.28        0.00342
         657478.75    4182943.28        0.00344                    657498.75
4182943.28        0.00345
         657518.75    4182943.28        0.00346                    657538.75
4182943.28        0.00348
         657558.75    4182943.28        0.00349                    657578.75
4182943.28        0.00350
         657598.75    4182943.28        0.00351                    657618.75
4182943.28        0.00351
         657638.75    4182943.28        0.00352                    657658.75
4182943.28        0.00352
         657678.75    4182943.28        0.00353                    657698.75
4182943.28        0.00353
         657718.75    4182943.28        0.00353                    657738.75
4182943.28        0.00353
         657758.75    4182943.28        0.00353                    657778.75
4182943.28        0.00353
         657798.75    4182943.28        0.00352                    657818.75
4182943.28        0.00352
         657838.75    4182943.28        0.00351                    657858.75
4182943.28        0.00350
         657878.75    4182943.28        0.00349                    657898.75
4182943.28        0.00348
         657418.75    4182963.28        0.00365                    657438.75
4182963.28        0.00367
         657458.75    4182963.28        0.00369                    657478.75
4182963.28        0.00370
         657498.75    4182963.28        0.00371                    657518.75
4182963.28        0.00373
         657538.75    4182963.28        0.00374                    657558.75
4182963.28        0.00375
         657578.75    4182963.28        0.00376                    657598.75
4182963.28        0.00376
         657618.75    4182963.28        0.00377                    657638.75
4182963.28        0.00378
         657658.75    4182963.28        0.00378                    657678.75
4182963.28        0.00378
         657698.75    4182963.28        0.00378                    657718.75
4182963.28        0.00379
         657738.75    4182963.28        0.00378                    657758.75
4182963.28        0.00378
         657778.75    4182963.28        0.00378                    657798.75
4182963.28        0.00377
 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
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*** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

*** THE ANNUAL AVERAGE CONCENTRATION   VALUES AVERAGED OVER   5 YEARS FOR SOURCE GROUP: ALL   ***
INCLUDING SOURCE(S):   L0000001   , L0000002 , L0000003   , L0000004   , L0000005   ,
L0000006   , L0000007   , L0000008   , L0000009   , L0000010 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_10   IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
657818.75	4182963.28	0.00377	657838.75	4182963.28	0.00376
657858.75	4182963.28	0.00375	657878.75	4182963.28	0.00374
657898.75	4182963.28	0.00373	657298.75	4182983.28	0.00379
657318.75	4182983.28	0.00382	657338.75	4182983.28	0.00385
657358.75	4182983.28	0.00387	657378.75	4182983.28	0.00390
657398.75	4182983.28	0.00393	657418.75	4182983.28	0.00395
657438.75	4182983.28	0.00397	657458.75	4182983.28	0.00398
657478.75	4182983.28	0.00400	657498.75	4182983.28	0.00401
657518.75	4182983.28	0.00402	657538.75	4182983.28	0.00403
657558.75	4182983.28	0.00404	657578.75	4182983.28	0.00405
657598.75	4182983.28	0.00406	657618.75	4182983.28	0.00406
657638.75	4182983.28	0.00407	657658.75	4182983.28	0.00407
657678.75	4182983.28	0.00407	657698.75	4182983.28	0.00407

657718.75 4182983.28 0.00407 657738.75
4182983.28 0.00407
657758.75 4182983.28 0.00407 657778.75
4182983.28 0.00406
657798.75 4182983.28 0.00406 657818.75
4182983.28 0.00405
657838.75 4182983.28 0.00404 657858.75
4182983.28 0.00403
657878.75 4182983.28 0.00402 657898.75
4182983.28 0.00401
657178.75 4183003.28 0.00388 657298.75
4183003.28 0.00413
657318.75 4183003.28 0.00416 657338.75
4183003.28 0.00419
657358.75 4183003.28 0.00421 657378.75
4183003.28 0.00424
657398.75 4183003.28 0.00427 657418.75
4183003.28 0.00429
657438.75 4183003.28 0.00430 657458.75
4183003.28 0.00432
657478.75 4183003.28 0.00433 657498.75
4183003.28 0.00435
657518.75 4183003.28 0.00436 657538.75
4183003.28 0.00437
657558.75 4183003.28 0.00438 657578.75
4183003.28 0.00439
657598.75 4183003.28 0.00439 657618.75
4183003.28 0.00439
657638.75 4183003.28 0.00440 657658.75
4183003.28 0.00440
657678.75 4183003.28 0.00440 657698.75
4183003.28 0.00440
657718.75 4183003.28 0.00440 657738.75
4183003.28 0.00440
657758.75 4183003.28 0.00439 657778.75
4183003.28 0.00439
657798.75 4183003.28 0.00438 657818.75
4183003.28 0.00437
657838.75 4183003.28 0.00436 657858.75
4183003.28 0.00435
657878.75 4183003.28 0.00434 657898.75
4183003.28 0.00433
657178.75 4183023.28 0.00426 657198.75
4183023.28 0.00431
657298.75 4183023.28 0.00452 657318.75
4183023.28 0.00455
657338.75 4183023.28 0.00458 657358.75
4183023.28 0.00461
657378.75 4183023.28 0.00464 657398.75
4183023.28 0.00466

*** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

*** THE ANNUAL AVERAGE CONCENTRATION VALUES AVERAGED OVER 5 YEARS FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): L0000001 , L0000002 , L0000003 , L0000004 , L0000005 , L0000006 , L0000007 , L0000008 , L0000009 , L0000010 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
657418.75	4183023.28	0.00468	657438.75	4183023.28	0.00470
657458.75	4183023.28	0.00471	657478.75	4183023.28	0.00473
657498.75	4183023.28	0.00474	657518.75	4183023.28	0.00475
657538.75	4183023.28	0.00476	657558.75	4183023.28	0.00477
657578.75	4183023.28	0.00477	657598.75	4183023.28	0.00478
657618.75	4183023.28	0.00478	657638.75	4183023.28	0.00479
657658.75	4183023.28	0.00479	657678.75	4183023.28	0.00479
657698.75	4183023.28	0.00479	657718.75	4183023.28	0.00478
657738.75	4183023.28	0.00478	657758.75	4183023.28	0.00477
657778.75	4183023.28	0.00477	657798.75	4183023.28	0.00476
657818.75	4183023.28	0.00475	657838.75	4183023.28	0.00474
657858.75	4183023.28	0.00472	657878.75	4183023.28	0.00471
657898.75	4183023.28	0.00469	657178.75		

4183043.28 0.00473
657198.75 4183043.28 0.00478 657218.75
4183043.28 0.00483
657238.75 4183043.28 0.00488 657298.75
4183043.28 0.00499
657318.75 4183043.28 0.00502 657338.75
4183043.28 0.00505
657358.75 4183043.28 0.00508 657378.75
4183043.28 0.00511
657398.75 4183043.28 0.00513 657418.75
4183043.28 0.00515
657438.75 4183043.28 0.00517 657458.75
4183043.28 0.00518
657478.75 4183043.28 0.00519 657498.75
4183043.28 0.00520
657518.75 4183043.28 0.00521 657538.75
4183043.28 0.00522
657558.75 4183043.28 0.00523 657578.75
4183043.28 0.00524
657598.75 4183043.28 0.00524 657618.75
4183043.28 0.00524
657638.75 4183043.28 0.00524 657658.75
4183043.28 0.00524
657678.75 4183043.28 0.00524 657698.75
4183043.28 0.00524
657718.75 4183043.28 0.00523 657738.75
4183043.28 0.00523
657758.75 4183043.28 0.00522 657778.75
4183043.28 0.00521
657798.75 4183043.28 0.00520 657818.75
4183043.28 0.00519
657838.75 4183043.28 0.00518 657858.75
4183043.28 0.00516
657878.75 4183043.28 0.00515 657898.75
4183043.28 0.00513
657198.75 4183063.28 0.00535 657218.75
4183063.28 0.00540
657238.75 4183063.28 0.00545 657258.75
4183063.28 0.00549
657298.75 4183063.28 0.00556 657318.75
4183063.28 0.00559
657338.75 4183063.28 0.00562 657358.75
4183063.28 0.00565
657378.75 4183063.28 0.00568 657398.75
4183063.28 0.00570
657418.75 4183063.28 0.00572 657438.75
4183063.28 0.00573
657458.75 4183063.28 0.00574 657478.75
4183063.28 0.00575
657498.75 4183063.28 0.00576 657518.75

4183063.28 0.00578
  657538.75 4183063.28 0.00579 657558.75
4183063.28 0.00579
  657578.75 4183063.28 0.00579 657598.75
4183063.28 0.00579
  657618.75 4183063.28 0.00579 657638.75
4183063.28 0.00579
  657658.75 4183063.28 0.00579 657678.75
4183063.28 0.00579

*** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

*** THE ANNUAL AVERAGE CONCENTRATION VALUES AVERAGED OVER 5 YEARS FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): L0000001 , L0000002 , L0000003 , L0000004 , L0000005 ,
L0000006 , L0000007 , L0000008 , L0000009 , L0000010 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
657698.75	4183063.28	0.00579	657718.75	4183063.28	0.00578
657738.75	4183063.28	0.00577	657758.75	4183063.28	0.00576
657778.75	4183063.28	0.00575	657798.75	4183063.28	0.00573
657818.75	4183063.28	0.00572	657838.75	4183063.28	0.00571
657858.75	4183063.28	0.00569	657878.75	4183063.28	0.00567
657898.75	4183063.28	0.00565	657238.75	4183083.28	0.00615
657258.75	4183083.28	0.00619	657278.75	4183083.28	0.00622
657298.75	4183083.28	0.00626	657318.75	4183083.28	0.00629

657338.75 4183083.28 0.00633 657358.75
4183083.28 0.00636
657378.75 4183083.28 0.00639 657398.75
4183083.28 0.00641
657418.75 4183083.28 0.00642 657438.75
4183083.28 0.00642
657458.75 4183083.28 0.00643 657478.75
4183083.28 0.00645
657498.75 4183083.28 0.00646 657518.75
4183083.28 0.00648
657538.75 4183083.28 0.00648 657558.75
4183083.28 0.00648
657578.75 4183083.28 0.00648 657598.75
4183083.28 0.00647
657618.75 4183083.28 0.00647 657638.75
4183083.28 0.00647
657658.75 4183083.28 0.00647 657678.75
4183083.28 0.00647
657698.75 4183083.28 0.00646 657718.75
4183083.28 0.00645
657738.75 4183083.28 0.00644 657758.75
4183083.28 0.00642
657778.75 4183083.28 0.00641 657798.75
4183083.28 0.00639
657818.75 4183083.28 0.00638 657838.75
4183083.28 0.00636
657858.75 4183083.28 0.00635 657878.75
4183083.28 0.00632
657898.75 4183083.28 0.00630 657258.75
4183103.28 0.00707
657278.75 4183103.28 0.00710 657298.75
4183103.28 0.00714
657318.75 4183103.28 0.00718 657338.75
4183103.28 0.00722
657358.75 4183103.28 0.00725 657378.75
4183103.28 0.00728
657398.75 4183103.28 0.00729 657418.75
4183103.28 0.00729
657438.75 4183103.28 0.00729 657458.75
4183103.28 0.00730
657478.75 4183103.28 0.00732 657498.75
4183103.28 0.00734
657518.75 4183103.28 0.00735 657538.75
4183103.28 0.00735
657558.75 4183103.28 0.00734 657578.75
4183103.28 0.00733
657598.75 4183103.28 0.00732 657618.75
4183103.28 0.00731
657638.75 4183103.28 0.00731 657658.75
4183103.28 0.00732

```
         657678.75    4183103.28        0.00732                        657698.75
4183103.28        0.00731
         657718.75    4183103.28        0.00729                        657738.75
4183103.28        0.00727
         657758.75    4183103.28        0.00724                        657778.75
4183103.28        0.00722
         657798.75    4183103.28        0.00721                        657818.75
4183103.28        0.00719
         657838.75    4183103.28        0.00718                        657858.75
4183103.28        0.00717
         657878.75    4183103.28        0.00714                        657898.75
4183103.28        0.00710
         657298.75    4183123.28        0.00825                        657318.75
4183123.28        0.00831
🡅 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuintal_Highway120\MantecaQuintal_Highwa ***        09/27/22
 *** AERMET - VERSION  18081 ***   ***
                       ***        17:09:08

                                  PAGE  26
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                  *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   5
YEARS FOR SOURCE GROUP: ALL      ***
                                 INCLUDING SOURCE(S):     L0000001    , L0000002
 , L0000003    , L0000004    , L0000005    ,
                L0000006    , L0000007    , L0000008    , L0000009    , L0000010
 ,

                                            *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                       ** CONC OF PM_10    IN MICROGRAMS/M**3
                    **

       X-COORD (M)   Y-COORD (M)        CONC                       X-COORD (M)
Y-COORD (M)        CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
         657338.75    4183123.28        0.00835                        657358.75
4183123.28        0.00838
         657378.75    4183123.28        0.00840                        657398.75
4183123.28        0.00840
         657418.75    4183123.28        0.00840                        657438.75
4183123.28        0.00838
         657458.75    4183123.28        0.00838                        657478.75
4183123.28        0.00841
         657498.75    4183123.28        0.00845                        657518.75
4183123.28        0.00847
         657538.75    4183123.28        0.00847                        657558.75
```

4183123.28 0.00844
657578.75 4183123.28 0.00841 657598.75
4183123.28 0.00837
657618.75 4183123.28 0.00836 657638.75
4183123.28 0.00837
657658.75 4183123.28 0.00841 657678.75
4183123.28 0.00840
657698.75 4183123.28 0.00840 657718.75
4183123.28 0.00836
657738.75 4183123.28 0.00833 657758.75
4183123.28 0.00828
657778.75 4183123.28 0.00824 657798.75
4183123.28 0.00824
657818.75 4183123.28 0.00823 657838.75
4183123.28 0.00823
657858.75 4183123.28 0.00822 657878.75
4183123.28 0.00817
657898.75 4183123.28 0.00813 657318.75
4183143.28 0.00642
657338.75 4183143.28 0.00619 657358.75
4183143.28 0.00603
657378.75 4183143.28 0.00595 657398.75
4183143.28 0.00599
657418.75 4183143.28 0.00613 657438.75
4183143.28 0.00634
657458.75 4183143.28 0.00704 657478.75
4183143.28 0.00670
657498.75 4183143.28 0.00643 657518.75
4183143.28 0.00623
657538.75 4183143.28 0.00611 657558.75
4183143.28 0.00608
657578.75 4183143.28 0.00616 657598.75
4183143.28 0.00633
657618.75 4183143.28 0.00967 657638.75
4183143.28 0.00682
657658.75 4183143.28 0.00653 657678.75
4183143.28 0.00630
657698.75 4183143.28 0.00615 657718.75
4183143.28 0.00608
657738.75 4183143.28 0.00611 657758.75
4183143.28 0.00623
657778.75 4183143.28 0.00954 657798.75
4183143.28 0.00954
657818.75 4183143.28 0.00651 657838.75
4183143.28 0.00626
657858.75 4183143.28 0.00608 657878.75
4183143.28 0.00597
657898.75 4183143.28 0.00595 657358.75
4183163.28 0.00659
657378.75 4183163.28 0.00651 657398.75

```
4183163.28        0.00657
         657418.75    4183163.28        0.00678                      657438.75
4183163.28        0.00425
         657458.75    4183163.28        0.00416                      657478.75
4183163.28        0.00745
         657498.75    4183163.28        0.00708                      657518.75
4183163.28        0.00681
         657538.75    4183163.28        0.00666                      657558.75
4183163.28        0.00665
         657578.75    4183163.28        0.00678                      657598.75
4183163.28        0.00441
         657618.75    4183163.28        0.00428                      657638.75
4183163.28        0.00760
         657658.75    4183163.28        0.00719                      657678.75
4183163.28        0.00688
         657698.75    4183163.28        0.00670                      657718.75
4183163.28        0.00664
         657738.75    4183163.28        0.00671                      657758.75
4183163.28        0.00692
🡅 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuintal_Highway120\MantecaQuintal_Highwa ***        09/27/22
 *** AERMET - VERSION  18081 ***   ***
                       ***        17:09:08

                                  PAGE  27
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                  *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   5
YEARS FOR SOURCE GROUP: ALL      ***
                                 INCLUDING SOURCE(S):     L0000001    , L0000002
 , L0000003    , L0000004    , L0000005    ,
                L0000006    , L0000007    , L0000008    , L0000009    , L0000010
 ,

                                          *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                     ** CONC OF PM_10    IN MICROGRAMS/M**3
                   **

       X-COORD (M)   Y-COORD (M)        CONC                      X-COORD (M)
Y-COORD (M)        CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - -
         657778.75    4183163.28        0.00430                      657798.75
4183163.28        0.00763
         657818.75    4183163.28        0.00719                      657838.75
4183163.28        0.00686
         657858.75    4183163.28        0.00662                      657878.75
4183163.28        0.00651
```

657898.75 4183163.28 0.00653 657398.75
4183183.28 0.00719
657418.75 4183183.28 0.00461 657438.75
4183183.28 0.00444
657458.75 4183183.28 0.00435 657478.75
4183183.28 0.00432
657498.75 4183183.28 0.00776 657518.75
4183183.28 0.00741
657538.75 4183183.28 0.00723 657558.75
4183183.28 0.00724
657578.75 4183183.28 0.00481 657598.75
4183183.28 0.00461
657618.75 4183183.28 0.00447 657638.75
4183183.28 0.00441
657658.75 4183183.28 0.00790 657678.75
4183183.28 0.00751
657698.75 4183183.28 0.00728 657718.75
4183183.28 0.00723
657738.75 4183183.28 0.00737 657758.75
4183183.28 0.00465
657778.75 4183183.28 0.00449 657798.75
4183183.28 0.00439
657818.75 4183183.28 0.00793 657838.75
4183183.28 0.00749
657858.75 4183183.28 0.00720 657878.75
4183183.28 0.00708
657898.75 4183183.28 0.00714 657418.75
4183203.28 0.00480
657438.75 4183203.28 0.00462 657458.75
4183203.28 0.00452
657478.75 4183203.28 0.00451 657498.75
4183203.28 0.00459
657518.75 4183203.28 0.00801 657538.75
4183203.28 0.00780
657558.75 4183203.28 0.00533 657578.75
4183203.28 0.00501
657598.75 4183203.28 0.00479 657618.75
4183203.28 0.00465
657638.75 4183203.28 0.00459 657658.75
4183203.28 0.00463
657678.75 4183203.28 0.00812 657698.75
4183203.28 0.00786
657718.75 4183203.28 0.00783 657738.75
4183203.28 0.00510
657758.75 4183203.28 0.00483 657778.75
4183203.28 0.00466
657798.75 4183203.28 0.00456 657818.75
4183203.28 0.00455
657838.75 4183203.28 0.00813 657858.75
4183203.28 0.00779

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         657878.75    4183203.28        0.00766                      657898.75
4183203.28        0.00508
         657458.75    4183223.28        0.00466                      657478.75
4183223.28        0.00467
         657498.75    4183223.28        0.00478                      657518.75
4183223.28        0.00855
         657538.75    4183223.28        0.00832                      657558.75
4183223.28        0.00553
         657578.75    4183223.28        0.00518                      657598.75
4183223.28        0.00493
         657618.75    4183223.28        0.00479                      657638.75
4183223.28        0.00475
         657658.75    4183223.28        0.00481                      657678.75
4183223.28        0.00499
         657698.75    4183223.28        0.00838                      657718.75
4183223.28        0.00568
         657738.75    4183223.28        0.00527                      657758.75
4183223.28        0.00498
         657778.75    4183223.28        0.00480                      657798.75
4183223.28        0.00471
         657818.75    4183223.28        0.00472                      657838.75
4183223.28        0.00485
         657858.75    4183223.28        0.00832                      657878.75
4183223.28        0.00572
```



```
                  *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   5
YEARS FOR SOURCE GROUP: ALL      ***
                                  INCLUDING SOURCE(S):     L0000001    , L0000002
 , L0000003    , L0000004    , L0000005    ,
                L0000006    , L0000007    , L0000008    , L0000009    , L0000010
 ,

                                                *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                        ** CONC OF PM_10    IN MICROGRAMS/M**3
                   **

       X-COORD (M)   Y-COORD (M)        CONC                      X-COORD (M)
Y-COORD (M)        CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - -
         657898.75    4183223.28        0.00526                      657518.75
```

```
4183243.28        0.00522
         657538.75    4183243.28        0.00621                       657558.75
4183243.28        0.00566
         657578.75    4183243.28        0.00529                       657598.75
4183243.28        0.00504
         657618.75    4183243.28        0.00490                       657638.75
4183243.28        0.00487
         657658.75    4183243.28        0.00497                       657678.75
4183243.28        0.00518
         657698.75    4183243.28        0.00882                       657718.75
4183243.28        0.00583
         657738.75    4183243.28        0.00539                       657758.75
4183243.28        0.00509
         657778.75    4183243.28        0.00490                       657798.75
4183243.28        0.00483
         657818.75    4183243.28        0.00486                       657838.75
4183243.28        0.00502
         657858.75    4183243.28        0.00876                       657878.75
4183243.28        0.00588
         657898.75    4183243.28        0.00539

 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuintal_Highway120\MantecaQuintal_Highwa ***        09/27/22
 *** AERMET - VERSION  18081 ***   ***
                       ***        17:09:08

                                  PAGE  29
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                              *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP:  ALL      ***
                                 INCLUDING SOURCE(S):     L0000001    , L0000002
 , L0000003    , L0000004    , L0000005    ,
                L0000006    , L0000007    , L0000008    , L0000009    , L0000010
 ,

                                       *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                    ** CONC OF PM_10    IN MICROGRAMS/M**3
                  **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD (M)
Y-COORD (M)        CONC     (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
        657538.75   4182763.28        0.03246  (17011609)               657558.75
 4182763.28        0.03250  (17011609)
        657578.75   4182763.28        0.03254  (17011609)               657598.75
 4182763.28        0.03258  (17011609)
```

657618.75 4182763.28 0.03264 (17011609) 657638.75 4182763.28 0.03263 (17011609)
657658.75 4182763.28 0.03257 (17011609) 657678.75 4182763.28 0.03250 (17011609)
657698.75 4182763.28 0.03247 (17011609) 657718.75 4182763.28 0.03247 (17011609)
657738.75 4182763.28 0.03248 (17011609) 657758.75 4182763.28 0.03250 (17011609)
657778.75 4182763.28 0.03251 (17011609) 657798.75 4182763.28 0.03249 (17011609)
657818.75 4182763.28 0.03243 (17011609) 657838.75 4182763.28 0.03234 (17011609)
657858.75 4182763.28 0.03226 (17011609) 657878.75 4182763.28 0.03256 (17011509)
657898.75 4182763.28 0.03309 (17011509) 657538.75 4182783.28 0.03337 (17011609)
657558.75 4182783.28 0.03338 (17011609) 657578.75 4182783.28 0.03343 (17011609)
657598.75 4182783.28 0.03350 (17011609) 657618.75 4182783.28 0.03354 (17011609)
657638.75 4182783.28 0.03355 (17011609) 657658.75 4182783.28 0.03351 (17011609)
657678.75 4182783.28 0.03343 (17011609) 657698.75 4182783.28 0.03337 (17011609)
657718.75 4182783.28 0.03336 (17011609) 657738.75 4182783.28 0.03339 (17011609)
657758.75 4182783.28 0.03343 (17011609) 657778.75 4182783.28 0.03344 (17011609)
657798.75 4182783.28 0.03343 (17011609) 657818.75 4182783.28 0.03337 (17011609)
657838.75 4182783.28 0.03348 (17011509) 657858.75 4182783.28 0.03405 (17011509)
657878.75 4182783.28 0.03456 (17011509) 657898.75 4182783.28 0.03501 (17011509)
657538.75 4182803.28 0.03433 (17011609) 657558.75 4182803.28 0.03432 (17011609)
657578.75 4182803.28 0.03438 (17011609) 657598.75 4182803.28 0.03446 (17011609)
657618.75 4182803.28 0.03451 (17011609) 657638.75 4182803.28 0.03453 (17011609)
657658.75 4182803.28 0.03451 (17011609) 657678.75 4182803.28 0.03443 (17011609)
657698.75 4182803.28 0.03434 (17011609) 657718.75 4182803.28 0.03431 (17011609)
657738.75 4182803.28 0.03437 (17011609) 657758.75 4182803.28 0.03441 (17011609)
657778.75 4182803.28 0.03444 (17011609) 657798.75 4182803.28 0.03446 (17011509)
657818.75 4182803.28 0.03507 (17011509) 657838.75 4182803.28 0.03561 (17011509)

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       657858.75   4182803.28        0.03609  (17011509)               657878.75
 4182803.28        0.03652  (17011509)
       657898.75   4182803.28        0.03689  (17011509)               657538.75
 4182823.28        0.03531  (17011609)
       657558.75   4182823.28        0.03535  (17011609)               657578.75
 4182823.28        0.03538  (17011609)
       657598.75   4182823.28        0.03545  (17011609)               657618.75
 4182823.28        0.03556  (17011609)
       657638.75   4182823.28        0.03557  (17011609)               657658.75
 4182823.28        0.03553  (17011609)
       657678.75   4182823.28        0.03548  (17011609)               657698.75
 4182823.28        0.03540  (17011609)
       657718.75   4182823.28        0.03535  (17011609)               657738.75
 4182823.28        0.03541  (17011609)
       657758.75   4182823.28        0.03551  (17011509)               657778.75
 4182823.28        0.03616  (17011509)
       657798.75   4182823.28        0.03673  (17011509)               657818.75
 4182823.28        0.03724  (17011509)
       657838.75   4182823.28        0.03769  (17011509)               657858.75
 4182823.28        0.03809  (17011509)
       657878.75   4182823.28        0.03843  (17011509)               657898.75
 4182823.28        0.03872  (17011509)
       657538.75   4182843.28        0.03641  (17011609)               657558.75
 4182843.28        0.03639  (17011609)
       657578.75   4182843.28        0.03645  (17011609)               657598.75
 4182843.28        0.03655  (17011609)
 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuintal_Highway120\MantecaQuintal_Highwa ***        09/27/22
 *** AERMET - VERSION  18081 ***   ***
                       ***        17:09:08

                                  PAGE  30
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                              *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP:  ALL      ***
                                 INCLUDING SOURCE(S):     L0000001    , L0000002
 , L0000003    , L0000004    , L0000005    ,
                L0000006    , L0000007    , L0000008    , L0000009    , L0000010
 ,

                                          *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                       ** CONC OF PM_10    IN MICROGRAMS/M**3
                  **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD (M)
Y-COORD (M)        CONC     (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
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- -
657618.75 4182843.28 0.03664 (17011609) 657638.75
4182843.28 0.03668 (17011609)
657658.75 4182843.28 0.03667 (17011609) 657678.75
4182843.28 0.03662 (17011609)
657698.75 4182843.28 0.03652 (17011609) 657718.75
4182843.28 0.03659 (17011509)
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4182863.28 0.03979 (17011509)
657758.75 4182863.28 0.04031 (17011509) 657778.75
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       657738.75   4182883.28        0.04223  (17011509)               657758.75
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       657778.75   4182883.28        0.04301  (17011509)               657798.75
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 4182883.28        0.04407  (17011509)
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 4182903.28        0.04024  (17011609)
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 4182903.28        0.04266  (17011509)
       657678.75   4182903.28        0.04330  (17011509)               657698.75
 4182903.28        0.04382  (17011509)
 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuintal_Highway120\MantecaQuintal_Highwa ***        09/27/22
 *** AERMET - VERSION  18081 ***   ***
                       ***        17:09:08

                                  PAGE  31
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                              *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP:  ALL      ***
                                  INCLUDING SOURCE(S):     L0000001    , L0000002
 , L0000003    , L0000004    , L0000005    ,
                L0000006    , L0000007    , L0000008    , L0000009    , L0000010
 ,

                                       *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                    ** CONC OF PM_10    IN MICROGRAMS/M**3
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**

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
657718.75	4182903.28	0.04427	(17011509)	657738.75	4182903.28	0.04466	(17011509)
657758.75	4182903.28	0.04499	(17011509)	657778.75	4182903.28	0.04526	(17011509)
657798.75	4182903.28	0.04548	(17011509)	657818.75	4182903.28	0.04566	(17011509)
657838.75	4182903.28	0.04580	(17011509)	657858.75	4182903.28	0.04592	(17011509)
657878.75	4182903.28	0.04600	(17011509)	657898.75	4182903.28	0.04607	(17011509)
657418.75	4182923.28	0.04193	(17011609)	657438.75	4182923.28	0.04206	(17011609)
657458.75	4182923.28	0.04219	(17011609)	657478.75	4182923.28	0.04225	(17011609)
657498.75	4182923.28	0.04218	(17011609)	657518.75	4182923.28	0.04201	(17011609)
657538.75	4182923.28	0.04181	(17011609)	657558.75	4182923.28	0.04170	(17011609)
657578.75	4182923.28	0.04265	(17011509)	657598.75	4182923.28	0.04351	(17011509)
657618.75	4182923.28	0.04424	(17011509)	657638.75	4182923.28	0.04491	(17011509)
657658.75	4182923.28	0.04551	(17011509)	657678.75	4182923.28	0.04603	(17011509)
657698.75	4182923.28	0.04645	(17011509)	657718.75	4182923.28	0.04680	(17011509)
657738.75	4182923.28	0.04710	(17011509)	657758.75	4182923.28	0.04735	(17011509)
657778.75	4182923.28	0.04754	(17011509)	657798.75	4182923.28	0.04769	(17011509)
657818.75	4182923.28	0.04781	(17011509)	657838.75	4182923.28	0.04791	(17011509)
657858.75	4182923.28	0.04797	(17011509)	657878.75	4182923.28	0.04802	(17011509)
657898.75	4182923.28	0.04804	(17011509)	657418.75	4182943.28	0.04356	(17011609)
657438.75	4182943.28	0.04369	(17011609)	657458.75	4182943.28	0.04385	(17011609)
657478.75	4182943.28	0.04393	(17011609)	657498.75	4182943.28	0.04388	(17011609)
657518.75	4182943.28	0.04369	(17011609)	657538.75	4182943.28	0.04428	(17011509)
657558.75	4182943.28	0.04523	(17011509)	657578.75	4182943.28	0.04603	(17011509)

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       657678.75   4182943.28        0.04878  (17011509)               657698.75
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       657718.75   4182943.28        0.04938  (17011509)               657738.75
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       657758.75   4182943.28        0.04976  (17011509)               657778.75
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       657658.75   4182963.28        0.05126  (17011509)               657678.75
 4182963.28        0.05159  (17011509)
       657698.75   4182963.28        0.05184  (17011509)               657718.75
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 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuintal_Highway120\MantecaQuintal_Highwa ***        09/27/22
 *** AERMET - VERSION  18081 ***   ***
                       ***        17:09:08

                                  PAGE  32
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                              *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP:  ALL      ***
                                 INCLUDING SOURCE(S):     L0000001    , L0000002
 , L0000003    , L0000004    , L0000005    ,
                L0000006    , L0000007    , L0000008    , L0000009    , L0000010
 ,
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*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
657818.75	4182963.28	0.05243	(17011509)	657838.75	4182963.28	0.05245	(17011509)
657858.75	4182963.28	0.05245	(17011509)	657878.75	4182963.28	0.05243	(17011509)
657898.75	4182963.28	0.05241	(17011509)	657298.75	4182983.28	0.04993	(17013022)
657318.75	4182983.28	0.04954	(17013022)	657338.75	4182983.28	0.04911	(17013022)
657358.75	4182983.28	0.04866	(17013022)	657378.75	4182983.28	0.04822	(17013022)
657398.75	4182983.28	0.04767	(17013022)	657418.75	4182983.28	0.04750	(17011609)
657438.75	4182983.28	0.04765	(17011609)	657458.75	4182983.28	0.04835	(17011509)
657478.75	4182983.28	0.04936	(17011509)	657498.75	4182983.28	0.05024	(17011509)
657518.75	4182983.28	0.05102	(17011509)	657538.75	4182983.28	0.05171	(17011509)
657558.75	4182983.28	0.05232	(17011509)	657578.75	4182983.28	0.05288	(17011509)
657598.75	4182983.28	0.05335	(17011509)	657618.75	4182983.28	0.05371	(17011509)
657638.75	4182983.28	0.05401	(17011509)	657658.75	4182983.28	0.05428	(17011509)
657678.75	4182983.28	0.05451	(17011509)	657698.75	4182983.28	0.05469	(17011509)
657718.75	4182983.28	0.05481	(17011509)	657738.75	4182983.28	0.05489	(17011509)
657758.75	4182983.28	0.05495	(17011509)	657778.75	4182983.28	0.05498	(17011509)
657798.75	4182983.28	0.05499	(17011509)	657818.75	4182983.28	0.05499	(17011509)
657838.75	4182983.28	0.05498	(17011509)	657858.75	4182983.28	0.05496	(17011509)
657878.75	4182983.28	0.05492	(17011509)	657898.75	4182983.28	0.05488	(17011509)
657178.75	4183003.28	0.05711	(17021308)	657298.75	4183003.28	0.05352	(17013022)
657318.75	4183003.28	0.05319	(17013022)	657338.75			

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       657398.75   4183003.28        0.05165  (17013022)               657418.75
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       657478.75   4183003.28        0.05356  (17011509)               657498.75
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 4183023.28        0.05643  (17011509)
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 4183023.28        0.05790  (17011509)
 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuintal_Highway120\MantecaQuintal_Highwa ***        09/27/22
 *** AERMET - VERSION  18081 ***   ***
                        ***        17:09:08

                                   PAGE  33
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                              *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION
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VALUES FOR SOURCE GROUP: ALL   ***
                                  INCLUDING SOURCE(S):   L0000001   , L0000002
 , L0000003   , L0000004   , L0000005   ,
                 L0000006   , L0000007   , L0000008   , L0000009   , L0000010
 ,

                                                *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                             ** CONC OF PM_10   IN MICROGRAMS/M**3
                   **

      X-COORD (M) Y-COORD (M)   CONC   (YYMMDDHH)   X-COORD (M)
Y-COORD (M)   CONC   (YYMMDDHH)
 -
- -
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        657578.75   4183023.28   0.06018 (17011509)   657598.75
 4183023.28   0.06041 (17011509)
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 4183023.28   0.06078 (17011509)
        657658.75   4183023.28   0.06090 (17011509)   657678.75
 4183023.28   0.06097 (17011509)
        657698.75   4183023.28   0.06103 (17011509)   657718.75
 4183023.28   0.06105 (17011509)
        657738.75   4183023.28   0.06105 (17011509)   657758.75
 4183023.28   0.06103 (17011509)
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        657818.75   4183023.28   0.06092 (17011509)   657838.75
 4183023.28   0.06086 (17011509)
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 4183023.28   0.06075 (17011509)
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        657358.75   4183043.28   0.06265 (17021308)   657378.75
 4183043.28   0.06210 (17021308)
        657398.75   4183043.28   0.06139 (17021308)   657418.75
 4183043.28   0.06058 (17021308)
        657438.75   4183043.28   0.06130 (17011509)   657458.75
 4183043.28   0.06192 (17011509)

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       657458.75   4183063.28        0.06694  (17011509)                657478.75
 4183063.28        0.06733  (17011509)
       657498.75   4183063.28        0.06764  (17011509)                657518.75
 4183063.28        0.06799  (17011509)
       657538.75   4183063.28        0.06824  (17011509)                657558.75
 4183063.28        0.06848  (17011509)
       657578.75   4183063.28        0.06866  (17011509)                657598.75
 4183063.28        0.06879  (17011509)
       657618.75   4183063.28        0.06884  (17011509)                657638.75
 4183063.28        0.06885  (17011509)
       657658.75   4183063.28        0.06885  (17011509)                657678.75
 4183063.28        0.06883  (17011509)
 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuintal_Highway120\MantecaQuintal_Highwa ***        09/27/22
 *** AERMET - VERSION  18081 ***   ***
                        ***       17:09:08
```

*** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

*** THE 1ST HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): L0000001 , L0000002 , L0000003 , L0000004 , L0000005 , L0000006 , L0000007 , L0000008 , L0000009 , L0000010 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
657698.75	4183063.28	0.06877	(17011509)	657718.75	4183063.28	0.06866	(17011509)
657738.75	4183063.28	0.06872	(17011509)	657758.75	4183063.28	0.06866	(17011509)
657778.75	4183063.28	0.06860	(17011509)	657798.75	4183063.28	0.06853	(17011509)
657818.75	4183063.28	0.06844	(17011509)	657838.75	4183063.28	0.06835	(17011509)
657858.75	4183063.28	0.06823	(17011509)	657878.75	4183063.28	0.06810	(17011509)
657898.75	4183063.28	0.06811	(17011509)	657238.75	4183083.28	0.07855	(17021308)
657258.75	4183083.28	0.07821	(17021308)	657278.75	4183083.28	0.07687	(17021308)
657298.75	4183083.28	0.07677	(17021308)	657318.75	4183083.28	0.07658	(17021308)
657338.75	4183083.28	0.07632	(17021308)	657358.75	4183083.28	0.07604	(17021308)
657378.75	4183083.28	0.07586	(17021308)	657398.75	4183083.28	0.07542	(17021308)
657418.75	4183083.28	0.07481	(17021308)	657438.75	4183083.28	0.07291	(17021308)
657458.75	4183083.28	0.07246	(17021308)	657478.75	4183083.28	0.07273	(17011509)
657498.75	4183083.28	0.07303	(17011509)	657518.75	4183083.28	0.07321	(17011509)
657538.75	4183083.28	0.07328	(17011509)	657558.75	4183083.28	0.07322	(17011509)
657578.75	4183083.28	0.07364	(17011509)	657598.75			

```
4183083.28        0.07373  (17011509)
       657618.75   4183083.28        0.07372  (17011509)               657638.75
4183083.28        0.07371  (17011509)
       657658.75   4183083.28        0.07367  (17011509)               657678.75
4183083.28        0.07358  (17011509)
       657698.75   4183083.28        0.07343  (17011509)               657718.75
4183083.28        0.07323  (17011509)
       657738.75   4183083.28        0.07343  (17011509)               657758.75
4183083.28        0.07336  (17011509)
       657778.75   4183083.28        0.07329  (17011509)               657798.75
4183083.28        0.07320  (17011509)
       657818.75   4183083.28        0.07309  (17011509)               657838.75
4183083.28        0.07296  (17011509)
       657858.75   4183083.28        0.07280  (17011509)               657878.75
4183083.28        0.07260  (17011509)
       657898.75   4183083.28        0.07271  (17011509)               657258.75
4183103.28        0.08571  (17021308)
       657278.75   4183103.28        0.08355  (17021308)               657298.75
4183103.28        0.08376  (17021308)
       657318.75   4183103.28        0.08386  (17021308)               657338.75
4183103.28        0.08386  (17021308)
       657358.75   4183103.28        0.08381  (17021308)               657378.75
4183103.28        0.08383  (17021308)
       657398.75   4183103.28        0.08359  (17021308)               657418.75
4183103.28        0.08311  (17021308)
       657438.75   4183103.28        0.08017  (17021308)               657458.75
4183103.28        0.08006  (17021308)
       657478.75   4183103.28        0.07992  (17021308)               657498.75
4183103.28        0.07984  (17021308)
       657518.75   4183103.28        0.07946  (17021308)               657538.75
4183103.28        0.07894  (17011509)
       657558.75   4183103.28        0.07868  (17011509)               657578.75
4183103.28        0.07835  (17011509)
       657598.75   4183103.28        0.07938  (17011509)               657618.75
4183103.28        0.07936  (17011509)
       657638.75   4183103.28        0.07935  (17011509)               657658.75
4183103.28        0.07926  (17011509)
       657678.75   4183103.28        0.07908  (17011509)               657698.75
4183103.28        0.07882  (17011509)
       657718.75   4183103.28        0.07847  (17011509)               657738.75
4183103.28        0.07804  (17011509)
       657758.75   4183103.28        0.07884  (17011509)               657778.75
4183103.28        0.07878  (17011509)
       657798.75   4183103.28        0.07867  (17011509)               657818.75
4183103.28        0.07853  (17011509)
       657838.75   4183103.28        0.07833  (17011509)               657858.75
4183103.28        0.07809  (17011509)
       657878.75   4183103.28        0.07777  (17011509)               657898.75
4183103.28        0.07737  (17011509)
       657298.75   4183123.28        0.09128  (17021308)               657318.75
```

4183123.28 0.09182 (17021308)

*** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

*** THE 1ST HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): L0000001 , L0000002 , L0000003 , L0000004 , L0000005 ,
L0000006 , L0000007 , L0000008 , L0000009 , L0000010 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
657338.75	4183123.28	0.09222	(17021308)	657358.75	4183123.28	0.09245	(17021308)
657378.75	4183123.28	0.09253	(17021308)	657398.75	4183123.28	0.09263	(17021308)
657418.75	4183123.28	0.09247	(17021308)	657438.75	4183123.28	0.08769	(17021308)
657458.75	4183123.28	0.08807	(17021308)	657478.75	4183123.28	0.08842	(17021308)
657498.75	4183123.28	0.08886	(17021308)	657518.75	4183123.28	0.08892	(17021308)
657538.75	4183123.28	0.08869	(17021308)	657558.75	4183123.28	0.08822	(17021308)
657578.75	4183123.28	0.08759	(17021308)	657598.75	4183123.28	0.08590	(17011509)
657618.75	4183123.28	0.08588	(17011509)	657638.75	4183123.28	0.08591	(17011509)
657658.75	4183123.28	0.08581	(17011509)	657678.75	4183123.28	0.08550	(17011509)
657698.75	4183123.28	0.08507	(17011509)	657718.75	4183123.28	0.08449	(17011509)
657738.75	4183123.28	0.08373	(17011509)	657758.75	4183123.28	0.08526	(17011509)
657778.75	4183123.28	0.08521	(17011509)	657798.75	4183123.28	0.08512	(17011509)

657818.75 4183123.28 0.08493 (17011509) 657838.75 4183123.28 0.08464 (17011509)
657858.75 4183123.28 0.08424 (17011509) 657878.75 4183123.28 0.08372 (17011509)
657898.75 4183123.28 0.08306 (17011509) 657318.75 4183143.28 0.08263 (17013006)
657338.75 4183143.28 0.08372 (17021308) 657358.75 4183143.28 0.08561 (17021308)
657378.75 4183143.28 0.08739 (17021308) 657398.75 4183143.28 0.08932 (17021308)
657418.75 4183143.28 0.09115 (17021308) 657438.75 4183143.28 0.09259 (17021308)
657458.75 4183143.28 0.08208 (17011509) 657478.75 4183143.28 0.07971 (17011509)
657498.75 4183143.28 0.08116 (17021308) 657518.75 4183143.28 0.08281 (17021308)
657538.75 4183143.28 0.08427 (17021308) 657558.75 4183143.28 0.08559 (17021308)
657578.75 4183143.28 0.08701 (17021308) 657598.75 4183143.28 0.08828 (17021308)
657618.75 4183143.28 0.09336 (17011509) 657638.75 4183143.28 0.08085 (17011509)
657658.75 4183143.28 0.07817 (17011509) 657678.75 4183143.28 0.07715 (17021308)
657698.75 4183143.28 0.07808 (17021308) 657718.75 4183143.28 0.07884 (17021308)
657738.75 4183143.28 0.07947 (17021308) 657758.75 4183143.28 0.07993 (17021308)
657778.75 4183143.28 0.09270 (17011509) 657798.75 4183143.28 0.09269 (17011509)
657818.75 4183143.28 0.07856 (17011509) 657838.75 4183143.28 0.07583 (17011509)
657858.75 4183143.28 0.07287 (17011509) 657878.75 4183143.28 0.06970 (17011509)
657898.75 4183143.28 0.06637 (17013022) 657358.75 4183163.28 0.09156 (17013006)
657378.75 4183163.28 0.09323 (17013006) 657398.75 4183163.28 0.09510 (17013006)
657418.75 4183163.28 0.09705 (17013006) 657438.75 4183163.28 0.07611 (17013006)
657458.75 4183163.28 0.07770 (17013006) 657478.75 4183163.28 0.08249 (17011509)
657498.75 4183163.28 0.08368 (17021308) 657518.75 4183163.28 0.08623 (17021308)
657538.75 4183163.28 0.08862 (17021308) 657558.75 4183163.28 0.09092 (17021308)
657578.75 4183163.28 0.09339 (17021308) 657598.75 4183163.28 0.06956 (17021308)
657618.75 4183163.28 0.07215 (17021308) 657638.75 4183163.28 0.08391 (17011509)

                              *** THE   1ST HIGHEST 1-HR AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP: ALL   ***
                                 INCLUDING SOURCE(S):   L0000001   , L0000002
 , L0000003   , L0000004   , L0000005   ,
                L0000006   , L0000007   , L0000008   , L0000009   , L0000010
 ,

                                       *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                    ** CONC OF PM_10   IN MICROGRAMS/M**3
                  **

      X-COORD (M) Y-COORD (M)   CONC   (YYMMDDHH)   X-COORD (M)
Y-COORD (M)   CONC   (YYMMDDHH)
 -
- -
       657778.75   4183163.28   0.06486 (17021308)   657798.75
 4183163.28   0.08450 (17011509)
       657818.75   4183163.28   0.08097 (17011509)   657838.75
 4183163.28   0.07724 (17011509)
       657858.75   4183163.28   0.07380 (14012017)   657878.75
 4183163.28   0.07379 (17021308)
       657898.75   4183163.28   0.07448 (17021308)   657398.75
 4183183.28   0.10275 (17121304)
       657418.75   4183183.28   0.07817 (17011605)   657438.75
 4183183.28   0.08030 (17011605)
       657458.75   4183183.28   0.08228 (17011605)   657478.75
 4183183.28   0.08430 (17011605)
       657498.75   4183183.28   0.08901 (17013006)   657518.75
 4183183.28   0.09122 (17013006)
       657538.75   4183183.28   0.09346 (17013006)   657558.75
 4183183.28   0.09578 (17013006)
       657578.75   4183183.28   0.07003 (17011605)   657598.75
 4183183.28   0.07195 (17013006)
       657618.75   4183183.28   0.07389 (17013006)   657638.75

4183183.28 0.07599 (17013006)
657658.75 4183183.28 0.08130 (17021308) 657678.75
4183183.28 0.08434 (17021308)
657698.75 4183183.28 0.08736 (17021308) 657718.75
4183183.28 0.09034 (17021308)
657738.75 4183183.28 0.09327 (17021308) 657758.75
4183183.28 0.06700 (14012017)
657778.75 4183183.28 0.06572 (17021308) 657798.75
4183183.28 0.06846 (17021308)
657818.75 4183183.28 0.08525 (14012017) 657838.75
4183183.28 0.08278 (14012017)
657858.75 4183183.28 0.08056 (14012017) 657878.75
4183183.28 0.08028 (17021308)
657898.75 4183183.28 0.08224 (17021308) 657418.75
4183203.28 0.08123 (17011205)
657438.75 4183203.28 0.08357 (17011205) 657458.75
4183203.28 0.08595 (17011205)
657478.75 4183203.28 0.08850 (17011205) 657498.75
4183203.28 0.09139 (17011205)
657518.75 4183203.28 0.09779 (15011009) 657538.75
4183203.28 0.09990 (15011009)
657558.75 4183203.28 0.07070 (17011205) 657578.75
4183203.28 0.07255 (17011205)
657598.75 4183203.28 0.07490 (17011605) 657618.75
4183203.28 0.07722 (17011605)
657638.75 4183203.28 0.07977 (17011605) 657658.75
4183203.28 0.08239 (17011605)
657678.75 4183203.28 0.08789 (15011009) 657698.75
4183203.28 0.09064 (17013006)
657718.75 4183203.28 0.09365 (17013006) 657738.75
4183203.28 0.07342 (17122519)
657758.75 4183203.28 0.07126 (17122519) 657778.75
4183203.28 0.06923 (17122519)
657798.75 4183203.28 0.06824 (17013006) 657818.75
4183203.28 0.07154 (17021308)
657838.75 4183203.28 0.08892 (14012017) 657858.75
4183203.28 0.08595 (17122519)
657878.75 4183203.28 0.08460 (17021308) 657898.75
4183203.28 0.07961 (17122519)
657458.75 4183223.28 0.08885 (17121423) 657478.75
4183223.28 0.09197 (17121423)
657498.75 4183223.28 0.09560 (17011205) 657518.75
4183223.28 0.10547 (15011009)
657538.75 4183223.28 0.10850 (15011009) 657558.75
4183223.28 0.07377 (15011009)
657578.75 4183223.28 0.07532 (15011009) 657598.75
4183223.28 0.07724 (17011205)
657618.75 4183223.28 0.07994 (17011205) 657638.75
4183223.28 0.08297 (17011205)
657658.75 4183223.28 0.08622 (17011205) 657678.75

*** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

*** THE 1ST HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): L0000001 , L0000002 , L0000003 , L0000004 , L0000005 ,
L0000006 , L0000007 , L0000008 , L0000009 , L0000010 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
657898.75	4183223.28	0.08339	(17122519)	657518.75	4183243.28	0.10324	(17121420)
657538.75	4183243.28	0.08024	(17122621)	657558.75	4183243.28	0.07655	(17122621)
657578.75	4183243.28	0.07683	(15011009)	657598.75	4183243.28	0.07919	(15011009)
657618.75	4183243.28	0.08183	(15011009)	657638.75	4183243.28	0.08505	(15011009)
657658.75	4183243.28	0.08873	(15011009)	657678.75	4183243.28	0.09280	(15011009)
657698.75	4183243.28	0.10469	(15011009)	657718.75	4183243.28	0.08580	(17122621)
657738.75	4183243.28	0.08226	(17122621)	657758.75	4183243.28	0.07911	(17122621)

 *** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

                                  *** THE SUMMARY OF MAXIMUM ANNUAL RESULTS
AVERAGED OVER   5 YEARS ***

                                   ** CONC OF PM_10   IN MICROGRAMS/M**3
             **

                        NETWORK
GROUP ID   AVERAGE CONC   RECEPTOR (XR, YR,
ZELEV, ZHILL, ZFLAG) OF TYPE GRID-ID
- -
- - - - - - - - - - - - - - - - - - -

ALL   1ST HIGHEST VALUE IS   0.00967 AT (657618.75, 4183143.28,
11.58,   11.58,   0.00) DC
          2ND HIGHEST VALUE IS   0.00954 AT (657798.75, 4183143.28,
12.19,   12.19,   0.00) DC
          3RD HIGHEST VALUE IS   0.00954 AT (657778.75, 4183143.28,
12.19,   12.19,   0.00) DC
          4TH HIGHEST VALUE IS   0.00882 AT (657698.75, 4183243.28,
11.89,   11.89,   0.00) DC
          5TH HIGHEST VALUE IS   0.00876 AT (657858.75, 4183243.28,
12.15,   12.15,   0.00) DC
          6TH HIGHEST VALUE IS   0.00855 AT (657518.75, 4183223.28,
11.28,   11.28,   0.00) DC
          7TH HIGHEST VALUE IS   0.00847 AT (657518.75, 4183123.28,
11.28,   11.28,   0.00) DC
          8TH HIGHEST VALUE IS   0.00847 AT (657538.75, 4183123.28,
11.28,   11.28,   0.00) DC
          9TH HIGHEST VALUE IS   0.00845 AT (657498.75, 4183123.28,
11.23,   11.23,   0.00) DC
         10TH HIGHEST VALUE IS   0.00844 AT (657558.75, 4183123.28,
11.28,   11.28,   0.00) DC

*** THE SUMMARY OF HIGHEST 1-HR RESULTS ***

** CONC OF PM_10   IN MICROGRAMS/M**3 **

GROUP ID	AVERAGE	NETWORK CONC OF TYPE	DATE (YYMMDDHH)	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	GRID-ID
ALL	HIGH	1ST HIGH VALUE IS	0.10850	ON 15011009: AT (657538.75, 4183223.28, 11.28, 11.28, 0.00)	DC

*** Message Summary : AERMOD Model Execution ***

--------- Summary of Total Messages --------

A Total of 0 Fatal Error Message(s)
A Total of 11 Warning Message(s)

```
A Total of          971 Informational Message(s)

A Total of        43824 Hours Were Processed

A Total of          442 Calm Hours Identified

A Total of          529 Missing Hours Identified (  1.21 Percent)


   ******** FATAL ERROR MESSAGES ********
              ***  NONE  ***


   ********   WARNING MESSAGES   ********
ME W186      96       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used
     0.50
ME W187      96       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET

MX W420   34276        METQA: Wind Speed Out-of-Range.   KURDAT =
 16112904
MX W420   34282        METQA: Wind Speed Out-of-Range.   KURDAT =
 16112910
MX W420   34288        METQA: Wind Speed Out-of-Range.   KURDAT =
 16112916
MX W420   34294        METQA: Wind Speed Out-of-Range.   KURDAT =
 16112922
MX W420   34300        METQA: Wind Speed Out-of-Range.   KURDAT =
 16113004
MX W420   40768        METQA: Wind Speed Out-of-Range.   KURDAT =
 17082616
MX W420   40792        METQA: Wind Speed Out-of-Range.   KURDAT =
 17082716
MX W420   40798        METQA: Wind Speed Out-of-Range.   KURDAT =
 17082722
MX W420   40804        METQA: Wind Speed Out-of-Range.   KURDAT =
 17082804

   ************************************
   *** AERMOD Finishes Successfully ***
   ************************************
```

Gas Station AERMOD Output Files

```
**
**************************************
**
** AERMOD Input Produced by:
** AERMOD View Ver. 10.0.0
** Lakes Environmental Software Inc.
** Date: 9/28/2022
** File: C:\Lakes\AERMOD
View\MantecaQuintal_gasstation\MantecaQuintal_gasstation.ADI
**
**************************************
**
**
**************************************
** AERMOD Control Pathway
**************************************
**
**
CO STARTING
   TITLEONE C:\Lakes\AERMOD View\MantecaQuintal_Highway120\MantecaQuintal_Highwa
   MODELOPT DFAULT CONC
   AVERTIME 1 ANNUAL
   POLLUTID BENZENE
   RUNORNOT RUN
   ERRORFIL MantecaQuintal_gasstation.err
CO FINISHED
**
**************************************
** AERMOD Source Pathway
**************************************
**
**
SO STARTING
** Source Location **
** Source ID - Type - X Coord. - Y Coord. **
   LOCATION PAREA1       AREAPOLY   657126.806  4182948.017       10.670
** Source Parameters **
   SRCPARAM PAREA1       1.5402E-08     1.000         5
   AREAVERT PAREA1       657126.806 4182948.017 657174.570 4182969.246
   AREAVERT PAREA1       657215.700 4183011.703 657214.373 4182904.234
   AREAVERT PAREA1       657128.132 4182902.907
   SRCGROUP ALL
SO FINISHED
**
**************************************
** AERMOD Receptor Pathway
**************************************
**
**
RE STARTING
```

```
   INCLUDED MantecaQuintal_gasstation.rou
RE FINISHED
**
**************************************
** AERMOD Meteorology Pathway
**************************************
**
**
ME STARTING
   SURFFILE "C:\Users\kheck\Meteorological_Data\AERMET
v18081_UStar\Stockton_23237\Stockton_2013-2017.SFC"
   PROFFILE "C:\Users\kheck\Meteorological_Data\AERMET
v18081_UStar\Stockton_23237\Stockton_2013-2017.PFL"
   SURFDATA 23237 2013 Stockton
   UAIRDATA 23230 2013 OAKLAND/WSO_AP
   PROFBASE 7.9 METERS
ME FINISHED
**
**************************************
** AERMOD Output Pathway
**************************************
**
**
OU STARTING
   RECTABLE ALLAVE 1ST
   RECTABLE 1 1ST
** Auto-Generated Plotfiles
   PLOTFILE 1 ALL 1ST MANTECAQUINTAL_GASSTATION.AD\01H1GALL.PLT 31
   PLOTFILE ANNUAL ALL MANTECAQUINTAL_GASSTATION.AD\AN00GALL.PLT 32
   SUMMFILE MantecaQuintal_gasstation.sum
OU FINISHED
**
**************************************
** Project Parameters
**************************************
** PROJCTN  CoordinateSystemUTM
** DESCPTN  UTM: Universal Transverse Mercator
** DATUM    World Geodetic System 1984
** DTMRGN   Global Definition
** UNITS    m
** ZONE     10
** ZONEINX  0
**
```

```
**
**************************************
**
** AERMOD Input Produced by:
** AERMOD View Ver. 10.0.0
** Lakes Environmental Software Inc.
** Date: 9/28/2022
** File: C:\Lakes\AERMOD
View\MantecaQuintal_gasstation\MantecaQuintal_gasstation.ADI
**
**************************************
**
**
**************************************
** AERMOD Control Pathway
**************************************
**
**
CO STARTING
   TITLEONE C:\Lakes\AERMOD View\MantecaQuintal_Highway120\MantecaQuintal_Highwa
   MODELOPT DFAULT CONC
   AVERTIME 1 ANNUAL
   POLLUTID BENZENE
   RUNORNOT RUN
   ERRORFIL MantecaQuintal_gasstation.err
CO FINISHED
**
**************************************
** AERMOD Source Pathway
**************************************
**
**
SO STARTING
** Source Location **
** Source ID - Type - X Coord. - Y Coord. **
   LOCATION PAREA1       AREAPOLY   657126.806  4182948.017       10.670
** Source Parameters **
   SRCPARAM PAREA1       1.5402E-08     1.000         5
   AREAVERT PAREA1       657126.806 4182948.017 657174.570 4182969.246
   AREAVERT PAREA1       657215.700 4183011.703 657214.373 4182904.234
   AREAVERT PAREA1       657128.132 4182902.907
   SRCGROUP ALL
SO FINISHED
**
**************************************
** AERMOD Receptor Pathway
**************************************
**
**
RE STARTING
```

```
   INCLUDED MantecaQuintal_gasstation.rou
RE FINISHED
**
**************************************
** AERMOD Meteorology Pathway
**************************************
**
**
ME STARTING
   SURFFILE "C:\Users\kheck\Meteorological_Data\AERMET
v18081_UStar\Stockton_23237\Stockton_2013-2017.SFC"
   PROFFILE "C:\Users\kheck\Meteorological_Data\AERMET
v18081_UStar\Stockton_23237\Stockton_2013-2017.PFL"
   SURFDATA 23237 2013 Stockton
   UAIRDATA 23230 2013 OAKLAND/WSO_AP
   PROFBASE 7.9 METERS
ME FINISHED
**
**************************************
** AERMOD Output Pathway
**************************************
**
**
OU STARTING
   RECTABLE ALLAVE 1ST
   RECTABLE 1 1ST
** Auto-Generated Plotfiles
   PLOTFILE 1 ALL 1ST MANTECAQUINTAL_GASSTATION.AD\01H1GALL.PLT 31
   PLOTFILE ANNUAL ALL MANTECAQUINTAL_GASSTATION.AD\AN00GALL.PLT 32
   SUMMFILE MantecaQuintal_gasstation.sum
OU FINISHED


  *** Message Summary For AERMOD Model Setup ***

  --------- Summary of Total Messages --------

 A Total of            0 Fatal Error Message(s)
 A Total of            2 Warning Message(s)
 A Total of            0 Informational Message(s)


    ******** FATAL ERROR MESSAGES ********
               ***  NONE  ***


    ********   WARNING MESSAGES   ********
 ME W186      64       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used
      0.50
 ME W187      64       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET
```

```
 **********************************
 *** SETUP Finishes Successfully ***
 **********************************

 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuintal_Highway120\MantecaQuintal_Highwa ***        09/28/22
 *** AERMET - VERSION  18081 ***   ***
                        ***        09:05:02

                                   PAGE   1
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                                            ***     MODEL SETUP OPTIONS SUMMARY
  ***
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - -

 **Model Is Setup For Calculation of Average CONCentration Values.

   --  DEPOSITION LOGIC  --
 **NO GAS DEPOSITION Data Provided.
 **NO PARTICLE DEPOSITION Data Provided.
 **Model Uses NO DRY DEPLETION.  DRYDPLT  =  F
 **Model Uses NO WET DEPLETION.  WETDPLT  =  F

 **Model Uses RURAL Dispersion Only.

 **Model Uses Regulatory DEFAULT Options:
        1. Stack-tip Downwash.
        2. Model Accounts for ELEVated Terrain Effects.
        3. Use Calms Processing Routine.
        4. Use Missing Data Processing Routine.
        5. No Exponential Decay.

 **Other Options Specified:
        ADJ_U*   - Use ADJ_U* option for SBL in AERMET
        CCVR_Sub - Meteorological data includes CCVR substitutions
        TEMP_Sub - Meteorological data includes TEMP substitutions

 **Model Assumes No FLAGPOLE Receptor Heights.

 **The User Specified a Pollutant Type of:  BENZENE

 **Model Calculates  1 Short Term Average(s) of:   1-HR
     and Calculates ANNUAL Averages

 **This Run Includes:      1 Source(s);       1 Source Group(s); and     661
Receptor(s)
```

```
               with:      0 POINT(s), including
                          0 POINTCAP(s) and      0 POINTHOR(s)
                and:      0 VOLUME source(s)
                and:      1 AREA type source(s)
                and:      0 LINE source(s)
                and:      0 RLINE/RLINEXT source(s)
                and:      0 OPENPIT source(s)
                and:      0 BUOYANT LINE source(s) with a total of     0 line(s)


 **Model Set To Continue RUNning After the Setup Testing.

 **The AERMET Input Meteorological Data Version Date:  18081

 **Output Options Selected:
         Model Outputs Tables of ANNUAL Averages by Receptor
         Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE
Keyword)
         Model Outputs External File(s) of High Values for Plotting (PLOTFILE
Keyword)
         Model Outputs Separate Summary File of High Ranked Values (SUMMFILE
Keyword)

 **NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                 m for Missing
Hours
                                                                 b for Both Calm
and Missing Hours

 **Misc. Inputs:  Base Elev. for Pot. Temp. Profile (m MSL) =     7.90 ;  Decay
Coef. =    0.000     ;  Rot. Angle =     0.0
                 Emission Units = GRAMS/SEC                                 ;
Emission Rate Unit Factor =   0.10000E+07
                 Output Units   = MICROGRAMS/M**3

 **Approximate Storage Requirements of Model =      3.6 MB of RAM.

 **Input Runstream File:          aermod.inp

 **Output Print File:             aermod.out


 **Detailed Error/Message File:   MantecaQuintal_gasstation.err

 **File for Summary of Results:   MantecaQuintal_gasstation.sum

↟ *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuintal_Highway120\MantecaQuintal_Highwa ***        09/28/22
 *** AERMET - VERSION  18081 ***   ***
```

```
                         ***        09:05:02

                                    PAGE   2
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*


                                                         *** AREAPOLY SOURCE DATA ***

                NUMBER EMISSION RATE   LOCATION OF AREA  BASE     RELEASE  NUMBER
  INIT.   URBAN  EMISSION RATE
   SOURCE       PART.  (GRAMS/SEC       X        Y      ELEV.    HEIGHT  OF VERTS.
   SZ     SOURCE  SCALAR VARY
     ID         CATS.   /METER**2)   (METERS) (METERS) (METERS) (METERS)
(METERS)              BY
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - -

 PAREA1           0   0.15402E-07  657126.8 4182948.0    10.7     1.00      5
   0.00     NO
↑ *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuintal_Highway120\MantecaQuintal_Highwa ***        09/28/22
 *** AERMET - VERSION  18081 ***   ***
                         ***        09:05:02

                                    PAGE   3
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*


                                                    *** SOURCE IDs DEFINING SOURCE GROUPS
***

 SRCGROUP ID                                                     SOURCE IDs
 -----------                                                     ----------


  ALL        PAREA1      ,
↑ *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuintal_Highway120\MantecaQuintal_Highwa ***        09/28/22
 *** AERMET - VERSION  18081 ***   ***
                         ***        09:05:02

                                    PAGE   4
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                                                      *** DISCRETE CARTESIAN RECEPTORS ***
                                                    (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
                                                                    (METERS)

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 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuintal_Highway120\MantecaQuintal_Highwa ***        09/28/22
 *** AERMET - VERSION  18081 ***   ***
                        ***       09:05:02

                                  PAGE   5
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                                    *** DISCRETE CARTESIAN RECEPTORS ***
                                  (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
                                               (METERS)
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 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuintal_Highway120\MantecaQuintal_Highwa ***        09/28/22
 *** AERMET - VERSION  18081 ***   ***
                        ***       09:05:02

                                  PAGE   6
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                                    *** DISCRETE CARTESIAN RECEPTORS ***
                                  (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
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(METERS)

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 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuintal_Highway120\MantecaQuintal_Highwa ***        09/28/22
 *** AERMET - VERSION  18081 ***   ***
                        ***        09:05:02

                                   PAGE   7
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*
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*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

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 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuintal_Highway120\MantecaQuintal_Highwa ***        09/28/22
 *** AERMET - VERSION  18081 ***   ***
                       ***        09:05:02
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*** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

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     ( 657378.8, 4183083.3,      10.9,      10.9,       0.0);         ( 657398.8,
4183083.3,      11.0,      11.0,       0.0);
     ( 657418.8, 4183083.3,      11.0,      11.0,       0.0);         ( 657438.8,
4183083.3,      11.0,      11.0,       0.0);
     ( 657458.8, 4183083.3,      11.0,      11.0,       0.0);         ( 657478.8,
4183083.3,      11.0,      11.0,       0.0);
     ( 657498.8, 4183083.3,      11.1,      11.1,       0.0);         ( 657518.8,
4183083.3,      11.2,      11.2,       0.0);
     ( 657538.8, 4183083.3,      11.3,      11.3,       0.0);         ( 657558.8,
4183083.3,      11.3,      11.3,       0.0);
     ( 657578.8, 4183083.3,      11.4,      11.4,       0.0);         ( 657598.8,
4183083.3,      11.6,      11.6,       0.0);
     ( 657618.8, 4183083.3,      11.6,      11.6,       0.0);         ( 657638.8,
4183083.3,      11.7,      11.7,       0.0);
     ( 657658.8, 4183083.3,      11.8,      11.8,       0.0);         ( 657678.8,
4183083.3,      11.9,      11.9,       0.0);
     ( 657698.8, 4183083.3,      12.0,      12.0,       0.0);         ( 657718.8,
4183083.3,      12.1,      12.1,       0.0);
     ( 657738.8, 4183083.3,      12.2,      12.2,       0.0);         ( 657758.8,
4183083.3,      12.2,      12.2,       0.0);
     ( 657778.8, 4183083.3,      12.2,      12.2,       0.0);         ( 657798.8,
4183083.3,      12.2,      12.2,       0.0);
     ( 657818.8, 4183083.3,      12.2,      12.2,       0.0);         ( 657838.8,
4183083.3,      12.2,      12.2,       0.0);
     ( 657858.8, 4183083.3,      12.2,      12.2,       0.0);         ( 657878.8,
4183083.3,      12.2,      12.2,       0.0);
     ( 657898.8, 4183083.3,      12.2,      12.2,       0.0);         ( 657258.8,
4183103.3,      10.7,      10.7,       0.0);
     ( 657278.8, 4183103.3,      10.7,      10.7,       0.0);         ( 657298.8,
4183103.3,      10.7,      10.7,       0.0);
     ( 657318.8, 4183103.3,      10.7,      10.7,       0.0);         ( 657338.8,
4183103.3,      10.7,      10.7,       0.0);
 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuintal_Highway120\MantecaQuintal_Highwa ***        09/28/22
 *** AERMET - VERSION  18081 ***   ***
                         ***        09:05:02
```

*** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(657358.8, 4183103.3, 10.7, 10.7, 0.0); (657378.8, 4183103.3, 10.9, 10.9, 0.0);
(657398.8, 4183103.3, 10.9, 10.9, 0.0); (657418.8, 4183103.3, 11.0, 11.0, 0.0);
(657438.8, 4183103.3, 11.0, 11.0, 0.0); (657458.8, 4183103.3, 11.0, 11.0, 0.0);
(657478.8, 4183103.3, 11.0, 11.0, 0.0); (657498.8, 4183103.3, 11.2, 11.2, 0.0);
(657518.8, 4183103.3, 11.3, 11.3, 0.0); (657538.8, 4183103.3, 11.3, 11.3, 0.0);
(657558.8, 4183103.3, 11.3, 11.3, 0.0); (657578.8, 4183103.3, 11.4, 11.4, 0.0);
(657598.8, 4183103.3, 11.6, 11.6, 0.0); (657618.8, 4183103.3, 11.6, 11.6, 0.0);
(657638.8, 4183103.3, 11.7, 11.7, 0.0); (657658.8, 4183103.3, 11.9, 11.9, 0.0);
(657678.8, 4183103.3, 11.9, 11.9, 0.0); (657698.8, 4183103.3, 12.0, 12.0, 0.0);
(657718.8, 4183103.3, 12.1, 12.1, 0.0); (657738.8, 4183103.3, 12.2, 12.2, 0.0);
(657758.8, 4183103.3, 12.2, 12.2, 0.0); (657778.8, 4183103.3, 12.2, 12.2, 0.0);
(657798.8, 4183103.3, 12.2, 12.2, 0.0); (657818.8, 4183103.3, 12.2, 12.2, 0.0);
(657838.8, 4183103.3, 12.2, 12.2, 0.0); (657858.8, 4183103.3, 12.2, 12.2, 0.0);
(657878.8, 4183103.3, 12.2, 12.2, 0.0); (657898.8, 4183103.3, 12.2, 12.2, 0.0);
(657298.8, 4183123.3, 10.7, 10.7, 0.0); (657318.8, 4183123.3, 10.7, 10.7, 0.0);
(657338.8, 4183123.3, 10.7, 10.7, 0.0); (657358.8, 4183123.3, 10.7, 10.7, 0.0);
(657378.8, 4183123.3, 10.7, 10.7, 0.0); (657398.8, 4183123.3, 10.8, 10.8, 0.0);
(657418.8, 4183123.3, 11.0, 11.0, 0.0); (657438.8, 4183123.3, 11.0, 11.0, 0.0);
(657458.8, 4183123.3, 11.0, 11.0, 0.0); (657478.8, 4183123.3, 11.0, 11.0, 0.0);
(657498.8, 4183123.3, 11.2, 11.2, 0.0); (657518.8, 4183123.3, 11.3, 11.3, 0.0);
(657538.8, 4183123.3, 11.3, 11.3, 0.0); (657558.8, 4183123.3, 11.3, 11.3, 0.0);

```
     ( 657578.8, 4183123.3,      11.4,      11.4,       0.0);         ( 657598.8,
4183123.3,      11.6,      11.6,       0.0);
     ( 657618.8, 4183123.3,      11.6,      11.6,       0.0);         ( 657638.8,
4183123.3,      11.7,      11.7,       0.0);
     ( 657658.8, 4183123.3,      11.9,      11.9,       0.0);         ( 657678.8,
4183123.3,      11.9,      11.9,       0.0);
     ( 657698.8, 4183123.3,      11.9,      11.9,       0.0);         ( 657718.8,
4183123.3,      12.0,      12.0,       0.0);
     ( 657738.8, 4183123.3,      12.2,      12.2,       0.0);         ( 657758.8,
4183123.3,      12.2,      12.2,       0.0);
     ( 657778.8, 4183123.3,      12.2,      12.2,       0.0);         ( 657798.8,
4183123.3,      12.2,      12.2,       0.0);
     ( 657818.8, 4183123.3,      12.2,      12.2,       0.0);         ( 657838.8,
4183123.3,      12.2,      12.2,       0.0);
     ( 657858.8, 4183123.3,      12.2,      12.2,       0.0);         ( 657878.8,
4183123.3,      12.2,      12.2,       0.0);
     ( 657898.8, 4183123.3,      12.2,      12.2,       0.0);         ( 657318.8,
4183143.3,      10.7,      10.7,       0.0);
     ( 657338.8, 4183143.3,      10.7,      10.7,       0.0);         ( 657358.8,
4183143.3,      10.7,      10.7,       0.0);
     ( 657378.8, 4183143.3,      10.7,      10.7,       0.0);         ( 657398.8,
4183143.3,      10.8,      10.8,       0.0);
     ( 657418.8, 4183143.3,      11.0,      11.0,       0.0);         ( 657438.8,
4183143.3,      11.0,      11.0,       0.0);
     ( 657458.8, 4183143.3,      11.0,      11.0,       0.0);         ( 657478.8,
4183143.3,      11.0,      11.0,       0.0);
     ( 657498.8, 4183143.3,      11.2,      11.2,       0.0);         ( 657518.8,
4183143.3,      11.3,      11.3,       0.0);
     ( 657538.8, 4183143.3,      11.3,      11.3,       0.0);         ( 657558.8,
4183143.3,      11.3,      11.3,       0.0);
     ( 657578.8, 4183143.3,      11.4,      11.4,       0.0);         ( 657598.8,
4183143.3,      11.6,      11.6,       0.0);
     ( 657618.8, 4183143.3,      11.6,      11.6,       0.0);         ( 657638.8,
4183143.3,      11.7,      11.7,       0.0);
     ( 657658.8, 4183143.3,      11.9,      11.9,       0.0);         ( 657678.8,
4183143.3,      11.9,      11.9,       0.0);
     ( 657698.8, 4183143.3,      11.9,      11.9,       0.0);         ( 657718.8,
4183143.3,      11.9,      11.9,       0.0);
     ( 657738.8, 4183143.3,      12.0,      12.0,       0.0);         ( 657758.8,
4183143.3,      12.1,      12.1,       0.0);
     ( 657778.8, 4183143.3,      12.2,      12.2,       0.0);         ( 657798.8,
4183143.3,      12.2,      12.2,       0.0);
     ( 657818.8, 4183143.3,      12.2,      12.2,       0.0);         ( 657838.8,
4183143.3,      12.2,      12.2,       0.0);
     ( 657858.8, 4183143.3,      12.2,      12.2,       0.0);         ( 657878.8,
4183143.3,      12.2,      12.2,       0.0);
     ( 657898.8, 4183143.3,      12.2,      12.2,       0.0);         ( 657358.8,
4183163.3,      10.7,      10.7,       0.0);
 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuintal_Highway120\MantecaQuintal_Highwa ***        09/28/22
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*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(657378.8, 4183163.3, 10.7, 10.7, 0.0); (657398.8, 4183163.3, 10.8, 10.8, 0.0);
(657418.8, 4183163.3, 10.9, 10.9, 0.0); (657438.8, 4183163.3, 11.0, 11.0, 0.0);
(657458.8, 4183163.3, 11.0, 11.0, 0.0); (657478.8, 4183163.3, 11.0, 11.0, 0.0);
(657498.8, 4183163.3, 11.2, 11.2, 0.0); (657518.8, 4183163.3, 11.3, 11.3, 0.0);
(657538.8, 4183163.3, 11.3, 11.3, 0.0); (657558.8, 4183163.3, 11.3, 11.3, 0.0);
(657578.8, 4183163.3, 11.4, 11.4, 0.0); (657598.8, 4183163.3, 11.6, 11.6, 0.0);
(657618.8, 4183163.3, 11.6, 11.6, 0.0); (657638.8, 4183163.3, 11.7, 11.7, 0.0);
(657658.8, 4183163.3, 11.9, 11.9, 0.0); (657678.8, 4183163.3, 11.9, 11.9, 0.0);
(657698.8, 4183163.3, 11.9, 11.9, 0.0); (657718.8, 4183163.3, 11.9, 11.9, 0.0);
(657738.8, 4183163.3, 11.9, 11.9, 0.0); (657758.8, 4183163.3, 12.0, 12.0, 0.0);
(657778.8, 4183163.3, 12.2, 12.2, 0.0); (657798.8, 4183163.3, 12.2, 12.2, 0.0);
(657818.8, 4183163.3, 12.2, 12.2, 0.0); (657838.8, 4183163.3, 12.2, 12.2, 0.0);
(657858.8, 4183163.3, 12.2, 12.2, 0.0); (657878.8, 4183163.3, 12.2, 12.2, 0.0);
(657898.8, 4183163.3, 12.2, 12.2, 0.0); (657398.8, 4183183.3, 10.7, 10.7, 0.0);
(657418.8, 4183183.3, 10.7, 10.7, 0.0); (657438.8, 4183183.3, 10.9, 10.9, 0.0);
(657458.8, 4183183.3, 11.0, 11.0, 0.0); (657478.8, 4183183.3, 11.0, 11.0, 0.0);
(657498.8, 4183183.3, 11.2, 11.2, 0.0); (657518.8, 4183183.3, 11.3, 11.3, 0.0);
(657538.8, 4183183.3, 11.3, 11.3, 0.0); (657558.8, 4183183.3, 11.3, 11.3, 0.0);
(657578.8, 4183183.3, 11.4, 11.4, 0.0); (657598.8, 4183183.3, 11.6, 11.6, 0.0);
(657618.8, 4183183.3, 11.6, 11.6, 0.0); (657638.8, 4183183.3, 11.7, 11.7, 0.0);

```
     ( 657658.8, 4183183.3,      11.9,      11.9,       0.0);         ( 657678.8,
4183183.3,      11.9,      11.9,       0.0);
     ( 657698.8, 4183183.3,      11.9,      11.9,       0.0);         ( 657718.8,
4183183.3,      11.9,      11.9,       0.0);
     ( 657738.8, 4183183.3,      11.9,      11.9,       0.0);         ( 657758.8,
4183183.3,      12.0,      12.0,       0.0);
     ( 657778.8, 4183183.3,      12.2,      12.2,       0.0);         ( 657798.8,
4183183.3,      12.2,      12.2,       0.0);
     ( 657818.8, 4183183.3,      12.2,      12.2,       0.0);         ( 657838.8,
4183183.3,      12.2,      12.2,       0.0);
     ( 657858.8, 4183183.3,      12.2,      12.2,       0.0);         ( 657878.8,
4183183.3,      12.2,      12.2,       0.0);
     ( 657898.8, 4183183.3,      12.2,      12.2,       0.0);         ( 657418.8,
4183203.3,      10.9,      10.9,       0.0);
     ( 657438.8, 4183203.3,      11.0,      11.0,       0.0);         ( 657458.8,
4183203.3,      11.0,      11.0,       0.0);
     ( 657478.8, 4183203.3,      11.0,      11.0,       0.0);         ( 657498.8,
4183203.3,      11.2,      11.2,       0.0);
     ( 657518.8, 4183203.3,      11.3,      11.3,       0.0);         ( 657538.8,
4183203.3,      11.3,      11.3,       0.0);
     ( 657558.8, 4183203.3,      11.3,      11.3,       0.0);         ( 657578.8,
4183203.3,      11.4,      11.4,       0.0);
     ( 657598.8, 4183203.3,      11.6,      11.6,       0.0);         ( 657618.8,
4183203.3,      11.6,      11.6,       0.0);
     ( 657638.8, 4183203.3,      11.7,      11.7,       0.0);         ( 657658.8,
4183203.3,      11.9,      11.9,       0.0);
     ( 657678.8, 4183203.3,      11.9,      11.9,       0.0);         ( 657698.8,
4183203.3,      11.9,      11.9,       0.0);
     ( 657718.8, 4183203.3,      11.9,      11.9,       0.0);         ( 657738.8,
4183203.3,      11.9,      11.9,       0.0);
     ( 657758.8, 4183203.3,      12.0,      12.0,       0.0);         ( 657778.8,
4183203.3,      12.0,      12.0,       0.0);
     ( 657798.8, 4183203.3,      12.0,      12.0,       0.0);         ( 657818.8,
4183203.3,      12.1,      12.1,       0.0);
     ( 657838.8, 4183203.3,      12.2,      12.2,       0.0);         ( 657858.8,
4183203.3,      12.2,      12.2,       0.0);
     ( 657878.8, 4183203.3,      12.2,      12.2,       0.0);         ( 657898.8,
4183203.3,      12.2,      12.2,       0.0);
     ( 657458.8, 4183223.3,      11.0,      11.0,       0.0);         ( 657478.8,
4183223.3,      11.0,      11.0,       0.0);
     ( 657498.8, 4183223.3,      11.2,      11.2,       0.0);         ( 657518.8,
4183223.3,      11.3,      11.3,       0.0);
     ( 657538.8, 4183223.3,      11.3,      11.3,       0.0);         ( 657558.8,
4183223.3,      11.3,      11.3,       0.0);
     ( 657578.8, 4183223.3,      11.4,      11.4,       0.0);         ( 657598.8,
4183223.3,      11.6,      11.6,       0.0);
     ( 657618.8, 4183223.3,      11.6,      11.6,       0.0);         ( 657638.8,
4183223.3,      11.7,      11.7,       0.0);
     ( 657658.8, 4183223.3,      11.9,      11.9,       0.0);         ( 657678.8,
4183223.3,      11.9,      11.9,       0.0);
```

*** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(657698.8, 4183223.3, 11.9, 11.9, 0.0); (657718.8, 4183223.3, 11.9, 11.9, 0.0);
(657738.8, 4183223.3, 11.9, 11.9, 0.0); (657758.8, 4183223.3, 11.9, 11.9, 0.0);
(657778.8, 4183223.3, 11.9, 11.9, 0.0); (657798.8, 4183223.3, 11.9, 11.9, 0.0);
(657818.8, 4183223.3, 12.0, 12.0, 0.0); (657838.8, 4183223.3, 12.1, 12.1, 0.0);
(657858.8, 4183223.3, 12.2, 12.2, 0.0); (657878.8, 4183223.3, 12.2, 12.2, 0.0);
(657898.8, 4183223.3, 12.2, 12.2, 0.0); (657518.8, 4183243.3, 11.3, 11.3, 0.0);
(657538.8, 4183243.3, 11.3, 11.3, 0.0); (657558.8, 4183243.3, 11.3, 11.3, 0.0);
(657578.8, 4183243.3, 11.4, 11.4, 0.0); (657598.8, 4183243.3, 11.6, 11.6, 0.0);
(657618.8, 4183243.3, 11.6, 11.6, 0.0); (657638.8, 4183243.3, 11.7, 11.7, 0.0);
(657658.8, 4183243.3, 11.9, 11.9, 0.0); (657678.8, 4183243.3, 11.9, 11.9, 0.0);
(657698.8, 4183243.3, 11.9, 11.9, 0.0); (657718.8, 4183243.3, 11.9, 11.9, 0.0);
(657738.8, 4183243.3, 11.9, 11.9, 0.0); (657758.8, 4183243.3, 11.9, 11.9, 0.0);
(657778.8, 4183243.3, 11.9, 11.9, 0.0); (657798.8, 4183243.3, 11.9, 11.9, 0.0);
(657818.8, 4183243.3, 11.9, 11.9, 0.0); (657838.8, 4183243.3, 12.0, 12.0, 0.0);
(657858.8, 4183243.3, 12.2, 12.2, 0.0); (657878.8, 4183243.3, 12.2, 12.2, 0.0);
(657898.8, 4183243.3, 12.2, 12.2, 0.0);

*** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***

(1=YES; 0=NO)

```
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
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NOTE: METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.

*** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***

(METERS/SEC)

1.54, 3.09, 5.14, 8.23, 10.80,

*** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

Surface file: C:\Users\kheck\Meteorological_Data\AERMET v18081_UStar\Stockton_23237\Stockton_2 Met Version: 18081
Profile file: C:\Users\kheck\Meteorological_Data\AERMET v18081_UStar\Stockton_23237\Stockton_2
Surface format: FREE

Profile format: FREE

Surface station no.: 23237 Upper air station no.: 23230
Name: STOCKTON Name: OAKLAND/WSO_AP
Year: 2013 Year: 2013

First 24 hours of scalar data

YR	MO	DY	JDY	HR	H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS	WD	HT	REF TA	HT
13	01	01	1	01	-22.0	0.211	-9.000	-9.000	-999.	232.	48.8	0.07	2.20	1.00	2.78	149.	10.0	273.8	2.0
13	01	01	1	02	-14.6	0.158	-9.000	-9.000	-999.	152.	27.6	0.04	2.20	1.00	2.37	77.	10.0	273.8	2.0
13	01	01	1	03	-18.4	0.181	-9.000	-9.000	-999.	185.	36.0	0.06	2.20	1.00	2.52	97.	10.0	273.1	2.0
13	01	01	1	04	-6.7	0.105	-9.000	-9.000	-999.	84.	16.0	0.04	2.20	1.00	1.63	349.	10.0	272.5	2.0
13	01	01	1	05	-20.1	0.193	-9.000	-9.000	-999.	203.	40.9	0.04	2.20	1.00	2.86	356.	10.0	274.2	2.0
13	01	01	1	06	-3.9	0.081	-9.000	-9.000	-999.	64.	12.6	0.04	2.20	1.00	1.23	77.	10.0	273.8	2.0
13	01	01	1	07	-18.3	0.180	-9.000	-9.000	-999.	184.	35.8	0.06	2.20	1.00	2.52	255.	10.0	273.1	2.0
13	01	01	1	08	-26.9	0.259	-9.000	-9.000	-999.	316.	73.8	0.08	2.20	0.73	3.29	287.	10.0	274.2	2.0
13	01	01	1	09	-1.9	0.212	-9.000	-9.000	-999.	236.	461.6	0.05	2.20	0.39	2.81	315.	10.0	275.9	2.0
13	01	01	1	10	61.1	0.155	0.630	0.005	150.	147.	-5.5	0.04	2.20	0.27	1.60	336.	10.0	277.5	2.0
13	01	01	1	11	110.2	0.238	1.137	0.005	488.	279.	-11.2	0.06	2.20	0.23	2.45	228.	10.0	279.9	2.0
13	01	01	1	12	137.1	0.276	1.492	0.008	886.	347.	-14.0	0.08	2.20	0.22	2.69	286.	10.0	280.4	2.0
13	01	01	1	13	141.1	0.271	1.531	0.007	929.	339.	-12.9	0.05	2.20	0.21	2.88	325.	10.0	282.5	2.0
13	01	01	1	14	121.3	0.232	1.475	0.006	965.	269.	-9.4	0.04	2.20	0.22	2.57	356.	10.0	283.8	2.0
13	01	01	1	15	78.7	0.218	1.287	0.005	988.	244.	-12.0	0.04	2.20	0.26	2.47	357.	10.0	284.2	2.0
13	01	01	1	16	17.6	0.265	0.783	0.005	993.	327.	-96.0	0.03	2.20	0.35	3.59	2.	10.0	284.2	2.0
13	01	01	1	17	-11.2	0.143	-9.000	-9.000	-999.	139.	24.1	0.04	2.20	0.60	2.16	346.	10.0	282.5	2.0
13	01	01	1	18	-8.7	0.125	-9.000	-9.000	-999.	107.	20.6	0.08	2.20	1.00	1.67	273.	10.0	279.2	2.0
13	01	01	1	19	-13.3	0.154	-9.000	-9.000	-999.	145.	26.0	0.06	2.20	1.00	2.15	238.	10.0	278.1	2.0

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 13 01 01   1 20  -10.2  0.134 -9.000 -9.000 -999.  117.     21.4  0.06   2.20
1.00    1.89  230.   10.0  275.9    2.0
 13 01 01   1 21  -12.5  0.148 -9.000 -9.000 -999.  137.     24.2  0.05   2.20
1.00    2.11  300.   10.0  276.4    2.0
 13 01 01   1 22 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.05   2.20
1.00    0.00    0.   10.0  275.9    2.0
 13 01 01   1 23  -24.0  0.230 -9.000 -9.000 -999.  264.     57.9  0.04   2.20
1.00    3.36   80.   10.0  274.2    2.0
 13 01 01   1 24  -16.1  0.169 -9.000 -9.000 -999.  167.     31.3  0.06   2.20
1.00    2.36  100.   10.0  274.2    2.0


 First hour of profile data
 YR MO DY HR HEIGHT F  WDIR    WSPD AMB_TMP sigmaA  sigmaW  sigmaV
 13 01 01 01   10.0 1  149.    2.78   273.8   99.0  -99.00  -99.00

 F indicates top of profile (=1) or below (=0)
 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuintal_Highway120\MantecaQuintal_Highwa ***        09/28/22
 *** AERMET - VERSION  18081 ***   ***
                       ***        09:05:02

                                  PAGE  14
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                   *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   5
YEARS FOR SOURCE GROUP: ALL      ***
                                  INCLUDING SOURCE(S):     PAREA1      ,

                                              *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                           ** CONC OF BENZENE  IN MICROGRAMS/M**3
                    **

       X-COORD (M)   Y-COORD (M)        CONC                       X-COORD (M)
Y-COORD (M)        CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - -
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4182763.28        0.00123
         657578.75    4182763.28        0.00113                      657598.75
4182763.28        0.00105
         657618.75    4182763.28        0.00098                      657638.75
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4182763.28        0.00070
         657738.75    4182763.28        0.00065                      657758.75
```

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657858.75 4182763.28 0.00047 657878.75
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657898.75 4182763.28 0.00043 657538.75
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657598.75 4182823.28 0.00110 657618.75

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4182823.28   0.00088
         657678.75   4182823.28   0.00082   657698.75
4182823.28   0.00076
         657718.75   4182823.28   0.00071   657738.75
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         657758.75   4182823.28   0.00063   657778.75
4182823.28   0.00059
         657798.75   4182823.28   0.00056   657818.75
4182823.28   0.00053
         657838.75   4182823.28   0.00050   657858.75
4182823.28   0.00048
         657878.75   4182823.28   0.00045   657898.75
4182823.28   0.00043
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4182843.28   0.00133
         657578.75   4182843.28   0.00121   657598.75
4182843.28   0.00111

 *** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

                   *** THE ANNUAL AVERAGE CONCENTRATION   VALUES AVERAGED OVER   5
YEARS FOR SOURCE GROUP: ALL   ***
                                  INCLUDING SOURCE(S):   PAREA1   ,

                                            *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                         ** CONC OF BENZENE IN MICROGRAMS/M**3
                    **

       X-COORD (M)   Y-COORD (M)   CONC   X-COORD (M)
Y-COORD (M)   CONC
 -
- -
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         657738.75   4182843.28   0.00067   657758.75
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         657778.75   4182843.28   0.00059   657798.75

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4182863.28 0.00076
657718.75 4182863.28 0.00071 657738.75
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657838.75 4182863.28 0.00050 657858.75
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🡅 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuintal_Highway120\MantecaQuintal_Highwa ***        09/28/22
 *** AERMET - VERSION  18081 ***   ***
                        ***        09:05:02

                                   PAGE  16
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                   *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   5
YEARS FOR SOURCE GROUP: ALL      ***
                                  INCLUDING SOURCE(S):     PAREA1      ,

                                              *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                        ** CONC OF BENZENE  IN MICROGRAMS/M**3
                    **

       X-COORD (M)   Y-COORD (M)        CONC                       X-COORD (M)
Y-COORD (M)        CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
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                  *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   5
YEARS FOR SOURCE GROUP: ALL      ***
                                 INCLUDING SOURCE(S):     PAREA1      ,

                                          *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                       ** CONC OF BENZENE  IN MICROGRAMS/M**3
                    **

       X-COORD (M)   Y-COORD (M)        CONC                      X-COORD (M)
Y-COORD (M)        CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - -
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         657798.75    4183003.28        0.00050                      657818.75
4183003.28        0.00047
         657838.75    4183003.28        0.00045                      657858.75
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4183023.28        0.00257
         657378.75    4183023.28        0.00229                      657398.75
4183023.28        0.00205
         657418.75    4183023.28        0.00185                      657438.75
4183023.28        0.00167
         657458.75    4183023.28        0.00152                      657478.75
4183023.28        0.00139
```



```
                  *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   5
YEARS FOR SOURCE GROUP: ALL      ***
                                 INCLUDING SOURCE(S):     PAREA1      ,

                                          *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                        ** CONC OF BENZENE  IN MICROGRAMS/M**3
                    **

       X-COORD (M)   Y-COORD (M)        CONC                      X-COORD (M)
Y-COORD (M)        CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - -
         657498.75    4183023.28        0.00127                      657518.75
4183023.28        0.00117
         657538.75    4183023.28        0.00108                      657558.75
```

4183023.28 0.00100
657578.75 4183023.28 0.00093 657598.75
4183023.28 0.00086
657618.75 4183023.28 0.00081 657638.75
4183023.28 0.00075
657658.75 4183023.28 0.00071 657678.75
4183023.28 0.00067
657698.75 4183023.28 0.00063 657718.75
4183023.28 0.00059
657738.75 4183023.28 0.00056 657758.75
4183023.28 0.00053
657778.75 4183023.28 0.00050 657798.75
4183023.28 0.00048
657818.75 4183023.28 0.00046 657838.75
4183023.28 0.00043
657858.75 4183023.28 0.00041 657878.75
4183023.28 0.00040
657898.75 4183023.28 0.00038 657178.75
4183043.28 0.00545
657198.75 4183043.28 0.00482 657218.75
4183043.28 0.00424
657238.75 4183043.28 0.00377 657298.75
4183043.28 0.00273
657318.75 4183043.28 0.00248 657338.75
4183043.28 0.00226
657358.75 4183043.28 0.00207 657378.75
4183043.28 0.00189
657398.75 4183043.28 0.00173 657418.75
4183043.28 0.00159
657438.75 4183043.28 0.00146 657458.75
4183043.28 0.00134
657478.75 4183043.28 0.00123 657498.75
4183043.28 0.00114
657518.75 4183043.28 0.00106 657538.75
4183043.28 0.00098
657558.75 4183043.28 0.00091 657578.75
4183043.28 0.00085
657598.75 4183043.28 0.00080 657618.75
4183043.28 0.00075
657638.75 4183043.28 0.00071 657658.75
4183043.28 0.00066
657678.75 4183043.28 0.00063 657698.75
4183043.28 0.00059
657718.75 4183043.28 0.00056 657738.75
4183043.28 0.00053
657758.75 4183043.28 0.00051 657778.75
4183043.28 0.00048
657798.75 4183043.28 0.00046 657818.75
4183043.28 0.00044
657838.75 4183043.28 0.00042 657858.75

4183043.28   0.00040
         657878.75   4183043.28   0.00038   657898.75
4183043.28   0.00037
         657198.75   4183063.28   0.00322   657218.75
4183063.28   0.00295
         657238.75   4183063.28   0.00270   657258.75
4183063.28   0.00247
         657298.75   4183063.28   0.00208   657318.75
4183063.28   0.00192
         657338.75   4183063.28   0.00179   657358.75
4183063.28   0.00166
         657378.75   4183063.28   0.00155   657398.75
4183063.28   0.00145
         657418.75   4183063.28   0.00135   657438.75
4183063.28   0.00126
         657458.75   4183063.28   0.00117   657478.75
4183063.28   0.00109
         657498.75   4183063.28   0.00102   657518.75
4183063.28   0.00095
         657538.75   4183063.28   0.00089   657558.75
4183063.28   0.00083
         657578.75   4183063.28   0.00078   657598.75
4183063.28   0.00074
         657618.75   4183063.28   0.00069   657638.75
4183063.28   0.00066
         657658.75   4183063.28   0.00062   657678.75
4183063.28   0.00059

 *** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

                   *** THE ANNUAL AVERAGE CONCENTRATION   VALUES AVERAGED OVER   5
YEARS FOR SOURCE GROUP: ALL   ***
                                  INCLUDING SOURCE(S):   PAREA1   ,

                                          *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                          ** CONC OF BENZENE IN MICROGRAMS/M**3
                    **

       X-COORD (M)   Y-COORD (M)   CONC   X-COORD (M)
Y-COORD (M)   CONC
 -
- -
         657698.75   4183063.28   0.00056   657718.75

4183063.28 0.00053
657738.75 4183063.28 0.00050 657758.75
4183063.28 0.00048
657778.75 4183063.28 0.00046 657798.75
4183063.28 0.00044
657818.75 4183063.28 0.00042 657838.75
4183063.28 0.00040
657858.75 4183063.28 0.00038 657878.75
4183063.28 0.00037
657898.75 4183063.28 0.00035 657238.75
4183083.28 0.00207
657258.75 4183083.28 0.00192 657278.75
4183083.28 0.00178
657298.75 4183083.28 0.00165 657318.75
4183083.28 0.00154
657338.75 4183083.28 0.00145 657358.75
4183083.28 0.00136
657378.75 4183083.28 0.00128 657398.75
4183083.28 0.00121
657418.75 4183083.28 0.00115 657438.75
4183083.28 0.00108
657458.75 4183083.28 0.00102 657478.75
4183083.28 0.00096
657498.75 4183083.28 0.00091 657518.75
4183083.28 0.00086
657538.75 4183083.28 0.00081 657558.75
4183083.28 0.00076
657578.75 4183083.28 0.00072 657598.75
4183083.28 0.00068
657618.75 4183083.28 0.00064 657638.75
4183083.28 0.00061
657658.75 4183083.28 0.00058 657678.75
4183083.28 0.00055
657698.75 4183083.28 0.00052 657718.75
4183083.28 0.00050
657738.75 4183083.28 0.00047 657758.75
4183083.28 0.00045
657778.75 4183083.28 0.00043 657798.75
4183083.28 0.00041
657818.75 4183083.28 0.00040 657838.75
4183083.28 0.00038
657858.75 4183083.28 0.00037 657878.75
4183083.28 0.00035
657898.75 4183083.28 0.00034 657258.75
4183103.28 0.00155
657278.75 4183103.28 0.00145 657298.75
4183103.28 0.00136
657318.75 4183103.28 0.00128 657338.75
4183103.28 0.00120
657358.75 4183103.28 0.00114 657378.75

4183103.28   0.00108
         657398.75   4183103.28   0.00103   657418.75
4183103.28   0.00098
         657438.75   4183103.28   0.00093   657458.75
4183103.28   0.00089
         657478.75   4183103.28   0.00085   657498.75
4183103.28   0.00081
         657518.75   4183103.28   0.00077   657538.75
4183103.28   0.00073
         657558.75   4183103.28   0.00069   657578.75
4183103.28   0.00066
         657598.75   4183103.28   0.00062   657618.75
4183103.28   0.00059
         657638.75   4183103.28   0.00056   657658.75
4183103.28   0.00054
         657678.75   4183103.28   0.00051   657698.75
4183103.28   0.00049
         657718.75   4183103.28   0.00046   657738.75
4183103.28   0.00044
         657758.75   4183103.28   0.00043   657778.75
4183103.28   0.00041
         657798.75   4183103.28   0.00039   657818.75
4183103.28   0.00038
         657838.75   4183103.28   0.00036   657858.75
4183103.28   0.00035
         657878.75   4183103.28   0.00033   657898.75
4183103.28   0.00032
         657298.75   4183123.28   0.00115   657318.75
4183123.28   0.00108

 *** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

                   *** THE ANNUAL AVERAGE CONCENTRATION   VALUES AVERAGED OVER   5
YEARS FOR SOURCE GROUP: ALL   ***
                                  INCLUDING SOURCE(S):   PAREA1   ,

                                            *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                         ** CONC OF BENZENE IN MICROGRAMS/M**3
                    **

       X-COORD (M)   Y-COORD (M)   CONC   X-COORD (M)
Y-COORD (M)   CONC
 -

- -
657338.75 4183123.28 0.00102 657358.75
4183123.28 0.00097
657378.75 4183123.28 0.00092 657398.75
4183123.28 0.00088
657418.75 4183123.28 0.00084 657438.75
4183123.28 0.00081
657458.75 4183123.28 0.00077 657478.75
4183123.28 0.00074
657498.75 4183123.28 0.00071 657518.75
4183123.28 0.00068
657538.75 4183123.28 0.00066 657558.75
4183123.28 0.00063
657578.75 4183123.28 0.00060 657598.75
4183123.28 0.00057
657618.75 4183123.28 0.00055 657638.75
4183123.28 0.00052
657658.75 4183123.28 0.00050 657678.75
4183123.28 0.00048
657698.75 4183123.28 0.00046 657718.75
4183123.28 0.00044
657738.75 4183123.28 0.00042 657758.75
4183123.28 0.00040
657778.75 4183123.28 0.00038 657798.75
4183123.28 0.00037
657818.75 4183123.28 0.00035 657838.75
4183123.28 0.00034
657858.75 4183123.28 0.00033 657878.75
4183123.28 0.00032
657898.75 4183123.28 0.00031 657318.75
4183143.28 0.00093
657338.75 4183143.28 0.00088 657358.75
4183143.28 0.00084
657378.75 4183143.28 0.00080 657398.75
4183143.28 0.00077
657418.75 4183143.28 0.00074 657438.75
4183143.28 0.00071
657458.75 4183143.28 0.00068 657478.75
4183143.28 0.00065
657498.75 4183143.28 0.00063 657518.75
4183143.28 0.00061
657538.75 4183143.28 0.00059 657558.75
4183143.28 0.00057
657578.75 4183143.28 0.00055 657598.75
4183143.28 0.00052
657618.75 4183143.28 0.00050 657638.75
4183143.28 0.00048
657658.75 4183143.28 0.00046 657678.75
4183143.28 0.00044
657698.75 4183143.28 0.00043 657718.75

4183143.28   0.00041
         657738.75   4183143.28   0.00039   657758.75
4183143.28   0.00038
         657778.75   4183143.28   0.00036   657798.75
4183143.28   0.00035
         657818.75   4183143.28   0.00034   657838.75
4183143.28   0.00032
         657858.75   4183143.28   0.00031   657878.75
4183143.28   0.00030
         657898.75   4183143.28   0.00029   657358.75
4183163.28   0.00074
         657378.75   4183163.28   0.00071   657398.75
4183163.28   0.00068
         657418.75   4183163.28   0.00065   657438.75
4183163.28   0.00063
         657458.75   4183163.28   0.00060   657478.75
4183163.28   0.00058
         657498.75   4183163.28   0.00056   657518.75
4183163.28   0.00054
         657538.75   4183163.28   0.00053   657558.75
4183163.28   0.00051
         657578.75   4183163.28   0.00049   657598.75
4183163.28   0.00048
         657618.75   4183163.28   0.00046   657638.75
4183163.28   0.00045
         657658.75   4183163.28   0.00043   657678.75
4183163.28   0.00041
         657698.75   4183163.28   0.00040   657718.75
4183163.28   0.00038
         657738.75   4183163.28   0.00037   657758.75
4183163.28   0.00036

 *** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

                   *** THE ANNUAL AVERAGE CONCENTRATION   VALUES AVERAGED OVER   5
YEARS FOR SOURCE GROUP: ALL   ***
                                  INCLUDING SOURCE(S):   PAREA1   ,

                                       *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                  ** CONC OF BENZENE IN MICROGRAMS/M**3
                    **

       X-COORD (M)   Y-COORD (M)   CONC   X-COORD (M)

Y-COORD (M)   CONC
 -
- -
657778.75 4183163.28 0.00034 657798.75
4183163.28 0.00033
657818.75 4183163.28 0.00032 657838.75
4183163.28 0.00031
657858.75 4183163.28 0.00030 657878.75
4183163.28 0.00029
657898.75 4183163.28 0.00028 657398.75
4183183.28 0.00060
657418.75 4183183.28 0.00058 657438.75
4183183.28 0.00056
657458.75 4183183.28 0.00054 657478.75
4183183.28 0.00052
657498.75 4183183.28 0.00050 657518.75
4183183.28 0.00049
657538.75 4183183.28 0.00047 657558.75
4183183.28 0.00046
657578.75 4183183.28 0.00045 657598.75
4183183.28 0.00044
657618.75 4183183.28 0.00042 657638.75
4183183.28 0.00041
657658.75 4183183.28 0.00040 657678.75
4183183.28 0.00039
657698.75 4183183.28 0.00037 657718.75
4183183.28 0.00036
657738.75 4183183.28 0.00035 657758.75
4183183.28 0.00034
657778.75 4183183.28 0.00032 657798.75
4183183.28 0.00031
657818.75 4183183.28 0.00030 657838.75
4183183.28 0.00029
657858.75 4183183.28 0.00028 657878.75
4183183.28 0.00027
657898.75 4183183.28 0.00026 657418.75
4183203.28 0.00052
657438.75 4183203.28 0.00051 657458.75
4183203.28 0.00049
657478.75 4183203.28 0.00047 657498.75
4183203.28 0.00046
657518.75 4183203.28 0.00044 657538.75
4183203.28 0.00043
657558.75 4183203.28 0.00042 657578.75
4183203.28 0.00041
657598.75 4183203.28 0.00040 657618.75
4183203.28 0.00039
657638.75 4183203.28 0.00038 657658.75
4183203.28 0.00037
657678.75 4183203.28 0.00036 657698.75

4183203.28   0.00035
         657718.75   4183203.28   0.00034   657738.75
4183203.28   0.00033
         657758.75   4183203.28   0.00032   657778.75
4183203.28   0.00031
         657798.75   4183203.28   0.00030   657818.75
4183203.28   0.00029
         657838.75   4183203.28   0.00028   657858.75
4183203.28   0.00027
         657878.75   4183203.28   0.00026   657898.75
4183203.28   0.00025
         657458.75   4183223.28   0.00045   657478.75
4183223.28   0.00043
         657498.75   4183223.28   0.00042   657518.75
4183223.28   0.00041
         657538.75   4183223.28   0.00039   657558.75
4183223.28   0.00038
         657578.75   4183223.28   0.00037   657598.75
4183223.28   0.00036
         657618.75   4183223.28   0.00035   657638.75
4183223.28   0.00034
         657658.75   4183223.28   0.00034   657678.75
4183223.28   0.00033
         657698.75   4183223.28   0.00032   657718.75
4183223.28   0.00031
         657738.75   4183223.28   0.00031   657758.75
4183223.28   0.00030
         657778.75   4183223.28   0.00029   657798.75
4183223.28   0.00028
         657818.75   4183223.28   0.00027   657838.75
4183223.28   0.00026
         657858.75   4183223.28   0.00026   657878.75
4183223.28   0.00025

 *** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

                   *** THE ANNUAL AVERAGE CONCENTRATION   VALUES AVERAGED OVER   5
YEARS FOR SOURCE GROUP: ALL   ***
                                  INCLUDING SOURCE(S):   PAREA1   ,

                                            *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                          ** CONC OF BENZENE IN MICROGRAMS/M**3
                    **

```
       X-COORD (M)   Y-COORD (M)        CONC                          X-COORD (M)
Y-COORD (M)        CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - -
         657898.75    4183223.28        0.00024                        657518.75
4183243.28        0.00037
         657538.75    4183243.28        0.00036                        657558.75
4183243.28        0.00035
         657578.75    4183243.28        0.00034                        657598.75
4183243.28        0.00033
         657618.75    4183243.28        0.00032                        657638.75
4183243.28        0.00032
         657658.75    4183243.28        0.00031                        657678.75
4183243.28        0.00030
         657698.75    4183243.28        0.00030                        657718.75
4183243.28        0.00029
         657738.75    4183243.28        0.00029                        657758.75
4183243.28        0.00028
         657778.75    4183243.28        0.00027                        657798.75
4183243.28        0.00027
         657818.75    4183243.28        0.00026                        657838.75
4183243.28        0.00025
         657858.75    4183243.28        0.00024                        657878.75
4183243.28        0.00024
         657898.75    4183243.28        0.00023

 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuintal_Highway120\MantecaQuintal_Highwa ***        09/28/22
 *** AERMET - VERSION  18081 ***   ***
                        ***        09:05:02

                                   PAGE  23
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                                *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP:  ALL      ***
                                    INCLUDING SOURCE(S):     PAREA1      ,

                                          *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                          ** CONC OF BENZENE  IN MICROGRAMS/M**3
                  **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD (M)
Y-COORD (M)        CONC     (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - -
        657538.75   4182763.28        0.08496  (17021208)               657558.75
```

4182763.28 0.07570 (17021208)
657578.75 4182763.28 0.06986 (17121906) 657598.75
4182763.28 0.06852 (17121906)
657618.75 4182763.28 0.06565 (17121906) 657638.75
4182763.28 0.06723 (15060806)
657658.75 4182763.28 0.06803 (15060806) 657678.75
4182763.28 0.06798 (15060806)
657698.75 4182763.28 0.06720 (15060806) 657718.75
4182763.28 0.06579 (15060806)
657738.75 4182763.28 0.06389 (15060806) 657758.75
4182763.28 0.06158 (15060806)
657778.75 4182763.28 0.05895 (15060806) 657798.75
4182763.28 0.05610 (15060806)
657818.75 4182763.28 0.05313 (15060806) 657838.75
4182763.28 0.05008 (15060806)
657858.75 4182763.28 0.04701 (15060806) 657878.75
4182763.28 0.04397 (15060806)
657898.75 4182763.28 0.04098 (15060806) 657538.75
4182783.28 0.08017 (17121906)
657558.75 4182783.28 0.07735 (17121906) 657578.75
4182783.28 0.07893 (15060806)
657598.75 4182783.28 0.07983 (15060806) 657618.75
4182783.28 0.07959 (15060806)
657638.75 4182783.28 0.07839 (15060806) 657658.75
4182783.28 0.07638 (15060806)
657678.75 4182783.28 0.07373 (15060806) 657698.75
4182783.28 0.07060 (15060806)
657718.75 4182783.28 0.06712 (15060806) 657738.75
4182783.28 0.06341 (15060806)
657758.75 4182783.28 0.05959 (15060806) 657778.75
4182783.28 0.05572 (15060806)
657798.75 4182783.28 0.05188 (15060806) 657818.75
4182783.28 0.04813 (15060806)
657838.75 4182783.28 0.04450 (15060806) 657858.75
4182783.28 0.04104 (15060806)
657878.75 4182783.28 0.03914 (14012017) 657898.75
4182783.28 0.03856 (14012017)
657538.75 4182803.28 0.09569 (15060806) 657558.75
4182803.28 0.09509 (15060806)
657578.75 4182803.28 0.09317 (15060806) 657598.75
4182803.28 0.09019 (15060806)
657618.75 4182803.28 0.08642 (15060806) 657638.75
4182803.28 0.08206 (15060806)
657658.75 4182803.28 0.07734 (15060806) 657678.75
4182803.28 0.07241 (15060806)
657698.75 4182803.28 0.06741 (15060806) 657718.75
4182803.28 0.06244 (15060806)
657738.75 4182803.28 0.05758 (15060806) 657758.75
4182803.28 0.05290 (15060806)
657778.75 4182803.28 0.04845 (15060806) 657798.75

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 4182803.28        0.04626  (14012017)
       657818.75   4182803.28        0.04528  (14012017)               657838.75
 4182803.28        0.04414  (14012017)
       657858.75   4182803.28        0.04288  (14012017)               657878.75
 4182803.28        0.04153  (14012017)
       657898.75   4182803.28        0.04010  (14012017)               657538.75
 4182823.28        0.10882  (15060806)
       657558.75   4182823.28        0.10322  (15060806)               657578.75
 4182823.28        0.09699  (15060806)
       657598.75   4182823.28        0.09041  (15060806)               657618.75
 4182823.28        0.08368  (15060806)
       657638.75   4182823.28        0.07701  (15060806)               657658.75
 4182823.28        0.07051  (15060806)
       657678.75   4182823.28        0.06427  (15060806)               657698.75
 4182823.28        0.05838  (15060806)
       657718.75   4182823.28        0.05566  (14012017)               657738.75
 4182823.28        0.05400  (14012017)
       657758.75   4182823.28        0.05217  (14012017)               657778.75
 4182823.28        0.05023  (14012017)
       657798.75   4182823.28        0.04822  (14012017)               657818.75
 4182823.28        0.04615  (14012017)
       657838.75   4182823.28        0.04407  (14012017)               657858.75
 4182823.28        0.04199  (14012017)
       657878.75   4182823.28        0.03993  (14012017)               657898.75
 4182823.28        0.03790  (14012017)
       657538.75   4182843.28        0.10749  (15060806)               657558.75
 4182843.28        0.09807  (15060806)
       657578.75   4182843.28        0.08895  (15060806)               657598.75
 4182843.28        0.08028  (15060806)
 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuintal_Highway120\MantecaQuintal_Highwa ***        09/28/22
 *** AERMET - VERSION  18081 ***   ***
                        ***        09:05:02

                                   PAGE  24
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                               *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP:  ALL      ***
                                  INCLUDING SOURCE(S):     PAREA1      ,

                                            *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                         ** CONC OF BENZENE  IN MICROGRAMS/M**3
                  **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD (M)
Y-COORD (M)        CONC     (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
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657618.75	4182843.28	0.07216	(15060806)	657638.75	4182843.28	0.06835	(14012017)
657658.75	4182843.28	0.06556	(14012017)	657678.75	4182843.28	0.06263	(14012017)
657698.75	4182843.28	0.05964	(14012017)	657718.75	4182843.28	0.05661	(14012017)
657738.75	4182843.28	0.05359	(14012017)	657758.75	4182843.28	0.05061	(14012017)
657778.75	4182843.28	0.04771	(14012017)	657798.75	4182843.28	0.04490	(14012017)
657818.75	4182843.28	0.04331	(17122519)	657838.75	4182843.28	0.04197	(17122519)
657858.75	4182843.28	0.04060	(17122519)	657878.75	4182843.28	0.03920	(17122519)
657898.75	4182843.28	0.03780	(17122519)	657418.75	4182863.28	0.17391	(15060806)
657438.75	4182863.28	0.15946	(15060806)	657458.75	4182863.28	0.14480	(15060806)
657478.75	4182863.28	0.13049	(15060806)	657498.75	4182863.28	0.11682	(15060806)
657518.75	4182863.28	0.10403	(15060806)	657538.75	4182863.28	0.09223	(15060806)
657558.75	4182863.28	0.08605	(14012017)	657578.75	4182863.28	0.08128	(14012017)
657598.75	4182863.28	0.07649	(14012017)	657618.75	4182863.28	0.07178	(14012017)
657638.75	4182863.28	0.06718	(14012017)	657658.75	4182863.28	0.06272	(14012017)
657678.75	4182863.28	0.05845	(14012017)	657698.75	4182863.28	0.05575	(17122519)
657718.75	4182863.28	0.05348	(17122519)	657738.75	4182863.28	0.05120	(17122519)
657758.75	4182863.28	0.04894	(17122519)	657778.75	4182863.28	0.04673	(17122519)
657798.75	4182863.28	0.04458	(17122519)	657818.75	4182863.28	0.04249	(17122519)
657838.75	4182863.28	0.04075	(14022104)	657858.75	4182863.28	0.03939	(14022104)
657878.75	4182863.28	0.03806	(14022104)	657898.75	4182863.28	0.03679	(14022104)
657418.75	4182883.28	0.16260	(15060806)	657438.75	4182883.28	0.14198	(15060806)
657458.75	4182883.28	0.12347	(15060806)	657478.75	4182883.28	0.11169	(14012017)
657498.75	4182883.28	0.10322	(14012017)	657518.75	4182883.28	0.09519	(14012017)
657538.75	4182883.28	0.08760	(14012017)	657558.75	4182883.28	0.08049	(14012017)
657578.75	4182883.28	0.07526	(17122519)	657598.75			

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       657618.75   4182883.28        0.06712  (17122519)               657638.75
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       657658.75   4182883.28        0.06059  (14022104)               657678.75
 4182883.28        0.05789  (14022104)
       657698.75   4182883.28        0.05531  (14022104)               657718.75
 4182883.28        0.05286  (14022104)
       657738.75   4182883.28        0.05052  (14022104)               657758.75
 4182883.28        0.04831  (14022104)
       657778.75   4182883.28        0.04687  (17122621)               657798.75
 4182883.28        0.04559  (17122621)
       657818.75   4182883.28        0.04434  (17122621)               657838.75
 4182883.28        0.04312  (17122621)
       657858.75   4182883.28        0.04194  (17122621)               657878.75
 4182883.28        0.04080  (17122621)
       657898.75   4182883.28        0.03969  (17122621)               657418.75
 4182903.28        0.13486  (14012017)
       657438.75   4182903.28        0.12165  (14022104)               657458.75
 4182903.28        0.11312  (14022104)
       657478.75   4182903.28        0.10540  (14022104)               657498.75
 4182903.28        0.09838  (14022104)
       657518.75   4182903.28        0.09231  (17122621)               657538.75
 4182903.28        0.08779  (17122621)
       657558.75   4182903.28        0.08361  (17122621)               657578.75
 4182903.28        0.07972  (17122621)
       657598.75   4182903.28        0.07610  (17122621)               657618.75
 4182903.28        0.07272  (17122621)
       657638.75   4182903.28        0.06955  (17122621)               657658.75
 4182903.28        0.06658  (17122621)
       657678.75   4182903.28        0.06378  (17122621)               657698.75
 4182903.28        0.06117  (17122621)
 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuintal_Highway120\MantecaQuintal_Highwa ***        09/28/22
 *** AERMET - VERSION  18081 ***   ***
                       ***        09:05:02

                                  PAGE  25
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                               *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP:  ALL      ***
                                  INCLUDING SOURCE(S):     PAREA1      ,

                                          *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                        ** CONC OF BENZENE  IN MICROGRAMS/M**3
                  **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD (M)
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Y-COORD (M)	CONC	(YYMMDDHH)			
657718.75	4182903.28	0.05870	(17122621)	657738.75	4182903.28	0.05637	(17122621)
657758.75	4182903.28	0.05417	(17122621)	657778.75	4182903.28	0.05210	(17122621)
657798.75	4182903.28	0.05015	(17122621)	657818.75	4182903.28	0.04831	(17122621)
657838.75	4182903.28	0.04657	(17122621)	657858.75	4182903.28	0.04492	(17122621)
657878.75	4182903.28	0.04336	(17122621)	657898.75	4182903.28	0.04187	(17122621)
657418.75	4182923.28	0.16146	(14092807)	657438.75	4182923.28	0.14789	(14092807)
657458.75	4182923.28	0.13622	(14092807)	657478.75	4182923.28	0.12609	(14092807)
657498.75	4182923.28	0.11720	(14092807)	657518.75	4182923.28	0.10937	(14092807)
657538.75	4182923.28	0.10240	(14092807)	657558.75	4182923.28	0.09617	(14092807)
657578.75	4182923.28	0.09056	(14092807)	657598.75	4182923.28	0.08550	(14092807)
657618.75	4182923.28	0.08091	(14092807)	657638.75	4182923.28	0.07673	(14092807)
657658.75	4182923.28	0.07290	(14092807)	657678.75	4182923.28	0.06939	(14092807)
657698.75	4182923.28	0.06615	(14092807)	657718.75	4182923.28	0.06317	(14092807)
657738.75	4182923.28	0.06040	(14092807)	657758.75	4182923.28	0.05784	(14092807)
657778.75	4182923.28	0.05546	(14092807)	657798.75	4182923.28	0.05325	(14092807)
657818.75	4182923.28	0.05119	(14092807)	657838.75	4182923.28	0.04926	(14092807)
657858.75	4182923.28	0.04745	(14092807)	657878.75	4182923.28	0.04576	(14092807)
657898.75	4182923.28	0.04416	(14092807)	657418.75	4182943.28	0.18243	(14092807)
657438.75	4182943.28	0.16680	(14092807)	657458.75	4182943.28	0.15329	(14092807)
657478.75	4182943.28	0.14153	(14092807)	657498.75	4182943.28	0.13122	(14092807)
657518.75	4182943.28	0.12210	(14092807)	657538.75	4182943.28	0.11402	(14092807)
657558.75	4182943.28	0.10679	(14092807)	657578.75	4182943.28	0.10031	(14092807)
657598.75	4182943.28	0.09447	(14092807)	657618.75	4182943.28	0.08917	(14092807)
657638.75	4182943.28	0.08437	(14092807)	657658.75			

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       657678.75   4182943.28        0.07596  (14092807)               657698.75
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       657718.75   4182943.28        0.06888  (14092807)               657738.75
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       657758.75   4182943.28        0.06286  (14092807)               657778.75
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       657798.75   4182943.28        0.05767  (14092807)               657818.75
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       657838.75   4182943.28        0.05321  (14092807)               657858.75
 4182943.28        0.05119  (14092807)
       657878.75   4182943.28        0.04929  (14092807)               657898.75
 4182943.28        0.04751  (14092807)
       657418.75   4182963.28        0.16604  (15021908)               657438.75
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       657458.75   4182963.28        0.14169  (14092807)               657478.75
 4182963.28        0.13197  (14092807)
       657498.75   4182963.28        0.12331  (14092807)               657518.75
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       657538.75   4182963.28        0.10857  (14092807)               657558.75
 4182963.28        0.10225  (14092807)
       657578.75   4182963.28        0.09652  (14092807)               657598.75
 4182963.28        0.09130  (14092807)
       657618.75   4182963.28        0.08654  (14092807)               657638.75
 4182963.28        0.08217  (14092807)
       657658.75   4182963.28        0.07817  (14092807)               657678.75
 4182963.28        0.07447  (14092807)
       657698.75   4182963.28        0.07105  (14092807)               657718.75
 4182963.28        0.06788  (14092807)
       657738.75   4182963.28        0.06496  (14092807)               657758.75
 4182963.28        0.06223  (14092807)
       657778.75   4182963.28        0.05969  (14092807)               657798.75
 4182963.28        0.05732  (14092807)
 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuintal_Highway120\MantecaQuintal_Highwa ***        09/28/22
 *** AERMET - VERSION  18081 ***   ***
                        ***        09:05:02

                                   PAGE  26
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                               *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP:  ALL      ***
                                  INCLUDING SOURCE(S):     PAREA1      ,

                                          *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                        ** CONC OF BENZENE  IN MICROGRAMS/M**3
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X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
657818.75	4182963.28	0.05511	(14092807)	657838.75	4182963.28	0.05304	(14092807)
657858.75	4182963.28	0.05110	(14092807)	657878.75	4182963.28	0.04928	(14092807)
657898.75	4182963.28	0.04755	(14092807)	657298.75	4182983.28	0.35133	(16091407)
657318.75	4182983.28	0.30811	(16091407)	657338.75	4182983.28	0.26715	(16091407)
657358.75	4182983.28	0.22853	(16091407)	657378.75	4182983.28	0.19299	(16091407)
657398.75	4182983.28	0.17668	(15021908)	657418.75	4182983.28	0.16574	(15021908)
657438.75	4182983.28	0.15513	(15021908)	657458.75	4182983.28	0.14489	(15021908)
657478.75	4182983.28	0.13508	(15021908)	657498.75	4182983.28	0.12575	(15021908)
657518.75	4182983.28	0.11693	(15021908)	657538.75	4182983.28	0.10865	(15021908)
657558.75	4182983.28	0.10092	(15021908)	657578.75	4182983.28	0.09371	(15021908)
657598.75	4182983.28	0.08702	(15021908)	657618.75	4182983.28	0.08084	(15021908)
657638.75	4182983.28	0.07512	(15021908)	657658.75	4182983.28	0.07066	(14022208)
657678.75	4182983.28	0.06807	(14022208)	657698.75	4182983.28	0.06559	(14022208)
657718.75	4182983.28	0.06322	(14022208)	657738.75	4182983.28	0.06098	(14022208)
657758.75	4182983.28	0.05882	(14022208)	657778.75	4182983.28	0.05675	(14022208)
657798.75	4182983.28	0.05480	(14022208)	657818.75	4182983.28	0.05293	(14022208)
657838.75	4182983.28	0.05114	(14022208)	657858.75	4182983.28	0.04945	(14022208)
657878.75	4182983.28	0.04781	(14022208)	657898.75	4182983.28	0.04626	(14022208)
657178.75	4183003.28	0.67009	(13123109)	657298.75	4183003.28	0.35272	(14091107)
657318.75	4183003.28	0.30992	(14091107)	657338.75	4183003.28	0.26312	(14091107)
657358.75	4183003.28	0.23575	(16091407)	657378.75	4183003.28	0.21529	(16091407)
657398.75	4183003.28	0.19344	(16091407)	657418.75	4183003.28	0.17135	(16091407)
657438.75	4183003.28	0.14996	(16091407)	657458.75			

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       657478.75   4183003.28         0.11885  (15021908)                657498.75
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       657518.75   4183003.28         0.11047  (15021908)                657538.75
 4183003.28         0.10590  (15021908)
       657558.75   4183003.28         0.10120  (15021908)                657578.75
 4183003.28         0.09646  (15021908)
       657598.75   4183003.28         0.09175  (15021908)                657618.75
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       657638.75   4183003.28         0.08258  (15021908)                657658.75
 4183003.28         0.07818  (15021908)
       657678.75   4183003.28         0.07397  (15021908)                657698.75
 4183003.28         0.06992  (15021908)
       657718.75   4183003.28         0.06605  (15021908)                657738.75
 4183003.28         0.06239  (15021908)
       657758.75   4183003.28         0.05890  (15021908)                657778.75
 4183003.28         0.05560  (15021908)
       657798.75   4183003.28         0.05251  (15021908)                657818.75
 4183003.28         0.04958  (15021908)
       657838.75   4183003.28         0.04684  (15021908)                657858.75
 4183003.28         0.04475  (13013121)
       657878.75   4183003.28         0.04342  (14022208)                657898.75
 4183003.28         0.04240  (14022208)
       657178.75   4183023.28         0.51035  (17012717)                657198.75
 4183023.28         0.54503  (15120809)
       657298.75   4183023.28         0.27388  (13011603)                657318.75
 4183023.28         0.27269  (14091107)
       657338.75   4183023.28         0.26188  (14091107)                657358.75
 4183023.28         0.24022  (14091107)
       657378.75   4183023.28         0.21178  (14091107)                657398.75
 4183023.28         0.18104  (16091407)
       657418.75   4183023.28         0.17254  (16091407)                657438.75
 4183023.28         0.16136  (16091407)
       657458.75   4183023.28         0.14850  (16091407)                657478.75
 4183023.28         0.13484  (16091407)
 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuintal_Highway120\MantecaQuintal_Highwa ***        09/28/22
 *** AERMET - VERSION  18081 ***   ***
                        ***        09:05:02

                                   PAGE  27
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                                *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP:  ALL      ***
                                    INCLUDING SOURCE(S):     PAREA1      ,

                                              *** DISCRETE CARTESIAN RECEPTOR POINTS
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** CONC OF BENZENE IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
657498.75	4183023.28	0.12106	(16091407)	657518.75	4183023.28	0.10769	(16091407)
657538.75	4183023.28	0.09728	(13032807)	657558.75	4183023.28	0.09093	(13032807)
657578.75	4183023.28	0.08436	(13032807)	657598.75	4183023.28	0.08126	(15021908)
657618.75	4183023.28	0.07939	(15021908)	657638.75	4183023.28	0.07726	(15021908)
657658.75	4183023.28	0.07496	(15021908)	657678.75	4183023.28	0.07251	(15021908)
657698.75	4183023.28	0.06998	(15021908)	657718.75	4183023.28	0.06740	(15021908)
657738.75	4183023.28	0.06479	(15021908)	657758.75	4183023.28	0.06220	(15021908)
657778.75	4183023.28	0.05962	(15021908)	657798.75	4183023.28	0.05711	(15021908)
657818.75	4183023.28	0.05465	(15021908)	657838.75	4183023.28	0.05225	(15021908)
657858.75	4183023.28	0.04992	(15021908)	657878.75	4183023.28	0.04767	(15021908)
657898.75	4183023.28	0.04551	(15021908)	657178.75	4183043.28	0.42253	(17012717)
657198.75	4183043.28	0.40960	(15011909)	657218.75	4183043.28	0.54412	(17022508)
657238.75	4183043.28	0.45050	(15123109)	657298.75	4183043.28	0.28606	(17013020)
657318.75	4183043.28	0.24024	(17013020)	657338.75	4183043.28	0.20611	(17030224)
657358.75	4183043.28	0.20567	(14091107)	657378.75	4183043.28	0.20389	(14091107)
657398.75	4183043.28	0.19262	(14091107)	657418.75	4183043.28	0.17487	(14091107)
657438.75	4183043.28	0.15350	(14091107)	657458.75	4183043.28	0.13783	(16091407)
657478.75	4183043.28	0.13324	(16091407)	657498.75	4183043.28	0.12660	(16091407)
657518.75	4183043.28	0.11853	(16091407)	657538.75	4183043.28	0.10961	(16091407)
657558.75	4183043.28	0.10031	(16091407)	657578.75	4183043.28	0.09100	(16091407)
657598.75	4183043.28	0.08194	(16091407)	657618.75	4183043.28	0.07707	(13032807)
657638.75	4183043.28	0.07299	(13032807)	657658.75			

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       657678.75   4183043.28        0.06415  (13120917)               657698.75
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       657718.75   4183043.28        0.06009  (15021908)               657738.75
 4183043.28        0.05907  (15021908)
       657758.75   4183043.28        0.05791  (15021908)               657778.75
 4183043.28        0.05662  (15021908)
       657798.75   4183043.28        0.05522  (15021908)               657818.75
 4183043.28        0.05374  (15021908)
       657838.75   4183043.28        0.05220  (15021908)               657858.75
 4183043.28        0.05062  (15021908)
       657878.75   4183043.28        0.04902  (15021908)               657898.75
 4183043.28        0.04741  (15021908)
       657198.75   4183063.28        0.33805  (15011909)               657218.75
 4183063.28        0.40374  (14060106)
       657238.75   4183063.28        0.42872  (17022508)               657258.75
 4183063.28        0.36904  (15123109)
       657298.75   4183063.28        0.26817  (17122824)               657318.75
 4183063.28        0.23742  (17122923)
       657338.75   4183063.28        0.21365  (17013020)               657358.75
 4183063.28        0.18008  (17121119)
       657378.75   4183063.28        0.16554  (13122521)               657398.75
 4183063.28        0.16256  (14091107)
       657418.75   4183063.28        0.16424  (14091107)               657438.75
 4183063.28        0.15842  (14091107)
       657458.75   4183063.28        0.14712  (14091107)               657478.75
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       657498.75   4183063.28        0.11824  (14011317)               657518.75
 4183063.28        0.10954  (16091407)
       657538.75   4183063.28        0.10687  (16091407)               657558.75
 4183063.28        0.10269  (16091407)
       657578.75   4183063.28        0.09737  (16091407)               657598.75
 4183063.28        0.09129  (16091407)
       657618.75   4183063.28        0.08479  (16091407)               657638.75
 4183063.28        0.07810  (16091407)
       657658.75   4183063.28        0.07144  (16091407)               657678.75
 4183063.28        0.06543  (13032807)
 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuintal_Highway120\MantecaQuintal_Highwa ***        09/28/22
 *** AERMET - VERSION  18081 ***   ***
                        ***        09:05:02

                                   PAGE  28
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                               *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP:  ALL      ***
                                  INCLUDING SOURCE(S):     PAREA1      ,

                                            *** DISCRETE CARTESIAN RECEPTOR POINTS
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** CONC OF BENZENE IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
657698.75	4183063.28	0.06301	(13032807)	657718.75	4183063.28	0.06024	(13032807)
657738.75	4183063.28	0.05723	(13032807)	657758.75	4183063.28	0.05408	(13032807)
657778.75	4183063.28	0.05128	(13120917)	657798.75	4183063.28	0.04880	(13120917)
657818.75	4183063.28	0.04728	(15021908)	657838.75	4183063.28	0.04683	(15021908)
657858.75	4183063.28	0.04625	(15021908)	657878.75	4183063.28	0.04555	(15021908)
657898.75	4183063.28	0.04476	(15021908)	657238.75	4183083.28	0.38172	(17022508)
657258.75	4183083.28	0.28055	(17012921)	657278.75	4183083.28	0.30636	(15123109)
657298.75	4183083.28	0.25376	(15123109)	657318.75	4183083.28	0.22544	(17122824)
657338.75	4183083.28	0.20572	(17122923)	657358.75	4183083.28	0.18879	(17013020)
657378.75	4183083.28	0.15977	(17013020)	657398.75	4183083.28	0.14653	(17121119)
657418.75	4183083.28	0.13690	(13122521)	657438.75	4183083.28	0.13285	(14091107)
657458.75	4183083.28	0.13575	(14091107)	657478.75	4183083.28	0.13297	(14091107)
657498.75	4183083.28	0.12568	(14091107)	657518.75	4183083.28	0.11532	(14091107)
657538.75	4183083.28	0.10315	(14091107)	657558.75	4183083.28	0.09664	(14011317)
657578.75	4183083.28	0.08983	(16091407)	657598.75	4183083.28	0.08821	(16091407)
657618.75	4183083.28	0.08545	(16091407)	657638.75	4183083.28	0.08182	(16091407)
657658.75	4183083.28	0.07754	(16091407)	657678.75	4183083.28	0.07284	(16091407)
657698.75	4183083.28	0.06790	(16091407)	657718.75	4183083.28	0.06287	(16091407)
657738.75	4183083.28	0.05789	(16091407)	657758.75	4183083.28	0.05441	(13032807)
657778.75	4183083.28	0.05276	(13032807)	657798.75	4183083.28	0.05083	(13032807)
657818.75	4183083.28	0.04869	(13032807)	657838.75			

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 4183083.28        0.04641  (13032807)
       657858.75   4183083.28        0.04403  (13032807)               657878.75
 4183083.28        0.04227  (13120917)
       657898.75   4183083.28        0.04043  (13120917)               657258.75
 4183103.28        0.28627  (17022508)
       657278.75   4183103.28        0.23651  (17011723)               657298.75
 4183103.28        0.25727  (15123109)
       657318.75   4183103.28        0.20529  (15123109)               657338.75
 4183103.28        0.19318  (17122824)
       657358.75   4183103.28        0.17939  (17122923)               657378.75
 4183103.28        0.16612  (17013020)
       657398.75   4183103.28        0.14782  (17013020)               657418.75
 4183103.28        0.13227  (17121119)
       657438.75   4183103.28        0.12100  (17030224)               657458.75
 4183103.28        0.11539  (13122521)
       657478.75   4183103.28        0.11131  (14091107)               657498.75
 4183103.28        0.11456  (14091107)
       657518.75   4183103.28        0.11346  (14091107)               657538.75
 4183103.28        0.10879  (14091107)
       657558.75   4183103.28        0.10142  (14091107)               657578.75
 4183103.28        0.09233  (14091107)
       657598.75   4183103.28        0.08584  (14011317)               657618.75
 4183103.28        0.08067  (14011317)
       657638.75   4183103.28        0.07545  (16091407)               657658.75
 4183103.28        0.07443  (16091407)
       657678.75   4183103.28        0.07256  (16091407)               657698.75
 4183103.28        0.06999  (16091407)
       657718.75   4183103.28        0.06689  (16091407)               657738.75
 4183103.28        0.06342  (16091407)
       657758.75   4183103.28        0.05970  (16091407)               657778.75
 4183103.28        0.05585  (16091407)
       657798.75   4183103.28        0.05197  (16091407)               657818.75
 4183103.28        0.04812  (16091407)
       657838.75   4183103.28        0.04622  (13032807)               657858.75
 4183103.28        0.04505  (13032807)
       657878.75   4183103.28        0.04365  (13032807)               657898.75
 4183103.28        0.04209  (13032807)
       657298.75   4183123.28        0.21621  (15123109)               657318.75
 4183123.28        0.21790  (15123109)
 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuintal_Highway120\MantecaQuintal_Highwa ***        09/28/22
 *** AERMET - VERSION  18081 ***   ***
                       ***        09:05:02

                                  PAGE  29
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                               *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP:  ALL      ***
                                  INCLUDING SOURCE(S):     PAREA1      ,
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*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF BENZENE IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
657338.75	4183123.28	0.16867	(15123109)	657358.75	4183123.28	0.16810	(17122824)
657378.75	4183123.28	0.15751	(17122923)	657398.75	4183123.28	0.14601	(17013020)
657418.75	4183123.28	0.13569	(17013020)	657438.75	4183123.28	0.11655	(17121119)
657458.75	4183123.28	0.11247	(17121119)	657478.75	4183123.28	0.10423	(13122521)
657498.75	4183123.28	0.09868	(13122521)	657518.75	4183123.28	0.09506	(14091107)
657538.75	4183123.28	0.09833	(14091107)	657558.75	4183123.28	0.09821	(14091107)
657578.75	4183123.28	0.09519	(14091107)	657598.75	4183123.28	0.08992	(14091107)
657618.75	4183123.28	0.08308	(14091107)	657638.75	4183123.28	0.07630	(14011317)
657658.75	4183123.28	0.07298	(14011317)	657678.75	4183123.28	0.06852	(14011317)
657698.75	4183123.28	0.06460	(16091407)	657718.75	4183123.28	0.06395	(16091407)
657738.75	4183123.28	0.06263	(16091407)	657758.75	4183123.28	0.06078	(16091407)
657778.75	4183123.28	0.05849	(16091407)	657798.75	4183123.28	0.05587	(16091407)
657818.75	4183123.28	0.05301	(16091407)	657838.75	4183123.28	0.05001	(16091407)
657858.75	4183123.28	0.04693	(16091407)	657878.75	4183123.28	0.04384	(16091407)
657898.75	4183123.28	0.04078	(16091407)	657318.75	4183143.28	0.19621	(15123109)
657338.75	4183143.28	0.18577	(15123109)	657358.75	4183143.28	0.14565	(17120704)
657378.75	4183143.28	0.14815	(17122824)	657398.75	4183143.28	0.13924	(17122923)
657418.75	4183143.28	0.12977	(17122923)	657438.75	4183143.28	0.12390	(17013020)
657458.75	4183143.28	0.10877	(17013020)	657478.75	4183143.28	0.10244	(17121119)
657498.75	4183143.28	0.09581	(17121119)	657518.75			

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 4183143.28         0.09096  (13122521)
       657538.75   4183143.28         0.08585  (17122801)                657558.75
 4183143.28         0.08247  (14091107)
       657578.75   4183143.28         0.08556  (14091107)                657598.75
 4183143.28         0.08601  (14091107)
       657618.75   4183143.28         0.08413  (14091107)                657638.75
 4183143.28         0.08034  (14091107)
       657658.75   4183143.28         0.07512  (14091107)                657678.75
 4183143.28         0.06900  (14091107)
       657698.75   4183143.28         0.06598  (14011317)                657718.75
 4183143.28         0.06294  (14011317)
       657738.75   4183143.28         0.05907  (14011317)                657758.75
 4183143.28         0.05614  (16091407)
       657778.75   4183143.28         0.05573  (16091407)                657798.75
 4183143.28         0.05481  (16091407)
       657818.75   4183143.28         0.05344  (16091407)                657838.75
 4183143.28         0.05171  (16091407)
       657858.75   4183143.28         0.04970  (16091407)                657878.75
 4183143.28         0.04747  (16091407)
       657898.75   4183143.28         0.04509  (16091407)                657358.75
 4183163.28         0.15923  (15123109)
       657378.75   4183163.28         0.12989  (17120704)                657398.75
 4183163.28         0.13192  (17122824)
       657418.75   4183163.28         0.12389  (17122923)                657438.75
 4183163.28         0.11852  (17122923)
       657458.75   4183163.28         0.11271  (17013020)                657478.75
 4183163.28         0.10249  (17013020)
       657498.75   4183163.28         0.09155  (17121119)                657518.75
 4183163.28         0.08969  (17121119)
       657538.75   4183163.28         0.08212  (17030224)                657558.75
 4183163.28         0.08010  (13122521)
       657578.75   4183163.28         0.07569  (17122801)                657598.75
 4183163.28         0.07289  (13121617)
       657618.75   4183163.28         0.07532  (14091107)                657638.75
 4183163.28         0.07610  (14091107)
       657658.75   4183163.28         0.07498  (14091107)                657678.75
 4183163.28         0.07225  (14091107)
       657698.75   4183163.28         0.06829  (14091107)                657718.75
 4183163.28         0.06344  (14091107)
       657738.75   4183163.28         0.05965  (14011317)                657758.75
 4183163.28         0.05768  (14011317)
 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuintal_Highway120\MantecaQuintal_Highwa ***        09/28/22
 *** AERMET - VERSION  18081 ***   ***
                        ***        09:05:02

                                   PAGE  30
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                              *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION
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VALUES FOR SOURCE GROUP: ALL   ***
                                INCLUDING SOURCE(S):   PAREA1   ,

                                          *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                       ** CONC OF BENZENE IN MICROGRAMS/M**3
                  **

      X-COORD (M) Y-COORD (M)   CONC   (YYMMDDHH)   X-COORD (M)
Y-COORD (M)   CONC   (YYMMDDHH)
 -
- -
        657778.75   4183163.28   0.05490 (14011317)   657798.75
 4183163.28   0.05153 (14011317)
        657818.75   4183163.28   0.04942 (16091407)   657838.75
 4183163.28   0.04917 (16091407)
        657858.75   4183163.28   0.04850 (16091407)   657878.75
 4183163.28   0.04748 (16091407)
        657898.75   4183163.28   0.04615 (16091407)   657398.75
 4183183.28   0.11695 (17120704)
        657418.75   4183183.28   0.11855 (17122824)   657438.75
 4183183.28   0.11104 (17122824)
        657458.75   4183183.28   0.10846 (17122923)   657478.75
 4183183.28   0.10236 (17013020)
        657498.75   4183183.28   0.09596 (17013020)   657518.75
 4183183.28   0.08404 (13012304)
        657538.75   4183183.28   0.08239 (17121119)   657558.75
 4183183.28   0.07843 (17121119)
        657578.75   4183183.28   0.07331 (13122521)   657598.75
 4183183.28   0.07103 (13122521)
        657618.75   4183183.28   0.06777 (13121617)   657638.75
 4183183.28   0.06517 (13121617)
        657658.75   4183183.28   0.06694 (14091107)   657678.75
 4183183.28   0.06793 (14091107)
        657698.75   4183183.28   0.06733 (14091107)   657718.75
 4183183.28   0.06539 (14091107)
        657738.75   4183183.28   0.06236 (14091107)   657758.75
 4183183.28   0.05848 (14091107)
        657778.75   4183183.28   0.05406 (14091107)   657798.75
 4183183.28   0.05279 (14011317)
        657818.75   4183183.28   0.05089 (14011317)   657838.75
 4183183.28   0.04839 (14011317)
        657858.75   4183183.28   0.04544 (14011317)   657878.75
 4183183.28   0.04396 (16091407)
        657898.75   4183183.28   0.04382 (16091407)   657418.75
 4183203.28   0.10612 (17120704)
        657438.75   4183203.28   0.10751 (17120704)   657458.75
 4183203.28   0.10154 (17122824)
        657478.75   4183203.28   0.09947 (17122923)   657498.75

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       657518.75   4183203.28        0.08944  (17013020)               657538.75
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 4183203.28        0.06603  (13122521)
       657638.75   4183203.28        0.06343  (13122521)               657658.75
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       657678.75   4183203.28        0.05872  (13121617)               657698.75
 4183203.28        0.06003  (14091107)
       657718.75   4183203.28        0.06110  (14091107)               657738.75
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       657758.75   4183203.28        0.05951  (14091107)               657778.75
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       657798.75   4183203.28        0.05408  (14091107)               657818.75
 4183203.28        0.05046  (14091107)
       657838.75   4183203.28        0.04832  (14011317)               657858.75
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       657878.75   4183203.28        0.04529  (14011317)               657898.75
 4183203.28        0.04302  (14011317)
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       657538.75   4183223.28        0.08312  (17013020)               657558.75
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       657578.75   4183223.28        0.06833  (13012304)               657598.75
 4183223.28        0.06817  (17121119)
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       657658.75   4183223.28        0.05971  (13122521)               657678.75
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       657698.75   4183223.28        0.05550  (13121617)               657718.75
 4183223.28        0.05328  (13121617)
       657738.75   4183223.28        0.05423  (14091107)               657758.75
 4183223.28        0.05534  (14091107)
       657778.75   4183223.28        0.05536  (14091107)               657798.75
 4183223.28        0.05441  (14091107)
       657818.75   4183223.28        0.05261  (14091107)               657838.75
 4183223.28        0.05015  (14091107)
       657858.75   4183223.28        0.04716  (14091107)               657878.75
 4183223.28        0.04424  (14011317)
 *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuintal_Highway120\MantecaQuintal_Highwa ***        09/28/22
 *** AERMET - VERSION  18081 ***   ***
                       ***        09:05:02

                                  PAGE  31
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*
```

*** THE 1ST HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): PAREA1 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF BENZENE IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
657898.75	4183223.28	0.04354	(14011317)	657518.75	4183243.28	0.08427	(17122923)
657538.75	4183243.28	0.07910	(17122923)	657558.75	4183243.28	0.07707	(17013020)
657578.75	4183243.28	0.07255	(17013020)	657598.75	4183243.28	0.06441	(13012304)
657618.75	4183243.28	0.06226	(17121119)	657638.75	4183243.28	0.06195	(17121119)
657658.75	4183243.28	0.05844	(17121119)	657678.75	4183243.28	0.05523	(13122521)
657698.75	4183243.28	0.05425	(13122521)	657718.75	4183243.28	0.05187	(17122801)
657738.75	4183243.28	0.05070	(13121617)	657758.75	4183243.28	0.04862	(13121617)
657778.75	4183243.28	0.04929	(14091107)	657798.75	4183243.28	0.05041	(14091107)
657818.75	4183243.28	0.05062	(14091107)	657838.75	4183243.28	0.04997	(14091107)
657858.75	4183243.28	0.04859	(14091107)	657878.75	4183243.28	0.04661	(14091107)
657898.75	4183243.28	0.04415	(14091107)				

*** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

*** THE SUMMARY OF MAXIMUM ANNUAL RESULTS AVERAGED OVER 5 YEARS ***

** CONC OF BENZENE IN MICROGRAMS/M**3

**

NETWORK
GROUP ID AVERAGE CONC RECEPTOR (XR, YR,
ZELEV, ZHILL, ZFLAG) OF TYPE GRID-ID
- -

ALL 1ST HIGHEST VALUE IS 0.01820 AT (657178.75, 4183003.28,
10.67, 10.67, 0.00) DC
2ND HIGHEST VALUE IS 0.00936 AT (657178.75, 4183023.28,
10.67, 10.67, 0.00) DC
3RD HIGHEST VALUE IS 0.00895 AT (657198.75, 4183023.28,
10.67, 10.67, 0.00) DC
4TH HIGHEST VALUE IS 0.00700 AT (657298.75, 4182983.28,
10.67, 10.67, 0.00) DC
5TH HIGHEST VALUE IS 0.00554 AT (657318.75, 4182983.28,
10.67, 10.67, 0.00) DC
6TH HIGHEST VALUE IS 0.00545 AT (657178.75, 4183043.28,
10.67, 10.67, 0.00) DC
7TH HIGHEST VALUE IS 0.00522 AT (657298.75, 4183003.28,
10.67, 10.67, 0.00) DC
8TH HIGHEST VALUE IS 0.00482 AT (657198.75, 4183043.28,
10.67, 10.67, 0.00) DC
9TH HIGHEST VALUE IS 0.00453 AT (657338.75, 4182983.28,
10.67, 10.67, 0.00) DC
10TH HIGHEST VALUE IS 0.00434 AT (657318.75, 4183003.28,
10.67, 10.67, 0.00) DC

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR

*** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

*** THE SUMMARY OF HIGHEST 1-HR RESULTS ***

** CONC OF BENZENE IN MICROGRAMS/M**3
**

```
                                                               DATE
                                                   NETWORK
GROUP ID                         AVERAGE CONC     (YYMMDDHH)             RECEPTOR
(XR, YR, ZELEV, ZHILL, ZFLAG)    OF TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - -

ALL      HIGH   1ST HIGH VALUE IS       0.67009  ON 13123109: AT (  657178.75,
4183003.28,    10.67,    10.67,    0.00)  DC


 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
↑ *** AERMOD - VERSION 21112  ***   *** C:\Lakes\AERMOD
View\MantecaQuintal_Highway120\MantecaQuintal_Highwa ***        09/28/22
 *** AERMET - VERSION  18081 ***   ***
                        ***        09:05:02

                                   PAGE  34
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

 *** Message Summary : AERMOD Model Execution ***

  --------- Summary of Total Messages --------

 A Total of            0 Fatal Error Message(s)
 A Total of           11 Warning Message(s)
 A Total of          971 Informational Message(s)

 A Total of        43824 Hours Were Processed

 A Total of          442 Calm Hours Identified

 A Total of          529 Missing Hours Identified (  1.21 Percent)


    ******** FATAL ERROR MESSAGES ********
               ***  NONE  ***


    ********   WARNING MESSAGES   ********
 ME W186      64       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used
      0.50
 ME W187      64       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET

 MX W420   34276        METQA: Wind Speed Out-of-Range.   KURDAT =
  16112904
 MX W420   34282        METQA: Wind Speed Out-of-Range.   KURDAT =
```

```
 16112910
MX W420   34288        METQA: Wind Speed Out-of-Range.   KURDAT =
 16112916
MX W420   34294        METQA: Wind Speed Out-of-Range.   KURDAT =
 16112922
MX W420   34300        METQA: Wind Speed Out-of-Range.   KURDAT =
 16113004
MX W420   40768        METQA: Wind Speed Out-of-Range.   KURDAT =
 17082616
MX W420   40792        METQA: Wind Speed Out-of-Range.   KURDAT =
 17082716
MX W420   40798        METQA: Wind Speed Out-of-Range.   KURDAT =
 17082722
MX W420   40804        METQA: Wind Speed Out-of-Range.   KURDAT =
 17082804

   ************************************
   *** AERMOD Finishes Successfully ***
   ************************************
```

RAST Output

HARP2 - HRACalc (dated 21081) 9/28/2022 9:24:26 AM - Output Log

GLCs loaded successfully
Pollutants loaded successfully
****
RISK SCENARIO SETTINGS

Receptor Type: Resident
Scenario: Cancer
Calculation Method: Derived

****
EXPOSURE DURATION PARAMETERS FOR CANCER

Start Age: -0.25
Total Exposure Duration: 70

Exposure Duration Bin Distribution
3rd Trimester Bin: 0.25
0<2 Years Bin: 2
2<9 Years Bin: 0
2<16 Years Bin: 14
16<30 Years Bin: 0
16 to 70 Years Bin: 54

****
PATHWAYS ENABLED

NOTE: Inhalation is always enabled and used for all assessments. The remaining pathways are only used for cancer and noncancer chronic assessments.

Inhalation: True
Soil: False
Dermal: False
Mother's milk: False
Water: False
Fish: False
Homegrown crops: False
Beef: False
Dairy: False
Pig: False
Chicken: False
Egg: False

****
INHALATION

Daily breathing rate: LongTerm24HR

Worker Adjustment Factors

Worker adjustment factors enabled: NO

Fraction at time at home
3rd Trimester to 16 years: ON
16 years to 70 years: ON

****
TIER 2 SETTINGS
Tier2 not used.

****

Calculating cancer risk
Cancer risk saved to: C:\Users\kheck\Desktop\Projects\Manteca Quintel\OnsiteResMantecaQuintalCancerRisk.csv
HRA ran successfully

*HARP - HRACalc v21081 9/28/2022 9:24:26 AM - Cancer Risk - Input File: C:\Users\kheck\Desktop\Projects\Manteca Quintel\OnsiteResMantecaQuintalHRAInput.hra

INDEX	GRP1	GRP2	POLID	POLABBREV	CONC	RISK_SUM	SCENARIO	DETAILS	INH_RISK
1	Residential_onsite		9901	DieselExhPM	0.00967	7.76E-06	70YrCancerDerived_Inh_FAH3to70	*	7.76E-06
2	Residential_Onsite		71432	Benzene	0.0182	1.33E-06	70YrCancerDerived_Inh_FAH3to70	*	1.33E-06

ATTACHMENT C:
Energy Calculations

Manteca Quintel Project—Energy Consumption Summary

Date of Last Revision: March 22, 2024

Summary of Energy Use During Construction	Annual Consumption	
Construction On-Road Vehicle Fuel	452,491	gallons (gasoline, diesel)
Construction Off-Road Equipment Fuel	306,008	gallons (diesel)

Summary of Energy Use During Proposed Operations	Annual Consumption	
Operational On-Road Vehicle Fuel	844,166	gallons (gasoline, diesel)
Operational Natural Gas Consumption	0	kBTU
Operational Electricity Consumption	5,048,019	kilowatt hours

Construction Vehicle Fuel Calculations

Phase Name	Construction Phase	Start Date	End Date	Num Days/ Week	Num Days
Grubbing/Clearing 1	Preconstruction of Utilities	1/1/2025			4.4
Grading/Excavation 1	Preconstruction of Utilities	1/8/2025			17.6
Drainage/Sub-Grade 1	Preconstruction of Utilities	2/2/2025			22
Site Prep A	Phase A	7/1/2025	9/22/2025	5	60
Grading A	Phase A	7/1/2025	9/22/2025	5	60
Utilities A	Phase A	8/1/2025	12/5/2025	5	91
BC A	Phase A	11/15/2025	10/17/2027	5	500
Paving A	Phase A	11/1/2025	11/8/2025	5	5
Site Prep B	Phase B	7/1/2025	10/14/2025	5	76
Grading B	Phase B	7/1/2025	10/14/2025	5	76
Utilities B	Phase B	9/15/2025	2/22/2026	5	115
BC B	Phase B	2/1/2026	7/13/2028	5	639
Paving B	Phase B	1/1/2026	1/9/2026	5	7
Grubbing/Clearing 2	Offsite Improvements	1/1/2027			17.6
Grading/Excavation 2	Offsite Improvements	1/26/2027			70.4
Drainage/Sub-Grade 2	Offsite Improvements	5/4/2027			61.6
Paving 2	Offsite Improvements	7/29/2027			26.4

Construction Trips and VMT

	One-Way Trips per Day			Construction Trip Length in Miles				Trips per Phase			VMT per Phase			Fuel Consumption (gallons)		
Phase Name	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Number of Days per Phase	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trips	Vendor Trips	Hauling Trips	Worker Trips	Vendor Trips	Hauling Trips
Grubbing/Clearing 1	20	0	0	12	0	30	4.4	176	0	0	2,112	0	0	79.50	0.00	0.00
Grading/Excavation 1	20	0	24	12	0	30	17.6	704	0	845	8,448	0	25,344	318.00	0.00	4,156.38
Drainage/Sub-Grade 1	20	0	0	12	0	30	22	880	0	0	10,560	0	0	397.50	0.00	0.00
Site Prep A	18	0	0	11.9	9.1	20	60	2,100	0	0	24,990	0	0	940.67	0.00	0.00
Grading A	20	0	19	11.9	9.1	20	60	2,400	0	2,256	28,560	0	45,120	1,075.05	0.00	7,399.61
Utilities A	20	0	0	11.9	9.1	20	91	3,640	0	0	43,316	0	0	1,630.50	0.00	0.00
BC A	200	22	0	11.9	9.1	20	500	200,000	21,900	0	2,380,000	199,290	0	89,587.68	23,396.56	0.00
Paving A	15	0	0	11.9	9.1	20	5	150	0	0	1,785	0	0	67.19	0.00	0.00
Site Prep B	18	0	0	11.9	9.1	20	76	2,660	0	0	31,654	0	0	1,191.52	0.00	0.00
Grading B	20	0	15	11.9	9.1	20	76	3,040	0	2,250	36,176	0	44,992	1,361.73	0.00	7,378.62
Utilities B	20	0	0	11.9	9.1	20	115	4,600	0	0	54,740	0	0	2,060.52	0.00	0.00
BC B	300	100	0	11.9	9.1	20	639	383,400	127,800	0	4,562,460	1,162,980	0	171,739.59	136,533.32	0.00
Paving B	15	0	0	11.9	9.1	20	7	210	0	0	2,499	0	0	94.07	0.00	0.00
Grubbing/Clearing 2	20	0	0	12	0	30	17.6	352	0	0	4,224	0	0	159.00	0.00	0.00
Grading/Excavation 2	20	0	3	12	0	30	70.4	1,408	0	352	16,896	0	10,560	636.00	0.00	1,731.82
Drainage/Sub-Grade 2	20	0	0	12	0	30	61.6	1,232	0	0	14,784	0	0	556.50	0.00	0.00
Paving 2	0	0	0	12	0	30	26.4	0	0	0	0	0	0	0.00	0.00	0.00
											7,223,204	1,362,270	126,016	271,895	159,930	20,666

Total Project Construction VMT (miles)

8,711,490

Total Project Fuel Consumption (gallons)

452,491

Source: EMFAC2021 (v1.0.2) Emissions Inventory
Region Type: County
Region: San Joaquin
Calendar Year: 2025
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for CVMT and EVMT, trips/day for Trips, kWh/day for Energy Consumption, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

VMT = Vehicle Miles Traveled
FE = Fuel Economy

Given *Calculations*

Region	Calendar Year	Vehicle Category	Model Year	Speed	Fuel	Population	VMT (mi/day)	Fuel Consumption (1000 gallons/day)	FE (mi/gallon)	VMT*FE
San Joaquin	2025	HHDT	Aggregate	Aggregate	Gasoline	1.37229065	54.295178	0.014900233	3.643914722	197.847
San Joaquin	2025	HHDT	Aggregate	Aggregate	Diesel	9206.55856	1240767.4	203.4804018	6.097724208	7565857.2
San Joaquin	2025	LDA	Aggregate	Aggregate	Gasoline	247812.193	10065419	337.3209777	29.83929059	300344953
San Joaquin	2025	LDA	Aggregate	Aggregate	Diesel	620.856318	19917.737	0.458686533	43.42341888	864896.26
San Joaquin	2025	LDT1	Aggregate	Aggregate	Gasoline	20969.6289	704503.53	28.33345049	24.86472752	17517288
San Joaquin	2025	LDT1	Aggregate	Aggregate	Diesel	5.05797749	54.798572	0.002229936	24.57406076	1346.6234
San Joaquin	2025	LDT2	Aggregate	Aggregate	Gasoline	105887.273	4297523.9	175.750706	24.45238507	105084710
San Joaquin	2025	LDT2	Aggregate	Aggregate	Diesel	305.594115	13558.419	0.40134555	33.78240671	458036.01
San Joaquin	2025	LHDT1	Aggregate	Aggregate	Gasoline	9450.48932	335570.02	34.90157426	9.614753065	3226422.9
San Joaquin	2025	LHDT1	Aggregate	Aggregate	Diesel	8447.6843	292201.98	18.38163512	15.89640857	4644962.1
San Joaquin	2025	LHDT2	Aggregate	Aggregate	Gasoline	1129.16871	39496.244	4.600897482	8.584465057	339054.12
San Joaquin	2025	LHDT2	Aggregate	Aggregate	Diesel	3098.91172	112092.23	8.493201579	13.19787668	1479379.4
San Joaquin	2025	MDV	Aggregate	Aggregate	Gasoline	92446.5315	3253692.9	166.8506732	19.50062791	63449055
San Joaquin	2025	MDV	Aggregate	Aggregate	Diesel	1393.09149	51951.977	2.120474723	24.5001634	1272831.9
San Joaquin	2025	MHDT	Aggregate	Aggregate	Gasoline	531.075632	27321.54	5.695995374	4.796622568	131051.12
San Joaquin	2025	MHDT	Aggregate	Aggregate	Diesel	5899.02812	277483.83	31.85478037	8.710900737	2417134.1

Worker

Sum of VMT*FE (Column BI)	**488993117**
Total VMT	**18406622**
Weighted Average Fuel Economy	**26.566152**

Vendor

Sum of VMT*FE (Column BI)	**19804059**
Total VMT	**2324987.5**
Weighted Average Fuel Economy	**8.5179205**

Haul

Sum of VMT*FE (Column BI)	**7566055.1**
Total VMT	**1240821.7**
Weighted Average Fuel Economy	**6.0976168**

Construction Equipment Fuel Calculation

Construction Schedule

Phase Name	Construction Phase	Start Date	End Date	Num Days/ Week	Num Days
Grubbing/Clearing 1	Preconstruction of Utilities	1/1/2025			4.4
Grading/Excavation 1	Preconstruction of Utilities	1/8/2025			17.6
Drainage/Sub-Grade 1	Preconstruction of Utilities	2/2/2025			22
Site Prep A	Phase A	7/1/2025	9/22/2025	5	60
Grading A	Phase A	7/1/2025	9/22/2025	5	60
Utilities A	Phase A	8/1/2025	12/5/2025	5	91
BC A	Phase A	11/15/2025	10/17/2027	5	500
Paving A	Phase A	11/1/2025	11/8/2025	5	5
Site Prep B	Phase B	7/1/2025	10/14/2025	5	76
Grading B	Phase B	7/1/2025	10/14/2025	5	76
Utilities B	Phase B	9/15/2025	2/22/2026	5	115
BC B	Phase B	2/1/2026	7/13/2028	5	639
Paving B	Phase B	1/1/2026	1/9/2026	5	7
Grubbing/Clearing 2	Offsite Improvements	1/1/2027			17.6
Grading/Excavation 2	Offsite Improvements	1/26/2027			70.4
Drainage/Sub-Grade 2	Offsite Improvements	5/4/2027			61.6
Paving 2	Offsite Improvements	7/29/2027			26.4

Construction Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor	Number of Days	HP Hours	HP Bin	Equipment Type + HP	Fuel (gallons/HP-hour)	Diesel Fuel Usage
Grubbing/Clearing 1	Crawler Tractors	1	8	212	0.43	4.4	3,208.83	300	Crawler Tractors 300	0.05068439	162.64
Grubbing/Clearing 1	Excavators	2	8	158	0.38	4.4	4,226.82	175	Excavators 175	0.05046116	213.29
Grading/Excavation 1	Crawler Tractors	1	8	212	0.43	17.6	12,835.33	300	Crawler Tractors 300	0.05068439	650.55
Grading/Excavation 1	Excavators	3	8	158	0.38	17.6	25,360.90	175	Excavators 175	0.05046116	1,279.74
Grading/Excavation 1	Graders	2	8	187	0.41	17.6	21,590.27	300	Graders 300	0.05088487	1,098.62
Grading/Excavation 1	Rollers	2	8	80	0.38	17.6	8,560.64	100	Rollers 100	0.05802827	496.76
Grading/Excavation 1	Rubber Tired Loaders	1	8	203	0.36	17.6	10,289.66	300	Rubber Tired Loaders 300	0.05039888	518.59
Grading/Excavation 1	Scrapers	2	8	367	0.48	17.6	49,606.66	600	Scrapers 600	0.04768168	2,365.33
Grading/Excavation 1	Tractors/Loaders/Backhoes	4	8	97	0.37	17.6	20,213.25	100	Tractors/Loaders/Backhoes 100	0.05648827	1,141.81
Drainage/Sub-Grade 1	Air Compressors	1	8	78	0.48	22	6,589.44	50	Air Compressors 50	0.02756483	181.64
Drainage/Sub-Grade 1	Generator Sets	1	8	84	0.74	22	10,940.16	50	Generator Sets 50	0.04233997	463.21
Drainage/Sub-Grade 1	Graders	1	8	187	0.41	22	13,493.92	300	Graders 300	0.05088487	686.64
Drainage/Sub-Grade 1	Plate Compactors	1	8	8	0.36	22	506.88	15	Plate Compactors 15	0	0.00
Drainage/Sub-Grade 1	Pumps	1	8	84	0.74	22	10,940.16	50	Pumps 50	0.04234350	463.24
Drainage/Sub-Grade 1	Rough Terrain Forklifts	1	8	100	0.40	22	7,040.00	100	Rough Terrain Forklifts 100	0.05787522	407.44
Drainage/Sub-Grade 1	Scrapers	1	8	367	0.48	22	31,004.16	600	Scrapers 600	0.04768168	1,478.33
Drainage/Sub-Grade 1	Tractors/Loaders/Backhoes	3	8	97	0.37	22	18,949.92	100	Tractors/Loaders/Backhoes 100	0.05648827	1,070.45
Site Prep A	Rubber Tired Dozers	3	8	367	0.40	60	211,392.00	600	Rubber Tired Dozers 600	0.04536070	9,588.89
Site Prep A	Tractors/Loaders/Backhoes	4	8	84	0.37	60	59,673.60	100	Tractors/Loaders/Backhoes 100	0.05648827	3,370.86
Grading A	Excavators	2	8	36	0.38	60	13,132.80	50	Excavators 50	0.05609785	736.72
Grading A	Graders	1	8	148	0.41	60	29,126.40	175	Graders 175	0.05382880	1,567.84
Grading A	Rubber Tired Dozers	1	8	367	0.40	60	70,464.00	600	Rubber Tired Dozers 600	0.04536070	3,196.30
Grading A	Tractors/Loaders/Backhoes	2	8	84	0.37	60	29,836.80	100	Tractors/Loaders/Backhoes 100	0.05648827	1,685.43
Grading A	Scrapers	2	8	423	0.48	60	194,918.40	600	Scrapers 600	0.04768168	9,294.04
Utilities A	Excavators	2	8	36	0.38	91	19,918.08	50	Excavators 50	0.05609785	1,117.36
Utilities A	Graders	1	8	148	0.41	91	44,175.04	175	Graders 175	0.05382880	2,377.89
Utilities A	Rubber Tired Dozers	1	8	367	0.40	91	106,870.40	600	Rubber Tired Dozers 600	0.04536070	4,847.72
Utilities A	Scrapers	2	8	423	0.48	91	295,626.24	600	Scrapers 600	0.04768168	14,095.95
Utilities A	Tractors/Loaders/Backhoes	2	8	84	0.37	91	45,252.48	100	Tractors/Loaders/Backhoes 100	0.05648827	2,556.23
BC A	Cranes	1	7	367	0.29	500	372,505.00	600	Cranes 600	0.05152933	19,194.93
BC A	Rough Terrain Forklifts	3	8	82	0.20	500	196,800.00	100	Rough Terrain Forklifts 100	0.05787522	11,389.84
BC A	Generator Sets	1	8	14	0.74	500	41,440.00	15	Generator Sets 15	0	0.00
BC A	Tractors/Loaders/Backhoes	3	7	84	0.37	500	326,340.00	100	Tractors/Loaders/Backhoes 100	0.05648827	18,434.38
BC A	Welders	1	8	46	0.45	500	82,800.00	50	Welders 50	0.02582254	2,138.11
BC A	Air Compressors	1	8	37	0.48	500	71,040.00	50	Air Compressors 50	0.02756483	1,958.21
Paving A	Pavers	2	8	81	0.42	5	2,721.60	100	Pavers 100	0.05653635	153.87
Paving A	Paving Equipment	2	8	89	0.36	5	2,563.20	100	Paving Equipment 100	0.05958651	152.73
Paving A	Rollers	2	8	36	0.38	5	1,094.40	50	Rollers 50	0.05785104	63.31

Site Prep B	Rubber Tired Dozers	3	8	367	0.40	76	267,763.20	600	Rubber Tired Dozers 600	0.04536070	12,145.93
Site Prep B	Tractors/Loaders/Backhoes	4	8	84	0.37	76	75,586.56	100	Tractors/Loaders/Backhoes 100	0.05648827	4,269.75
Grading B	Excavators	2	8	36	0.38	76	16,634.88	50	Excavators 50	0.05609785	933.18
Grading B	Graders	1	8	148	0.41	76	36,893.44	175	Graders 175	0.05382880	1,985.93
Grading B	Rubber Tired Dozers	1	8	367	0.40	76	89,254.40	600	Rubber Tired Dozers 600	0.04536070	4,048.64
Grading B	Tractors/Loaders/Backhoes	2	8	84	0.37	76	37,793.28	100	Tractors/Loaders/Backhoes 100	0.05648827	2,134.88
Grading B	Scrapers	2	8	423	0.48	76	246,896.64	600	Scrapers 600	0.04768168	11,772.45
Utilities B	Excavators	2	8	36	0.38	115	25,171.20	50	Excavators 50	0.05609785	1,412.05
Utilities B	Graders	1	8	148	0.41	115	55,825.60	175	Graders 175	0.05382880	3,005.03
Utilities B	Rubber Tired Dozers	1	8	367	0.40	115	135,056.00	600	Rubber Tired Dozers 600	0.04536070	6,126.23
Utilities B	Scrapers	2	8	423	0.48	115	373,593.60	600	Scrapers 600	0.04768168	17,813.57
Utilities B	Tractors/Loaders/Backhoes	2	8	84	0.37	115	57,187.20	100	Tractors/Loaders/Backhoes 100	0.05648827	3,230.41
BC B	Cranes	1	7	367	0.29	639	476,061.39	600	Cranes 600	0.05152933	24,531.12
BC B	Rough Terrain Forklifts	3	8	82	0.20	639	251,510.40	100	Rough Terrain Forklifts 100	0.05787522	14,556.22
BC B	Generator Sets	1	8	14	0.74	639	52,960.32	15	Generator Sets 15	0	0.00
BC B	Tractors/Loaders/Backhoes	3	7	84	0.37	639	417,062.52	100	Tractors/Loaders/Backhoes 100	0.05648827	23,559.14
BC B	Welders	1	8	46	0.45	639	105,818.40	50	Welders 50	0.02582254	2,732.50
BC B	Air Compressors	1	8	37	0.48	639	90,789.12	50	Air Compressors 50	0.02756483	2,502.59
Paving B	Pavers	2	8	81	0.42	7	3,810.24	100	Pavers 100	0.05653635	215.42
Paving B	Paving Equipment	2	8	89	0.36	7	3,588.48	100	Paving Equipment 100	0.05958651	213.83
Paving B	Rollers	2	8	36	0.38	7	1,532.16	50	Rollers 50	0.05785104	88.64
Grubbing/Clearing 2	Crawler Tractors	1	8	212	0.43	17.6	12,835.33	300	Crawler Tractors 300	0.05068439	650.55
Grubbing/Clearing 2	Excavators	2	8	158	0.38	17.6	16,907.26	175	Excavators 175	0.05046116	853.16
Grubbing/Clearing 2	Signal Boards	3	8	6	0.82	17.6	2,078.21	15	Signal Boards 15	0	0.00
Grading/Excavation 2	Crawler Tractors	1	8	212	0.43	70.4	51,341.31	300	Crawler Tractors 300	0.05068439	2,602.20
Grading/Excavation 2	Excavators	3	8	158	0.38	70.4	101,443.58	175	Excavators 175	0.05046116	5,118.96
Grading/Excavation 2	Graders	2	8	187	0.41	70.4	86,361.09	300	Graders 300	0.05088487	4,394.47
Grading/Excavation 2	Rollers	2	8	80	0.38	70.4	34,242.56	100	Rollers 100	0.05802827	1,987.04
Grading/Excavation 2	Rubber Tired Loaders	1	8	203	0.36	70.4	41,158.66	300	Rubber Tired Loaders 300	0.05039888	2,074.35
Grading/Excavation 2	Scrapers	2	8	367	0.48	70.4	198,426.62	600	Scrapers 600	0.04768168	9,461.31
Grading/Excavation 2	Signal Boards	3	8	6	0.82	70.4	8,312.83	15	Signal Boards 15	0	0.00
Grading/Excavation 2	Tractors/Loaders/Backhoes	4	8	97	0.37	70.4	80,852.99	100	Tractors/Loaders/Backhoes 100	0.05648827	4,567.25
Drainage/Sub-grade 2	Air Compressors	1	8	78	0.48	61.6	18,450.43	50	Air Compressors 50	0.02756483	508.58
Drainage/Sub-grade 2	Generator Sets	1	8	84	0.74	61.6	30,632.45	50	Generator Sets 50	0.04233997	1,296.98
Drainage/Sub-grade 2	Graders	1	8	187	0.41	61.6	37,782.98	300	Graders 300	0.05088487	1,922.58
Drainage/Sub-grade 2	Plate Compactors	1	8	8	0.36	61.6	1,419.26	15	Plate Compactors 15	0	0.00
Drainage/Sub-grade 2	Pumps	1	8	84	0.74	61.6	30,632.45	50	Pumps 50	0.04234350	1,297.09
Drainage/Sub-grade 2	Rough Terrain Forklifts	1	8	100	0.40	61.6	19,712.00	100	Rough Terrain Forklifts 100	0.05787522	1,140.84
Drainage/Sub-grade 2	Scrapers	1	8	367	0.48	61.6	86,811.65	600	Scrapers 600	0.04768168	4,139.32
Drainage/Sub-grade 2	Signal Boards	3	8	6	0.82	61.6	7,273.73	15	Signal Boards 15	0	0.00
Drainage/Sub-grade 2	Tractors/Loaders/Backhoes	3	8	97	0.37	61.6	53,059.78	100	Tractors/Loaders/Backhoes 100	0.05648827	2,997.26
Paving 2	Pavers	1	8	130	0.42	26.4	11,531.52	175	Pavers 175	0.05047509	582.05
Paving 2	Paving Equipment	1	8	132	0.36	26.4	10,036.22	175	Paving Equipment 175	0.05060225	507.86
Paving 2	Rollers	2	8	80	0.38	26.4	12,840.96	100	Rollers 100	0.05802827	745.14
Paving 2	Signal Boards	3	8	6	0.82	26.4	3,117.31	15	Signal Boards 15	0	0.00
Paving 2	Tractors/Loaders/Backhoes	3	8	97	0.37	26.4	22,739.90	100	Tractors/Loaders/Backhoes 100	0.05648827	1,284.54

TOTAL **306,007.89**

Model Output: OFFROAD2021 (v1.0.5) Emissions Inventory
Region Type: County
Region: San Joaquin
Calendar Year: 2025
Scenario: All Adopted Rules - Exhaust
Vehicle Classification: OFFROAD2021 Equipment Types
Units: tons/day for Emissions, gallons/year for Fuel, hours/year for Activity, Horsepower-hours/year fo

Region	CalYr	Vehicle Class + HP Bin	Model Year	Fuel
San Joaquin	2025	Bore/Drill Rigs 100	Aggregate	Diesel
San Joaquin	2025	Bore/Drill Rigs 175	Aggregate	Diesel
San Joaquin	2025	Bore/Drill Rigs 300	Aggregate	Diesel
San Joaquin	2025	Bore/Drill Rigs 50	Aggregate	Diesel
San Joaquin	2025	Bore/Drill Rigs 600	Aggregate	Diesel
San Joaquin	2025	Bore/Drill Rigs 75	Aggregate	Diesel
San Joaquin	2025	Bore/Drill Rigs 750	Aggregate	Diesel
San Joaquin	2025	Cranes 100	Aggregate	Diesel
San Joaquin	2025	Cranes 175	Aggregate	Diesel
San Joaquin	2025	Cranes 25	Aggregate	Diesel
San Joaquin	2025	Cranes 300	Aggregate	Diesel
San Joaquin	2025	Cranes 50	Aggregate	Diesel
San Joaquin	2025	Cranes 600	Aggregate	Diesel
San Joaquin	2025	Cranes 75	Aggregate	Diesel
San Joaquin	2025	Cranes 750	Aggregate	Diesel
San Joaquin	2025	Crawler Tractors 100	Aggregate	Diesel
San Joaquin	2025	Crawler Tractors 175	Aggregate	Diesel
San Joaquin	2025	Crawler Tractors 300	Aggregate	Diesel
San Joaquin	2025	Crawler Tractors 50	Aggregate	Diesel
San Joaquin	2025	Crawler Tractors 600	Aggregate	Diesel
San Joaquin	2025	Crawler Tractors 75	Aggregate	Diesel
San Joaquin	2025	Crawler Tractors 750	Aggregate	Diesel
San Joaquin	2025	Excavators 100	Aggregate	Diesel
San Joaquin	2025	Excavators 175	Aggregate	Diesel
San Joaquin	2025	Excavators 25	Aggregate	Diesel
San Joaquin	2025	Excavators 300	Aggregate	Diesel
San Joaquin	2025	Excavators 50	Aggregate	Diesel
San Joaquin	2025	Excavators 600	Aggregate	Diesel
San Joaquin	2025	Excavators 75	Aggregate	Diesel
San Joaquin	2025	Excavators 750	Aggregate	Diesel
San Joaquin	2025	Graders 100	Aggregate	Diesel
San Joaquin	2025	Graders 175	Aggregate	Diesel
San Joaquin	2025	Graders 300	Aggregate	Diesel
San Joaquin	2025	Graders 50	Aggregate	Diesel
San Joaquin	2025	Graders 600	Aggregate	Diesel
San Joaquin	2025	Graders 75	Aggregate	Diesel

San Joaquin	2025	Graders 750	Aggregate	Diesel
San Joaquin	2025	Bore/Drill Rigs 15	Aggregate	Diesel
San Joaquin	2025	Bore/Drill Rigs 25	Aggregate	Diesel
San Joaquin	2025	Cement And Mortar Mixers 15	Aggregate	Diesel
San Joaquin	2025	Cement And Mortar Mixers 25	Aggregate	Diesel
San Joaquin	2025	Concrete/Industrial Saws 25	Aggregate	Diesel
San Joaquin	2025	Concrete/Industrial Saws 50	Aggregate	Diesel
San Joaquin	2025	Dumpers/Tenders 25	Aggregate	Diesel
San Joaquin	2025	Other 15	Aggregate	Diesel
San Joaquin	2025	Other 25	Aggregate	Diesel
San Joaquin	2025	Plate Compactors 15	Aggregate	Diesel
San Joaquin	2025	Signal Boards 15	Aggregate	Diesel
San Joaquin	2025	Signal Boards 50	Aggregate	Diesel
San Joaquin	2025	Off-Highway Tractors 100	Aggregate	Diesel
San Joaquin	2025	Off-Highway Tractors 175	Aggregate	Diesel
San Joaquin	2025	Off-Highway Tractors 300	Aggregate	Diesel
San Joaquin	2025	Off-Highway Tractors 50	Aggregate	Diesel
San Joaquin	2025	Off-Highway Tractors 600	Aggregate	Diesel
San Joaquin	2025	Off-Highway Tractors 75	Aggregate	Diesel
San Joaquin	2025	Off-Highway Tractors 750	Aggregate	Diesel
San Joaquin	2025	Off-Highway Trucks 100	Aggregate	Diesel
San Joaquin	2025	Off-Highway Trucks 175	Aggregate	Diesel
San Joaquin	2025	Off-Highway Trucks 300	Aggregate	Diesel
San Joaquin	2025	Off-Highway Trucks 50	Aggregate	Diesel
San Joaquin	2025	Off-Highway Trucks 600	Aggregate	Diesel
San Joaquin	2025	Off-Highway Trucks 75	Aggregate	Diesel
San Joaquin	2025	Off-Highway Trucks 750	Aggregate	Diesel
San Joaquin	2025	Pavers 100	Aggregate	Diesel
San Joaquin	2025	Pavers 175	Aggregate	Diesel
San Joaquin	2025	Pavers 300	Aggregate	Diesel
San Joaquin	2025	Pavers 50	Aggregate	Diesel
San Joaquin	2025	Pavers 600	Aggregate	Diesel
San Joaquin	2025	Pavers 75	Aggregate	Diesel
San Joaquin	2025	Pavers 750	Aggregate	Diesel
San Joaquin	2025	Paving Equipment 100	Aggregate	Diesel
San Joaquin	2025	Paving Equipment 175	Aggregate	Diesel
San Joaquin	2025	Paving Equipment 300	Aggregate	Diesel
San Joaquin	2025	Paving Equipment 50	Aggregate	Diesel
San Joaquin	2025	Paving Equipment 600	Aggregate	Diesel
San Joaquin	2025	Paving Equipment 75	Aggregate	Diesel
San Joaquin	2025	Paving Equipment 750	Aggregate	Diesel
San Joaquin	2025	Rollers 100	Aggregate	Diesel
San Joaquin	2025	Rollers 175	Aggregate	Diesel
San Joaquin	2025	Rollers 300	Aggregate	Diesel
San Joaquin	2025	Rollers 50	Aggregate	Diesel
San Joaquin	2025	Rollers 600	Aggregate	Diesel
San Joaquin	2025	Rollers 75	Aggregate	Diesel

San Joaquin	2025	Rollers 750	Aggregate	Diesel
San Joaquin	2025	Rough Terrain Forklifts 100	Aggregate	Diesel
San Joaquin	2025	Rough Terrain Forklifts 175	Aggregate	Diesel
San Joaquin	2025	Rough Terrain Forklifts 300	Aggregate	Diesel
San Joaquin	2025	Rough Terrain Forklifts 50	Aggregate	Diesel
San Joaquin	2025	Rough Terrain Forklifts 600	Aggregate	Diesel
San Joaquin	2025	Rough Terrain Forklifts 75	Aggregate	Diesel
San Joaquin	2025	Rough Terrain Forklifts 750	Aggregate	Diesel
San Joaquin	2025	Rubber Tired Dozers 100	Aggregate	Diesel
San Joaquin	2025	Rubber Tired Dozers 175	Aggregate	Diesel
San Joaquin	2025	Rubber Tired Dozers 300	Aggregate	Diesel
San Joaquin	2025	Rubber Tired Dozers 50	Aggregate	Diesel
San Joaquin	2025	Rubber Tired Dozers 600	Aggregate	Diesel
San Joaquin	2025	Rubber Tired Dozers 75	Aggregate	Diesel
San Joaquin	2025	Rubber Tired Dozers 750	Aggregate	Diesel
San Joaquin	2025	Rubber Tired Loaders 100	Aggregate	Diesel
San Joaquin	2025	Rubber Tired Loaders 175	Aggregate	Diesel
San Joaquin	2025	Rubber Tired Loaders 300	Aggregate	Diesel
San Joaquin	2025	Rubber Tired Loaders 50	Aggregate	Diesel
San Joaquin	2025	Rubber Tired Loaders 600	Aggregate	Diesel
San Joaquin	2025	Rubber Tired Loaders 75	Aggregate	Diesel
San Joaquin	2025	Rubber Tired Loaders 750	Aggregate	Diesel
San Joaquin	2025	Scrapers 100	Aggregate	Diesel
San Joaquin	2025	Scrapers 175	Aggregate	Diesel
San Joaquin	2025	Scrapers 300	Aggregate	Diesel
San Joaquin	2025	Scrapers 50	Aggregate	Diesel
San Joaquin	2025	Scrapers 600	Aggregate	Diesel
San Joaquin	2025	Scrapers 75	Aggregate	Diesel
San Joaquin	2025	Scrapers 750	Aggregate	Diesel
San Joaquin	2025	Skid Steer Loaders 100	Aggregate	Diesel
San Joaquin	2025	Skid Steer Loaders 175	Aggregate	Diesel
San Joaquin	2025	Skid Steer Loaders 300	Aggregate	Diesel
San Joaquin	2025	Skid Steer Loaders 50	Aggregate	Diesel
San Joaquin	2025	Skid Steer Loaders 600	Aggregate	Diesel
San Joaquin	2025	Skid Steer Loaders 75	Aggregate	Diesel
San Joaquin	2025	Skid Steer Loaders 750	Aggregate	Diesel
San Joaquin	2025	Surfacing Equipment 100	Aggregate	Diesel
San Joaquin	2025	Surfacing Equipment 175	Aggregate	Diesel
San Joaquin	2025	Surfacing Equipment 300	Aggregate	Diesel
San Joaquin	2025	Surfacing Equipment 50	Aggregate	Diesel
San Joaquin	2025	Surfacing Equipment 600	Aggregate	Diesel
San Joaquin	2025	Surfacing Equipment 75	Aggregate	Diesel
San Joaquin	2025	Surfacing Equipment 750	Aggregate	Diesel
San Joaquin	2025	Tractors/Loaders/Backhoes 100	Aggregate	Diesel
San Joaquin	2025	Tractors/Loaders/Backhoes 175	Aggregate	Diesel
San Joaquin	2025	Tractors/Loaders/Backhoes 25	Aggregate	Diesel
San Joaquin	2025	Tractors/Loaders/Backhoes 300	Aggregate	Diesel

San Joaquin	2025	Tractors/Loaders/Backhoes 50	Aggregate	Diesel
San Joaquin	2025	Tractors/Loaders/Backhoes 600	Aggregate	Diesel
San Joaquin	2025	Tractors/Loaders/Backhoes 75	Aggregate	Diesel
San Joaquin	2025	Tractors/Loaders/Backhoes 750	Aggregate	Diesel
San Joaquin	2025	Trenchers 100	Aggregate	Diesel
San Joaquin	2025	Trenchers 175	Aggregate	Diesel
San Joaquin	2025	Trenchers 300	Aggregate	Diesel
San Joaquin	2025	Trenchers 50	Aggregate	Diesel
San Joaquin	2025	Trenchers 600	Aggregate	Diesel
San Joaquin	2025	Trenchers 75	Aggregate	Diesel
San Joaquin	2025	Trenchers 750	Aggregate	Diesel
San Joaquin	2025	Air Compressors 15	Aggregate	Diesel
San Joaquin	2025	Air Compressors 25	Aggregate	Diesel
San Joaquin	2025	Air Compressors 50	Aggregate	Diesel
San Joaquin	2025	Generator Sets 15	Aggregate	Diesel
San Joaquin	2025	Generator Sets 25	Aggregate	Diesel
San Joaquin	2025	Generator Sets 50	Aggregate	Diesel
San Joaquin	2025	Pumps 15	Aggregate	Diesel
San Joaquin	2025	Pumps 25	Aggregate	Diesel
San Joaquin	2025	Pumps 50	Aggregate	Diesel
San Joaquin	2025	Welders 50	Aggregate	Diesel

or Horsepower-hours

Fuel Consumption (gallons/year)	Horsepower Hours (HP-hours/year)	Fuel (gallons/HP-hour)
5908.937744	105088.6192	0.056228141
42426.18609	844115.2041	0.050261132
50456.21305	1004872.9	0.050211537
2002.251843	35703.19593	0.056080465
72574.23933	1456807.622	0.049817312
7728.902201	137197.1374	0.056334282
30153.60553	597752.965	0.050444928
2739.301148	33547.72931	0.081653847
20520.57136	347960.9523	0.058973776
5.510228581	98.25575707	0.056080465
66388.99189	1248004.909	0.053196098
233.0469635	2731.40883	0.085321158
92514.32385	1795372.238	0.051529327
905.7713629	11541.66258	0.078478413
14426.37616	285982.6867	0.050444928
30724.26568	527378.1175	0.058258514
111016.3259	2187033.493	0.050761146
137434.197	2711568.293	0.050684394
1169.71653	18344.93025	0.063762386
240942.7153	4856792.22	0.049609434
7976.183422	133000.1851	0.05997122
15292.9152	326540.7774	0.046833095
76445.78564	1356959.93	0.056336067
431349.884	8548156.356	0.05046116
3.298135895	58.81077971	0.056080465
461504.6779	9151667.795	0.050428478
123841.4499	2207596.911	0.056097854
532792.7062	10590124.51	0.050310334
98317.97582	1748975.009	0.056214626
15620.55557	312503.6284	0.049985197
3164.131481	52466.34058	0.060307836
50565.9363	939384.3625	0.053828804
167003.9124	3281995.33	0.050884872
388.1435384	6433.252195	0.060333953
40377.25761	800981.7875	0.050409707
1485.700656	20239.16795	0.0734072

1538.650118	30501.58196	0.050444928
1.787601616	0	0
8.278605914	0	0
12.33253065	0	0
2.407616072	0	0
1.651493039	0	0
573.05	13610.85	0.04210244
1.188445773	0	0
27.16907883	0	0
4.440443007	0	0
10.60795725	0	0
165.8171637	0	0
248.2	5402	0.045945946
17443.86809	310341.4262	0.056208635
94823.0694	1882670.51	0.050366258
42526.28065	848528.1516	0.050117702
20856.56941	362950.1148	0.057464011
112199.1962	2270453.136	0.049417094
18279.54043	314524.5783	0.058118003
9169.040326	182252.7405	0.050309478
473.7723534	8448.081703	0.056080465
24430.38382	484614.1657	0.05041203
57204.40001	1138761.097	0.05023389
892.4911414	15914.4746	0.056080465
420760.7801	8390574.992	0.050146835
997.8173218	16596.03107	0.060123852
51930.89375	1196131.075	0.043415722
10631.59785	188048.876	0.056536354
35767.74675	708621.6894	0.050475095
43431.90842	860894.5067	0.050449745
1931.677742	33942.3516	0.056910545
7691.92267	153740.5032	0.050031856
9834.747044	173079.6704	0.056822081
316.3451747	6271.099686	0.050444928
6047.921499	101498.1582	0.059586515
39709.72857	784742.3491	0.05060225
17886.66851	353589.5257	0.050585968
4987.71856	87566.30243	0.056959337
42393.28586	844565.7414	0.050195365
3623.921264	64620.02838	0.056080465
9201.409855	182405.0533	0.050444928
29865.40841	514670.0036	0.058028267
171691.5365	3393959.897	0.050587379
14776.88803	286864.6083	0.051511715
48201.61325	833202.1325	0.057851044
11953.42353	242816.4413	0.04922823
19160.04707	339334.8214	0.056463545

288.918042	5727.395223	0.050444928
42727.01385	738260.9183	0.057875221
274658.3385	5441173.643	0.050477775
2345.077962	45713.97441	0.05129893
1536.40088	27396.36467	0.056080465
668.2336009	13221.09792	0.050542973
61037.32405	1082266.592	0.056397679
218.8054574	4335.977591	0.050462774
2085.785927	35295.19485	0.059095464
6491.423774	128388.8722	0.050560642
8126.193096	160945.9224	0.050490208
453.6655396	4920.946833	0.092190701
43013.78	948261.0022	0.045360697
997.5925252	15864.38359	0.062882527
1511.500265	31725.38671	0.047643242
37033.99321	645462.2645	0.057375923
280874.6576	5557601.396	0.050538827
527913.9319	10474715.47	0.05039888
2931.488791	49514.02591	0.05920522
407183.1688	8137515.922	0.050037772
22683.0101	392996.0497	0.057718163
10292.83997	268051.7776	0.038398701
1116.757451	17653.29519	0.063260566
9031.705533	175122.3353	0.051573693
132064.9114	2520018.76	0.052406321
128.9201416	1102.045978	0.116982544
465145.1782	9755218.79	0.047681676
919.8163406	14757.31841	0.062329504
75772.72685	1743009.241	0.043472361
169428.8992	3017187.474	0.056154581
49778.65516	985575.2395	0.05050721
4072.027657	80722.24077	0.050444928
46943.15402	819226.9429	0.05730177
2828.538923	56071.81955	0.050444928
333687.8846	5934936.747	0.056224337
272.1440978	5394.875291	0.050444928
1224.242895	17842.30383	0.06861462
4525.397233	89221.93935	0.050720678
5297.395757	103553.2112	0.051156267
537.8853693	8222.637673	0.065415186
30384.44913	603866.3509	0.050316513
918.2727916	14490.5951	0.063370261
12790.52191	253554.1692	0.050444928
514455.1584	9107291.241	0.056488273
545120.0866	10769605.16	0.050616534
11.12508509	198.3771892	0.056080465
230922.5348	4572983.88	0.050497124

48417.60181	819240.3068	0.05910061
175965.9289	3502175.494	0.050244749
219939.3868	3843415.803	0.057224979
8093.416468	163099.924	0.049622442
5758.432051	100877.6769	0.057083313
9400.446123	184723.1748	0.050889371
5648.72498	111583.1465	0.05062346
14858.74949	260642.056	0.057008258
9169.895546	185302.5409	0.049486076
4775.429768	81233.4269	0.058786511
345.6882378	8603.434307	0.040180261
271.3353454	0	0
1082.87491	0	0
11037.6	400423.25	0.027564833
15809.79134	0	0
19922.66747	0	0
30441	718966.05	0.042339969
10301.62784	0	0
8053.38935	0	0
17830.25	421085.9	0.042343498
50687.55	1962918.9	0.025822539

Operational Fuel Calculation—Project-Generated Operational Trips

Source: CalEEMod Output

Land Use Type	VMT/Year
Phase A - Condo/Townhouse	1,494,161
Phase A - Enclosed Parking Structure	-
Phase A - Single Family Housing	3,050,580
Phase B - Apartments Mid-Rise	14,173,268
Phase B - Enclosed Parking	-
Phase B - Parking Lot	-
Phase B - Unenclosed Parking	-
Total	**18,718,009**

Fleet Mix

					Light-Heavy to Heavy-Heavy					Other		
LDA	**LDT1**	**LDT2**	**MDV**	**LHD1**	**LHD2**	**MHD**	**HHD**	**MCY**	**OBUS**	**UBUS**	**SBUS**	**MH**
0.480205914	0.031900898	0.22084314	0.151929297	0.11				0.002973159	0.002443958			

1.000

Fleet mix based on the EMFAC VMT data above

Vehicle Type	Fraction of 1	Annual VMT	Average Fuel Economy (miles/gallon)	Total Annual Fuel Consumption (gallons)
Passenger Cars (LDA)	0.4802	8,988,499	31.55	284,915
Light Trucks and Medium Vehicles (LDT1, LDT2, and MDV)	0.4047	7,574,679	24.14	313,763
Light-Heavy to Heavy-Heavy Diesel Trucks	0.1097	2,053,434	8.63	237,819
Motorcycles	0.0030	55,652	40.72	1,367
Other	0.0024	45,746	7.26	6,301
Total	1.0000	18,718,009		**844,166**

Operational Fuel Calculation—Project-Generated Operational Trips

Source: EMFAC2021 (v1.0.2) Emissions Inventory
Region Type: County
Region: San Joaquin
Calendar Year: 2028
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for CVMT and EVMT, trips/day for Trips, kWh/day for Energy Consumption, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

VMT = Vehicle Miles Traveled
FE = Fuel Economy

			Given						*Calculations*	
Region	Calendar Year	Vehicle Class	Model Year	Speed	Fuel	Population	VMT	Fuel Consumption	FE	VMT*FE
San Joaquin	2028	LDA	Aggregate	Aggregate	Gasoline	251648.0756	10160923.28	322.2820081	31.52805004	320354097.6
San Joaquin	2028	LDA	Aggregate	Aggregate	Diesel	476.6687725	15258.03162	0.340487129	44.8123595	683748.3982
									Sum of VMT*FE	**321037846**
									Total VMT	**10176181.31**
									Weighted Average Fuel Economy	**31.54796836**
San Joaquin	2028	LDT1	Aggregate	Aggregate	Gasoline	19853.11201	676003.0721	25.74141902	26.26129785	17752718.03
San Joaquin	2028	LDT1	Aggregate	Aggregate	Diesel	1.514132086	18.01588449	0.00068461	26.3155608	474.0981036
San Joaquin	2028	LDT2	Aggregate	Aggregate	Gasoline	115346.5637	4664145.407	178.7797124	26.0887846	121681884.8
San Joaquin	2028	LDT2	Aggregate	Aggregate	Diesel	365.4008573	15804.92743	0.444389463	35.56548644	562109.9323
San Joaquin	2028	MDV	Aggregate	Aggregate	Gasoline	90241.20671	3172076.247	152.8689427	20.75029886	65821530.13
San Joaquin	2028	MDV	Aggregate	Aggregate	Diesel	1343.990793	47501.07779	1.869609896	25.40694607	1206857.321
									Sum of VMT*FE	**207025574.4**
									Total VMT	**8575548.747**
									Weighted Average Fuel Economy	**24.14137922**
San Joaquin	2028	LHDT1	Aggregate	Aggregate	Gasoline	8967.418734	320263.476	31.82571277	10.06304174	3222824.726
San Joaquin	2028	LHDT1	Aggregate	Aggregate	Diesel	7749.679194	261137.0731	16.31989837	16.00114579	4178492.376
San Joaquin	2028	LHDT2	Aggregate	Aggregate	Gasoline	1060.430108	36804.35456	4.128261301	8.915219236	328118.8898
San Joaquin	2028	LHDT2	Aggregate	Aggregate	Diesel	3004.917923	104795.3214	7.815673005	13.40835541	1405132.915
San Joaquin	2028	MHDT	Aggregate	Aggregate	Gasoline	498.3566684	26843.99395	5.403565597	4.967829755	133356.3919
San Joaquin	2028	MHDT	Aggregate	Aggregate	Diesel	6213.29246	282031.2097	31.75969044	8.880162426	2504482.951
San Joaquin	2028	HHDT	Aggregate	Aggregate	Gasoline	0.458753371	55.08382365	0.012542307	4.391841318	241.9194127
San Joaquin	2028	HHDT	Aggregate	Aggregate	Diesel	9927.221318	1292830.674	201.3668556	6.420275422	8300329
									Sum of VMT*FE	**20072979.17**
									Total VMT	**2324761.186**
									Weighted Average Fuel Economy	**8.634426317**
San Joaquin	2028	MCY	Aggregate	Aggregate	Gasoline	11864.94521	63005.06134	1.547365458	40.71763462	2565417.067
									Weighted Average Fuel Economy	**40.71763462**
San Joaquin	2028	MH	Aggregate	Aggregate	Gasoline	1150.701442	10130.11857	2.294700863	4.414570427	44720.12185
San Joaquin	2028	MH	Aggregate	Aggregate	Diesel	609.6553626	5150.21088	0.548641656	9.387203507	48346.07763
San Joaquin	2028	OBUS	Aggregate	Aggregate	Gasoline	152.7075179	6276.985048	1.265329381	4.960751834	31138.56509
San Joaquin	2028	OBUS	Aggregate	Aggregate	Diesel	96.10324482	6092.897791	0.841862095	7.237406021	44096.77516
San Joaquin	2028	SBUS	Aggregate	Aggregate	Gasoline	136.2534926	7509.127762	0.732722623	10.24825428	76955.45074
San Joaquin	2028	SBUS	Aggregate	Aggregate	Diesel	485.381611	10497.26178	1.266080089	8.291151463	87034.38737
San Joaquin	2028	UBUS	Aggregate	Aggregate	Gasoline	39.79810813	2881.956137	0.613507912	4.697504435	13538.00174
San Joaquin	2028	UBUS	Aggregate	Aggregate	Diesel	44.25006523	3252.046713	0.350793501	9.270544372	30148.24335
									Sum of VMT*FE	**375977.6229**
									Total VMT	**51790.60468**
									Weighted Average Fuel Economy	**7.259571987**

Project Operations Natural Gas Use

Source: CalEEMod Output

kBTU/yr = kilo-British Thermal Units/year

Land Use	Natural Gas (kBTU/yr)
Phase A - Condo/Townhouse	0
Phase A - Enclosed Parking Structure	0
Phase A - Single Family Housing	0
Phase B - Apartments Mid-Rise	0
Phase B - Enclosed Parking	0
Phase B - Parking Lot	0
Phase B - Unenclosed Parking	0
Total	**0**

Project Operations Electricity Use

Source: CalEEMod Output

kWh/yr = kilowatt hours per year

Land Use	Electricity (kWh/yr)
Phase A - Condo/Townhouse	249,786
Phase A - Enclosed Parking Structure	134,455
Phase A - Single Family Housing	839,636
Phase B - Apartments Mid-Rise	3,038,186
Phase B - Enclosed Parking	265,783
Phase B - Parking Lot	250,015
Phase B - Unenclosed Parking	270,158
Total	**5,048,019**

APPENDIX C

To:	Anna Radonich Stantec Consulting Inc	From:	Susannah Kiteck Cardno, now Stantec
Project:	144-490 Quintal Road Project	Date:	November 22, 2022

Reference: 144-490 Quintal Road Project Biological Resources Assessment

PROJECT DESCRIPTION

The 144-490 Quintal Road Project (Project) is located at the juncture of Quintal Road, S. Main Street, and E. Atherton in the City of Manteca, in San Joaquin County, California. The approximately 59.19 acre site is surrounded by urban development on all sides. The site is located off of Highway 120 that travels through Manteca, east to Benton, California and connects to the west at Interstate 5.

The Project involves the development of 818 residential dwelling units including: 672 multifamily for-rent apartments, 48 for-sale duplexes, and 98 single-family for-sale homes on an undeveloped site. The Project would also include an approximately 1.93-acre public open space and associated parking located adjacent to the residential developments as well as other amenities such as a dog park, game lawn, and club house. Additionally, the Project would construct improvements to adjacent streets, on- and off-site utility infrastructure, parking, driveways, frontage improvements, landscaping, and a detention basin.

With the development of a total of 818 housing units, the Project is anticipated to have approximately 2,000 new residents. In addition, it is anticipated that up to 11 staff would work at the apartment component. The 11 staff members are anticipated to be a part of the local labor force and would support the two apartment complexes.

ENVIRONMENTAL SETTING

LOCAL SETTING AND EXISTING LAND USES

The Project site is a rectangular-shaped parcel that is currently undeveloped. The Project site is surrounded in all four directions by urban development, including the following land uses:

- **North:** Highway 120 and commercial uses
- **East:** Single-family and multi-family residential uses
- **South:** Single-family residential uses and a Chevron gas station.
- **West:** Vacant land and commercial uses

PHYSICAL CONDITIONS

The topography of the Project area is nearly level, at an elevation of approximately 30 feet above mean sea level. The Project is within a Mediterranean climate zone characterized by hot, dry summers and moderate winters, with average temperatures ranging seasonally from 49.3 to 76.5 degrees Fahrenheit

(°F). Average annual rainfall is 13.45 inches and occurs primarily from December through February[1]. Historical data used to describe the climate was collected at the Stockton AP, California National Oceanic and Atmospheric Administration Station, approximately 8.50 miles north of the Project area[1].

HABITAT

The Project area is located within sandy scrub habitat dominated by Telegraph weed (*Heterotheca grandiflora*). A line of trees is located within the median of E Atherton Dr within the Project area, and a small grove of deciduous trees is located directly outside of the Project area to the north. The surrounding landcover type is urban/developed and agriculture.

METHODS

The analysis presented in this Biological Resources Assessment includes a desktop review of existing information about sensitive biological resources known to occur near the proposed Project and a pre-construction site visit. In addition, the desktop review analysis utilized aerial imagery/KMZ files, topo maps, USFWS wetland inventory maps, California Natural Diversity Database (CNDDB), California Native Plant Society (CNPS) rare plant database and USFWS species lists and critical habitat designations. This memo was prepared to determine whether biological resources are absent, present, and/or are likely to be present.

DEFINITIONS

Special-Status Species and Sensitive Communities

For the purpose of this evaluation, special-status plant species include plants that are: 1) listed as threatened or endangered under the California Endangered Species Act (CESA) or Federal Endangered Species Act (ESA); 2) proposed for federal listing as threatened or endangered; 3) state or federal candidate species; 4) designated as rare by the California Department of Fish and Wildlife (CDFW); or 5) California Rare Plant Rank (CRPR) 1A, 1B, 2A or 2B species.

Special-status animal species include species that are: 1) listed as threatened or endangered under the CESA or ESA; 2) proposed for federal listing as threatened or endangered; 3) state or federal candidate species; or 4) identified by CDFW as Species of Special Concern (SSC) or Fully Protected (FP) species.

Sensitive natural communities are those communities that are highly limited in distribution, and may or may not contain rare, threatened, or endangered species. CNDDB ranks natural communities according to their rarity and endangerment in California. Habitats are considered “sensitive” if they are identified on the CDFW List of Vegetation Alliances and Associations as being highly imperiled or classified by CDFW in the CNDDB as natural communities of special concern – Ranks S1 to S3.

Potential to Occur

The potential for special-status species to occur within the 59-acre Project area were classified under one of five categories as described below. Only the special-status species with an occurrence potential of “Moderate” or greater are evaluated in detail.

- **Present:** The species is known to be present or has been recently observed in the Project area.

[1] National Centers for Environmental Information, National Oceanic and Atmospheric Administration (NOAA). 2022. *U.S. Climate Normals Quick Access.* Retrieved from https://www.ncei.noaa.gov/access/us-climate-normals/.

- **High:** The species has been observed and documented within 3 miles of the Project area within the last five years and suitable habitat for the species is present.
- **Moderate:** The proposed Project is located within the range of the species, there are documented occurrences within 3 miles of the Project area, and/or potential habitat for the species exists in the Project area.
- **Low:** The proposed Project is located within the range of the species and low-quality (e.g., disturbed, agricultural) habitat is present.
- **Absent:** The proposed Project site is located outside of the species range and/or potential habitat to support the species is not present in the Project area.

BIOLOGICAL RECONNAISSANCE SURVEY SUMMARY

Cardno now Stantec (Cardno) completed a biological reconnaissance survey of the Project area to identify sensitive biological resources (wildlife species, plant species, and their habitats). Two biologists, Natalie Greer and Susannah Kiteck, conducted the survey on Friday, October 7th, 2022. The biologists arrived on site at 08:30 am and proceeded to walk transects within the Project site. The biologists recorded the dominant plant species within the Project area which included the following: Telegraph weed (*Heterotheca grandiflora*), prickly Russian thistle (*Salsola tragus L.*), and colocynth (*Citrullus colocynthis*). The biologists observed a seasonal drainage at the far east side of the Project area, approximately 50 feet south of E Atherton Dr. The seasonal drainage was identified based on a change in the vegetation community. The dominant plant species included giant reed (*Arundo donax*) and various non-native grass species. This seasonal drainage may be a result of underground water as indicated by a well directly adjacent to the drainage or the run-off from the sprinkler system at the adjacent house. The seasonal drainage is approximately 150 feet in length and 20 feet wide. No presence of special status species or potential habitat for them was observed within the Project area.

LITERATURE AND DATABASE REVIEW

In addition to a biological reconnaissance survey, Cardno completed a desktop analysis to identify sensitive biological resources (wildlife species, plant species, and their habitats) that may occur within the proposed Project site and region, as defined by CDFW, the U.S. Fish and Wildlife Service (USFWS), and California Native Plant Society (CNPS). The following resources were used to identify those potentially occurring biological resources:

- CDFW CNDDB records search of special-status species and habitat observations within a five-mile radius[2] (see Attachments A and B)
- CNPS online Inventory of Rare and Endangered Plants of California for Manteca, Avena, Peters, Lathrop, Stockton West, Stockton East, Salida, Vernalis and Ripon USGS 7.5-minute Quads[3] (see Attachment C)

[2] California Department of Fish and Wildlife. 2022. Rarefind 5. California Natural Diversity Database (CNDDB). California Natural Communities List. Biogeographic Data Branch, California Department of Fish and Wildlife. Retrieved from https://www.wildlife.ca.gov/Data/CNDDB/Maps-and-Dat. Accessed October 2022.

[3] California Native Plant Society. 2022. Inventory of Rare and Endangered Plants (Online Edition, v9-01 1.5). Retrieved from: http://www.rareplants.cnps.org. Accessed October 2022.

- USFWS list of endangered, threatened, and candidate species that may occur within the proposed Project site[4] (see Attachment D)
- USFWS Designated Critical Habitat data for federally threatened and endangered species[5] (see Attachment B)

Based on this background research, a list of special-status species that have the potential to occur or are known to occur in the Project area and vicinity was developed (Tables 1 and 2).

RESULTS

HABITATS AND NATURAL COMMUNITIES OF CONCERN

Based the National Wetlands Inventory (NWI), riverines pass through the Project area. However, during the reconnaissance survey, these riverines were not observed. The biologists did observe one seasonal drainage located in the far east side of the Project area approximately 50 feet south of E Atherton Dr. The seasonal drainage is approximately 150 feet in length and 20 feet wide based on the vegetation community change. Due to the size of the seasonal drainage, disturbed nature of the adjacent Project area and adjacent urban landcover, the seasonal drainage does not provide quality habitat for any special status species.

A wetland delineation was conducted on October 24th and 26th, 2022. Results of this delineation are included in 144-490 Quintal Road Project Wetland Delineation Report.

Critical Habitat

There are no USFWS-designated critical habitats in the Project area or in the immediate vicinity.

Special-Status Plant Species

The Project area is disturbed and consists of sandy scrubland dominated by Telegraph weed. Based on the lack of suitable habitat and the disturbed nature of the Project area, the Project area does not provide moderate, or high potential habitat for special-status plants to occur. One species, lesser saltscale (*Atriplex minuscula*), has a low potential to occur within the Project area. While the Project occurs within the range for this species, the disturbed nature of the Project area provides low quality habitat for this species. Due to the low-quality habitat, this species is not expected to occur. No effects to special-status plants are anticipated, as summarized in Table 1, below.

[4] U.S. Fish and Wildlife Service. 2022. Trust Resources Report. Information for Planning and Consultation (IPaC). Retrieved from https://ecos.fws.gov/ipac/. Accessed October 2022.

[5] U.S. Fish and Wildlife Service. 2022. USFWS Critical Habitat for Threatened and Endangered Species. Online Critical Habitat Mapper. Retrieved from https://fws.maps.arcgis.com/home/webmap/viewer.html?webmap=9d8de5e265ad4fe09893cf75b8dbfb77. Accessed October 2022.

Table 1. Special-Status Plant Species Evaluated for the Potential to Occur in the Project Area

Scientific Name	Common Name	Listing Status[1] (Fed/State/CRPR)	Elevation Range (feet)	Known Habitat	Bloom Period	Potential for Occurrence
Astragalus tener var. tener	Alkali milk-vetch	-/-/1B.2	5-195	Playas, valley and foothill grassland (adobe clay), and vernal pools	Mar-Jun	Absent. Suitable habitat is not present in the Project area for this species.
Lasthenia chrysantha	Alkali-sink goldfields	-/-/1B.1	0-655	Vernal pools; alkaline	Feb-Apr	Absent. Suitable habitat is not present in the Project area for this species.
Blepharizonia plumosa	Big tarplant	-/-/1B.1	100-1655	Valley and foothill grassland; clay (usually)	Jul-Oct	Absent. Suitable habitat is not present in the Project area for this species.
Puccinellia simplex	California alkali grass	-/-/1B.2	5-3050	Chenopod scrub, meadows and seeps, valley and foothill grassland, vernal pools; alkaline, flats, lake margins, vernally mesic	Mar-May	Absent. Suitable habitat is not present in the Project area for this species.
Tropidocarpum capparideum	Caper-fruited tropidocarpum	-/-/1B.1	5-1495	Valley and foothill grassland	Mar-Apr	Absent. Suitable habitat is not present in the Project area

Table 1. Special-Status Plant Species Evaluated for the Potential to Occur in the Project Area

Scientific Name	Common Name	Listing Status[1] (Fed/State/CRPR)	Elevation Range (feet)	Known Habitat	Bloom Period	Potential for Occurrence
						for this species.
Eryngium racemosum	Delta button-celery	-/SE/1B.1	10-100	Riparian scrub	Jun-Oct	Absent. Suitable habitat is not present in the Project area for this species.
Lathyrus jepsonii var. jepsonii	Delta tule pea	-/-/1B.2	0-15	Brackish and freshwater marshes, slough edges; known to take root and climb up to neighboring areas and riparian areas	May-July	Absent. Suitable habitat is not present in the Project area for this species.
Tuctoria greenei	Greene's tentoria	FE/SR/ 1B.1	100-3510	Vernal pools	May-Jul	Absent. Suitable habitat is not present in the Project area for this species.
Atriplex cordulata var. cordulata	Heartscale	-/-/1B.2	0-1835	Chenopod scrub, meadows and seeps, valley and foothill grassland; alkaline (sometimes)	Apr-Oct	Absent. Suitable habitat is not present in the Project area for this species.

Table 1. Special-Status Plant Species Evaluated for the Potential to Occur in the Project Area

Scientific Name	Common Name	Listing Status[1] (Fed/State/CRPR)	Elevation Range (feet)	Known Habitat	Bloom Period	Potential for Occurrence
Atriplex minuscula	Lesser saltscale	-/-/1B.1	50-655	Chenopod scrub, playas, valley and foothill grassland; alkaline, sandy	May-Oct	Low. There is suitable habitat within the Project area, however, due to the disturbed nature of the Project area, this is low quality habitat for this species.
Chloropyron palmatum	Palmate-bracted bird's-beak	FE/SE/ 1B.1	15-510	Chenopod scrub, valley and foothill grassland; alkaline	May-Oct	Absent. Suitable habitat is not present in the Project area for this species.
Delphinium recurvatum	Recurved larkspur	-/-/1B.2	10-2590	Chenopod scrub, cismontane woodland, valley and foothill grassland; alkaline	Mar-Jun	Absent. Suitable habitat is not present in the Project area for this species.
Trifolium hydrophilum	Saline clover	-/-/1B.2	0 - 985	Marshes and swamps, valley and foothill grassland (mesic, alkaline), vernal pools	Apr-Jun	Absent. Suitable habitat is not present in the Project area for this species.

Table 1. Special-Status Plant Species Evaluated for the Potential to Occur in the Project Area

Scientific Name	Common Name	Listing Status[1] (Fed/State/CRPR)	Elevation Range (feet)	Known Habitat	Bloom Period	Potential for Occurrence
Extriplex joaquinana	San Joaquin spearscale	-/-/1B.2	5-2740	Chenopod scrub, meadows and seeps, playas, valley and foothill grassland	Apr-Oct	Absent. Suitable habitat is not present in the Project area for this species.
Sagittaria sanfordii	Sanford's arrowhead	-/-/1B.2	0-2135	Marshes and swamps	May-Oct	Absent. Suitable habitat is not present in the Project area for this species.
Cirsium crassicaule	Slough thistle	-/-/1B.1	10-330	Chenopod scrub, marshes and swamps, riparian scrub	May-Aug	Absent. Suitable habitat is not present in the Project area for this species.
Symphyotrichum lentum	Suisun Marsh aster	-/-/1B.2	0-10	Marshes and swamps (brackish, freshwater)	Apr-Nov	Absent. Suitable habitat is not present in the Project area for this species.
Brasenia schreberi	Watershield	-/-/2B.3	0-7220	Marshes and swamps	Jun-Sep	Absent. Suitable habitat is not present in the Project area for this species.

Table 1. Special-Status Plant Species Evaluated for the Potential to Occur in the Project Area

Scientific Name	Common Name	Listing Status[1] (Fed/State/CRPR)	Elevation Range (feet)	Known Habitat	Bloom Period	Potential for Occurrence
Hibiscus lasiocarpos var. occidentalis	Woolly rose-mallow	-/-/1B.2	0-395	Marshes and swamps	Jun-Sep	Absent. Suitable habitat is not present in the Project area for this species.
Trichocoronis wrightii var. wrightii	Wright's trichocoronis	-/-/2B.1	15-1425	Marshes and swamps, meadows and seeps, riparian forest, vernal pools; alkaline	May-Sep	Absent. Suitable habitat is not present in the Project area for this species.

[1] **Federal and State Status Codes:** E = Endangered; T= Threatened; R = Rare

CNPS CRPR Codes:

List 1A – Plants presumed extirpated in California and either rare or extinct elsewhere

List 1B – Plants rare, threatened, or endangered in California and elsewhere

List 2B – Plants Rare, threatened, or endangered in California, but more common elsewhere

Extensions: x.1 - Seriously threatened in California; x.2 – Moderately threatened in California; x.3 -Not very threatened in California.

Special-Status Animal Species

The Project area is disturbed and consists of sandy scrub habitat with a line of trees located along the median of E Atherton Dr, and a small grove of deciduous trees growing just outside the northern side of the Project area. Two species, loggerhead shrike (*Lanius ludovicianus*) and Swainson's hawk (*Buteo swainsoni*), have moderate potential to occur within the Project area. There are two CNDDB occurrences from 2011 and 2012 within 3 miles of the Project area for Swainson's hawk. These CNDDB occurrences record observations of nesting in fallow fields habitat surrounded by freeway, commercial, and residential land use. There is one CNDDB occurrence from 2016 mapped approximately 4 miles west of the Project Area for loggerhead shrike. This CNDDB occurrence records an observation of a family group perched on and around a chain link fence and in nearby trees adjacent to an empty parcel with spread gravel and sparse vegetation. The habitat described in both species' CNDDB occurrence records has similarities to the habitat and surrounding land use at the Project area. The small grove of deciduous trees located just outside the Project area to the north provide suitable nesting habitat for Swainson's hawk, and the small grove of trees and line of trees within the median of E Atherton Dr provide suitable nesting habitat for loggerhead shrike. Marginal foraging habitat occurs within the Project area. One species, burrowing owl (*Athene cunicularia*), has low potential to occur in the Project area. No ground squirrels or ground squirrel burrows were observed during the reconnaissance survey to provide habitat for burrowing owl.

The species identified as having low potential to occur is not expected to occur due to the poor-quality habitat within the Project area. The Project area does provide suitable nesting habitat for migratory birds, as discussed in detail below. The mitigation measure BIO-1 Avoidance of Nesting Birds listed below is sufficient in minimizing impacts to Swainson's hawk and loggerhead shrike. No additional avoidance or minimization measures are recommended for special status animal species.

Migratory Nesting Birds

There is a small grove of deciduous trees located just outside the Project area to the north, and a line of trees within the median of E Atherton Dr that provide suitable nesting habitat for non-listed birds. The presence of trees on-site and in the vicinity of the Project area could provide suitable nesting and foraging habitat for various bird species that are protected by the Migratory Bird Treaty Act or California Fish and Game Code. Therefore, construction activities could have the potential to affect nesting birds if construction activities were to occur during the breeding season (i.e., February 1 through August 31).

To avoid any potential affects to nesting birds that may be present, mitigation measure BIO-1 is recommended.

- **BIO-1**: **Avoid Disturbance of Nesting Birds.** Vegetation removal and construction activities shall be initiated during the non-nesting season for migratory birds from September 1 to January 31. If work cannot be initiated during this period, a nesting bird survey shall be performed by a qualified biologist for species protected by the Migratory Bird Treaty Act and California Fish and Game Code within a 250-foot radius of proposed construction activities for passerines, and .25 miles for raptors, no more than two weeks prior to the start of construction activities. If active nests are found, a no-disturbance buffer shall be placed around the nest until young have fledged or the nest is determined to be no longer active by the biologist. The size of the buffer shall be determined by the biologist based on species and proximity to activities and may be reduced at the discretion of the biologist. Active nests shall be monitored to determine time of fledging.

Table 2. Special-Status Animal Species Evaluated for the Potential to Occur in the Project Area.

Scientific Name	Common Name	Listing Status[1] (Fed/State	Known Habitat Requirements	Potential for Occurrence
Invertebrates				
Danaus plexippus	Monarch butterfly	FC/-	Overwintering sites typically situated on south, southwest, or west-facing slopes or in shallow canyons or gullies; sites provide dappled sunlight, high humidity, fresh water, are absent of freezing temperatures or high winds; monarchs most commonly roost in non-native blue gum eucalyptus and native Monterey pine and Monterey cypress; occasionally, non-native red gum eucalyptus and native western sycamore, coast redwood, coast live oak, and others.	Absent. No suitable habitat occurs within the Project area.
Branchinecta lynchi	Vernal pool fairy shrimp	FT/-	Vernal pools or similar habitats, including artificial pools created by ditches.	Absent. No suitable habitat occurs within the Project area.
Lepidurus packardi	Vernal pool tadpole shrimp	FE/-	Ephemeral freshwater habitats, including alkaline pools, clay flats, vernal lakes, vernal pools, vernal swales, and other seasonal wetlands	Absent. No suitable habitat occurs within the Project area.
Desmocerus californicus dimorphus	Valley elderberry longhorn beetle	FT/-	Always found on or near elderberry shrubs and trees (Sambucus spp); elderberry can be found in moist or riparian areas along streams, edges of meadows, canyons, and forest openings	Absent. No suitable habitat occurs within the Project area.
Fish				
Hypomesus transpacificus	Delta smelt	FT/SE	Endemic to the San Francisco Estuary; tolerant of a wide salinity range. Spawning occurs in fresh water and tidally influenced sloughs and channel edges.	Absent. No aquatic habitat occurs within the Project area.
Acipenser medirostris	Green sturgeon - southern DPS	FT/-	Spawns primarily in the mainstem Sacramento River; away from spawning areas, found in San Francisco Bay Delta, bays, estuaries and open ocean.	Absent. No aquatic habitat occurs within the Project area.
Spirinchus thaleichthys	Longfin smelt	FC/ST	Coastal lagoons, bays, estuaries, sloughs, tidal	Absent. No aquatic habitat occurs within the Project area.

Table 2. Special-Status Animal Species Evaluated for the Potential to Occur in the Project Area.

Scientific Name	Common Name	Listing Status[1] (Fed/State	Known Habitat Requirements	Potential for Occurrence
			freshwater streams, and offshore.	
Oncorhynchus mykiss	Steelhead – Central Valley DPS	FT/-	Clean, cold water over gravel beds with water temperatures between 6 and 16 degrees Celsius for spawning in the Sacramento and San Joaquin rivers and their tributaries.	Absent. No aquatic habitat occurs within the Project area.
Herpetofauna				
Ambystoma californiense	California tiger salamander - central California DPS	FT/ST	Small mammal burrows and burrow complexes in grasslands and open oak woodlands, traveling up to 1 mile to seasonal pools and fish/crayfish-free intermittent creek pools during the breeding season. Aestivates only during the hottest part of the summer, otherwise moving about and feeding in and around the burrows during the rest of the year.	Absent. No suitable habitat occurs within the Project area.
Birds				
Athene cunicularia	Burrowing owl	-/SSC	Open treeless areas such as grasslands, coastal dunes, agricultural or disturbed areas; found in a larger variety of habitats in winter and during migration.	Low.. No ground squirrels or ground squirrel burrows were observed within the Project area; therefore, there is no suitable habitat for this species.
Lanius ludovicianus	Loggerhead shrike	-/SSC	Open habitats such as agricultural areas, shrublands, open woodlands and grasslands. Requires some shrubs and trees for nesting.	Moderate. The small grove of deciduous trees located just outside the Project area to the north, and a line of trees within the median of E Atherton Dr that provide suitable nesting habitat. There is marginal foraging habitat within the Project area due to frequent disturbance and the lack of prey species observed during the reconnaissance survey. small grove of trees

Table 2. Special-Status Animal Species Evaluated for the Potential to Occur in the Project Area.

Scientific Name	Common Name	Listing Status[1] (Fed/State	Known Habitat Requirements	Potential for Occurrence
Buteo swainsoni	Swainson's hawk	-/ST	Nests in grasslands and agricultural areas with scattered groves of trees; nest sites are usually in trees or large shrubs adjacent to open habitats used for foraging. Nests may be placed in windbreaks and disturbed areas.	Moderate. There are two documented CNDDB occurrences from 2011 and 2012 within three miles of the Project area. There is a small grove of trees just outside the Project area to the north that provides suitable nesting habitat. There is a line of trees along the median of E Atherton Dr within the Project area, however, these trees are not large enough to support Swainson's hawk nests. There is marginal foraging habitat within the Project area due to frequent disturbance and the lack of prey species observed during the reconnaissance survey.
Agelaius tricolor	Tricolored blackbird	-/ST	Breeds in a variety of both freshwater wetlands and upland areas. Suitable wetland sites have emergent vegetation (i.e. cattails or bulrushes) or willows. Upland habitats include undeveloped areas and agricultural fields, including areas dominated by triticale, Himalayan blackberry, thistle and other spinous plants.	Absent. There is no suitable breeding or nesting habitat, and no suitable foraging habitat within the Project area.
Xanthocephalus xanthocephalus	Yellow-headed blackbird	-/SSC	Freshwater marshes with tall emergent vegetation; nests are constructed over water.	Absent. No suitable habitat occurs within the Project area.

[1] **Federal and State Status Codes:** E = Endangered; T = Threatened; SC= State Candidate for Listing; FP = Fully Protected; SSC= Species of Special Concern

CONCLUSION

The Project site is disturbed in nature consisting of sandy scrub habitat and surrounded by urban landcover and agricultural land. Based on its biological review of the Project site, Cardno has concluded that with the implementation of minimization measures, the Project would not impact any special status species or

sensitive habitat types. The NWI database indicates that riverines pass through the Project area. During the reconnaissance survey, the biologists did not observe the riverines, however, they did observe a seasonal drainage located on the eastern side of the Project approximately 50 feet south of E Atherton Dr. The seasonal drainage does not provide suitable habitat for any special-status species due to its size and the surrounding urban and disturbed landcover but may be considered a jurisdictional feature as waters of the State. Mitigation measure BIO-1 should be implemented to minimize impacts to any water features or a wetland delineation should be conducted to determine if this feature or any waters meet the definition for a water of the State, covered under the jurisdiction of the RWQCB.

Based on the lack of suitable habitat, the Project area does not have a moderate or high potential for special-status plants to occur, and no impacts to special-status plants are anticipated. However, two special-status animal species, loggerhead shrike (*Lanius ludovicianus*) and Swainson's hawk (*Buteo swainsoni*), have moderate potential to occur as there is suitable nesting habitat within the Project area and within the vicinity of the Project area for these species. Additionally, Project area does provide suitable nesting and foraging habitat for various non-listed bird species that are protected by the Migratory Bird Treaty Act. Construction activities could have the potential to affect nesting birds if construction activities were to occur during the breeding season (i.e., February 1 through August 31). Therefore, mitigation measure BIO-1 is recommended to avoid potential impacts to migratory bird species, loggerhead shrike (*Lanius ludovicianus*) and Swainson's hawk (*Buteo swainsoni*). No additional minimization or mitigation measures are required or recommended.

ATTACHMENT A

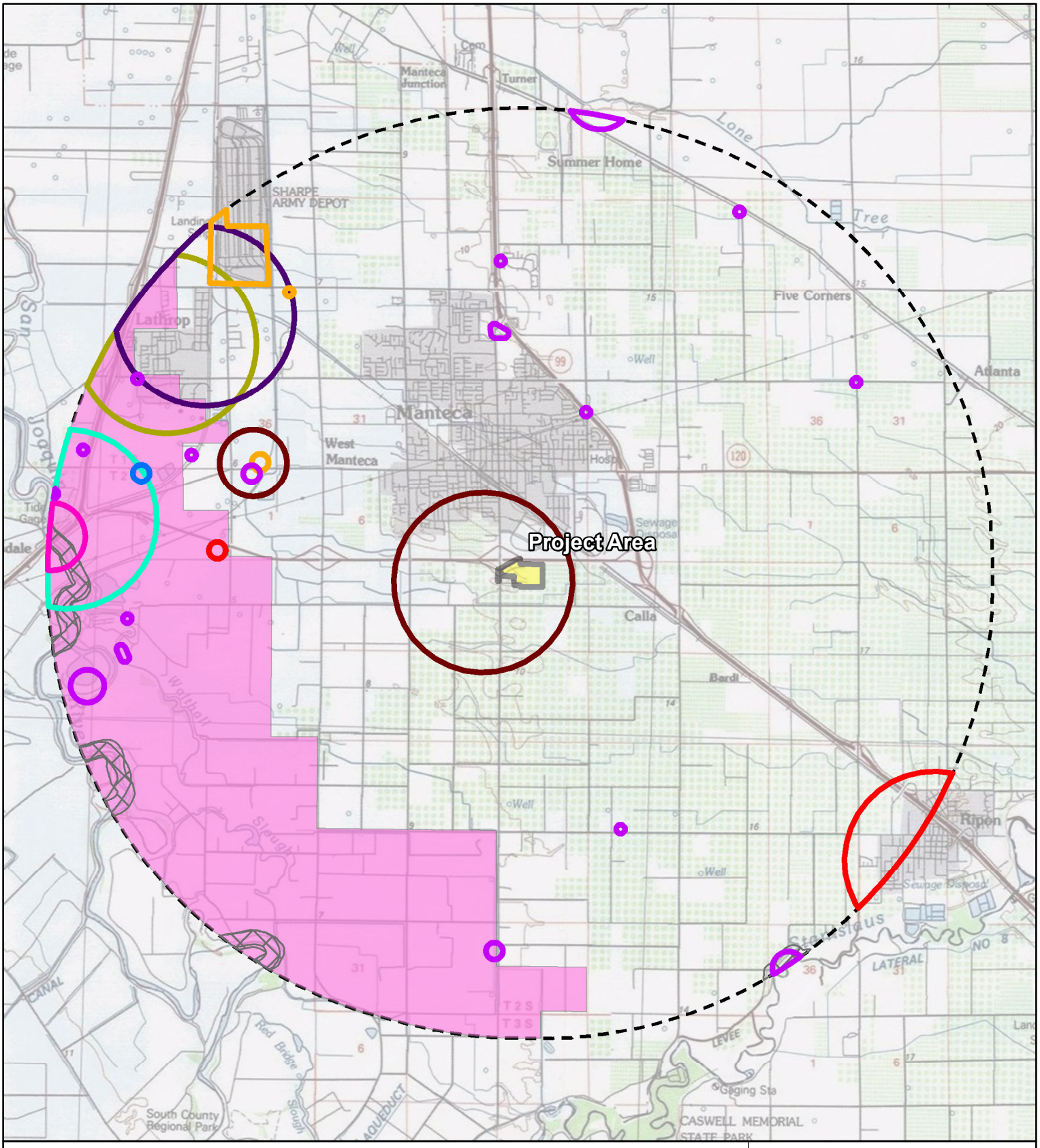
CNDDB SPECIES LIST*B SPECIES LIST*

*Table modified for readability

SCIENTIFIC NAME	COMMON NAME	FEDLIST	CALLIST	CDFW	OTHRSTATUS	TAXONGROUP	SITEDATE	ELMDATE
Athene cunicularia	burrowing owl	None	None	SSC	BLM_S; IUCN_LC; USFWS_BCC	Birds	20160719	20160719
Athene cunicularia	burrowing owl	None	None	SSC	BLM_S; IUCN_LC; USFWS_BCC	Birds	20000121	20000121
Athene cunicularia	burrowing owl	None	None	SSC	BLM_S; IUCN_LC; USFWS_BCC	Birds	19970314	19970314
Ambystoma californiense pop. 1	California tiger salamander - central California DPS	Threatened	Threatened	WL	IUCN_VU	Amphibians	19120406	19120406
Ambystoma californiense pop. 1	California tiger salamander - central California DPS	Threatened	Threatened	WL	IUCN_VU	Amphibians	19960411	19960411
Tropidocarpum capparideum	caper-fruited tropidocarpum	None	None		SB_CalBG/RSABG; USFS_S	Dicots	18810423	18810423
Eryngium racemosum	Delta button-celery	None	Endangered			Dicots	19840828	19130605
Acipenser medirostris pop. 1	green sturgeon - southern DPS	Threatened	None		AFS_VU; IUCN_EN	Fish	20200411	20200411
Acipenser medirostris pop. 1	green sturgeon - southern DPS	Threatened	None		AFS_VU; IUCN_EN	Fish	20171009	20171009
Lanius ludovicianus	loggerhead shrike	None	None	SSC	IUCN_NT	Birds	20160421	20160421
Oncorhynchus mykiss irideus pop. 1	steelhead - Central Valley DPS	Threatened	None		AFS_TH	Fish	2013XXXX	2013XXXX
Oncorhynchus mykiss irideus pop. 1	steelhead - Central Valley DPS	Threatened	None		AFS_TH	Fish	20140120	20140120
Buteo swainsoni	Swainson's hawk	None	Threatened		BLM_S; IUCN_LC	Birds	1991XXXX	1991XXXX
Buteo swainsoni	Swainson's hawk	None	Threatened		BLM_S; IUCN_LC	Birds	19930420	19930420
Buteo swainsoni	Swainson's hawk	None	Threatened		BLM_S; IUCN_LC	Birds	1992XXXX	1992XXXX
Buteo swainsoni	Swainson's hawk	None	Threatened		BLM_S; IUCN_LC	Birds	19970508	19970508
Buteo swainsoni	Swainson's hawk	None	Threatened		BLM_S; IUCN_LC	Birds	19980414	19980414
Buteo swainsoni	Swainson's hawk	None	Threatened		BLM_S; IUCN_LC	Birds	20120406	20120406
Buteo swainsoni	Swainson's hawk	None	Threatened		BLM_S; IUCN_LC	Birds	20030501	20030501
Buteo swainsoni	Swainson's hawk	None	Threatened		BLM_S; IUCN_LC	Birds	20090713	20090713
Buteo swainsoni	Swainson's hawk	None	Threatened		BLM_S; IUCN_LC	Birds	20090404	20090404
Buteo swainsoni	Swainson's hawk	None	Threatened		BLM_S; IUCN_LC	Birds	20090703	20090703
Buteo swainsoni	Swainson's hawk	None	Threatened		BLM_S; IUCN_LC	Birds	20090703	20090703
Buteo swainsoni	Swainson's hawk	None	Threatened		BLM_S; IUCN_LC	Birds	20030613	20030613
Buteo swainsoni	Swainson's hawk	None	Threatened		BLM_S; IUCN_LC	Birds	20090716	20090716
Buteo swainsoni	Swainson's hawk	None	Threatened		BLM_S; IUCN_LC	Birds	20090428	20090428
Buteo swainsoni	Swainson's hawk	None	Threatened		BLM_S; IUCN_LC	Birds	20090619	20090619
Buteo swainsoni	Swainson's hawk	None	Threatened		BLM_S; IUCN_LC	Birds	20090630	20090630
Buteo swainsoni	Swainson's hawk	None	Threatened		BLM_S; IUCN_LC	Birds	20110727	20110727
Buteo swainsoni	Swainson's hawk	None	Threatened		BLM_S; IUCN_LC	Birds	20110727	20110727
Agelaius tricolor	tricolored blackbird	None	Threatened	SSC	BLM_S; IUCN_EN; NABCI_RWL; USFWS_BCC	Birds	19360603	19360603
Agelaius tricolor	tricolored blackbird	None	Threatened	SSC	BLM_S; IUCN_EN; NABCI_RWL; USFWS_BCC	Birds	19740605	19740605
Trichocoronis wrightii var. wrightii	Wright's trichocoronis	None	None			Dicots	19140928	19140928
Xanthocephalus xanthocephalus	yellow-headed blackbird	None	None	SSC	IUCN_LC	Birds	18940510	18940510

ATTACHMENT B

CNDDB AND USFWS CRITICAL HABITAT SPECIES MAPB SPECIES MAP



Creator: J. Shaw C:\Users\jackson.shaw\OneDrive - Cardno\Documents\PGE_ShortCycle\BIO\LMC Manteca\LMCManteca_map.mxd

ATTACHMENT C

CNPS SPECIES LIST*IST*

*Table modified for readabilityability

Scientific Name	Common Name	CRPR	GRank	SRank	OtherStatus	CESA	FESA	DateAdded	LastUpdate
Astragalus tener var. tener	alkali milk-vetch	1B.2	G2T1	S1		None	None	1/1/1994 0:00	8/25/2021 0:00
Lasthenia chrysantha	alkali-sink goldfields	1B.1	G2	S2		None	None	9/30/2019 0:00	4/5/2022 0:00
Blepharizonia plumosa	big tarplant	1B.1	G1G2	S1S2	SB_CalBG/RSABG	None	None	1/1/1994 0:00	8/25/2021 0:00
Puccinellia simplex	California alkali grass	1B.2	G2	S2	BLM_S	None	None	10/15/2015 0:00	8/2/2022 0:00
Tropidocarpum capparideum	caper-fruited tropidocarpum	1B.1	G1	S1	SB_CalBG/RSABG; USFS_S	None	None	1/1/1974 0:00	5/26/2021 0:00
Eryngium racemosum	Delta button-celery	1B.1	G1	S1		CE	None	1/1/1974 0:00	6/3/2021 0:00
Lathyrus jepsonii var. jepsonii	Delta tule pea	1B.2	G5T2	S2	SB_BerrySB; SB_CalBG/RSABG	None	None	1/1/1974 0:00	1/5/2022 0:00
Tuctoria greenei	Greene's tuctoria	1B.1	G1	S1		CR	FE	1/1/1974 0:00	5/26/2021 0:00
Atriplex cordulata var. cordulata	heartscale	1B.2	G3T2	S2	BLM_S	None	None	1/1/1988 0:00	8/25/2021 0:00
Atriplex minuscula	lesser saltscale	1B.1	G2	S2		None	None	1/1/1994 0:00	8/25/2021 0:00
Chloropyron palmatum	palmate-bracted bird's-beak	1B.1	G1	S1	SB_CalBG/RSABG	CE	FE	1/1/1974 0:00	10/4/2021 0:00
Delphinium recurvatum	recurved larkspur	1B.2	G2?	S2?	BLM_S; SB_SBBG	None	None	1/1/1988 0:00	6/3/2021 0:00
Trifolium hydrophilum	saline clover	1B.2	G2	S2		None	None	1/1/2001 0:00	5/26/2021 0:00
Extriplex joaquinana	San Joaquin spearscale	1B.2	G2	S2	BLM_S; SB_CalBG/RSABG	None	None	1/1/1988 0:00	1/5/2022 0:00
Sagittaria sanfordii	Sanford's arrowhead	1B.2	G3	S3	BLM_S	None	None	1/1/1984 0:00	5/26/2021 0:00
Cirsium crassicaule	slough thistle	1B.1	G1	S1		None	None	1/1/1974 0:00	5/26/2021 0:00
Symphyotrichum lentum	Suisun Marsh aster	1B.2	G2	S2	SB_CalBG/RSABG; SB_USDA	None	None	1/1/1974 0:00	5/26/2021 0:00
Brasenia schreberi	watershield	2B.3	G5	S3	IUCN_LC	None	None	10/27/2010 0:00	7/14/2021 0:00
Hibiscus lasiocarpos var. occidentalis	woolly rose-mallow	1B.2	G5T3	S3	SB_CalBG/RSABG; SB_UCBG	None	None	1/1/1974 0:00	1/5/2022 0:00
Trichocoronis wrightii var. wrightii	Wright's trichocoronis	2B.1	G4T3	S1		None	None	1/1/1988 0:00	6/8/2022 0:00

ATTACHMENT D

IPaC Species Listt

IPaC resource list

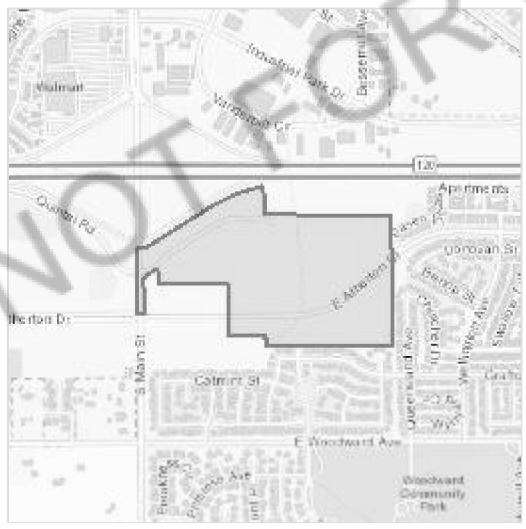
This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list 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

NOT FOR CONSULTATION

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. IPaC only shows species that are regulated by USFWS (see FAQ).

NOT FOR CONSULTATION

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:

Amphibians

NAME	STATUS
California Tiger Salamander Ambystoma californiense There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/2076	Threatened

Fishes

NAME	STATUS
Delta Smelt Hypomesus transpacificus Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/321	Threatened

Insects

NAME	STATUS
Monarch Butterfly Danaus plexippus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9743	Candidate
Valley Elderberry Longhorn Beetle Desmocerus californicus dimorphus Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/7850	Threatened

Crustaceans

NAME	STATUS

NOT FOR CONSULTATION

Vernal Pool Fairy Shrimp Branchinecta lynchi — Threatened

Wherever found

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
https://ecos.fws.gov/ecp/species/498

Vernal Pool Tadpole Shrimp Lepidurus packardi — Endangered

Wherever found

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
https://ecos.fws.gov/ecp/species/2246

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.

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 https://www.fws.gov/program/migratory-birds/species
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf

NOT FOR CONSULTATION

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
Belding's Savannah Sparrow Passerculus sandwichensis beldingi 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/8	Breeds Apr 1 to Aug 15
Bullock's Oriole Icterus bullockii This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Mar 21 to Jul 25
Common Yellowthroat Geothlypis trichas sinuosa 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	Breeds May 20 to Jul 31
Nuttall's Woodpecker Picoides nuttallii 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	Breeds Apr 1 to Jul 20
Oak Titmouse Baeolophus inornatus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9656	Breeds Mar 15 to Jul 15

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

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

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.

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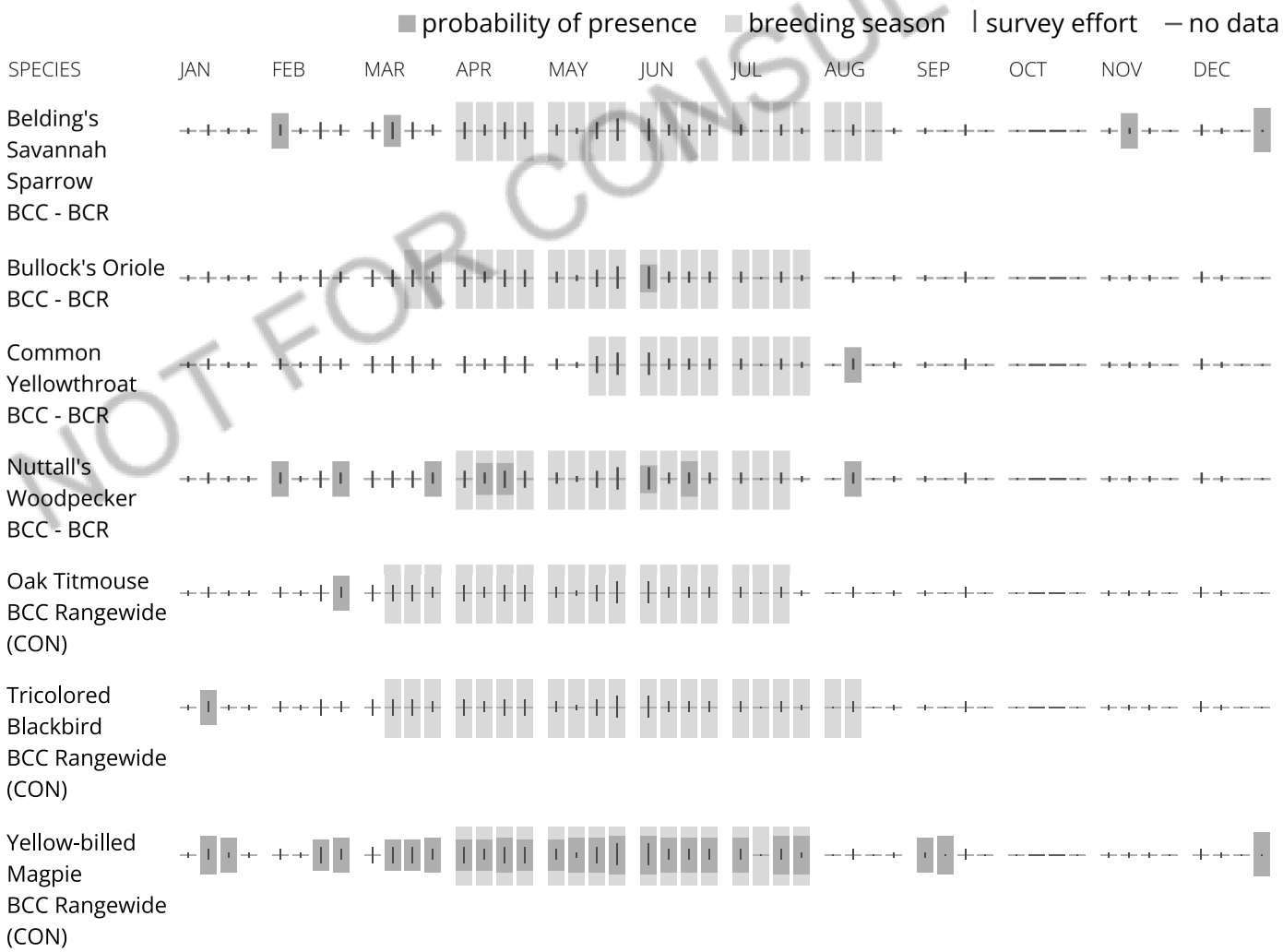
Breeding Season ( )
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

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.



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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 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 list of migratory birds that potentially occur 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 Rapid Avian Information Locator (RAIL) 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 or migrating in my area?

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 query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. 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:

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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 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

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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.

Coastal Barrier Resources System

Projects within the John H. Chafee Coastal Barrier Resources System (CBRS) may be subject to the restrictions on federal expenditures and financial assistance and the consultation requirements of the Coastal Barrier Resources Act (CBRA) (16 U.S.C. 3501 et seq.). For more information, please contact the local Ecological Services Field Office or visit the CBRA Consultations website. The CBRA website provides tools such as a flow chart to help determine whether consultation is required and a template to facilitate the consultation process.

There are no known coastal barriers at this location.

Data limitations

The CBRS boundaries used in IPaC are representations of the controlling boundaries, which are depicted on the official CBRS maps. The boundaries depicted in this layer are not to be considered authoritative for in/out determinations close to a CBRS boundary (i.e., within the "CBRS Buffer Zone" that appears as a hatched area on either side of the boundary). For projects that are very close to a CBRS boundary but do not clearly intersect a unit, you may contact the Service for an official determination by following the instructions here: https://www.fws.gov/service/coastal-barrier-resources-system-property-documentation

Data exclusions

CBRS units extend seaward out to either the 20- or 30-foot bathymetric contour (depending on the location of the unit). The true seaward extent of the units is not shown in the CBRS data, therefore projects in the offshore areas of units (e.g., dredging, breakwaters, offshore wind energy or oil and gas projects) may be subject to CBRA even if they do not intersect the CBRS data. For additional information, please contact CBRA@fws.gov.

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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.

Wetlands in the National Wetlands Inventory (NWI)

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.

Wetland information is not available at this time

This can happen when the National Wetlands Inventory (NWI) map service is unavailable, or for very large projects that intersect many wetland areas. Try again, or visit the NWI map to view wetlands at this location.

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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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APPENDIX D

To:	Anna Radonich Stantec Consulting Inc	From:	Susannah Kiteck Cardno, now Stantec
Project:	144-490 Quintal Road Project	Date:	November 22, 2022

Reference: 144-490 Quintal Road Project Wetland Delineation Report

INTRODUCTION

Cardno, now Stantec (Cardno) conducted a wetland delineation for the 144-490 Quintal Road Project (Project). The Project primarily consists of four parcels identified as Assessor's Parcel Numbers (APNs): 224-040-520-000 (114 Quintal Road), 224-040-070-000 (292 Quintal Road), 224-040-060-000 (301 Quintal Road), and 224-070-110-000 (490 Quintal Road) in Manteca, Placer County, California (Project area). The Project's center is located at approximately 37.780476° and -121.210639°, and on the United States Geological Survey (USGS) 7.5-minute topographic quadrangle map for Manteca, California, in Section 8 and 9, Township 02 south, Range 07 east, Mount Diablo Baseline & Meridian. Wetland delineations occurred at identified sampling points within the Project area based on National Wetlands Inventory (NWI) data and observations from an on-site biological reconnaissance survey previously conducted on October 7th, 2022 (Biological Resource Assessment). See Attachment A for the Project area and the water features within the Project Area.

This report presents the results of the field evaluation and provides a preliminary discussion regarding current wetlands and other Waters of the United States as defined by the Clean Water Act (CWA) within the Project area.

This delineation of Waters of the United States contains the following:

- A narrative describing the methodology used to delineate the wetlands and Waters of the United States in the Project area.
- A narrative description of existing field conditions, hydrology, soils descriptions, and plant communities present in the sampling points.
- Attachments and figures including the Project area and water features, a soils map, representative photographs, and aerial imagery showing the Project area and sampling points.

REGULATORY FRAMEWORK

FEDERAL JURISDICTION OF WETLANDS AND OTHER WATERS OF THE UNITED STATES

Section 404 of the Clean Water Act

Under Section 404 of the CWA, the US Environmental Protection Agency (EPA) and the US Army Corp of Engineers (USACE) have regulatory and permitting authority regarding discharge of dredged or fill material into "navigable Waters of the United States". The scope of the USACE jurisdiction was further refined in Rapanos v. US and Carabell v. US Guidance[1]. The USACE asserts jurisdiction over the following waters:

- Traditional navigable waters;
- Wetlands adjacent to traditional navigable waters;
- Non-navigable tributaries of traditional navigable waters that are relatively permanent where the tributaries typically flow year-round or have continuous flow at least seasonally (e.g., typically three months); and,
- Wetlands that directly abut such tributaries.

The USACE determines jurisdiction over the following waters based on a fact-specific analysis to determine whether they have a significant nexus with a traditional navigable water:

- Non-navigable tributaries that are not relatively permanent;
- Wetlands adjacent to non-navigable tributaries that are not relatively permanent; and,
- Wetlands adjacent to but that does not directly abut a relatively permanent non-navigable tributary.

A significant nexus exists when it is demonstrated that the tributary and/or wetland along with any other, similarly situated wetlands, has "more than a speculative or insubstantial effect on the chemical, physical and biological integrity of a traditional navigable water."

The USACE generally will not assert jurisdiction over the following features:

- Swales or erosional features (e .g., gullies, small washes characterized by low volume, infrequent, or short duration flow); or
- Ditches (including roadside ditches) excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water.

STATE JURISDICTION OF WETLANDS AND OTHER WATERS

Regional Water Quality Control Board

The State Water Resources Control Board (SWRCB) and nine Regional Water Quality Control Boards (RWQCB) regulate activities in Waters of the State, under the Dickey Water Pollution Act of 1949 and the Porter-Cologne Act of 1969. Waters of the State include Waters of the United States and are defined by the Porter-Cologne Act as "any surface water or groundwater, including saline waters, within the boundaries of the state." Additionally, the RWQCB regulates discharges of fill and dredged material under Section 401 of the CWA and the Porter-Cologne Act through the State Water Quality Certification Program. The State Water

[1] Rapanos v. US and Carabell v. US Guidance. https://www.epa.gov/sites/default/files/2016-02/documents/cwa_jurisdiction_following_rapanos120208.pdf

Quality Certification Program regulates proposed federally permitted activity which may result in a discharge to water bodies including discharges of dredged or fill material permitted by the USACE under section 404 of the CWA (e.g., navigational dredging; flood control channelization; levee construction; channel clearing; and fill of wetlands or other water bodies for land development), and ensures consistency with the Federal CWA, California Environmental Quality Act (CEQA), California Endangered Species Act (ESA), and the Porter-Cologne Act.

The Central Valley RWQCB has jurisdiction over the Project area. Because Waters of the State are defined more broadly than Waters of the United States, projects that do not require a federal permit may still result in dredge or fill in Waters of the State. Such projects may be regulated by the RWQCB under Waste Discharge Requirements or Certifications of Waste Discharge Requirements.

METHODOLOGY

The sampling points for this delineation encompass areas identified to be potential wetlands determined via the NWI database and an on-site biological reconnaissance survey. On October 24 and 26, 2022 Cardno biologists, Susannah Kiteck and Ashley Payne, collected field data and delineated potential USACE and RWQCB jurisdictional boundaries within the Project area. Sampling points were recorded, and the geographic coordinates (longitude and latitude) were collected. Plants were identified to species. Representative photographs of the Project area and sampling points are in Attachment B.

WATERS OF THE UNITED STATES

Wetlands

The team followed the routine determination method given in the Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory 1987) and the revised procedures in the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)[2]. This methodology examines specific sample points in both wetlands and uplands (i.e., paired points) to determine the boundaries of wetland features. Sample points are examined for hydrophytic vegetation, hydric soils, and wetland hydrology. In most cases, by the federal definition, all three parameters must be present for an area to be considered a wetland. Problematic situations, in which only two parameters are met, do occur in the Arid West (outlined in the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region) (USACE 2008a), especially in areas that have been altered by human activity. Problematic situations in which only two parameters are met do occur in the Arid West (outlined in the Arid West Regional Supplement), however none of these situations occurred in the study area. The standard USACE Wetland Determination Data Form for the Arid West was used to document each sample point.

Vegetation

The USACE National Wetland Plant List[3] was used to determine the wetland indicator status of plants identified in the sampling points. A visual assessment was made of all plant species located in the Project area and sampling points. Plant species were then analyzed to determine the presence or absence of hydrophytic vegetation. The procedure for determining the presence of hydrophytic vegetation followed that identified in the Regional Supplement. Specifically, it involves the following assessment for each sampling point:

1. Apply Indicator 1 (Dominance Test). If the plant community passes the dominance test, then the vegetation is hydrophytic and no further vegetation analysis is required.
    a. If the plant community fails the dominance test and indicators of hydric soil and/or wetland hydrology are absent, then hydrophytic vegetation is absent unless the site meets the requirements for a problematic wetland vegetation.
    b. If the plant community fails the dominance test, but indicators of hydric soil and wetland hydrology are both present, proceed to Step 2.
2. Apply Indicator 2 (Prevalence Index). This and the following step assume that at least one indicator of hydric soil and one primary or two secondary indicators of wetland hydrology are present.

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[2] U.S. Army Corps of Engineers (USACE). 2008a. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0). Available: https://usace.contentdm.oclc.org/utils/getfile/collection/p266001coll1/id/7627. Accessed May 2019.

[3] U.S. Army Corps of Engineers 2020. National Wetland Plant List, version 3.5. Available from http://wetland-plants.usace.army.mil/. U.S. Army Corps of Engineer Engineer Research and Development Center Cold Regions Research and Engineering Laboratory, Hanover, NH.

a. If the plant community satisfies the prevalence index, then the vegetation is hydrophytic. No further vegetation analysis is required.

b. If the plant community fails the prevalence index, proceed to Step 3.

3. Apply Indicator 3 (Morphological Adaptations).

a. If the indicator is satisfied, then the vegetation is hydrophytic.

b. If none of the indicators are satisfied, then hydrophytic vegetation is absent unless indicators of hydric soil and wetland hydrology are present and the site meets the requirements for a problematic wetland situation.

c. Wetland indicator species include those listed as Obligate (OBL), Facultative Wetland (FACW), or Facultative (FAC) in the National List of Plant Species that Occur in Wetlands: California (Region 0). Vegetation was described in terms of both species and percent coverage per strata. Sample plots that had vegetation that met the above criteria were identified as hydrophytic. A list of plant species observed within the sampling points and the wetland indicator status is available in Tables 2 and 4 below, and Attachment C.

Soils

The SoilWeb[4] online website and Web Soil Survey for San Joaquin County[5] was used to preliminarily identify soil types in the Project area and sampling points. The Web Soil Survey of San Joaquin County was used to identify potential soils (map units) present in the vicinity of the Project area and sampling points (Figure 1). Soils were examined by digging a test pit to a depth of 20 inches, where feasible, to determine if soils exhibited hydric characteristics. In some cases, loose soil or rocks within the soil prohibited the digging of 20 inch test pits, and pits were dug to a depth sufficient to identify hydric indicators. The determination of hydric soils was based on soil texture, matrix color, and/or the presence of other hydric soil indicators such as mottles.

Soil samples were collected and described according to the methodology provided in the Regional Supplement. Soil chroma and values were determined by using the Munsell Soil Color Book[6]. Hydric soils were determined to be present if any of the soil samples met one or more of the hydric soil indicators as indicated in the 2022 Pocket Guide to Hydric Soil Field Indicators[7].

Hydrology

The USACE jurisdictional wetland hydrology criterion is satisfied if an area is inundated or saturated for a period of time sufficient to create anoxic soil conditions during the growing season (a minimum of 14 consecutive days in the Arid West Region). Evidence of wetland hydrology can include primary indicators, such as visible inundation or saturation, drift deposits, oxidized root channels, and salt crusts, or secondary indicators such as the FAC-neutral test, or the presence of a shallow aquitard. The Regional Supplement contains 18 primary hydrology indicators and nine secondary hydrology indicators.

[4] California Soil Resource Lab at UC Davis and UC-ANR & USDA Natural Resources Conservation Service. SoilWeb. Available from https://casoilresource.lawr.ucdavis.edu/gmap/. Accessed October 2022.
[5] United States Department of Agriculture National Resources Conservation Service. Web Soil Survey. Available from https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx. Accessed October 2022.
[6] Munsell. 2000. Soil Color Charts. Gretag Macbeth. New Windsor, New York.
[7] Wetland Training Institute, Inc. 2022. 2022 Pocket Guide to Hydric Soil Field Indicators Based on Field Indicators of Hydric Soils in the United State v.8.2. 2022.

The presence of these primary or secondary indicators was used to determine whether each sample point met the wetland hydrology criteria. A minimum of one primary indicator or two secondary indicators are required to meet the wetland hydrology criterion.

Drainages and Other Waters

The Project area was evaluated for the presence of "other waters," including lakes, rivers, and perennial or intermittent streams. Potential "other waters" may be identified by the presence of a defined river or streambed, a bank, or evidence of flow, or the absence of emergent vegetation in ponds and lakes. The extent of other waters was mapped to the OHWM as defined by the USACE Regulatory Guidance Letter No. 05-05 Ordinary High Water Mark Identification[8].

CWA regulations define the OHWM at 33 CFR 328.3(e) as the following:

> The term ordinary high water mark means that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

The following geomorphic OHWM indicators, as described in the USACE publication *A Field Guide to the Identification of the OHWM in the Arid West Region of the Western United* States (USACE 2008), were used to delineate the OHWM of other Waters of the United States:

1. **Benches**: Formed by the removal of previously aggraded sediment and located near the below/at ordinary high water (OHW) boundary and potentially near the at/above boundary.
2. **Drift**: Organic debris larger than twigs. Tends to be oriented in the direction of flow, and often collects behind/in obstructions or is simply deposited by receding flow.
3. **Exposed Root Hairs Below Intact Soil Layer**: Exposed by erosion of sediment. Tend to be located along the above/at OHW boundary or where benches have formed.
4. **Change in Particle Size Distribution**: Transition from coarser to finder sediment common, and likely to occur near the at/below OHW boundary.
5. **Upper Limit of Sand-Sized Particles**: Deposited due to reduced flow competence and tends to be concentrated near the at/below OHW boundary but may extend to the above OHW boundary.
6. **Valley Flat**: Formed by the deposition of fine-grained sediment during over-bank flow, and located adjacent to low-flow feature(s) and extends to the break in slope (when present) near the at/above OHW boundary.

WATERS OF THE STATE

Biologists assessed all mapped features for potential RWQCB jurisdiction following the Porter-Cologne Water Quality Control Act regulations and guidance which states that all waters defined as "wetlands" under the USACE three-parameter requirement, including isolated features, would likely be considered RWQCB jurisdictional. Therefore, all wetlands that meet the three-parameter wetland criteria (or two in the case of problematic situations) are considered potentially jurisdictional.

The RWQCB takes jurisdiction over waters defined as "drainages" based upon the presence of OHWM and/or bed-and-bank; connectivity is not a consideration. In addition, isolated open waters or impoundments are

[8] United State Army Corps of Engineers. 2005. Regulatory Guidance Letter Ordinary High Water Mark Identification No. 05-05. https://www.nap.usace.army.mil/Portals/39/docs/regulatory/rgls/rgl05-05.pdf

generally considered under the jurisdiction of the RWQCB. Therefore, all drainages or other non-wetland waters on-site are considered potentially jurisdictional under the RWQCB.

Shrubby and forested wetlands fall under CDFW's jurisdiction when they are adjacent to or associated with a drainage feature or "stream." Features that exhibited a dominance of hydrophytic vegetation and were associated with a drainage feature, regardless of regime, were considered potentially jurisdictional.

CDFW generally takes jurisdiction over all waters with defined bed-and-bank up to TOB measurements; connectivity is not considered. In addition, isolated open waters or impoundments and associated persistent wetlands are generally considered under CDFW's jurisdiction. Therefore, all drainages or other non-wetland waters on-site are considered potentially jurisdictional.

PROJECT AREA

The Project area is approximately 59.15 acres and is surrounded by urban development on all sides. The site is located off Highway 120 that travels through Manteca, east to Benton, California and connects to the west at Interstate 5. The topography of the Project area is nearly level, at an elevation of approximately 30 feet above mean sea level. The majority of the Project area is located within sandy scrub habitat dominated by Telegraph weed (*Heterotheca grandiflora*). The Project area is significantly disturbed from agricultural activities and a majority of the Project area appeared to have been tilled resulting in upturned soil and uprooted, dead vegetation. During an on-site biological reconnaissance survey, biologists Natalie Greer and Susannah Kiteck observed an unnamed seasonal drainage on the far east side of the Project area, approximately 50 feet south of E Atherton Dr. The drainage was observed due to a change in vegetation community. The drainage is approximately 150 feet in length and 20 feet wide.

SAMPLING POINTS

Sampling points were identified via NWI and an on-site reconnaissance survey to determine if potential features were considered wetlands or other waters. The NWI identifies two NWI classified "riverine" features crossing through the Project area. These features are not visible on the surface; therefore, two sampling points were selected along the southern-most feature, one directly along the NWI mapped riverine location and one outside of the NWI mapped riverine location where there was sufficient vegetation cover (>5% cover). The sampling points along the NWI mapped riverine will be referred to below as sampling points A and B. Four sampling points were selected within the seasonal drainage. The seasonal drainage sampling points will be referred to below as sampling points 1, 2, 3 and 4.

VEGETATION

Project area vegetation communities

A majority of the Project area is sandy scrub habitat. Predominant species observed within the Project area include Telegraph weed (*Heterotheca grandiflora*), Russian thistle (*Salsola tragus*), Palmer amaranth (*Amaranthus palmeri*), common sunflower (*Helianthus annuus*), mat amaranth (*Amaranthus blitoides*) and colocynth (*Citrullus* colocynthis). Other species observed include a species of oat (*Avena* spp.), species of radish (*Rhaphanus* spp.), and hedge bindweed (*Calystegia sepium*). There is a change of vegetation within the Project area where there is a seasonal drainage on the eastern side of the Project area. Species observed within the seasonal drainage include giant reed (*Arundo donax*), rough cocklebur (*Xanthium strumarium*), Palmer amaranth (*Amaranthus palmeri*), brome fescue *(Festuca bromoides*), hairy crab grass (*Digitaria sanguinalis*), California melic (*Melica imperfecta*), Bermuda grass (*Cynodon dactylon*), and tall manna grass *(Glyceria elata*). Telegraph weed and Russian thistle were also present within the seasonal drainage.

SOILS

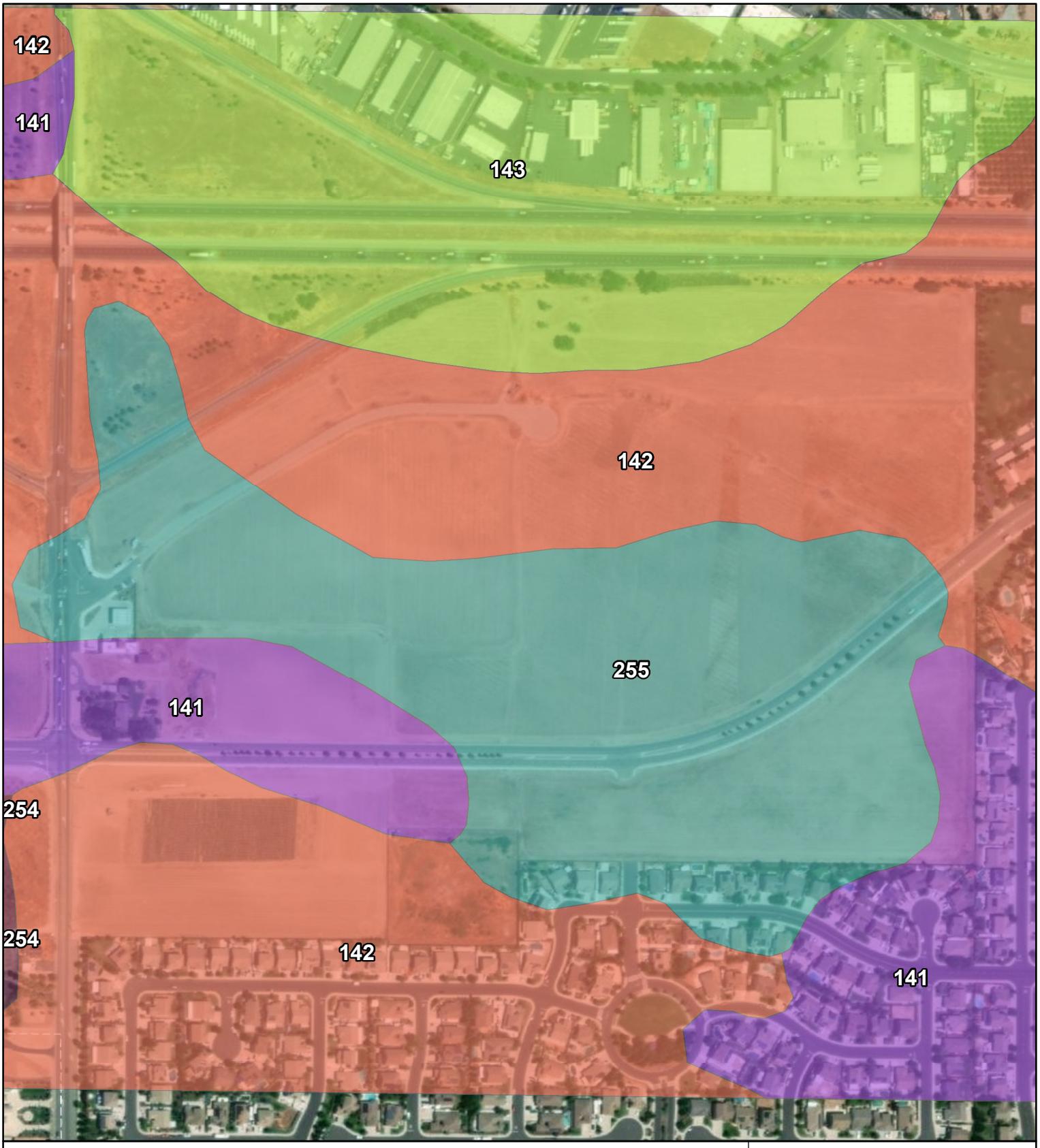
The soil map units are identified in the Web Soil Survey for San Joaquin County. Soil map units that occur in the Project area are shown in Figure 1 and include Delhi fine sand, 0 to 5 percent slopes, Delhi loamy sand, 0 to 2 percent slopes, Delhi-Urban land complex, 0 to 2 percent slopes, and Tinnin loamy coarse sand, 0 to 2 percent slopes. Sampling points were taken within the soil map units Delhi loamy sand and Tinnin loamy coarse sand. Table 1 provides the soil map unit descriptions for each unit.

Table 1 Soil Map Unit Description in the Project area

Map Unit Name	National Map Unit symbol	Drainage Class	Depth to Restrictive Layer	Hydric Soils Included
Delhi fine sand, 0 to 5 percent slopes	hhs9	Somewhat excessively drained	>80 inches	No
Delhi loamy sand, 0 to 2 percent slopes	2ss9g	Somewhat excessively drained	>80 inches	No
Delhi-Urban land complex, 0 to 2 percent slopes	hhsc	Somewhat excessively drained	>80 inches	No
Tinnin loamy coarse sand, 0 to 2 percent slopes	hhwz	Well drained	>80 inches	No

HYDROLOGY

The Project area has been significantly disturbed by agricultural activities. A majority of the site has little to no hydrological connection to downstream wetlands or other waters. Any precipitation the site receives likely infiltrates rapidly through the loose soils and no hydrological or hydric indicators were present during the delineation survey. The unnamed seasonal drainage potentially collects artificial runoff from the adjacent house's sprinkler system and naturally from precipitation. The NWI map identifies two riverine systems which pass through the Project area. The northern-most NWI mapped riverine has a series of wells located along it, indicating that it may be a fed through a ground water source. Based on Google Earth historical imagery, the wells appear to have been used to irrigate the agricultural fields within the Project area. No other hydrological indicators were present during the delineation survey and the wells are significantly disturbed. At the southern-most NWI mapped riverine, no hydrological indicators, wetland vegetation or hydric indicators were observed.



Legend

Soil Survey

Symbol Description

- Delhi fine sand, 0 to 5 percent slopes
- Delhi loamy sand, 0 to 2 percent slopes, MLRA 17
- Delhi-Urban land complex, 0 to 2 percent slopes
- Timor loamy sand, 0 to 2 percent slopes
- Tinnin loamy coarse sand, 0 to 2 percent slopes

Cardno

Figure 1
144-490 Quintal Road Project
Soil Survey

Projection: UTM Zone 10 N Datum: NAD 83
Date: 11/1/2022

0 70 140 280 420 560 Feet

Creator: J. Shaw C:\Users\jackson.shaw\OneDrive - Cardno\Documents\PGE_ShortCycle\BIO\LMC Manteca\LMCManteca_extra.mxd

RESULTS AND DISCUSSION

Cardno biologists Ashley Payne and Susannah Kiteck delineated wetlands and other waters in the Project area on October 26th, 2022. Other waters investigated in the Project area include two NWI mapped riverines and an unnamed seasonal drainage (Attachment A). The banks of the drainages were inspected for OHWM indicators using the methods described in the *A Field Guide to the Identification of the OHWM in the Arid West Region of the Western United States*. Representative photographs of the Project area and sampling points are located in Attachment B.

SEASONAL DRAINAGE

An unnamed seasonal drainage is present along the eastern edge of the Project area approximately 50 feet south of E Atherton Dr. The seasonal drainage begins at a well and continues to a length of approximately 150 feet based on vegetation community changes. The drainage is approximately 20 feet wide. Four soil sample points were selected within this area (Attachment A). No hydrological or hydric indicators were recorded within these sampling points. Sampling point 3 did have hydrophytic vegetation present. Tables 2 and 3 below show the vegetation cover, indicator status, and soil profiles recorded at each sampling point. See Attachment C for the wetland determination data forms for all data recorded at sampling points 1-4. The seasonal drainage may be hydrologically connected to the northern NWI mapped riverine, but it is not hydrologically connected to any other waters as described below. The seasonal drainage drains into uplands. The site was historically used for agriculture and is significantly disturbed. Based on a visual assessment of the drainage, no OHWM is visible within the drainage channel and there were no other indicators including mud cracks, drift and/or debris, presence of bed and bank, benches, etc., within the drainage that could indicate the presence of non-wetland waters.

Table 2: Vegetation at Sampling Points 1-4

Sampling Point	Vegetation	Absolute % cover	Indicator Status
1	Xanthium strumarium	15	FAC
	Amaranthus palmeri	8	FACU
	Salsola tragus	1	FACU
	Digitaria sanguinalis	5	FACU
	Glyceria elata	12	OBL
	Cynodon dactylon	50	FACU
2	Amaranthus palmeri	12	FACU
	Heterotheca grandiflora	3	UPL

	Salsola tragus	5	FACU
	Festuca bromoides	17	UPL
3	Xanthium strumarium	13	FAC
	Amaranthus palmeri	7	FACU
	Heterotheca grandiflora	1	UPL
	Digitaria sanguinalis	20	FACU
	Glyceria elata	60	OBL
	Cynodon dactylon	80	FACU
4	Digitaria sanguinalis	75	FACU
	Xanthium strumarium	2	FAC
	Amaranthus palmeri	5	FACU
	Melica imperfecta	3	UPL

Table 3: Soil Profile at Sampling Points 1-4

Sampling Point	Depth	Matrix color (%)	Redox Features	Texture
1	0-15”	2.5Y 3/3 (100%)	None	Loamy sand
2	0-12”	2.5Y 3/3 (100%)	None	Loamy sand
3	0-15”	2.5Y 3/2 (100%)	None	Loamy sand
4	0-14”	2.5Y 3/3 (100%)	None	Loamy sand

NWI RIVERINES

Two NWI unnamed riverines are mapped within the Project area. Sampling points A and B were chosen along the southern-most NWI mapped riverine (Attachment A). No hydrophytic vegetation, hydric soils or hydrological indicators were recorded. Sampling points along the northern-most riverine were not taken due to a lack of hydrological indicators and hydrophytic vegetation. Attachment B includes images of the wells located along the northern NWI mapped riverine. Both sampling points are significantly disturbed by agricultural activities. At sampling points A and B, it was noted that the vegetation is significantly disturbed which resulted from what appeared to be tilled soil. The ground was littered with uprooted and dead vegetation. Tables 4 and 5 below show the vegetation cover, indicator status, and soil profiles recorded at each sampling point. See Attachment C for the wetland determination data forms for all data recorded at sampling points A and B. Based on a visual assessment of the site, there are no OHWM indicators where the two NWI riverines are recorded. There were no other indicators including mud cracks, drift and/or debris, presence of bed and bank, benches, etc., that may indicate the presence of non-wetland waters. Based on NWI, while the riverines continue upstream and downstream, it only connects to other underground waters and are not connected to any other navigable waters or adjacent wetlands.

Table 4: Vegetation at Sampling Points A and B

Sampling Point	Vegetation	Absolute % cover	Indicator Status
A	Amaranthus palmeri	10	FACU
	Salsola tragus	2	FACU
B	Heterotheca grandiflora	25	UPL

Table 5: Soil Profile at Sampling Points A and B

Sampling Point	Depth	Matrix color (%)	Redox Features	Texture
A	0-16”	2.5Y 3/3 (100%)	None	Loamy sand
B	0-14”	2.5Y 4/4 (100%)	None	Loamy sand

CONCLUSION

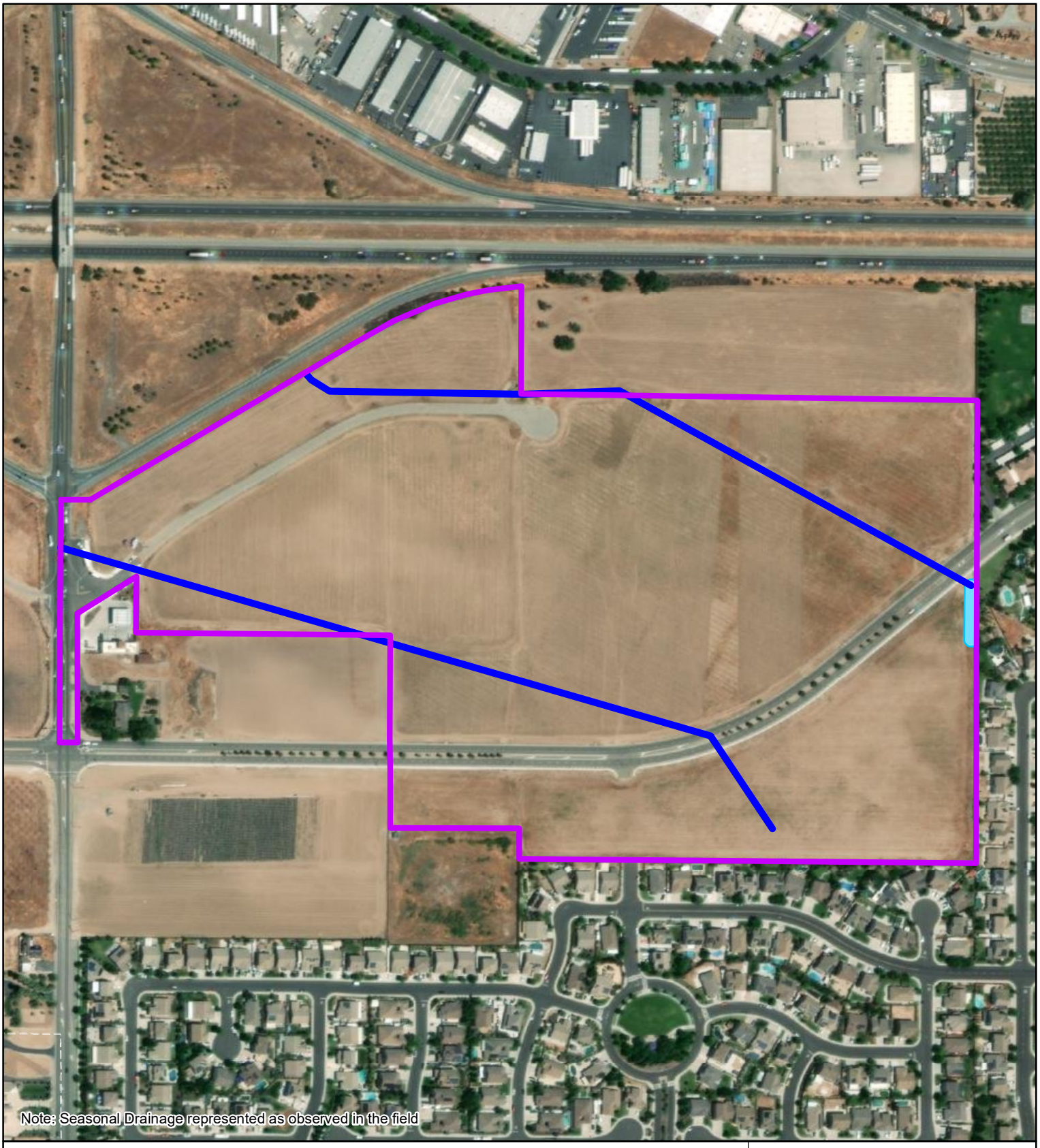
Based on the findings in this delineation report, the Project area contains no wetlands or other waters that are potentially subject to the USACE jurisdiction pursuant to the Clean Water Act. No portion of the Project area meets the three criteria for federal wetlands (dominance of hydrophytic vegetation, evidence of wetland hydrology, and hydric soils) and no surface water was present during the survey event. In addition, no other waters were identified based on the lack of an OHWM and connectivity to a downstream Traditional Navigable Water.

These features are also not considered potential waters of the State because they lack an OHWM and connectivity to downstream waters and did not contain hydrophytic vegetation, evidence of wetland hydrology, and hydric soils.

The conclusions presented above represent Cardno's professional opinion based on our knowledge and experience with the applicable regulatory agencies, including their technical guidance documents and manuals. Based off the site plan presented in of the Initial Study Document (Figure 5), no construction is planned within at least 25 feet of the seasonal drainage; therefore, no impacts are expected to this feature and no mitigation or minimization measures are required. If site plans change and impacts are anticipated to this feature, it may be necessary to coordinate with the USACE and/or RQQCB to get final authority in determining the status and presence of jurisdictional wetlands/waters and the extent of their boundaries. The USACE and RWQCB have final authority in determining the status and presence of jurisdictional wetlands/waters and the extent of their boundaries.

ATTACHMENT A

PROJECT AREA AND SAMPLING POINTS



Legend

- Project Area
- NWI Riverine
- Seasonal Drainage

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Attachment A
144-490 Quintal Road Project
Project Area
Water Features

Projection: UTM Zone 10 N Datum: NAD 83
Date: 10/31/2022
0 0.0125 0.025 0.05 0.075 0.1
Miles

Creator: J. Shaw C:\Users\jackson.shaw\OneDrive - Cardno\Documents\PGE_ShortCycle\BIO\LMC Manteca\LMCManteca_extra.mxd

Legend

- Sampling Point
- Project Area
- NWI Riverine
- Seasonal Drainage

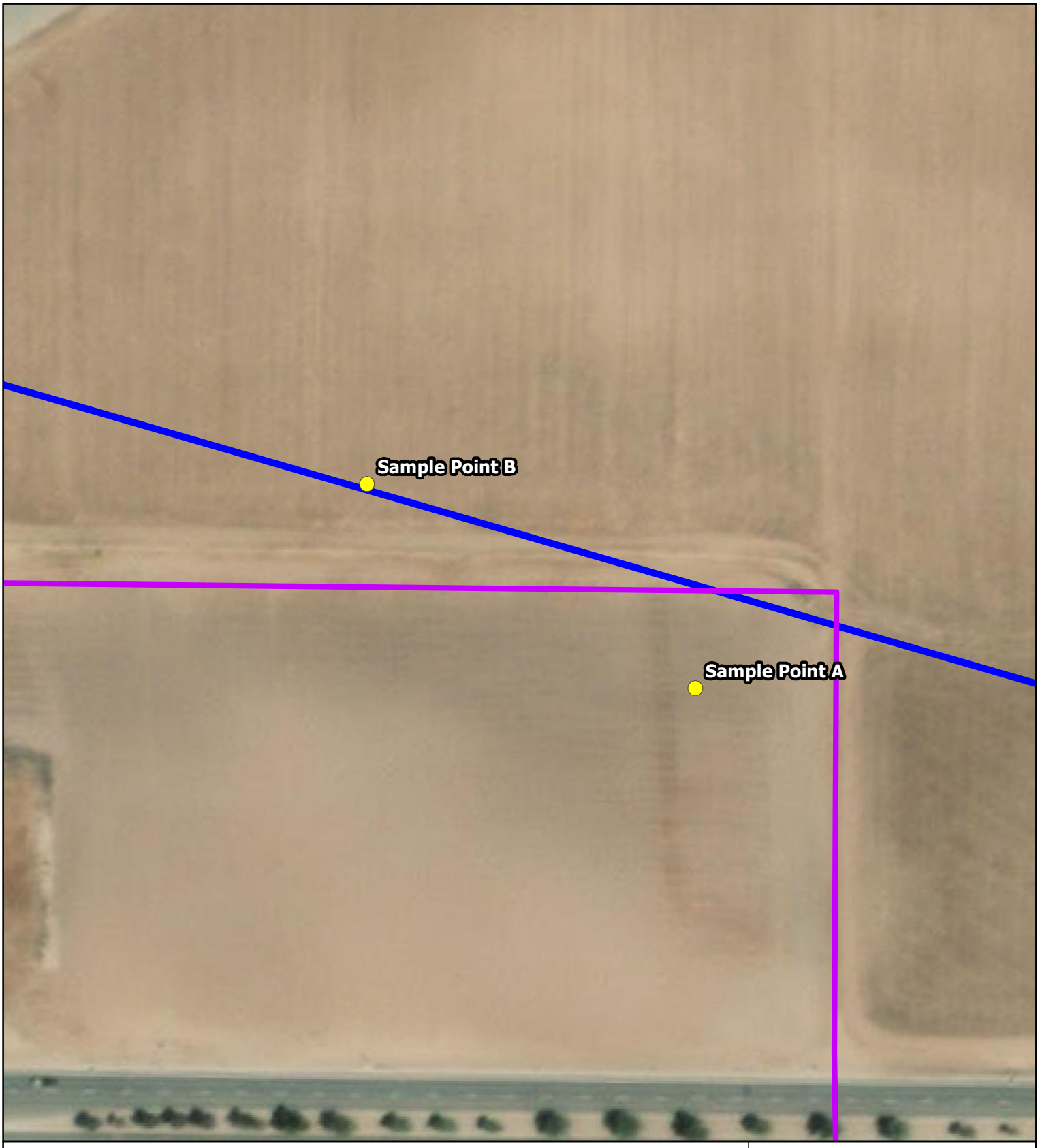
Cardno

Attachment A
144-490 Quintal Road Project
Sampling Points 1-4

Projection: UTM Zone 10 N Datum: NAD 83
Date: 10/31/2022

0 10 20 40 60 80
Feet

Creator: J. Shaw C:\Users\jackson.shaw\OneDrive - Cardno\Documents\PGE_ShortCycle\BIO\LMC Manteca\LMCManteca_extra.mxd



Legend

- Sampling Point
- Project Area
- NWI Riverine

Cardno

Attachment A
144-490 Quintal Road Project
Sampling Points A-B

Projection: UTM Zone 10 N Datum: NAD 83
Date: 10/31/2022

0 15 30 60 90 120
Feet

Creator: J. Shaw C:\Users\jackson.shaw\OneDrive - Cardno\Documents\PGE_ShortCycle\BIO\LMC Manteca\LMCManteca_extra.mxd

ATTACHMENT B

REPRESENTATIVE PHOTOGRAPHS

Attachment B

Representative Photographs of Sampling Points and Vegetation Community within the Project Area

Photo 1: Sampling point 1 located at the base of the seasonal drainage at 37.780609, -121.206799. No wetland indicators were met, and this area is not considered a wetland.

Photo 2: Sampling point 2 located outside of the seasonal drainage at 37.780609, -121.206799. No wetland indicators were met, and this area is not considered a wetland.

Attachment B

Photo 3: Sampling point 3 located within the seasonal drainage at 37.780380, -121.206800. While hydrophytic vegetation was present, no hydrology or hydric indicators were present. This area is not considered a wetland.

Photo 4: Sampling point 4 located outside of the seasonal drainage at 37.780400, -121.207070. No wetland indicators were met, and this area is not considered a wetland.

Photo 5: Sampling point A located outside of the NWI riverine (south) at 37.780030, -121.212870. The ground was littered with dead/uprooted vegetation due to what appeared to be tilled soil. No wetland indicators were met, and this area is not considered a wetland.

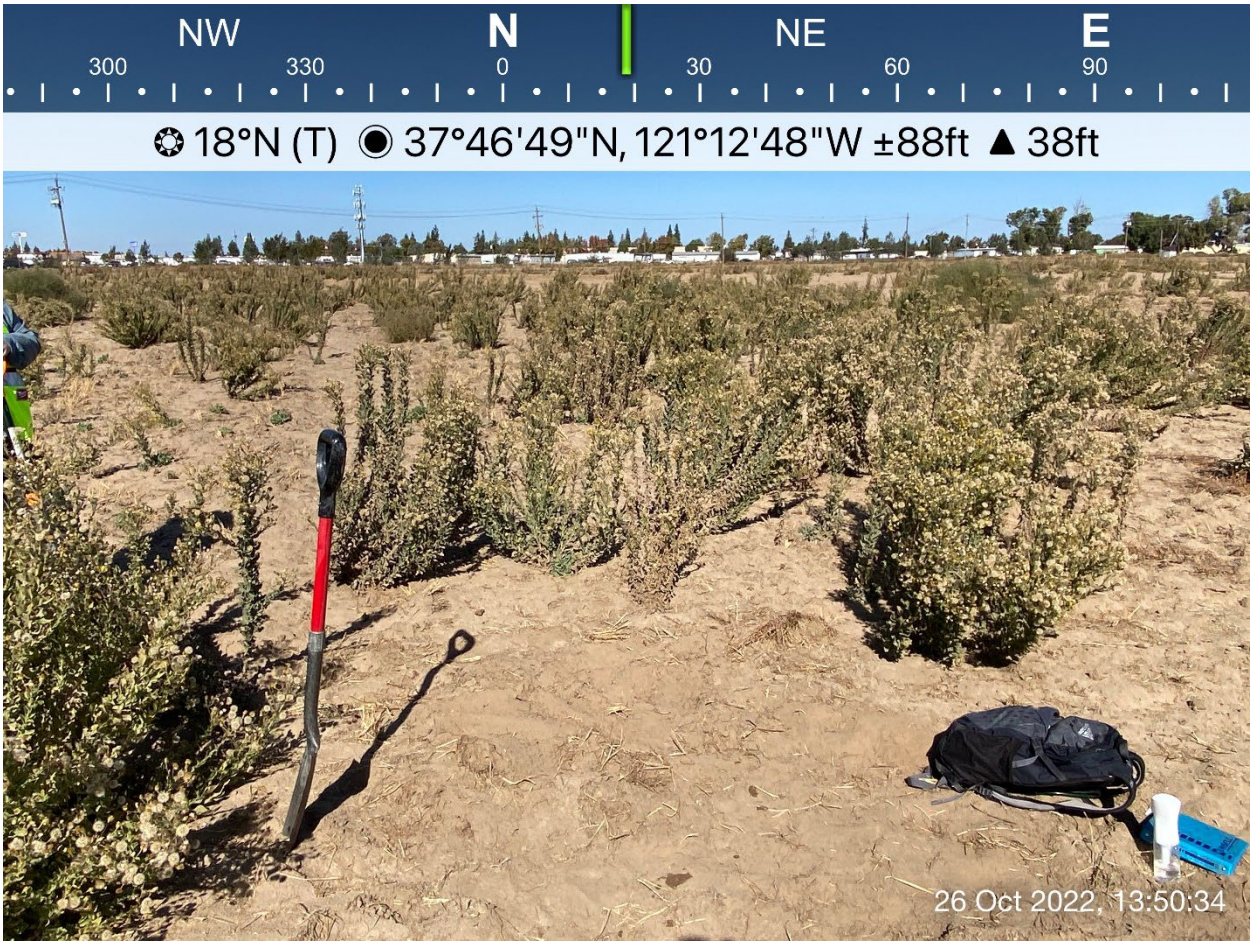


Photo 6: Sampling point B located on the NWI riverine at 37.780380, -121.213600. The ground was littered with dead/uprooted vegetation due to what appeared to be tilled soil. No wetland indicators were met, and this area is not considered a wetland.

Photo 7: Well located along the northern NWI riverine. The area is significantly disturbed. No hydrological indicators or wetland vegetation were present.

Photo 8: Well located along the northern NWI riverine. The area is significantly disturbed. No hydrological indicators or wetland vegetation were present.

Photo 9: Sandy scrub habitat dominated by Telegraph weed (Heterotheca grandiflora) within the Project area.

Photo 10: Sandy scrub habitat within the Project area.

Photo 11: Well at the northern-end of the seasonal drainage. This well may be connected to the northern NWI riverine. Based on the NWI database, the riverine is hydrologically connected to other underground waters, but not to any navigable waters.

Photo 12: Vegetation community along the seasonal drainage.

ATTACHMENT C

DATA FORMS

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: 144-490 Quintal Road Project City/County: Manteca/San Joaquin Sampling Date: 10/26/2022

Applicant/Owner: Quarterra Multifamily State: CA Sampling Point: 1

Investigator(s): Susannah Kiteck, Ashley Payne Section, Township, Range: Sec 9 T 02S R 07E

Landform (hillslope, terrace, etc.): Bottom of drainage Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR): LRR C Lat: 37.780609 Long: -121.206799 Datum:

Soil Map Unit Name: Delhi loamy sand NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No ✓	**Is the Sampled Area within a Wetland?** Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 20 ft*)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. None			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5 ft)			
1. Xanthium strumarium	15	No	FAC
2. Amaranthus palmeri	8	No	FACU
3. Salsola tragus	1	No	FACU
4. Digitaria sanguinalis	5	No	FACU
5. Glyceria elata	12	No	OBL
6. Cynodon dactylon	50	Yes	FACU
7.			
8.			
	91 = Total Cover		
Woody Vine Stratum (Plot size: 15 ft)			
1. None			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 2 % Cover of Biotic Crust ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	12	x 1 =	12
FACW species		x 2 =	
FAC species	15	x 3 =	45
FACU species	64	x 4 =	256
UPL species		x 5 =	
Column Totals:	91 (A)		313 (B)

Prevalence Index = B/A = 3.4

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks:

Due to a fence within the plot, a 20 ft radius was chosen and used hereafter for all sampling points.

SOIL

Sampling Point: 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-15	2.5Y 3/3	100	None				Loamy sa	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

Difficult to dig deeper due to sandy soil and rocky areas within the soil.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydrology indicators were present.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: 144-490 Quintal Road Project City/County: Manteca/San Joaquin Sampling Date: 10/26/2022

Applicant/Owner: Quarterra Multifamily State: CA Sampling Point: 2

Investigator(s): Susannah Kiteck, Ashley Payne Section, Township, Range: Sec 9 T 02S R 07E

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0-2

Subregion (LRR): LRR C Lat: 37.780609 Long: -121.206799 Datum:

Soil Map Unit Name: Delhi loamy sand NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ✓, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No ✓	**Is the Sampled Area within a Wetland?** Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 20 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. None			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5 ft)			
1. Amaranthus palmeri	12	Yes	FACU
2. Heterotheca grandiflora	3	No	UPL
3. Salsola tragus	5	No	FACU
4. Festuca bromoides	17	Yes	UPL
5.			
6.			
7.			
8.			
	37 = Total Cover		
Woody Vine Stratum (Plot size: 15 ft)			
1. None			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 20 % Cover of Biotic Crust ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species 17	x 4 =	68
UPL species 20	x 5 =	100
Column Totals: 37 (A)		168 (B)

Prevalence Index = B/A = 4.5

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks:

Area was disturbed, appeared as though a truck drove through the area. Top portion of the soil disturbed, but still able to adequately sample.

SOIL

Sampling Point: 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	2.5Y 3/3	100	None				Loamy sa	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

Dug only 12" due to hard pieces of rock in soil.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydrology indicators were present.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: 144-490 Quintal Road Project City/County: Manteca/San Joaquin Sampling Date: 10/26/2022

Applicant/Owner: Quarterra Multifamily State: CA Sampling Point: 3

Investigator(s): Susannah Kiteck, Ashley Payne Section, Township, Range: Sec 9 T 02S R 07E

Landform (hillslope, terrace, etc.): Base of hillslope Local relief (concave, convex, none): None Slope (%): 0-2

Subregion (LRR): LRR C Lat: 37.780380 Long: -121.206800 Datum:

Soil Map Unit Name: Delhi loamy sand NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ____	**Is the Sampled Area within a Wetland?** Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 20 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. None			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5 ft)			
1. Xanthium strumarium	13	No	FAC
2. Amaranthus palmeri	7	No	FACU
3. Heterotheca grandiflora	1	No	UPL
4. Digitaria sanguinalis	20	No	FACU
5. Glyceria elata	60	Yes	OBL
6. Cynodon dactylon	80	Yes	FACU
7.			
8.			
	181 = Total Cover		
Woody Vine Stratum (Plot size: 15 ft)			
1. None			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 3 % Cover of Biotic Crust ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species 60	x 1 = 60
FACW species ____	x 2 = ____
FAC species 13	x 3 = 39
FACU species 107	x 4 = 428
UPL species 1	x 5 = 5
Column Totals: 181 (A)	532 (B)

Prevalence Index = B/A = 2.9

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

✓ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks:

SOIL

Sampling Point: 3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-15	2.5Y 3/2	100	None				Loamy sa	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No other hydrology indicators were present.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: 144-490 Quintal Road Project City/County: Manteca/San Joaquin Sampling Date: 10/26/2022

Applicant/Owner: Quarterra Multifamily State: CA Sampling Point: 4

Investigator(s): Susannah Kiteck, Ashley Payne Section, Township, Range: Sec 9 T 02S R 07E

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0-2

Subregion (LRR): LRR C Lat: 37.780400 Long: -121.207070 Datum:

Soil Map Unit Name: Delhi loamy sand NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ✓, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No ✓	**Is the Sampled Area within a Wetland?** Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 20 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. None			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5 ft)			
1. Digitaria sanguinalis	75	Yes	FACU
2. Xanthium strumarium	2	No	FAC
3. Amaranthus palmeri	5	No	FACU
4. Melica imperfecta	3	No	UPL
5.			
6.			
7.			
8.			
	85 = Total Cover		
Woody Vine Stratum (Plot size: 15 ft)			
1. None			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 25 % Cover of Biotic Crust ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	____	x 1 =	60
FACW species	____	x 2 =	
FAC species	2	x 3 =	6
FACU species	80	x 4 =	320
UPL species	3	x 5 =	15
Column Totals:	85 (A)		401 (B)

Prevalence Index = B/A = 4.7

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks:

Soil appears to be tilled in sampling point area. Vegetation was disturbed.

SOIL

Sampling Point: 4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	2.5Y 3/3	100	None				Loamy sa	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydrology indicators were present.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: 144-490 Quintal Road Project City/County: Manteca/San Joaquin Sampling Date: 10/26/2022

Applicant/Owner: Quarterra Multifamily State: CA Sampling Point: A

Investigator(s): Susannah Kiteck, Ashley Payne Section, Township, Range: Sec 9 T 02S R 07E

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0-2

Subregion (LRR): LRR C Lat: 37.780030 Long: -121.212870 Datum:

Soil Map Unit Name: Tinnin loamy coarse sand NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ✓, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No ✓	**Is the Sampled Area within a Wetland?** Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks:

Though the area is disturbed, there is no indication that the sampled area is a wetland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 20)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. None			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5)			
1. Amaranthus palmeri	10	Yes	FACU
2. Salsola tragus	2	No	FACU
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		
Woody Vine Stratum (Plot size: 15)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 80 % Cover of Biotic Crust ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species 12	x 4 =	48
UPL species	x 5 =	
Column Totals: 12 (A)		48 (B)

Prevalence Index = B/A = 4

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks:

Areas of vegetation appear to have been run over. The soil appears to have been tilled resulting in dead debris on the ground.

SOIL

Sampling Point: A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	2.5Y 3/3	100	None				Loamy sa	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

No redox features present - all one color and one layer.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydrology indicators were present.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: 144-490 Quintal Road Project City/County: Manteca/San Joaquin Sampling Date: 10/26/2022

Applicant/Owner: Quarterra Multifamily State: CA Sampling Point: B

Investigator(s): Susannah Kiteck, Ashley Payne Section, Township, Range: Sec 9 T 02S R 07E

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0-2

Subregion (LRR): LRR C Lat: 37.780380 Long: -121.213600 Datum:

Soil Map Unit Name: Tinnin loamy coarse sand NWI classification: Riverine

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ✓, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No ✓	**Is the Sampled Area within a Wetland?** Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks:

Though the area is disturbed, there is no indication that the sampled area is a wetland. There are normal circumstances for the landcover being agricultural.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 20 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. None			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5 ft)			
1. Heterotheca grandiflora	25	Yes	UPL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	25 = Total Cover		
Woody Vine Stratum (Plot size: 15 ft)			
1. None			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 80 % Cover of Biotic Crust ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species 25	x 5 = 125
Column Totals: 25 (A)	125 (B)

Prevalence Index = B/A = 5

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks:

Soil appears to be tilled, and there is dead/uprooted vegetation on the ground.

SOIL

Sampling Point: B

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-14	2.5Y 4/4	100	None				Loamy sa	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

Very sandy soil which made it difficult to dig deeper than 14". No redox features present - all one color and one layer. Top layer of soil was a little disturbed due to tilling, but this did not effect the sample.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydrology indicators were present.

APPENDIX E

144-490 Quintal Road Project

Manteca, CA

CEQA Cultural Resources Evaluation Report

October 14, 2022

Prepared for:

Quarterra Multifamily

Prepared by:

Stantec Consulting Services Inc.
Petaluma, CA

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APPENDICES

Appendix A: Records Search Results

Executive Summary

Stantec Consulting Services Inc. (Stantec) conducted this CEQA Evaluation Report (cultural resources assessment) on behalf of Quarterra Multifamily for the 144-490 Quintal Road Project (Project).

The purpose of this report is to analyze whether or not the proposed Project would impact historical and archaeological resources as defined by the California Environmental Quality Act (CEQA). In accordance with relevant state guidelines, this report identifies and documents potential historic properties within the project's area of potential impacts (API), evaluates the resources for inclusion in the California Register of Historic Places, and assesses the project's potential to result in adverse impacts on historic properties.

Identification efforts included a records search at the Central California Information Center of the California Historical Resources Information System in Turlock, California, and Sacred Lands files maintained by the Native American Heritage Commission. The records search included a review of records for the API and a surrounding radius of 0.50 mile. A pedestrian survey of the Project area was also completed.

The records search, desktop review, Native American consultation and pedestrian survey did not identify any archaeological resources within the API. Therefore, based on the studies conducted, this report concludes with a finding of *No Historic Properties*.

Preparer Qualifications

This report was prepared by Stantec personnel who meet the Secretary of the Interior's Standards and Guidelines for Professional Qualifications in archaeology.

Stantec Archaeologist Jenna Santy, M.A., completed this report. Ms. Santy has a Master of Arts degree in Anthropology-Archaeology from University of California, Santa Barbara. She has more than 10 years of experience in cultural resource management and meets the Secretary of the Interior's Standards and Guidelines for Professional Qualifications for Archaeology (as defined in 36 Code of Federal Regulations Part 61).

Stantec Architectural Historian Rebecca Riggs, M.A. contributed to this report. Rebecca has over 6 years of experience in architectural history and cultural resource management, including in-depth research knowledge and evaluation of historical buildings, structures, and landscapes and regulatory compliance relating to the built environment. She meets the Secretary of Interior Standards for History and Architectural History and has served as architectural historian on several documentation projects, including Section 106 and 110 of the National Historic Preservation Act (NHPA), National Environmental Policy Act (NEPA), and CEQA.

Acronyms and Abbreviations

A.D.	anno Domini (i.e., “This is year 2022 AD”)
API	area of potential impact
Applicant	LMC, LLC
BP	years before present
CEQA	California Environmental Quality Act
CHRIS	California Historical Resources Information System
CRHR	California Register of Historical Resources
CCaIC	Central California Information Center
Project	Quintal Road Development, Manteca
Stantec	Stantec Consulting Services Inc.

1 Project Location and Description

The Project site is located at the juncture of Quintal Road, S. Main Street, and E. Atherton, consisting of Assessor's Parcel Numbers [APNs] 224-040-110-000; 224-040-070-000; 224-040-060-000; and 224-040-520-000. The project site is bordered by CA-120 to the north, East Atherton Drive to the south, South Main Street to the west, and a housing development to the east.

As depicted on the Project site plans and presented in the Preliminary Staff Review Application provided by Quarterra Multifamily the Project would involve the construction and operation of 652 multifamily for-rent apartments, 48 for-sale two-family units and 98 single family for-sale homes. The Project site is approximately 59.19 acres and currently undeveloped. Entrance to the site would be via two entry points: the primary entry point will be at the intersection of the new Buena Vista Road segment and E. Atherton Road. The second access point is via the currently abandoned Quintal Road entry off S. Main Street and just to the south of the on and off ramps of Highway (HWY) CA-120.

2 Regulatory Context

2.1 CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

Historical and archaeological resources are afforded consideration and protection by CEQA (14 CCR Section 21083.2, 14 CCR Section 15064). CEQA Guidelines define significant cultural resources under two regulatory designations: historical resources and unique archaeological resources.

A historical resource is a "resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the California Register of Historical Resources (CRHR);" or "a resource listed in a local register of historical resources or identified as significant in a historical resource survey meeting the requirements of Section 5024.1(g) of the Public Resources Code;" or "any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California, provided the agency's determination is supported by substantial evidence in light of the whole record" (14 CCR Section 15064.5[a][3]).

Historical resources automatically listed in the CRHR include California cultural resources listed in or formally determined to be eligible for the National Register and California Historical Landmarks list from No. 770 onward (Public Resources Code [PRC] 5024.1[d]). Locally listed resources are entitled to a presumption of significance unless a preponderance of evidence in the record indicates otherwise.

Under CEQA, a resource is considered historically significant if it meets the criteria for listing in the CRHR.

2.1.1 DEFINITIONS

The State CEQA Guidelines set the standard for determining whether a proposed project will result in a "substantial adverse change" in the significance of historical resources in Title 14 CCR Section 15064.5(b), which states:

> *A project with an effect that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment.*

Title 14 CCR Section 15064.5(b)(1) further clarifies "substantial adverse change" as follows:

> *Substantial adverse change in the significance of an historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired.*

Title 14 CCR Section 15064.5(b)(2) in turn explains that a historical resource is "materially impaired" when a project:

> *Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its eligibility for inclusion in the California Register of Historical Resources as determined by a lead agency for purposes of CEQA*.

As such, the test for determining whether or not a proposed project will have a significant impact on an identified historical resource is whether or not the project will alter in an adverse manner the physical integrity of the historical resource such that it would no longer be eligible for listing in the NRHP or CRHR or other local landmark programs.

This analysis considers direct and indirect impacts to historical resources using the following definitions of each:

- Direct or primary impacts are caused by the project and occur at the same time and place (14 CCR Section 15358 [a][1]).

- Indirect impacts, or secondary effects, are reasonably foreseeable and caused by a project but occur at a different time or place (14 CCR Section 15358 [a][2]).

2.2 Assembly Bill 52 and Tribal Cultural Resources

Assembly Bill 52 establishes a formal role for California Native American tribes in the CEQA process. If consultation is requested, CEQA lead agencies are required to consult with tribes about potential Tribal Cultural Resources (TCR) in the Project Area, the potential significance of project impacts, the development of project alternatives, and the type of environmental document that should be prepared.

2.2.1 DEFINITION

The definition of Native American tribe is a "Native American tribe located in California that is on the contact list maintained Native American Heritage Commission" (NAHC). This definition does not distinguish between federally recognized and non-federally recognized tribal groups and is, therefore, more inclusive than the federal definition of "Indian tribe" (PRC § 21073).

2.2.2 QUALIFICATION

To qualify as a TCR, it must be: 1) listed on or eligible for listing on the CRHR or a local historic register, or 2) a resource that the lead agency, at its discretion and supported by substantial evidence, determines should be treated as a TCR (PRC § 21074). TCRs include “non-unique archaeological resources” that, instead of being important for “scientific” value as a resource, can also be significant because of the sacred and/or cultural tribal value of the resource. Tribal representatives are considered experts appropriate for providing substantial evidence regarding the locations, types, and significance of TCRs within their traditionally and cultural affiliated geographic area (PRC § 21080.3.1(a)).

2.2.3 IMPACTS TO TRIBAL CULTURAL RESOURCES

A project that may cause a substantial adverse change in the significance of a TCR may be considered to have a significant effect on the environment (PRC § 21084.2). TCRs are defined under PRC 21074 as:

(1) Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:

(A) Included or determined to be eligible for inclusion in the California Register of Historical Resources.

(B) Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1.

(2) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.

(b) A cultural landscape that meets the criteria of subdivision (a) is a tribal cultural resource to the extent that the landscape is geographically defined in terms of the size and scope of the landscape.

(c) A historical resource described in Section 21084.1, a unique archaeological resource as defined in subdivision (g) of Section 21083.2, or a “nonunique archaeological resource” as defined in subdivision (h) of Section 21083.2 may also be a tribal cultural resource if it conforms with the criteria of subdivision (a).

3 Cultural Context

3.1 Prehistoric Context

The archaeological record for much of the Central Valley is fragmented and sparse. Many surface sites have been destroyed by human activities relating to agriculture and development, and many subsurface sites have been "obliterated or [deeply] buried" by ongoing alluvial processes, like flooding (Rosenthal et al. 2007: 149). Many of the surface sites, in particular, that have been destroyed were mound sites proximal to waterways; these would have been important settlement sites. Nevertheless, a century of archaeological research has yielded sufficient information to create a rough chronological framework.

The archaeological record of the Central Valley, and the San Joaquin Valley in particular, is divided into three time periods, with many periods themselves being subdivided. These include the Paleo-Indian (13500-10500 BP [years before present]), the Archaic (10500-850 BP, divided into Lower, Middle, and Upper), and the Emergent Period (850-180 BP). 180 BP generally represents the date of historic "contact" with Euroamerican settlers. For a complete discussion of the characteristic features of the Central Valley, see Rosenthal et al. 2007, from which this summary is drawn.

THE PALEO-INDIAN PERIOD (13500 TO 10500 BP)

This period represents the transition from the Pleistocene to the Holocene geologic epoch, and many Pleistocene landforms are long eroded, and sites lost. However, a distinctive projectile point type, basally thinned with a central flute, is well dated to this time period. These concave-base points have been found in several locations within the San Joaquin Valley (Rosenthal et al. 2007:151).

THE ARCHAIC PERIOD (10500 TO 850 BP)

THE LOWER ARCHAIC PERIOD (10500 TO 7500 BP): During the middle Holocene, a period of climate change resulted in a cycle of "widespread fan and floodplain deposition", presumably deeply burying and destroying many archaeological sites that would date to this time period (Rosenthal et al. 2007: 152). However, the limited evidence that does exist suggests that regional trade networks had been established by this point, as shell beads from California are found in the western and central Great Basin.

THE MIDDLE ARCHAIC PERIOD (7500 TO 2500 BP): The subsistence base of prehistoric groups begins to expand and diversify during the Middle Archaic period with a developing acorn economy, as evidenced by the advent of the mortar and pestle, and the growing importance of fishing, as evidence by novel technology like gorge hooks, composite bone hooks and spears.

During this period, the Windmiller Pattern (4500-~850 BP) emerges in the Central Valley and Delta regions, and perhaps even originated in the San Joaquin Valley. The Windmiller Pattern is defined by its distinctive funerary styles and elaborate material culture (stone net sinks, daggers, shell and bone ornaments, twine imprints in clay, items of unknown function or purpose), many of which were used as

funerary offerings. Trade networks were well established and widespread, with obsidian coming from the eastern Sierra Nevada and shell beads moving both east and west toward the coast. Extended residential settlement at Windmiller sites, often on mounds, is suggested by refined and specialized tool assemblages, trade objects, and plant and animal foods sourced throughout the year (Rosenthal et al. 2007: 154).

UPPER ARCHAIC PERIOD (2500 TO 850 BP): In the San Joaquin Valley, the Windmiller Pattern continued into the Upper Archaic. Additionally, a proliferation of specialized tool technologies developed, including bone whistles and other ornaments. An increasing abundance of mortars and pestles indicate the arrival of acorn-centric economies.

EMERGENT PERIOD (850 BP TO 180 BP)

The Emergent period is thought to be associated with a new level of sedentism, status ascription, and regional trade as indicated by the presence of finished artifacts and food remains that could not be obtained locally. This set of characteristics at the beginning of the Emergent period is referred to as the Augustine Pattern (Milliken et al. 2007:116).

The Augustine Pattern has several distinctive characteristics. An increase in status ascription is associated with novel funerary practices and material culture, with certain burials containing vast numbers of grave goods, like shell beads and ornaments. New levels of sedentism and population growth are suggested by an increase in settlement density, especially along waterways, and a dramatic increase in food remains. Specifically, large quantities of fish bone indicate that more people on the landscape were eating more fish. The increasing diversity of plant foods shows that acorns had been supplemented, if not supplanted, by plant foods like small seeds from grasses (Wohlgemuth 2004). The florescence of shell bead types and the decentralized nature of manufacture are potentially signs of a monetized economy with shell bead currencies, which has been documented elsewhere in California at this time (Arnold 2001).

3.2 Ethnography

The Manteca area has traditionally been home to speakers of Northern Valley Yokuts[1]. Population estimates for the Central Valley, prior to European arrival in the Americas, hover in the 100,000 range (Rosenthal et al. 2007), with anywhere from 11,000 to 30,000 of these being Northern Valley Yokuts speakers (Wallace 1978).

The Northern Valley Yokuts language belongs to the Penutian language stock (Golla 2007). A branch of Penutian, called Yok-Utian has two sub-branches, consisting of Miwok-Ohlone (spoken by groups in the Bay Area, and parts of the northern Sierra Nevada) and Yokuts (Northern and Southern) (Golla 2007:76). Linguistic differences between these and other California groups suggest that Yokuts-speakers have

[1] Most specifically, Manteca was occupied by Far Northern Valley Yokuts, also known as Delta Yokuts, speakers, which is somewhat distinct from other Yokuts dialects (Golla 2011).

resided in the Central Valley for between 4000-5000 years, perhaps coeval with the Windmiller Pattern observed in the region archaeologically (see above).

Ethnographically, Yokuts groups are known for dense settlements and complex sociopolitical organization, even compared with other Indigenous Californian groups (Bettinger 2015). In terms of subsistence, the San Joaquin River and its many tributaries were the lifeblood of Yokuts survival. Salmon were among the most important fish, as were white sturgeon and river perch. Waterfowl, such as geese and ducks, were also a key a resource (Wallace 1978). Wild plant foods like acorn were of "prime significance" (Wallace 1978:464), as were tule roots and a variety of seeds. Notably, tule reed boats were used along the lazy waterways of the San Joaquin Valley, both for fishing and transportation. Tribes, or villages, could have as many as 300 people, with each tribe having a headman. Settlements were often "perched on top of low mounds, on or near the banks of large watercourses" (Wallace 1978:466). Many Yokuts groups practiced a "fission-fusion" settlement pattern, as did many native Californian groups. This pattern is characterized by tribal members gathering communally in the winter, at their principal villages, and then dispersing, in small family groups, into the surrounding landscape in spring to forage among new growth.

With the advent of the Mission period in 1776, the lifeways of Indigenous Californians were rapidly and massively disrupted. Starting in the 1800s, Northern Valley Yokuts speakers were recruited, both voluntarily and not, to labor at Missions San Jose and Santa Clara (Arkush 2011). Diseases such as smallpox and influenza decimated native populations. Many who had avoided or escaped the Mission system fell victim to an epidemic of malaria in 1833, wiping out entire villages (Wallace 1978). When the secularization of the Mission system was instituted in 1834, many Yokuts-speakers returned to their homelands. However, the Gold Rush in 1849 and its aftermath, including the Homestead Act of 1862, dealt another blow to native Californians. Many native Californians, including Yokuts, were driven out of their traditional homelands by Euroamerican settlers seeking fertile farmland. In 1850, the reservation system was established. As of 2022, at least eight California tribal nations represent Yokuts-speakers (nahc.ca.gov).

Today, many Yokuts groups are working to revitalize their traditional cultural practices and pursue self-determination. Notably, these practices include prescribed burns for landscape management (Hagemann 2020) as with the Amah Mutsun (a tribal band comprising Ohlone and Yokuts speakers). Tribal gaming has been an important source of economic sovereignty for Northern Yokuts groups. The Picayune Rancheria of Chukchansi Yokuts has been active in pursuing and supporting language and cultural revitalization movements (Schock 2012).

3.3 Historic Overview

After the luster of the Gold Rush began to fade in the late 1850s, former miners and new settlers in California began to disperse out from the Sierra Nevada Mountains and find areas in the Central Valley to settle and stake claims to land. Joshua Cowell arrived in Central Valley in 1861 and settled on the land that became the town of Manteca. He filed a land claim for 1,000 acres and called his settlement Cowell Station (Manteca Chamber of Commerce). He raised cattle and grew grain and watermelons and was soon joined on his land by ranch hands and their families and slowly formed a small town. After the

construction of the Central Pacific Railroad through the town in 1873, the local agricultural industry continued to grow, with the addition of crops like alfalfa, almonds, grapes, and walnuts (Manteca Historical Society and Museum). With the construction of the railroad, it was decided to change the name of the town to Manteca, which loosely translates as “lard” or “butter” in Spanish. There was already a Cowell Station on the rail line, so the name of the town had to be changed and Manteca was chosen because of the prevalence of dairy farms in the area. Ranching and farming continued as the primary pillars of the local economy, with pumpkins and the dairy industry as the most prevalent, and the town continued to grow into the 20th century (Escalante 2019). By the 1910s, the population of the town was 100 and the downtown boasted a general store, barber, and a post office. To continue supporting the successful agriculture in the area, the South San Joaquin Irrigation District was authorized and formed in 1909 and bonds were issued in 1913 to divert water from the Stanislaus River (Manteca Chamber of Commerce).

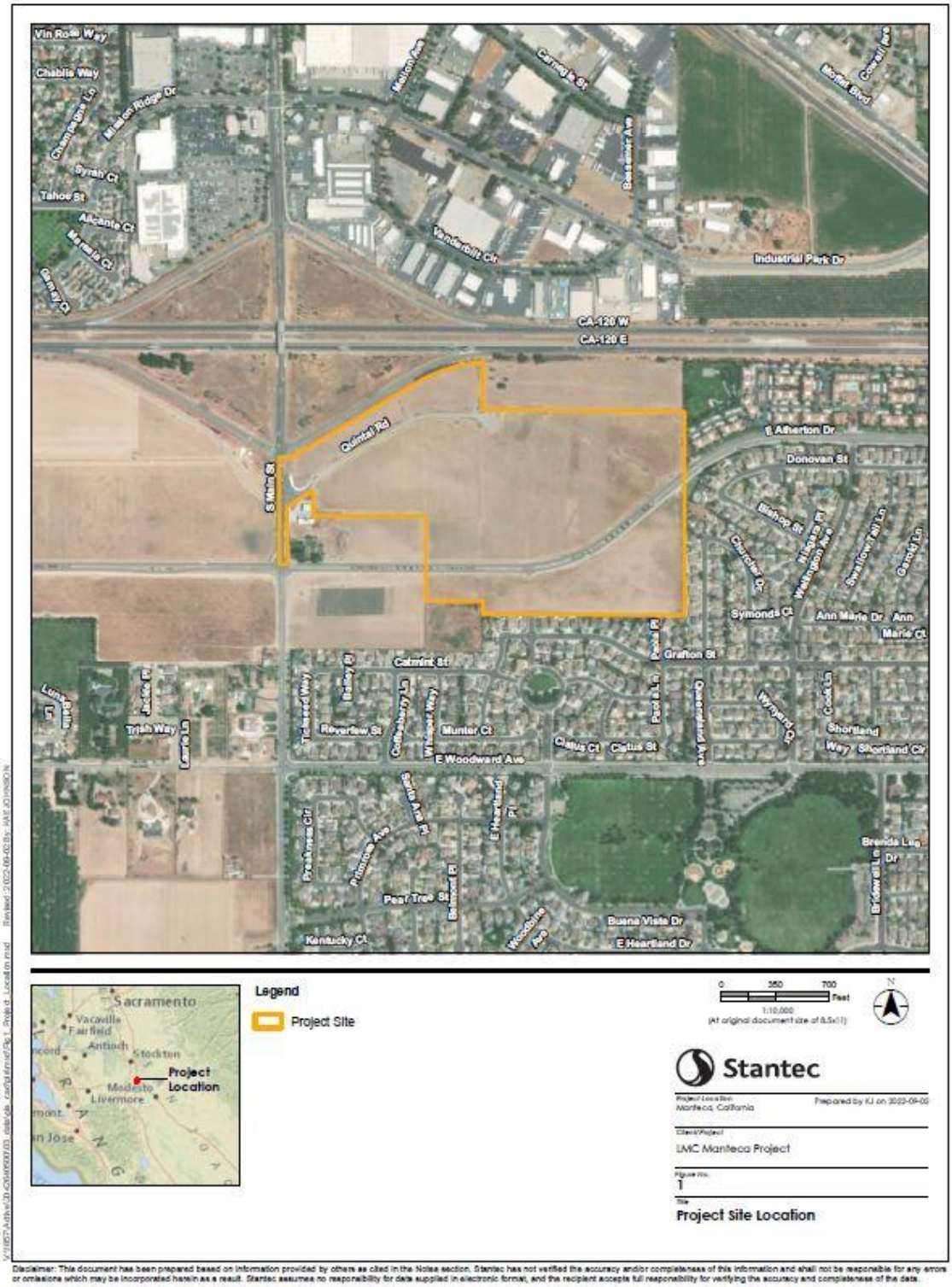
The town was incorporated in 1918 and Joshua Cowell was elected as Manteca’s first mayor. Agriculture continued to dominate the local economy, but by the mid-20th century industry came to town with the construction of the Manteca Canning Company, Spreckels Sugar Company, and the Kraft Company cheese factory. With the construction of these factories, the population of Manteca boomed, several subdivisions were constructed, and industry and agriculture sustained the town through the 20th century. By the 2000s, most of the factories and plants were shut down, however, new technology industries were developing in the area. Manteca has remained a largely agricultural area and much of the community is still focused on local agriculture (Manteca Chamber of Commerce).

4 Area of Potential Impacts

The project site is bordered by CA-120 to the north, East Atherton Drive to the south, South Main Street to the west, and a housing development to the east (Figure 1). Following a definition provided for federal guidance (per 36 CFR Section 800.16, after which state guidance is modeled), the area of potential impacts (API) can be described as:

> *geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties, if any such properties exist. The area of potential [impacts] is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking.*

Area of Potential Impacts



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5 Methods and Results

Cultural resources investigations for the project included a records search conducted at Central California Information Center (CCaIC) of the California Historical Resources Information System (CHRIS), a desktop literature review, Native American outreach, and pedestrian survey.

5.1 California Historical Resources Information System Records Search and Desktop Review

At the request of Stantec Consulting Services Inc. (Stantec), CCaIC staff performed a search of the CHRIS cultural resources database on September 26, 2022, for resources located in and within 0.50 mile of the project API. The following lists and databases were also reviewed:

- California Inventory of Historic Resources (Office of Historic Preservation 1976)
- California Historical Landmarks (California Office of Historic Preservation 1996)
- Points of Historical Interest (California Office of Historic Preservation 1992)
- Directory of Properties in the Historic Property Data File (California Office of Historic Preservation 2012) (Note, the directory includes listings of the NRHP, California Register of Historical Resources, California Historic Landmarks, and California Points of Historical Interest)

5.1.1 PREVIOUS STUDIES

Two previous studies were identified as covering portions of the API (Table 1). Eleven (11) additional previous studies were identified within 0.50 mile of the API (Table 2).

Table 1: Previous Studies Within or Adjacent to the Project API (n=2)

Study Number	Author	Date	Title
SJ-01900	Napton, L. K.	1993	A Preliminary Cultural Resources Investigation of the South Manteca Area Plan, 7800 acres in San Joaquin County, California.
SJ-04768	Windmiller, Rick and Donald Napoli	2002	City of Manteca- General Plan Update, Background Reports: Archaeological Resources, Historical Resources, Records Search Results

Table 2: Previous Studies Within 0.50-mile (n=11)

Study Number	Author	Date	Title
SJ-02262	Napton, L. K.	1994	Cultural Resources Investigation of the Proposed Tidewater Bikeway Project, City of Manteca, San Joaquin County, California
SJ-03362	City of Manteca	1994	Historic Property Survey Report - Proposed Tidewater Bikeway Project in the City of Manteca, California
SJ-03810	Roper, C. K.	1999	Attachment C: Cultural/Historical Resources, Pacific Bell Mobile Services SA-238-03, VERTEX Project No. 1391
SJ-03995	Nelson, W. J.	2000	Cultural Resource Survey for the Level (3) Communications Long Haul Fiber Optics Project; Segment WS04: Sacramento to Bakersfield
SJ-04682	Kobrine, K.	2001	Request for Section 106 Findings/Determination, Verizon Site: 120/S. Main, County of San Joaquin (1153 Vanderbilt Circle, Manteca, California).
SJ-05309	Baloian, M, R. Baloian, W. Nettles	2004	Cultural Resources Investigations for the South San Joaquin Irrigation District in San Joaquin County, California.
SJ-05808	Losee, C.	2005	Collocation ("CO") Submission Packet, FCC Form 621, Cingular Wireless Cal-Concrete/T-Mobile, FS 031-C1.
SJ-06345	SWCA Environmental Consultants	2006	Cultural Resources Final Report of Monitoring and Findings for the QWest Network Construction Project, State of California. SWCA Project No. 10715-180.
SJ-06625	ASI Archaeology and Cultural Resource Management	1998	Cultural Resources Survey, South County Surface Water Project, San Joaquin County, California, South San Joaquin Irrigation District
SJ-09092	ESA Inc.	2019	Cultural Resources and Tribal Cultural Resources City of Manteca TCP Mitigation Project.
SJ-09247	Falke, M. and K. Vallaire	2017	Supplemental Archaeological Survey Report, State Route 120 at Union Road Interchange Project, Manteca, San Joaquin County, California; 10-SJ-120, P.M. 3.4/5.2, EA 10-0P200, ID 10-0000-0182

5.1.2 PREVIOUSLY RECORDED CULTURAL RESOURCES

The records search conducted at the CCaIC identified no resources located within the project API. Two resources were located within 0.50 miles of the API (Table 3, below).

Table 3. Previously Recorded Cultural Resources within 0.5-mile of API (n=2)

P-Number	Trinomial	Description	Previous NRHP/CRHR Recommendations
P-39-000015	CA-SJO-000256/H	A portion of the Tidewater Southern/Union Pacific Railway. In Manteca, the grade is now a bike path.	6Y (Ineligible)
P-39-004400	N/A	Single-family, Ranch-style residence with garage.	7 (Unevaluated)

No impacts to the listed resources are anticipated.

5.2 Native American Consultation

On September 2, 2022, Stantec sent an email with a map depicting the project API to the Native American Heritage Commission, requesting a review of their sacred lands files for any Native American cultural resources that might be affected by the project.

As of this document, no response has been received.

5.3 Pedestrian Survey

On October 6, 2022, Stantec archaeologist, Sarah Mace M.A., conducted an intensive pedestrian survey for the Manteca Quintal Project. Sarah Mace meets the Secretary of Interior's Professional Qualification Standards for archaeology. Stantec documented field conditions and overview photographs were taken.

Stantec conducted intensive pedestrian survey of the project area. The survey was conducted by walking parallel transects spaced at ten to fifteen meters across the entire Project area. All exposed soils, such as at vehicle tracks and rodent burrows, were closely examined for evidence of buried cultural deposits. Stantec documented the survey with digital photographs and written notes.

The Project area is located south of CA-120 and is bisected by a road. Ground surface visibility was good (70 to 80 percent), on average at the time of survey; the northern third of the project area had visibility closer to 20% (Figure 2), but the southern two-thirds closer to 100% (Figure 3). Sparse vegetation consisted of short brushes, grasses, and watermelon plants. Exposed soils consisted of grey sand and grey-brown sandy loam. Modern refuse was scattered across the northern section of the project area. Digital photographs were taken of the survey area, a selection of which are included as Figures 2–5 below.

No evidence of cultural resources, neither prehistoric nor historic, were observed during the survey.

Figure 2. Photograph of northern portion of project area, showing poor ground visibility. View facing southwest (S. Mace)

Figure 3. Project overview, facing west. Photograph shows excellent ground visibility (S. Mace)

Figure 4. Transect overview, facing southwest (S. Mace)

Figure 5. End of day transect overview, facing west (S. Mace)

6 Conclusion

Stantec conducted a cultural resources inventory and evaluation for the project that included background research, a records search at CCaIC, and intensive pedestrian survey. No resources were identified in the API, and work will be confined to the project parcel. As such, no additional cultural resource work is recommended for the proposed project.

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Appendix A Records Search Results

CENTRAL CALIFORNIA INFORMATION CENTER
California Historical Resources Information System
Department of Anthropology – California State University, Stanislaus
One University Circle, Turlock, California 95382
(209) 667-3307

Alpine, Calaveras, Mariposa, Merced, San Joaquin, Stanislaus & Tuolumne Counties

Date: 9/6/2022

Records Search File No.: 12295L
Access Agreement: #20
Project: Manteca Quintal Road

Sarah Mace
Stantec Consulting, Inc.
1340 Treat Boulevard, Suite 300
Walnut Creek, CA 94597
925-448-7654 sarah.mace@stantec.com

Invoice address: Stantec
3875 Atherton Road
Rocklin, CA 95765-3716

Dear Ms. Mace:

The Central California Information Center received your Priority Response record search request for the project area referenced above, located on the Manteca 7.5' quadrangle in San Joaquin County. The following reflects the results of the records search for the project study area and radius:

As per data currently available at the CCaIC, the locations of resources/reports are provided in the following format: ☐ custom GIS maps ☒ GIS Data/shape files ☐ hand-drawn maps

Summary Data:

Resources within the project area:	None formally reported to the Information Center.
Resources within the 1/2-mile radius:	2: P-39-000015, 4400
Reports within the project area:	2: SJ-01900, 4786
Reports within the 1/2-mile radius:	11: SJ-02262, 3362, 3810, 3995, 4682, 5309, 5808, 6345, 6625, 9092, 9247

Resource Database Printout (list):	☐ enclosed	☒ not requested	☐ nothing listed
Resource Database Printout (details):	☒ enclosed	☐ not requested	☐ nothing listed
Resource Digital Database Records:	☐ enclosed	☒ not requested	☐ nothing listed
Report Database Printout (list):	☐ enclosed	☒ not requested	☐ nothing listed
Report Database Printout (details):	☒ enclosed	☐ not requested	☐ nothing listed
Report Digital Database Records:	☐ enclosed	☒ not requested	☐ nothing listed
Resource Record Copies:	☒ enclosed	☐ not requested	☐ nothing listed
Report Copies:	☒ enclosed	☐ not requested	☐ nothing listed

OHP Historic Properties Directory: New Excel File: Built Environment Resource Directory (BERD)

Dated 11/17/2021

Not all resources listed in the BERD are mapped in GIS, nor do we have records on file for; if you identify additional resources in the BERD that you need copies of, contact the IC.

	☐ enclosed	☐ not requested	☒ nothing listed
Archaeological Determinations of Eligibility:	☐ enclosed	☐ not requested	☒ nothing listed
CA Inventory of Historic Resources (1976):	☐ enclosed	☐ not requested	☒ nothing listed
Caltrans Bridge Survey:	☐ enclosed	☒ not requested	☐ nothing listed
Ethnographic Information:	☐ enclosed	☒ not requested	☐ nothing listed
Historical Literature:	☐ enclosed	☒ not requested	☐ nothing listed
Historical Maps:	☐ enclosed	☒ not requested	☐ nothing listed
Local Inventories:	☐ enclosed	☒ not requested	☐ nothing listed
GLO and/or Rancho Plat Maps:	☐ enclosed	☒ not requested	☐ nothing listed

Shipwreck Inventory: ☒ not available at CCIC; please go to http://shipwrecks.slc.ca.gov/ShipwrecksDatabase/Shipwrecks_Database.asp

Soil Survey Maps: ☒ not available at CCIC; please go to http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx

Please forward a copy of any resulting reports from this project to the office as soon as possible. Due to the sensitive nature of archaeological site location data, we ask that you do not include resource location maps and resource location descriptions in your report if the report is for public distribution. If you have any questions regarding the results presented herein, please contact the office at the phone number listed above.

The provision of CHRIS Data via this records search response does not in any way constitute public disclosure of records otherwise exempt from disclosure under the California Public Records Act or any other law, including, but not limited to, records related to archeological site information maintained by or on behalf of, or in the possession of, the State of California, Department of Parks and Recreation, State Historic Preservation Officer, Office of Historic Preservation, or the State Historical Resources Commission.

Due to processing delays and other factors, not all of the historical resource reports and resource records that have been submitted to the Office of Historic Preservation are available via this records search. Additional information may be available through the federal, state, and local agencies that produced or paid for historical resource management work in the search area. Additionally, Native American tribes have historical resource information not in the CHRIS Inventory, and you should contact the California Native American Heritage Commission for information on local/regional tribal contacts.

Should you require any additional information for the above referenced project, reference the record search number listed above when making inquiries. Requests made after initial invoicing will result in the preparation of a separate invoice.

Thank you for using the California Historical Resources Information System (CHRIS).

Note: Billing will be transmitted separately via email by our Financial Services office *($537.52),

payable within 60 days of receipt of the invoice.

If you wish to include payment by Credit Card, you must wait to receive the official invoice from Financial Services so that you can reference the CMP # (Invoice Number), and then contact the link below:

https://commerce.cashnet.com/ANTHROPOLOGY

Sincerely,

E. A. Greathouse

E. A. Greathouse, Coordinator
Central California Information Center
California Historical Resources Information System

* Invoice Request sent to: ARBilling@csustan.edu, CSU Stanislaus Financial Services

APPENDIX F

ROCKRIDGE GEOTECHNICAL

Prepared for **Lennar Multifamily Communities**

PRELIMINARY GEOTECHNICAL INVESTIGATION TO SUPPORT DUE DILIGENCE EVALUATION EMBLEM MANTECA 144-490 QUINTAL ROAD MANTECA, CALIFORNIA

DRAFT

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November 11, 2021
Project No. 21-2059

270 Grand Avenue
Oakland, CA 94610

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510 420-5738 tel
510 652-3096 fax

ROCKRIDGE GEOTECHNICAL

November 11, 2021
Project No. 21-2059

Mr. Tyler Wood
Vice President, Development
Lennar Multifamily Communities
492 9th Street, Suite 300
Oakland, California 94607

Subject: Preliminary Geotechnical Investigation Report
to Support Due Diligence Evaluation
Proposed Emblem Manteca Residential Development
144-490 Quintal Road
Manteca, California

DRAFT

Dear Mr. Wood:

We are pleased to present the results of our preliminary geotechnical investigation in support of the due diligence evaluation of the property located at 144 through 490 Quintal Road in Manteca, California. We understand the proposed development will be a joint venture between Lennar Multifamily Communities and Lennar Homes. Our preliminary investigation was performed in accordance with our proposal dated June 25, 2021.

The project site, referred to in this report as Emblem Manteca, consists of four parcels encompassing a total area of approximately 60 acres. There is a non-contiguous parcel south of East Atherton Road that is included in the overall site development. The site is bounded by a single-family residential development to the east and south, South Main Street to the west, and Highway 120 to the north. The subject property is currently vacant with vegetated, tilled ground covering most of the site.

The proposed development being considered for the site consists of constructing two phases of three-story, at grade, Type-V apartment buildings (Lennar Multifamily Community scope), as well as single-family homes (Lennar Homes scope). The proposed development will also include new internal streets and parking lots.

Based on the results of our preliminary geotechnical investigation, we conclude there are no major geotechnical issues that would preclude development of the site as proposed. The primary geotechnical issues affecting the proposed development include: 1) providing adequate foundation support for the proposed structures; and 2) the potential for up to one inch of liquefaction-induced, free-field settlement and relatively shallow liquefiable layers in some locations at the site.

On the basis of our experience, we judge the anticipated settlements due to post-liquefaction reconsolidation exceed the typical tolerance of a conventional spread footing foundation system. We preliminarily conclude P-T slabs or stiffened mats would be the most appropriate foundation system for the proposed buildings, provided the estimated settlements are acceptable from a structural standpoint.

Our preliminary geotechnical investigation consisted of a limited subsurface exploration program. Prior to final design, a final geotechnical investigation should be performed to fill in data gaps of subsurface conditions and provide final conclusions and recommendations regarding the geotechnical aspects of the project.

We appreciate the opportunity to provide our services to you on this project. If you have any questions, please call.

Sincerely yours,
ROCKRIDGE GEOTECHNICAL, INC.

DRAFT

Darcie Maffioli, P.E., G.E.
Senior Project Engineer

Logan D. Medeiros P.E., G.E.
Associate Engineer

Enclosure

ROCKRIDGE GEOTECHNICAL

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ROCKRIDGE GEOTECHNICAL

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APPENDIX A

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Figures A-16 through A-23 Hand Auger Boring Logs

Figure A-24 Soil Classification Chart

APPENDIX B

Figures B-1a and B-1b Particle Size Distribution Reports

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ROCKRIDGE GEOTECHNICAL

PRELIMINARY GEOTECHNICAL INVESTIGATION
TO SUPPORT DUE DILIGENCE EVALUATION
EMBLEM MANTECA
144-490 QUINTAL ROAD
Manteca, California

1.0 INTRODUCTION

This report presents the results of the preliminary geotechnical investigation performed by Rockridge Geotechnical, Inc. (Rockridge) for the due diligence evaluation of the properties at 144 through 490 Quintal Road in Manteca, California. We understand that the proposed development will be a joint venture between Lennar Multifamily Communities and Lennar Homes. The project site is located on the eastern side of South Main Street, approximately 300 feet south of its intersection with Highway 120, as shown on the Site Location Map, Figure 1.

The project site, referred to in this report as Emblem Manteca, consists of four parcels encompassing a total area of approximately 60 acres. There is a non-contiguous parcel south of East Atherton Road that is included in the overall site development. The site is bounded by a single-family residential development to the east and south, South Main Street to the west, and Highway 120 to the north. The subject property is currently vacant with vegetated, tilled ground covering most of the site.

The proposed development being considered for the site consists of constructing two phases of three-story, at grade, Type-V apartment buildings (Lennar Multifamily Community scope), as well as single-family homes (Lennar Homes scope), as shown on the Site Plan, Figure 2. The proposed development will also include new internal streets and parking lots.

2.0 SCOPE OF SERVICES

Our preliminary geotechnical investigation was performed in accordance with our Consultant Due Diligence Agreement with Lennar Multifamily Communities dated September 21, 2021. Our scope of work consisted of exploring subsurface conditions at the site by performing fifteen cone penetration tests (CPTs), advancing eight hand auger borings, performing laboratory

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testing, and performing engineering analyses to develop conclusions and recommendations regarding:

- the most appropriate foundation type(s) for the proposed buildings
- preliminary design criteria for the recommended foundation type(s), including vertical and lateral capacities
- estimates of foundation settlement
- site seismicity and seismic hazards, including the potential for liquefaction and liquefaction-induced ground failure
- 2019 California Building Code (CBC) site class and mapped design spectral response acceleration parameters
- construction considerations.

3.0 FIELD INVESTIGATION

Subsurface conditions were explored by performing fifteen CPTs, hand augering eight shallow test borings, and performing laboratory testing on select soil samples. Prior to performing our field investigation, we obtained a drilling permit from the San Joaquin County Environmental Health Department (SJCEHD) and contacted Underground Service Alert (USA) to notify them of our work, as required by law. We also retained Precision Locating LLC, a private utility locator, to check that the CPT locations were clear of buried utilities. Details of the field investigation and laboratory testing are described in this section.

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3.1 Cone Penetration Tests

Fifteen CPTs, designated CPT-1 through CPT-15, were performed to obtain in-situ soil data at the approximate locations shown on Figure 2. The CPTs were advanced by ConeTec, Inc. of San Leandro, California on October 4 and 5, 2021. All CPTs were advanced to target depth ranging between 30 and 50 feet below ground surface (bgs).

The CPTs were advanced by hydraulically pushing a 1.7-inch-diameter cone-tipped probe with a projected area of 2.3 square inches (15 square centimeters) into the ground. The cone-tipped probe measured tip resistance and the friction sleeve behind the cone tip measured frictional resistance. Electrical strain gauges within the cone measured soil parameters at a recording

interval of approximately one inch for the entire depth advanced. Soil data, including tip resistance, frictional resistance, and pore water pressure, were recorded by a computer while the test was conducted. Accumulated data were processed by a computer to provide engineering information such as the soil behavior types (Robertson, 2010) and approximate strength characteristics of the soil encountered. The CPT logs showing tip resistance, friction ratio, and pore pressure, as well as correlated soil behavior type, are presented in Appendix A on Figures A-1 through A-15.

Upon completion, the CPT was backfilled with neat cement grout in accordance with SJCEHD grouting guidelines.

3.2 Hand Auger Borings

We advanced eight hand auger borings, designated as HA-1 through HA-8, adjacent to select CPTs to obtain near-surface soil samples for visual classification and limited laboratory testing. Hand auger borings were advanced to depths between 5 and 10 feet bgs using a three-inch-diameter hand auger. The subsurface conditions encountered in the borings are presented on Figures A-16 through A-23 in Appendix A. The soil encountered in the borings was classified in accordance with the classification chart shown on Figure A-24. Upon completion, the borehole were backfilled with the soil cuttings.

3.3 Laboratory Testing

We re-examined each soil sample obtained from our hand auger borings to confirm the field classifications and select representative samples for laboratory testing. Soil samples were tested by B. Hillebrandt Soils Testing, Inc. of Alamo, California to measure moisture content and particle size distribution. The results of the laboratory tests are presented on the hand auger boring logs and in Appendix B.

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4.0 SUBSURFACE CONDITIONS

The regional geology map prepared by Wagner, Bortugno, and McJunkin (1991), a portion of which is presented on Figure 3, indicates the site is mapped in a zone of Holocene-age Dune sand (Qs).

The results of our CPTs and hand auger borings indicate the site is generally underlain by medium dense to dense sand with varying fines content in the upper 12 to 20 feet bgs. Below the surficial sand with silt and silty sand, subsurface soils become interbedded with discontinuous layers of very stiff to hard clay and silty clay with dense to very dense sand and silty sand to the maximum depth explored of 50 feet bgs.

4.1 Groundwater

The groundwater level was indirectly measured in CPT-2, CPT-4, CPT-7, CPT-10, CPT-11, CPT-12, and CPT-13 by performing pore-pressure dissipation tests (PPDs) at or near the termination depths of the CPTs. The PPDs indicated the depth to groundwater at the time of the investigation was about 19.6 to 24.2 feet bgs. Groundwater was not measured at other CPT locations. Groundwater was not encountered in hand auger borings.

To further estimate the highest potential groundwater level that may occur at the site, we reviewed information on the State of California Water Resources Control Board GeoTracker website (https://geotracker.waterboards.ca.gov/). From the GeoTracker website, we obtained information from monitoring wells installed for the City of Manteca located at 210 Wetmore Street, about 4,000 feet north of the site. This site is relatively far away from the proposed development, however, both sites are located in the same geologic region. Summary of groundwater level measurements presented from the GeoTracker website indicate the groundwater level was measured between January 2002 and March 2008 and high groundwater level measurements ranged from about 13 to 15 feet bgs. The groundwater fluctuation between the high and low groundwater levels was approximately 10 feet during the monitoring period.

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In addition, we reviewed historic boring and CPT logs from Caltrans for the design and construction of the South Main Street overcrossing of Highway 120. The groundwater level measured in the CPT was at a depth of 13 feet bgs in January 1974 (Caltrans, 1974).

Based on the groundwater level data measured at the site, as well as review of historic groundwater data from other sites in the near vicinity, we conclude a preliminary design high groundwater level of about 13 feet below existing grades should be used for planning purposes. The groundwater level at the site is expected to fluctuate several feet seasonally and annually, depending on the amount of rainfall.

5.0 SEISMIC CONSIDERATIONS

The project site is within the central portion of the Great Valley geomorphic providence of California, which is also referred to as the Central Valley. The Great Valley is a large, asymmetrical northwesterly trending valley between the Coast ranges to the west and the Sierra Nevada to the east. The seismicity of this region of California is moderately low. The results of our evaluation of site seismicity and seismically related geologic hazards for the project site are presented in the following sections.

5.1 Regional Seismicity and Faulting

The site is in the Great Valley geomorphic province of California that is an alluvial plain about 50 miles wide and 400 miles long in the central part of California. The Great Valley is bordered to the north by the Cascade and Klamath ranges, to the west by the Coast Ranges, to the east by the Sierra Nevada Mountains, and to the south by the Transverse ranges.

The major active faults in the area are the Great Valley faults. These and select other faults in the region are shown on Figure 4. Active faults within a 50-kilometer radius of the site that are included in the Building Seismic Safety Council 2014 Event Catalog are summarized in Table 1. This table includes the distance and direction from the site, and characteristic moment

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magnitude[1] [Petersen et al. (2014) & Thompson et al. (2016)]. These references are based on the Third Uniform California Earthquake Rupture Forecast (UCERF3), prepared by Field et al. (2013).

TABLE 1
Regional Faults and Seismicity

Fault Segment	Approximate Distance from Site (km)	Direction from Site	Maximum Magnitude
Great Valley 07 (Orestimba)	25	Southwest	6.82
Great Valley 06 (Midland alt2)	39	West	7.12
Great Valley 06 (Midland alt1)	39	West	7.27
Greenville (North)	40	West	6.86
Greenville (South)	42	Southwest	6.64
Las Positas	43	West	6.50

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Earthquakes that have occurred in the Central Valley since the 1800s have only moderate effects in the Great Valley. Historic earthquakes occurring on the San Andreas and Hayward faults had moderate to strong shaking. The San Francisco Earthquake of 1906 caused the most significant damage in the history of the Bay Area in terms of loss of lives and property damage. This earthquake created a surface rupture along the San Andreas Fault from Shelter Cove to San Juan Bautista approximately 470 kilometers in length. It had a maximum intensity of XI (MM), an Mw of about 7.9, and was felt 560 kilometers away in Oregon, Nevada, and Los Angeles. At the project site, the estimated MM was about V, which corresponds to strong shaking (Boatwright and Bundock, 2005). The most recent earthquake to affect the Bay Area was the Loma Prieta Earthquake of October 17, 1989 with an Mw of 6.9. This earthquake occurred in the Santa Cruz

[1] Moment magnitude is an energy-based scale and provides a physically meaningful measure of the size of a faulting event. Moment magnitude is directly related to average slip and fault rupture area. Characteristic moment magnitudes are from the Building Seismic Safety Council 2014 Event Catalog.

Mountains about 102 kilometers southwest of the site. The MM of the 1989 Loma Prieta earthquake was between V and VI (moderate to strong) at the project site.

5.2 Geologic Hazards

During a major earthquake on a segment of one of the nearby faults, strong to very strong shaking is expected to occur at the project site. Strong shaking during an earthquake can result in ground failure such as that associated with soil liquefaction,[2] lateral spreading,[3] and cyclic densification[4]. We used the results of our field investigation to evaluate the potential of these phenomena occurring at the project site. The results of our analyses and evaluation are presented in the following sections.

5.2.1 Ground Shaking

The seismicity of the site is governed by the activity of the Great Valley fault, although ground shaking from future earthquakes on other faults will also be felt at the site. The intensity of earthquake ground motion at the site will depend upon the characteristics of the generating fault, distance to the earthquake epicenter, and magnitude and duration of the earthquake. We judge that moderate to strong shaking could occur at the site during a large earthquake on one of the nearby faults.

5.2.2 Ground Surface Rupture

Historically, ground surface displacements closely follow the trace of geologically young faults. The site is not within an Earthquake Fault Zone, as defined by the Alquist-Priolo Earthquake Fault Zoning Act, and no known active or potentially active faults exist on the site. We therefore conclude the risk of fault offset at the site from a known active fault is very low. In a seismically

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[2] Liquefaction is a phenomenon where loose, saturated, cohesionless soil experiences temporary reduction in strength during cyclic loading such as that produced by earthquakes.

[3] Lateral spreading is a phenomenon in which surficial soil displaces along a shear zone that has formed within an underlying liquefied layer. Upon reaching mobilization, the surficial blocks are transported downslope or in the direction of a free face by earthquake and gravitational forces.

[4] Cyclic densification is a phenomenon in which non-saturated, cohesionless soil is compacted by earthquake vibrations, causing ground-surface settlement.

active area, the remote possibility exists for future faulting in areas where no faults previously existed; however, we conclude the risk of surface faulting and consequent secondary ground failure from previously unknown faults is also very low.

5.2.3 Liquefaction and Associated Hazards

When a saturated, cohesionless soil liquefies, it experiences a temporary loss of shear strength created by a transient rise in excess pore pressure generated by strong ground motion. Soil susceptible to liquefaction includes loose to medium dense sand and gravel, low-plasticity silt, and some low-plasticity clay deposits. Flow failure, lateral spreading, differential settlement, loss of bearing strength, ground fissures and sand boils are evidence of excess pore pressure generation and liquefaction.

We evaluated the liquefaction potential of soil encountered below groundwater at the site using data collected in our CPTs. Liquefaction susceptibility was assessed using the software CLiq v3.3 (GeoLogismiki, 2021). CLiq uses measured CPT data and assesses liquefaction susceptibility and post-earthquake vertical settlement, given a user-defined earthquake magnitude and peak ground acceleration (PGA). Our liquefaction analyses were performed using the methodology proposed by Boulanger & Idriss (2014) for sand-like soils. Post-earthquake settlements were evaluated using the relationship proposed by Zhang, Robertson, and Brachman (2002) to estimate post-liquefaction volumetric strains and corresponding ground surface settlement; a relationship that is an extension of the work by Ishihara and Yoshimine (1992). Volumetric strains were modified using the methodology proposed by Çetin et al. (2009) to account for the depth of the liquefiable layers.

Our liquefaction analyses were performed assuming a high groundwater depth of 13 feet bgs as the "during earthquake" groundwater level. In accordance with the 2019 California Building Code (CBC), we used a peak ground acceleration of 0.42 times gravity (g) in our liquefaction evaluation; this peak ground acceleration is consistent with the Maximum Considered Earthquake Geometric Mean (MCE_G) peak ground acceleration adjusted for site effects (PGA_M) for a Site Class D. We conservatively used a moment magnitude 7.27 earthquake, which is

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consistent with the characteristic moment magnitude for the Great Valley (06) fault, as presented in Table 1.

Our liquefaction analyses indicate that there are several layers of potentially liquefiable soil between 13 and 42 feet bgs. Layers of potentially liquefiable soil are generally less than two feet, however there are some zones that are between three feet (CPT-7) and six feet thick (CPT-13). We estimate total liquefaction-induced ground settlement of at the site following a Maximum Considered Earthquake (MCE) event with PGA_M of 0.42g will be between 1/4 and 1 inch. We estimate less than 1/2 inch of liquefaction-induced differential settlement may occur over a 30-foot horizontal distance within the free field following a major earthquake.

The potential for liquefaction-induced ground failure depends on the thickness of the liquefiable soil layers relative to the thickness of the overlying non-liquefiable material. Ishihara (1985) presented an empirical relationship that provides criteria used to evaluate whether liquefaction-induced ground failure, such as sand boils, would be expected to occur under a given level of shaking for a liquefiable layer of given thickness overlain by a resistant, or protective, surficial layer. The potentially liquefiable soil layers in CPT-7 and CPT-13 are relatively thick compared to the overlying thickness of non-liquefiable soil, we preliminarily conclude that there is a potential for surface manifestation from liquefaction, such as sand boils and loss of bearing capacity, in these areas. In other areas of the site, the potential for liquefaction-induced ground failure is negligible. The potential for surface manifestations of liquefaction should be further evaluated during the final geotechnical investigation once groundwater levels are better characterized, samples of the liquefiable materials have been tested in the laboratory, and once the final grading plan and building layout have been established.

The results of our CPTs indicate that many of the potentially liquefiable layers are not continuous from one CPT location to another, which reduces the likelihood of large-scale lateral spreading during a major earthquake. However, we preliminarily conclude that there may be localized lateral ground deformations in portions of the site during a major seismic event. The CPTs performed as part of our preliminary investigation are widely spaced and, therefore, the geometry of the liquefiable layers is currently poorly constrained. In addition, a site topographic

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survey is not currently available. Additional borings and CPTs should be performed during the final geotechnical study and a topographic survey should be performed to further characterize these layers and refine the lateral spreading analyses.

5.2.4 Cyclic Densification

Cyclic densification (also referred to as differential compaction) of non-saturated sand (sand above groundwater table) can occur during an earthquake, resulting in settlement of the ground surface and overlying improvements. The site is underlain by medium dense to dense sand above the groundwater table. We evaluated the cyclic densification potential of soil encountered at the site using data collected in CPTs using the methodology by Yee, Stewart and Duku (2012).

Using the earthquake parameters discussed above, we estimate that settlements associated with cyclic densification will be negligible at the site as a result of strong shaking during an MCE event on a nearby fault.

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6.0 PRELIMINARY CONCLUSIONS AND RECOMMENDATIONS

Based on the results of our preliminary geotechnical investigation, we conclude there are no major geotechnical issues that would preclude development of the site as proposed. The primary geotechnical issues affecting the proposed development include:

- providing adequate foundation support for the proposed structures; and
- the potential for up to 1 inch of liquefaction-induced, free-field settlement and relatively shallow liquefiable layers in some locations

Our preliminary conclusions and recommendations regarding these issues are presented in the following sections.

6.1 Foundations and Settlement

As discussed in Section 4.0, the site is underlain by Dune sand which primarily consists of medium dense to very dense sand, which is generally capable of supporting the proposed lightweight structures on conventional shallow foundations under static load conditions. We estimate the magnitude of long-term static settlement for the proposed structures will be less than 1/2 inch. However, as discussed in Section 5.2.3, there is the potential for 1/4 to 1 inch of liquefaction-induced ground settlement at the site, as well as a low to moderate potential for surface manifestation of shallow liquefiable layers in isolated locations. Shallow liquefiable layers pose a threat of potential reduction in bearing capacity and/or excessive differential settlement for isolated spread footings under seismic loading. On the basis of our experience, we judge the anticipated settlements due to post-liquefaction reconsolidation exceed the typical tolerance of a conventional spread footing foundation system.

We understand that the project team is primarily interested in post-tensioned slabs-on-grade (P-T slabs) for support of the proposed buildings. We preliminarily conclude P-T slabs or stiffened mats would be the most appropriate foundation system for the proposed buildings, provided the estimated settlements are acceptable from a structural standpoint. More accurate estimates of the total and differential settlement will be provided once the structural loading has been determined, the foundation type has been selected, and after we complete the final subsurface exploration and

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laboratory testing program for the project site. Preliminary recommendations for P-T slabs and mat foundations are presented below.

6.1.1 P-T Slabs

The edges of the P-T slabs should be thickened such that the foundation edge is bottomed at least nine inches below the adjacent exterior grade. The maximum bearing pressure beneath P-T slabs should not exceed 4,000 psf under dead-plus-live load conditions and 5,300 psf under total load conditions, although we anticipate the average contact pressure will be significantly lower. For design of P-T slabs, we recommend using the parameters presented below in Table 2.

TABLE 2
P-T Slab Design Parameters

Parameter	Value
Thornwaite Moisture Index	-40
Edge moisture variation distance (e_m) edge lift center lift	 5.2 feet 9.0 feet
Percentage fines (assumed)	15%
Percentage of fine clay	5%
Liquid limit	30%
Plasticity Index	4%
Suction Variance at Ground	4.17 pF
Soil differential movement (y_m) edge lift center lift	 0.7 inches 0.1 inches

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Because the primary mechanism of foundation settlement at this site (liquefaction) is not expansive soil movement, the parameters provided above in accordance with the PTI methodology may not be adequate for determining the appropriate slab thickness and reinforcing. Therefore, in addition to checking the P-T slab design using the parameters provided

in Table 2, we recommend the design also be checked by the structural engineer using the subgrade modulus approach described in Section 6.1.2 for conventional mat foundations.

Lateral loads can be resisted by a combination of passive pressure on the vertical faces of the P-T slabs and friction along the bottom of the slab. Lateral resistance may be computed using an equivalent fluid weight (triangular distribution) of 270 pcf. Passive resistance in the upper one foot of soil should be ignored unless it is confined by slabs or pavement. Frictional resistance should be computed using a base friction coefficient of 0.35 where the P-T slab is in contact with soil. Where a vapor retarder is placed beneath the P-T slab, a base friction coefficient of 0.20 should be used. These values include a factor of safety of at least 1.5 and may be used in combination without reduction.

The P-T slab subgrades should be free of standing water, debris, and disturbed materials prior to placing concrete. The subgrade should be wetted following excavation and maintained in a moist condition until it is covered. We should check the foundation subgrade prior to placement of the vapor retarder.

6.1.2 Mat Foundations

For mat design, we preliminarily recommend using a modulus of subgrade reaction of 20 pounds per cubic inch (pci) for dead-plus-live loads. This value has already been scaled to consider the approximate plan dimensions of the foundation (therefore, this is not k_{v1} for 1-foot-square plate).

We expect the average bearing stress under the mat to be low; however, concentrated stresses will occur at wall/column locations and at the edges of the mat. The mat should be designed to impose a maximum dead-plus-live bearing pressure of 4,000 pounds per square foot (psf) on the foundation subgrade soil. This pressure may be increased by one-third for total load conditions.

Assuming the mat is underlain by a vapor retarder, a friction factor of 0.20 may be used to compute base friction. Where the mat foundation is supported directly on soil, a friction factor of 0.35 may be used. To compute lateral resistance from passive pressure against the sides of the mat, we recommend using an equivalent fluid weight of 270 pounds per cubic foot (pcf); the

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upper foot of soil should be ignored unless confined by a slab or pavement. The values for friction coefficient and passive pressure include a factor of safety of 1.5.

6.2 Construction Considerations

The soil to be excavated consists primarily of sand with varying silt content, which can be excavated with conventional earth-moving equipment such as loaders and backhoes. The majority of the site is currently fallow farmland. It is unknown if any other improvements were constructed previously at the site. Site clearing should include the removal of all existing vegetation, former improvements (if any), and underground utilities. If concrete debris or former foundation elements are encountered during grading, removal will require equipment capable of breaking concrete, such as a hoe-ram.

Undocumented fills or loose material associated with past tilling are likely present in portions of the site. Therefore, we recommend, at a minimum, the upper 18 inches of existing soil beneath the proposed structural improvements be moisture-conditioned and recompacted prior to construction of new roadways, concrete flatwork, building foundations, or placement of new fill (if applicable).

Excavations that will be entered by workers should be sloped or shored in accordance with CAL-OSHA standards (29 CFR Part 1926). The contractor should be responsible for the construction and safety of temporary slopes. We judge temporary slopes above the groundwater table with a maximum inclination of 1.5:1 (horizontal to vertical) should be stable, provided the slope is not surcharged by adjacent structures, construction equipment, or stockpiled soil.

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6.3 Seismic Design

The latitude and longitude of the site are 37.7807° and -121.2100°, respectively. For design in accordance with 2019 CBC, we recommend the following:

- Site Class D
- S_S = 0.786g, S_1 = 0.298g

The 2019 CBC is based on the guidelines contained within ASCE 7-16 which stipulates that where S_1 is greater than 0.2 times gravity (g) for Site Class D, a ground motion hazard analysis is needed unless the seismic response coefficient (C_s) value will be calculated as outlined in Section 11.4.8, Exception 2. Assuming the C_s value will be calculated as outlined in Section 11.4.8, Exception 2, we recommend the following seismic design parameters:

- F_a = 1.19, F_v = 2.0
- S_{MS} = 0.932g, S_{M1} = 0.596g
- S_{DS} = 0.621g, S_{D1} = 0.397g
- Seismic Design Category D for Risk Factors I, II, and III

7.0 FUTURE GEOTECHNICAL STUDY AND LIMITATIONS

The preliminary conclusions and recommendations presented within the report are based on a preliminary field investigation and not intended for final design. Prior to final design, we should be retained to provide a final geotechnical report based on a supplemental field investigation. Borings will be required to further evaluate the subsurface conditions beneath the site and develop final foundation design recommendations. Once our final report has been completed, the design team has selected a foundation system, and prior to construction, we should review the project plans and specifications to check their conformance with the intent of our final recommendations. During construction, we should observe site preparation, foundation installation, and the placement and compaction of fill. These observations will allow us to compare the actual with the anticipated soil conditions and to check if the contractor's work conforms with the geotechnical aspects of the plans and specifications.

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FIGURES

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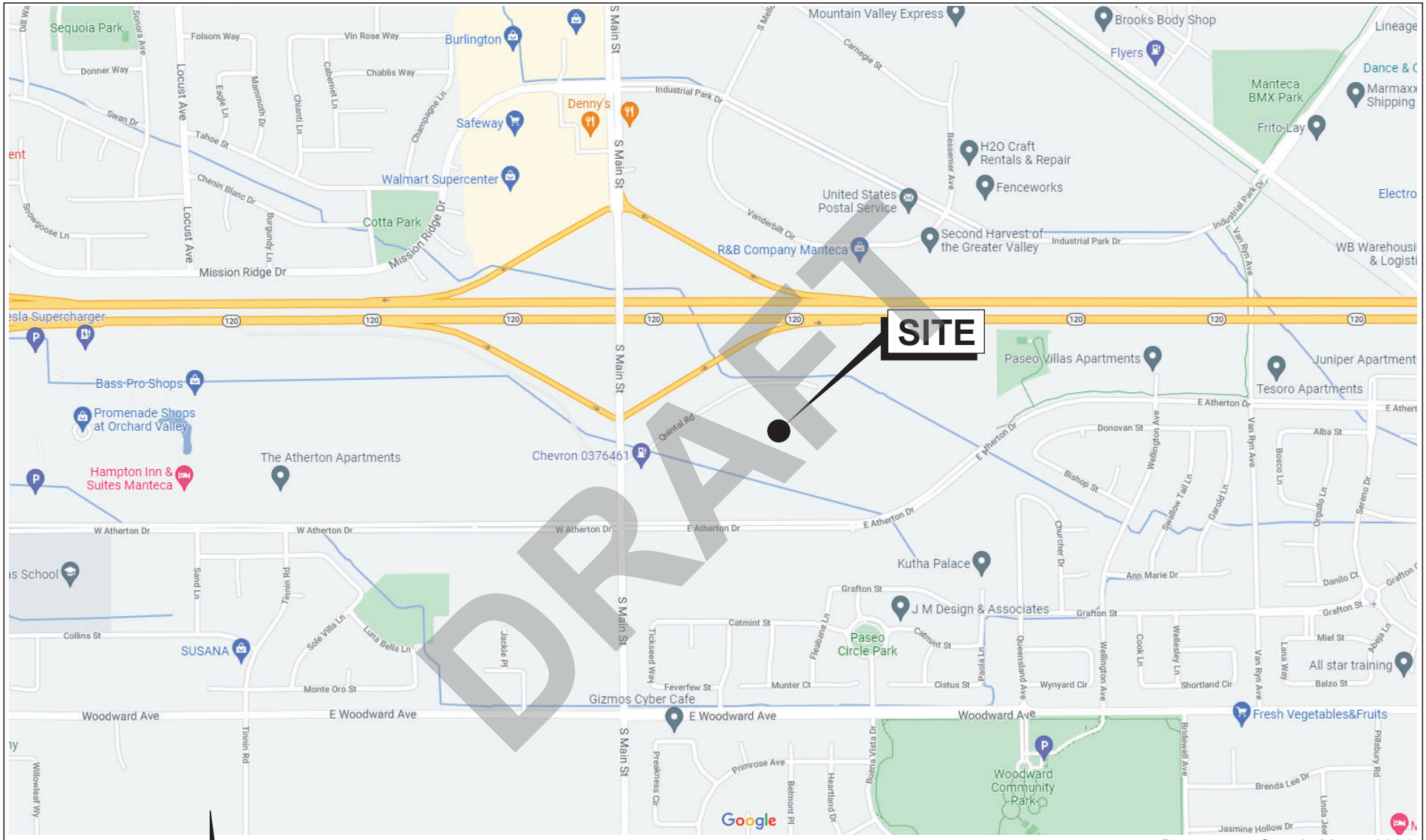

Base map: Google Maps, 2021

0 1,000 2,000 Feet

Approximate scale

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SITE LOCATION MAP

Date	Project No.	Figure
10/18/21	21-2059	1

MULTI-FAMILY ZONE	
TOTAL MULTI-FAMILY SITE AREA	1,375,226 SF
NUMBER OF BUILDINGS	34
NUMBER OF UNITS	744
TOTAL PARKING STALLS	1,194
AVG. STALLS/UNIT	1.60
POOL/CLUBHOUSE AREA	10,000 SF
TOTAL PAVEMENT AREA	467,414 SF
TOTAL SIDEWALK AREA	161,400 SF
TOTAL BUILDING AREA	275,980 SF
TOTAL IMPERVIOUS AREA	914,794 SF
TOTAL OPEN SPACE	460,432 SF
% OF OPEN SPACE	33.4%
MINIMUM C.3 TREATMENT AREA (4%)	36,591 SF

UNIT DENSITY				
AREA	ACRES	UNIT TYPE	UNITS	DENSITY
1	14.1	SINGLE FAMILY	65	4.61
2	13.8	1/2 SINGLE FAMILY, 1/2 DUET	85	6.16
3A	15.5	MULTI-FAMILY (STANDARD MODULE)	384	24.77
3B	15.8	MULTI-FAMILY (TUCK-UNDER MODULE)	360	22.78
TOTAL	59.2		894	15.10

HIGHWAY 120

SOUTH MAIN ST.

EAST ATHERTON DR.

LMC Phase 2

LMC Phase 1

Lennar Homes

Lennar Homes

CPT-1 CPT-2 CPT-3 CPT-4 CPT-5 CPT-6 CPT-7 CPT-8 CPT-9 CPT-10 CPT-11 CPT-12 CPT-13 CPT-14 CPT-15

HA-1 HA-2 HA-3 HA-4 HA-5 HA-6 HA-7 HA-8

EXPLANATION

CPT-1 Approximate location of cone penetration test by Rockridge Geotechnical, Inc., October 4-5, 2021

HA-1 Approximate location of hand-auger boring by Rockridge Geotechnical, Inc., October 4-5, 2021

Proposed development phase boundaries

Approximate project limits

0 250 Feet

Approximate scale

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Reference: Proposed Development Plan by LMC and Sandis, undated.

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SITE PLAN

Date 10/18/21 | Project No. 21-2059 | Figure 2

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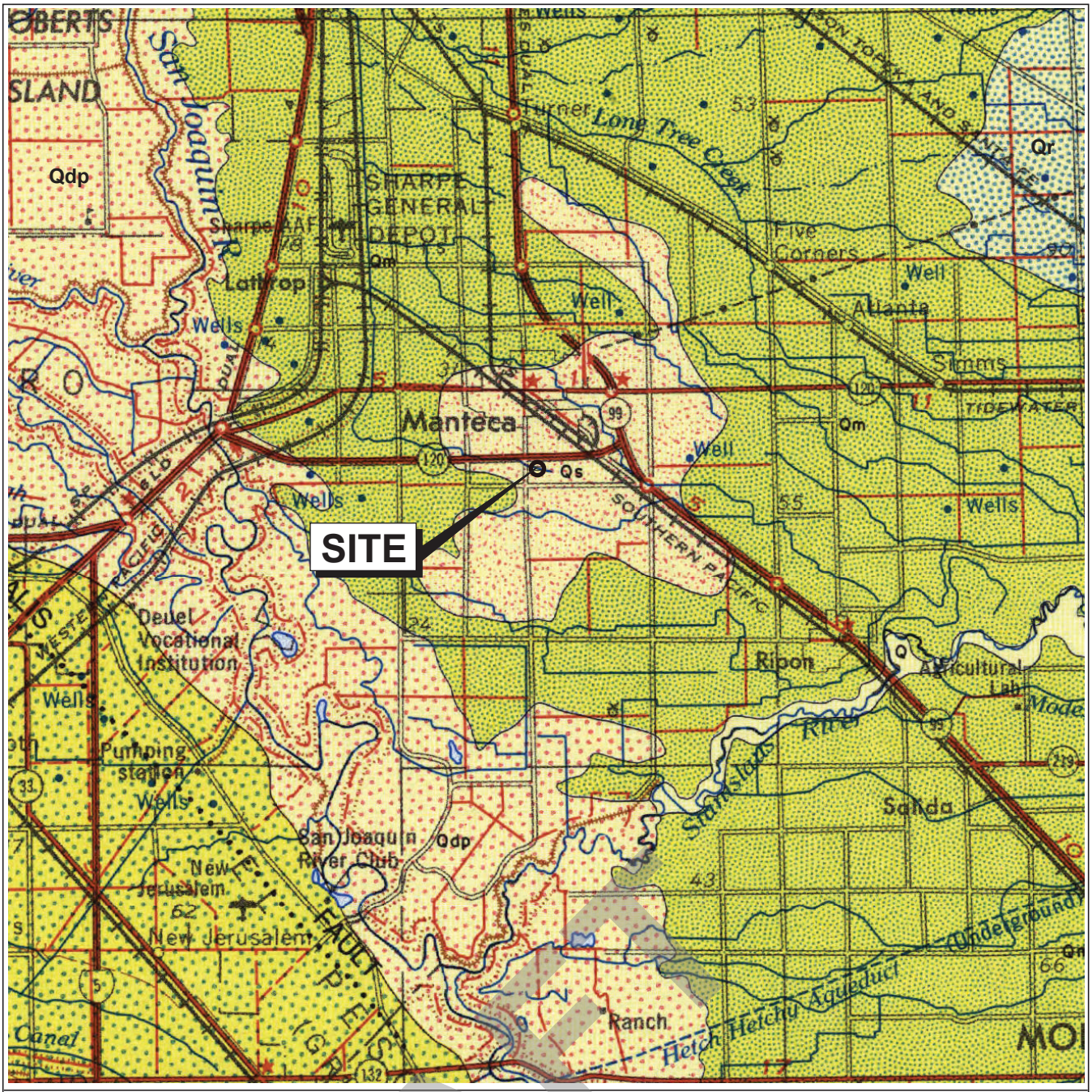

Wagner, D.L., Bortugno, E.J., and McJunkin, R.D. (1991).
Geologic map of the San Francisco-San Jose quadrangle, California, 1:250,000
California Division of Mines and Geology.

0 2.5 5 Miles

Approximate scale

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ROCKRIDGE GEOTECHNICAL

REGIONAL GEOLOGIC MAP

Date 10/18/21	Project No. 21-2059	Figure 3

Base Map: U.S. Geological Survey (USGS), National Seismic Hazards Maps - Fault Sources, 2014.

EXPLANATION

- Strike slip
- Thrust (Reverse)
- Normal

N

0 10 20 Miles

Approximate scale

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ROCKRIDGE GEOTECHNICAL

REGIONAL FAULT MAP

Date	Project No.	Figure
10/18/21	21-2059	4

ROCKRIDGE GEOTECHNICAL

APPENDIX A
Cone Penetration Test Results and Hand Auger Boring Logs

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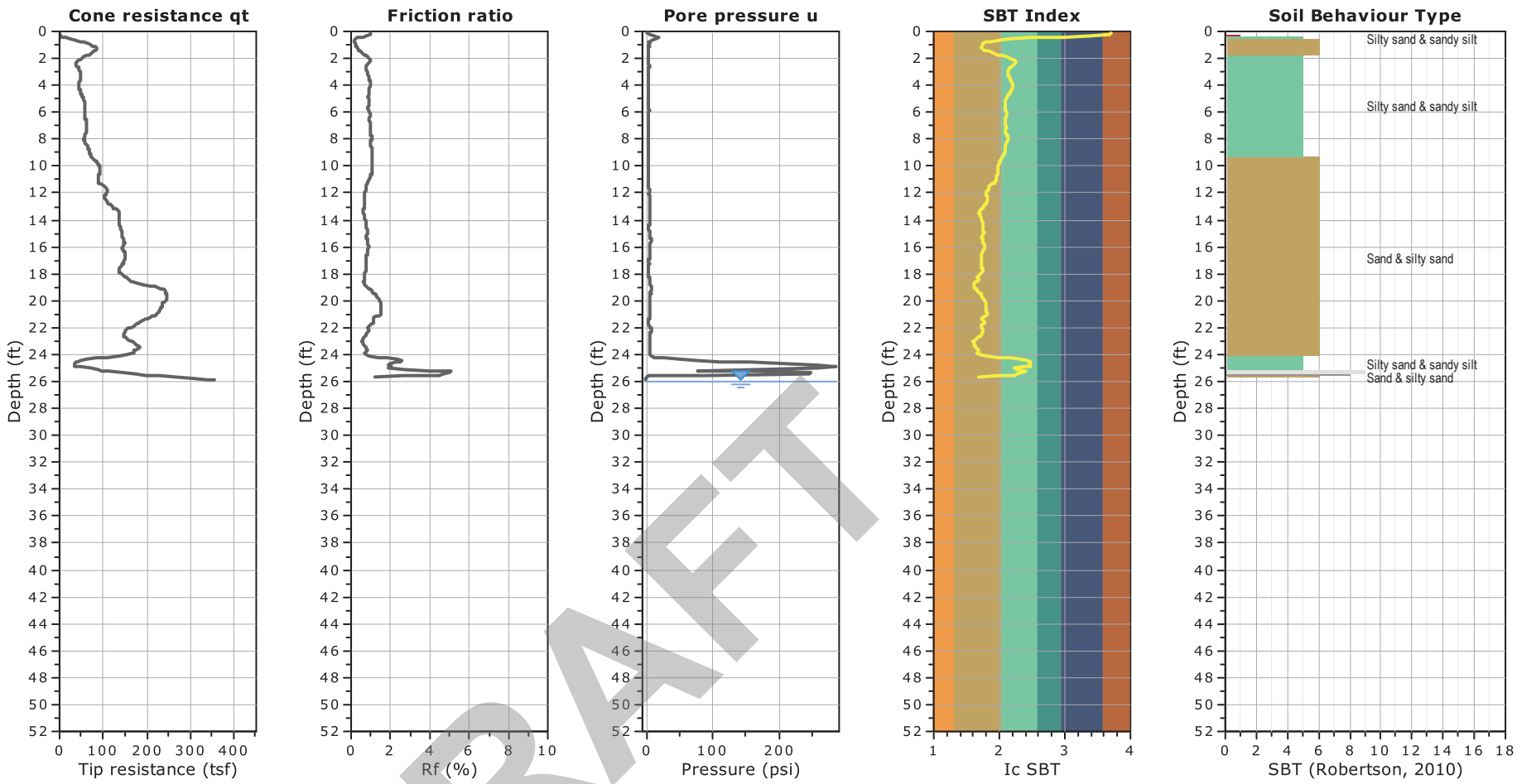

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Total depth: 25.92 ft, Date: October 5, 2021
Depth to Groundwater: >26 feet (pore pressure dissipation test at a depth of 25.5 feet indicated no groundwater present)
Cone Operator: ConeTec, Inc.

SBT legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty clay
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravelly sand to sand
8. Very stiff sand to clayey sand
9. Very stiff fine grained

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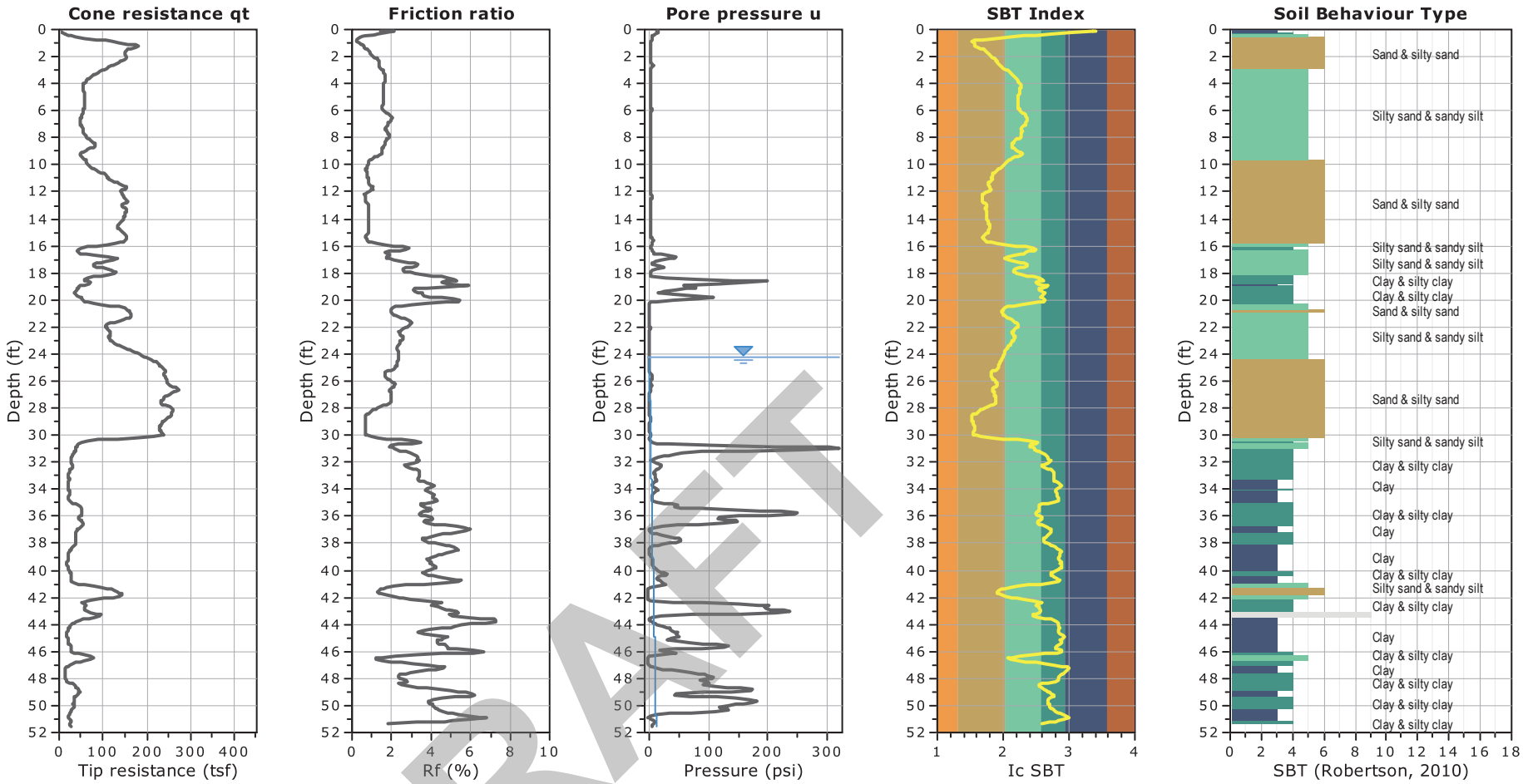
ROCKRIDGE GEOTECHNICAL

CONE PENETRATION TEST RESULTS
CPT-1

Date 10/18/21	Project No. 21-2059	Figure A-1



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Total depth: 51.6 ft, Date: October 5, 2021
Depth to Groundwater: 24.2 feet (measured using a pore pressure dissipation test at a depth of 51.5 feet)
Cone Operator: ConeTec, Inc.

SBT legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty clay
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravelly sand to sand
8. Very stiff sand to clayey sand
9. Very stiff fine grained

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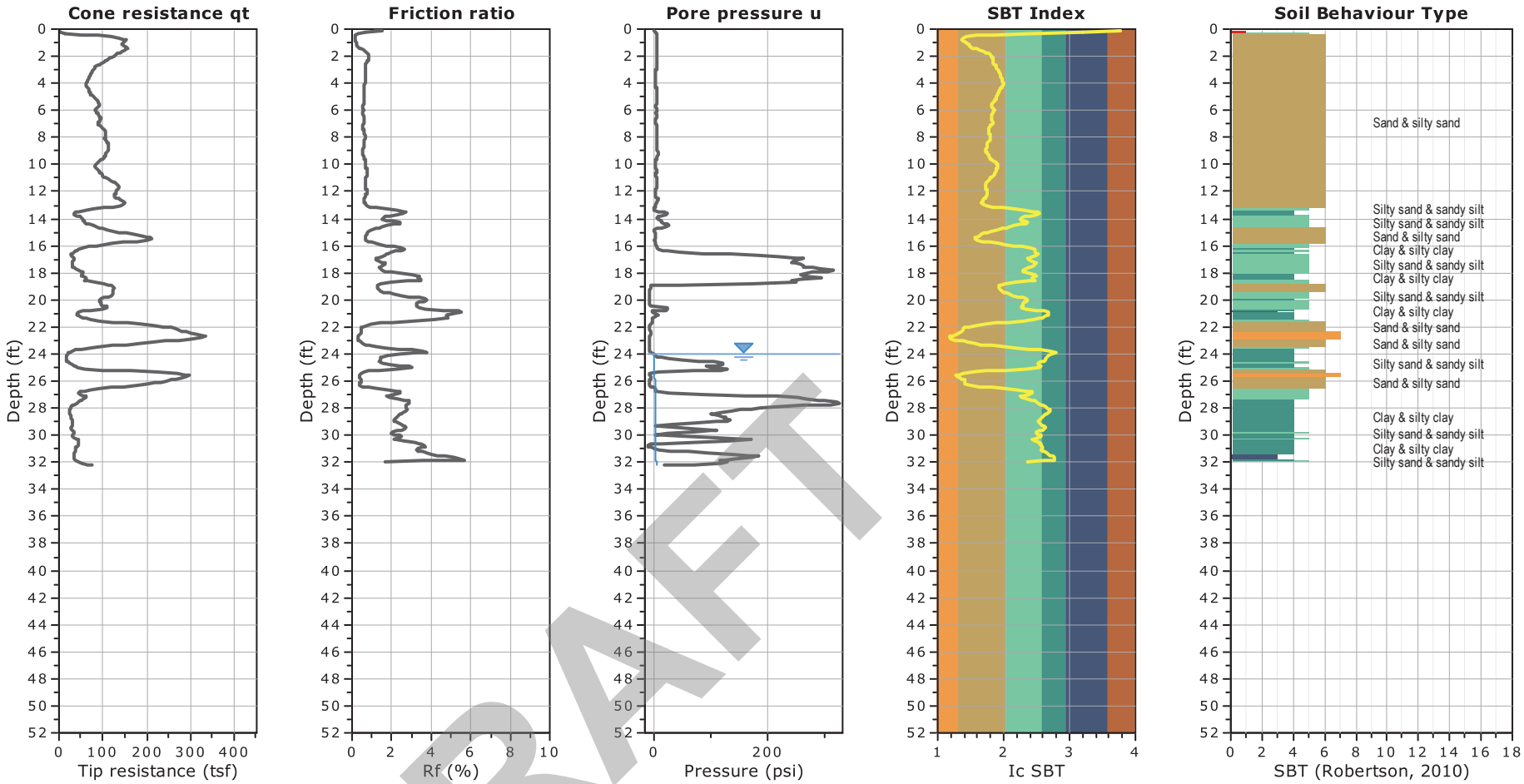
ROCKRIDGE GEOTECHNICAL

CONE PENETRATION TEST RESULTS
CPT-2

Date 10/18/21	Project No. 21-2059	Figure A-2



Total depth: 32.2 ft, Date: October 5, 2021
Assumed Depth to Groundwater: 24 feet
Cone Operator: ConeTec, Inc.

SBT legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty clay
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravelly sand to sand
8. Very stiff sand to clayey sand
9. Very stiff fine grained

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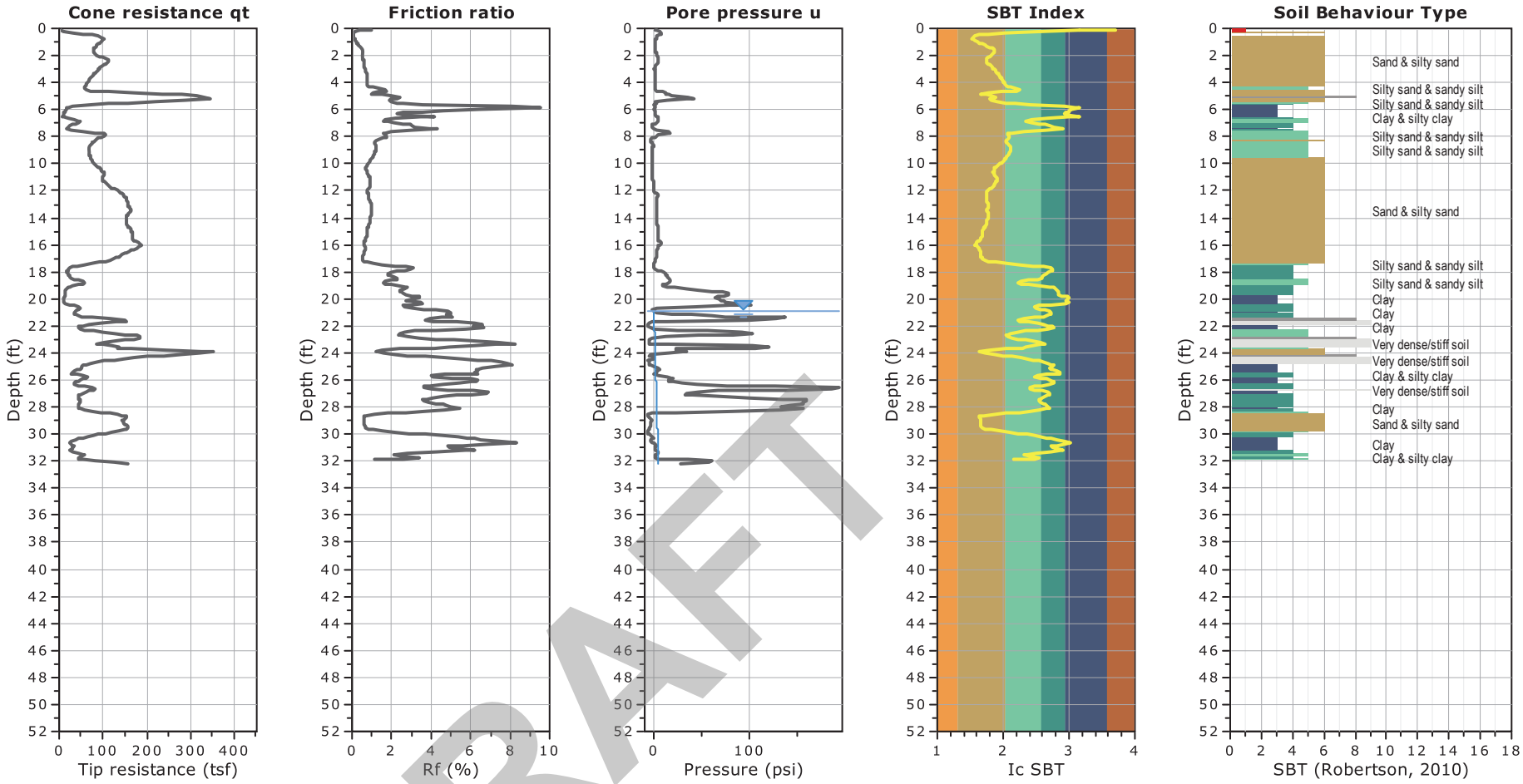
ROCKRIDGE GEOTECHNICAL

CONE PENETRATION TEST RESULTS
CPT-3

Date 10/18/21	Project No. 21-2059	Figure A-3



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Total depth: 32.2 ft, Date: October 5, 2021
Depth to Groundwater: 20.5 feet (measured using a pore pressure dissipation test at a depth of 32 feet)
Cone Operator: ConeTec, Inc.

SBT legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty clay
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravelly sand to sand
8. Very stiff sand to clayey sand
9. Very stiff fine grained

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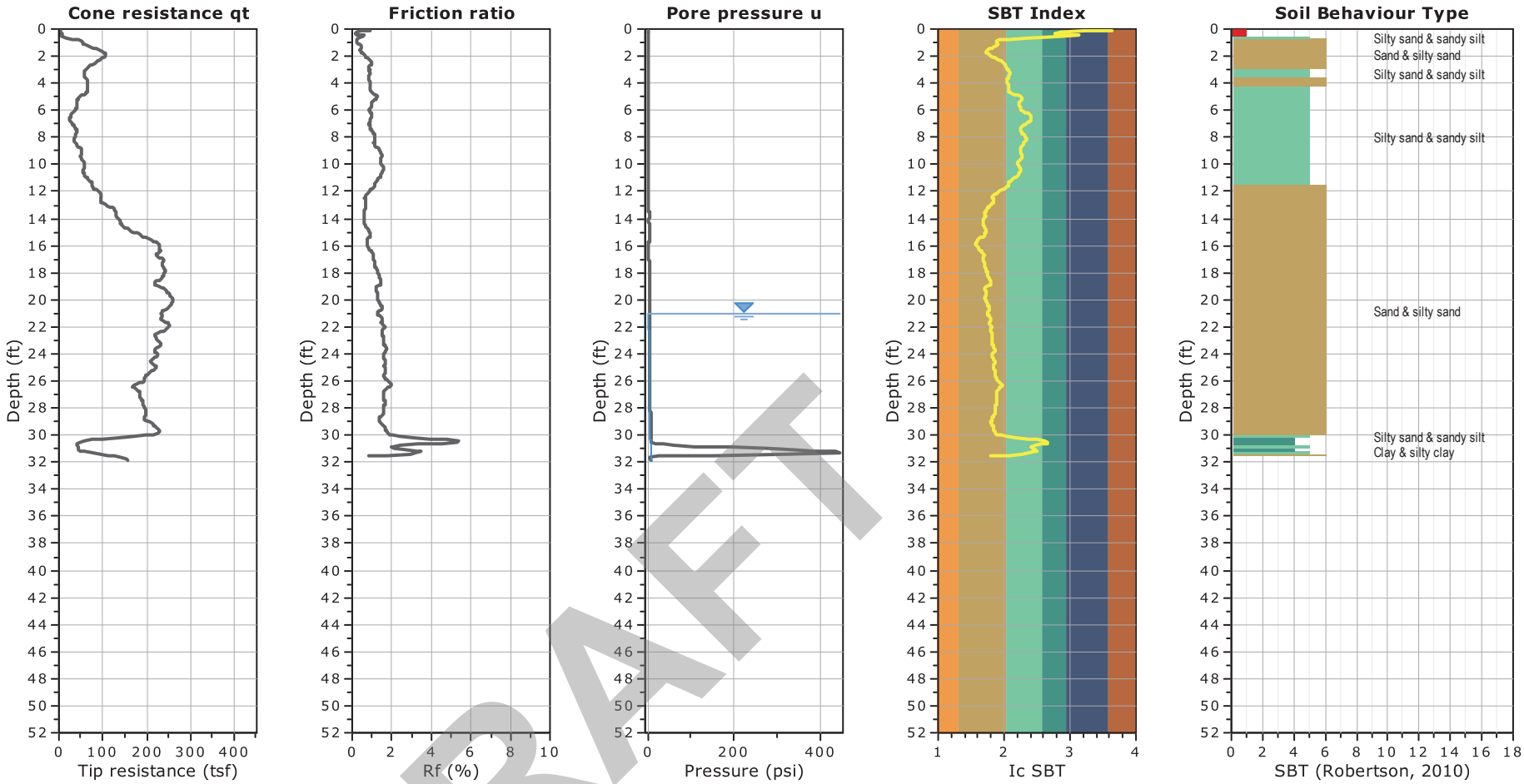
Manteca, California

ROCKRIDGE GEOTECHNICAL

CONE PENETRATION TEST RESULTS
CPT-4

Date 10/18/21	Project No. 21-2059	Figure A-4



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Total depth: 31.8 ft, Date: October 4, 2021
Assumed Depth to Groundwater: 21 feet
at a depth of 25.5 feet indicated no groundwater present)
Cone Operator: ConeTec, Inc.

SBT legend

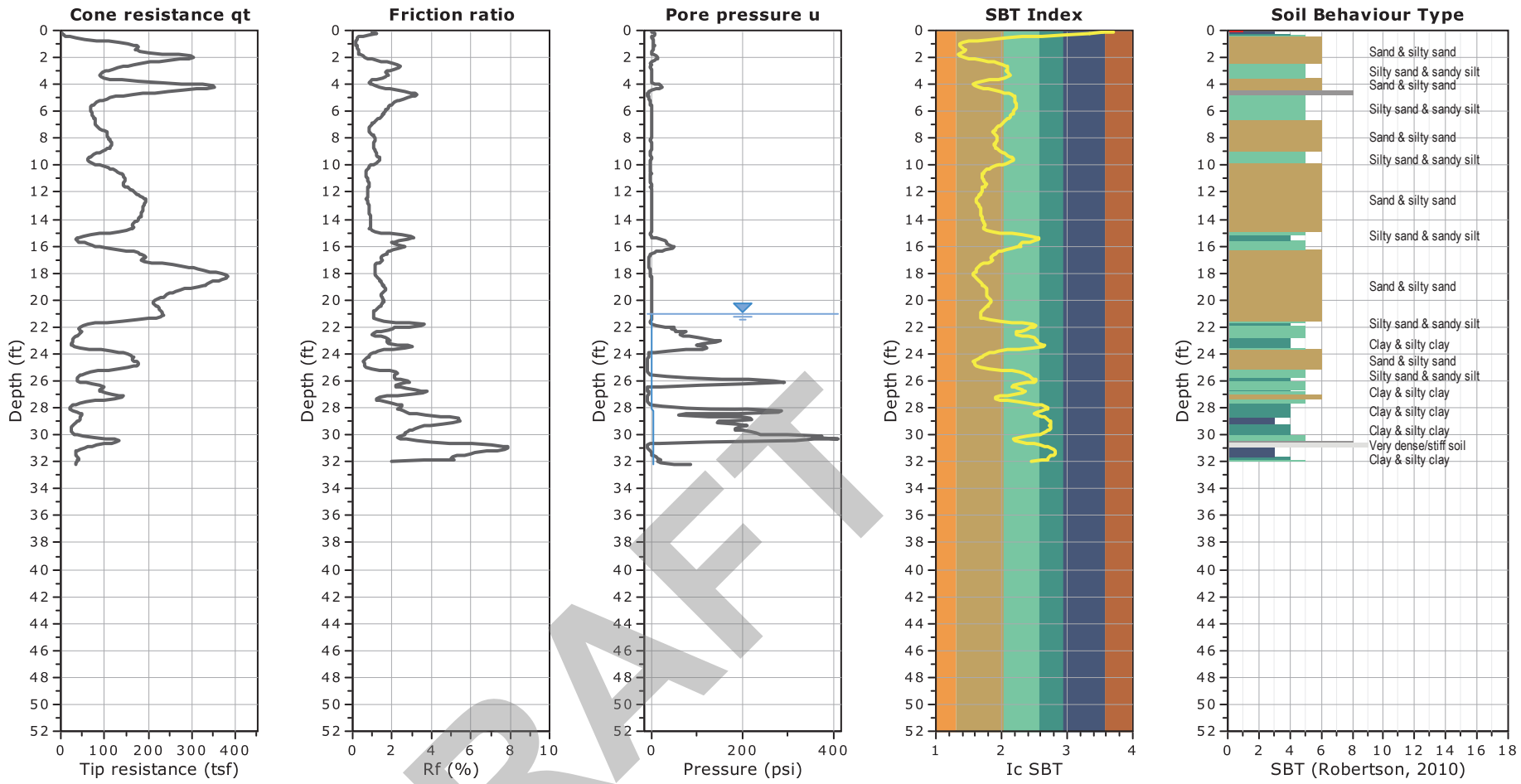
1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty clay
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravelly sand to sand
8. Very stiff sand to clayey sand
9. Very stiff fine grained

EMBLEM MANTECA
144-490 QUINTAL ROAD
Manteca, California

ROCKRIDGE GEOTECHNICAL

CONE PENETRATION TEST RESULTS
CPT-5

Date 10/18/21	Project No. 21-2059	Figure A-5



Total depth: 32.2 ft, Date: October 4, 2021
Assumed Depth to Groundwater: 21 feet
Cone Operator: ConeTec, Inc.

SBT legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty clay
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravelly sand to sand
8. Very stiff sand to clayey sand
9. Very stiff fine grained

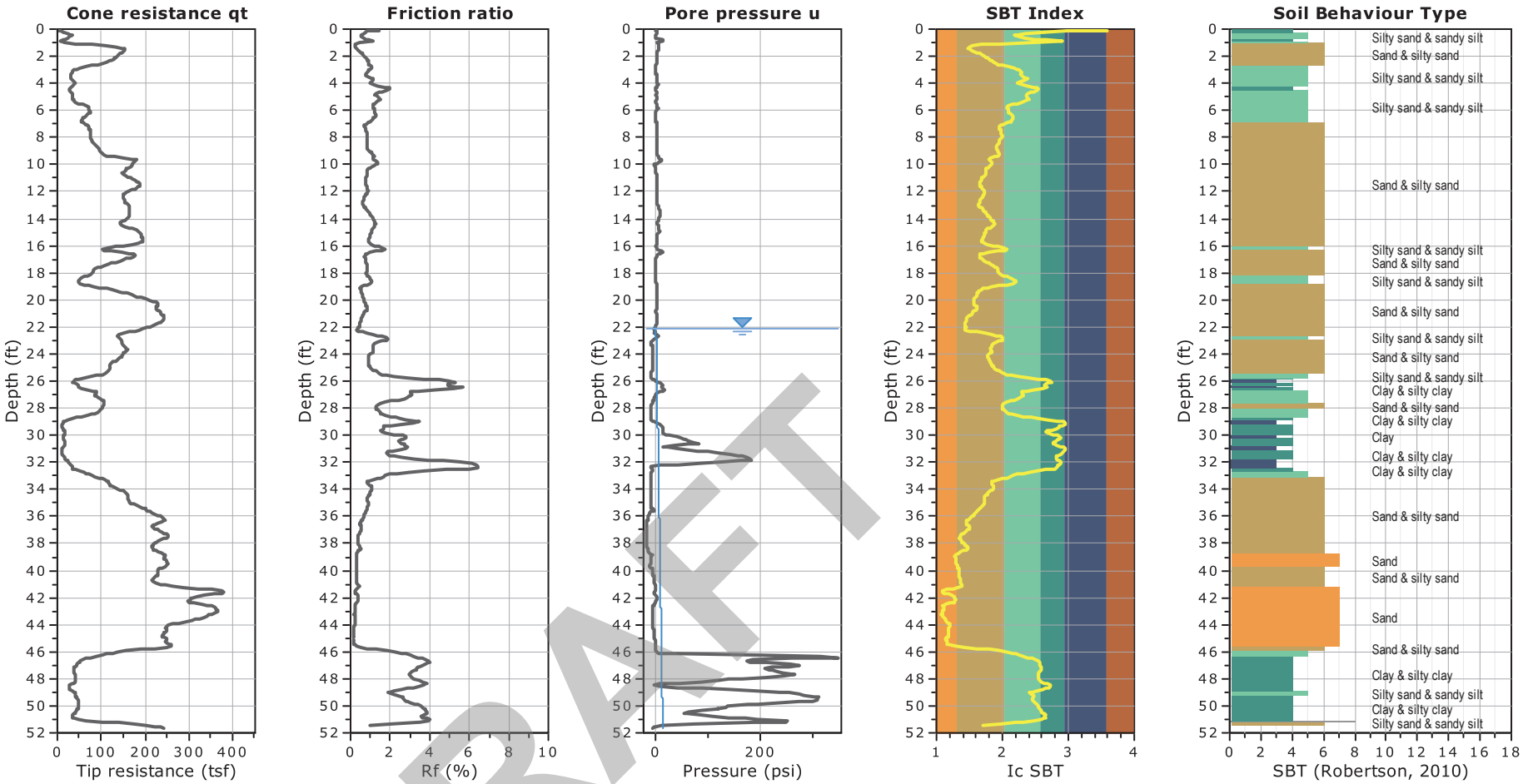
DRAFT

EMBLEM MANTECA
144-490 QUINTAL ROAD
Manteca, California

ROCKRIDGE GEOTECHNICAL

CONE PENETRATION TEST RESULTS
CPT-6

Date 10/18/21	Project No. 21-2059	Figure A-6



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Total depth: 51.7 ft, Date: October 5, 2021
Depth to Groundwater: 22.1 feet (measured using a pore pressure dissipation test at a depth of 51.6 feet)
Cone Operator: ConeTec, Inc.

SBT legend

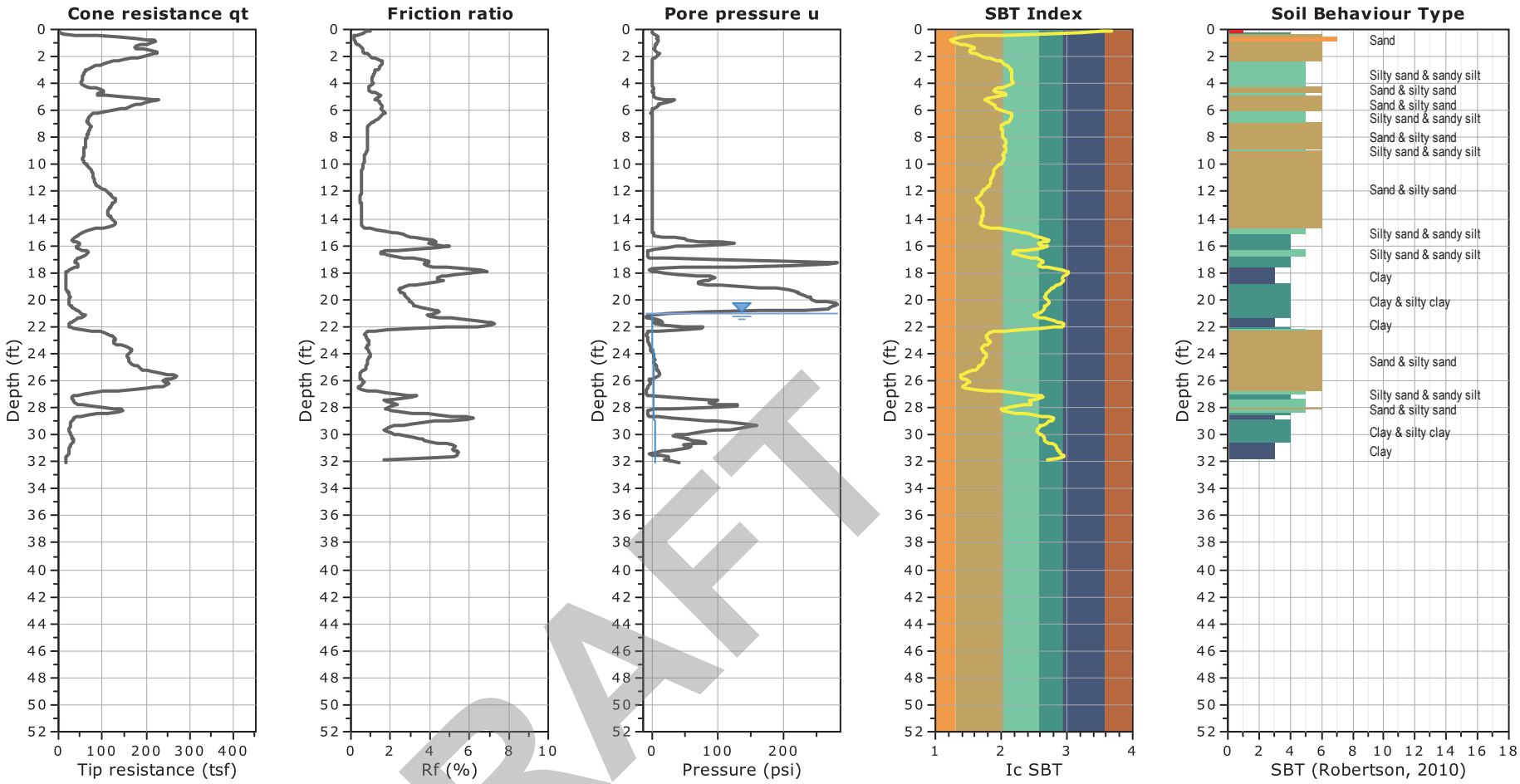
1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty clay
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravelly sand to sand
8. Very stiff sand to clayey sand
9. Very stiff fine grained

EMBLEM MANTECA
144-490 QUINTAL ROAD
Manteca, California

ROCKRIDGE GEOTECHNICAL

CONE PENETRATION TEST RESULTS
CPT-7

Date 10/18/21	Project No. 21-2059	Figure A-7



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Total depth: 32.1 ft, Date: October 4, 2021
Assumed Depth to Groundwater: 21 feet
Cone Operator: ConeTec, Inc.

SBT legend

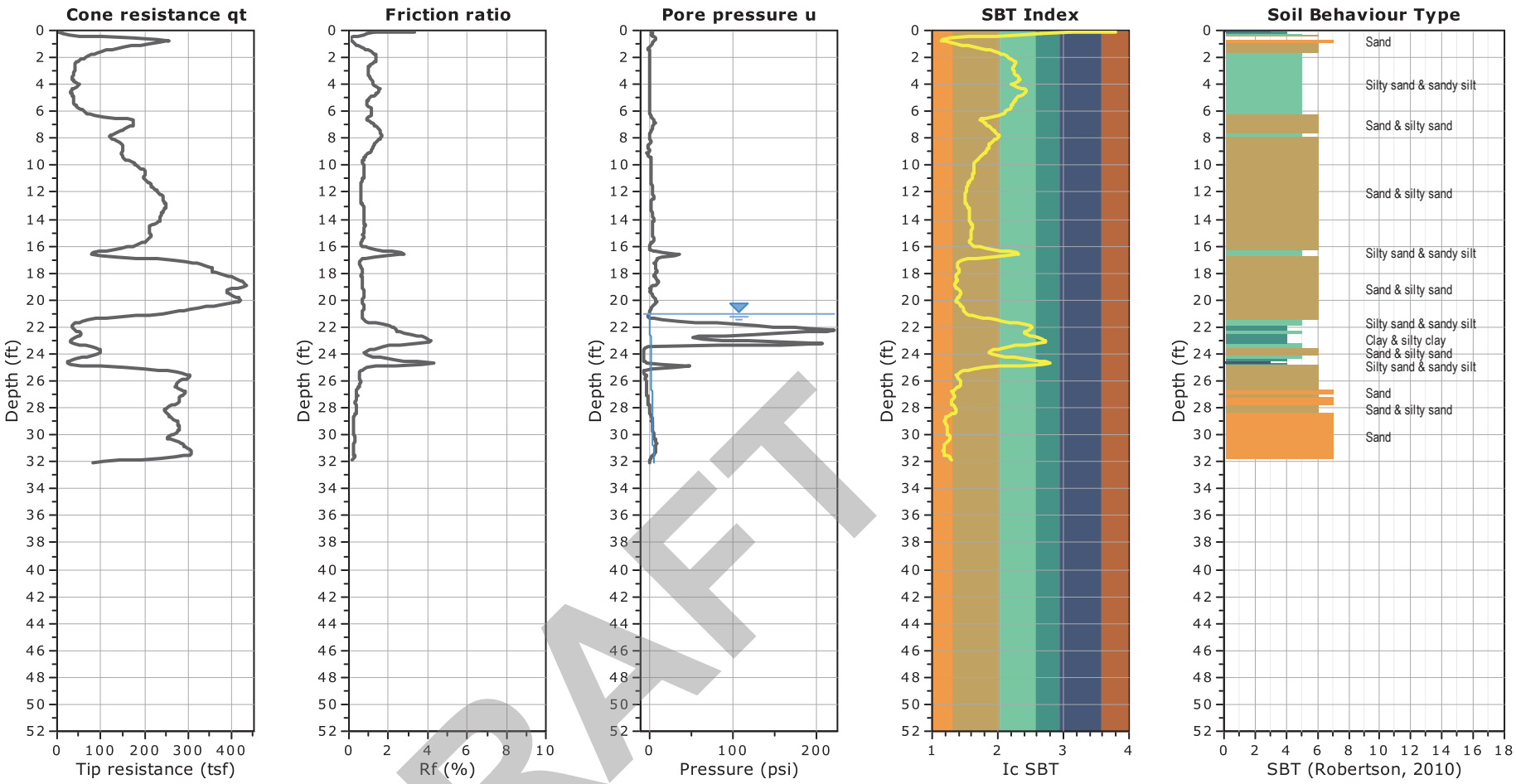
1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty clay
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravelly sand to sand
8. Very stiff sand to clayey sand
9. Very stiff fine grained

EMBLEM MANTECA
144-490 QUINTAL ROAD
Manteca, California

ROCKRIDGE GEOTECHNICAL

CONE PENETRATION TEST RESULTS
CPT-8

Date 10/18/21	Project No. 21-2059	Figure A-8



DRAFT

Total depth: 32.1 ft, Date: October 4, 2021
Assumed Depth to Groundwater: 21 feet
Cone Operator: ConeTec, Inc.

SBT legend

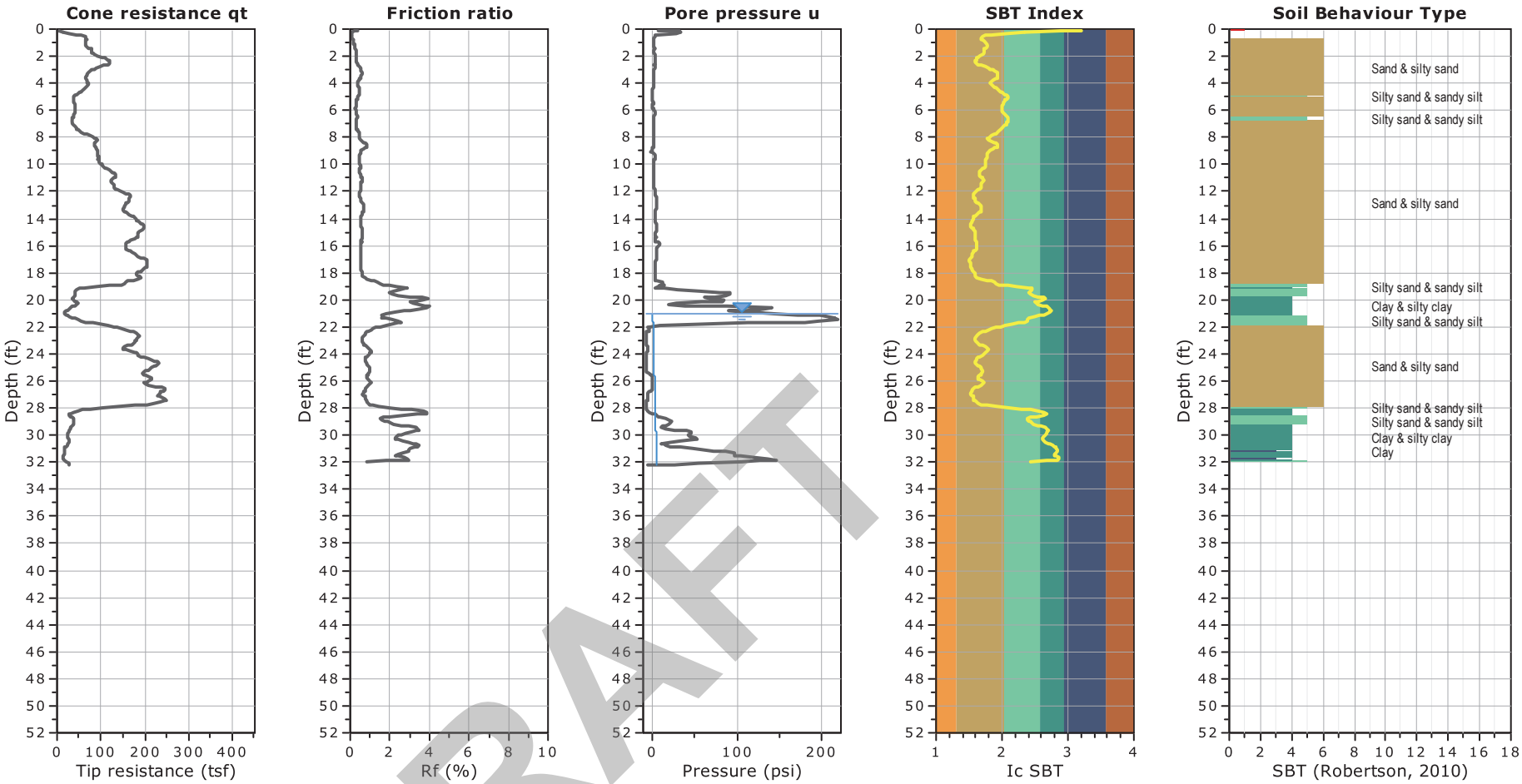
1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty clay
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravelly sand to sand
8. Very stiff sand to clayey sand
9. Very stiff fine grained

EMBLEM MANTECA
144-490 QUINTAL ROAD
Manteca, California

ROCKRIDGE GEOTECHNICAL

CONE PENETRATION TEST RESULTS
CPT-9

Date 10/18/21	Project No. 21-2059	Figure A-9



DRAFT

Total depth: 32.2 ft, Date: October 4, 2021
Depth to Groundwater: 21 feet (measured using a pore pressure dissipation test at a depth of 32.2 feet)
Cone Operator: ConeTec, Inc.

SBT legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty clay
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravelly sand to sand
8. Very stiff sand to clayey sand
9. Very stiff fine grained

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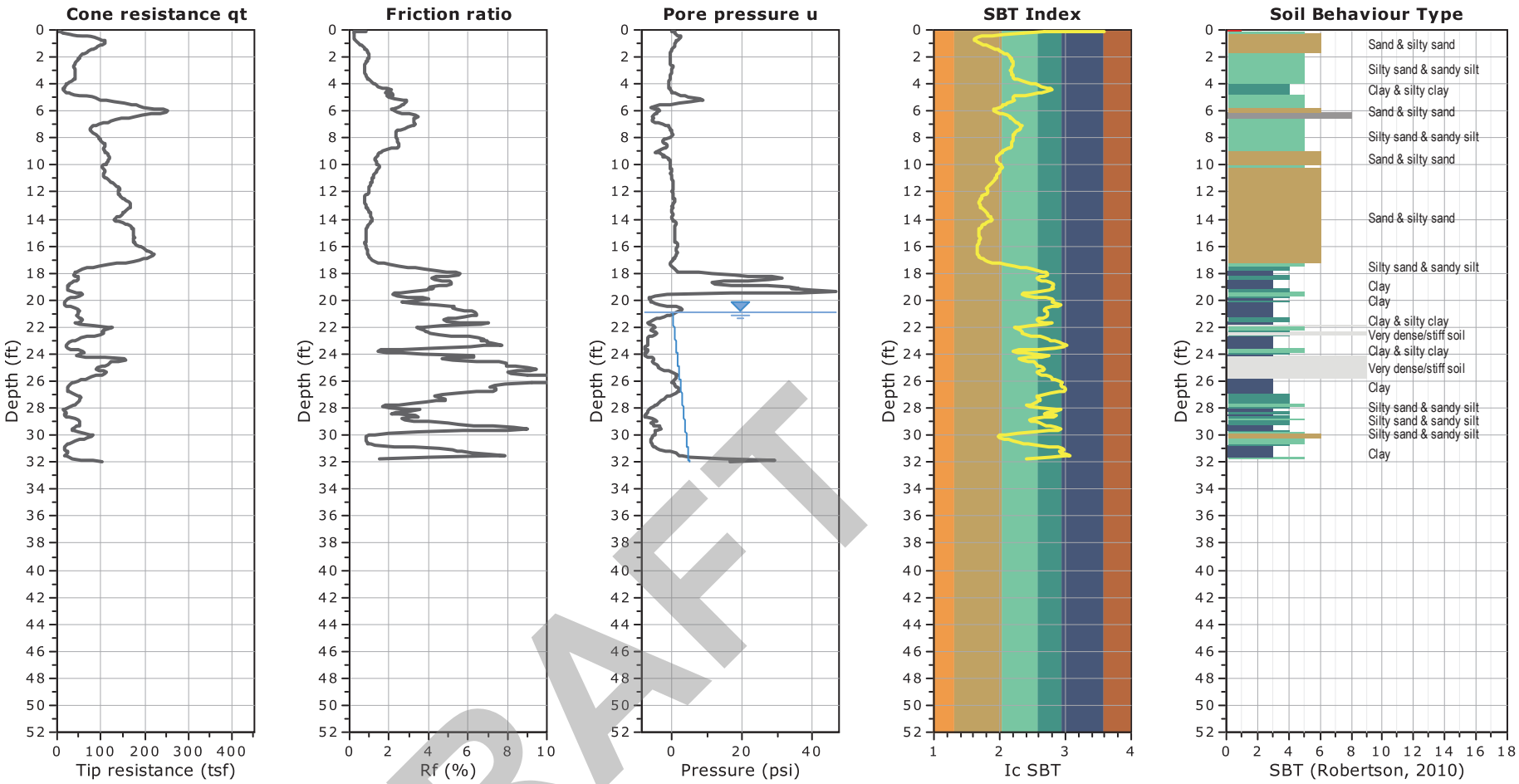
Manteca, California

ROCKRIDGE GEOTECHNICAL

CONE PENETRATION TEST RESULTS
CPT-10

Date 10/18/21	Project No. 21-2059	Figure A-10



DRAFT

Total depth: 32.0 ft, Date: October 4, 2021
Depth to Groundwater: 20.9 feet (measured using a pore pressure dissipation test at a depth of 32 feet)
Cone Operator: ConeTec, Inc.

SBT legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty clay
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravelly sand to sand
8. Very stiff sand to clayey sand
9. Very stiff fine grained

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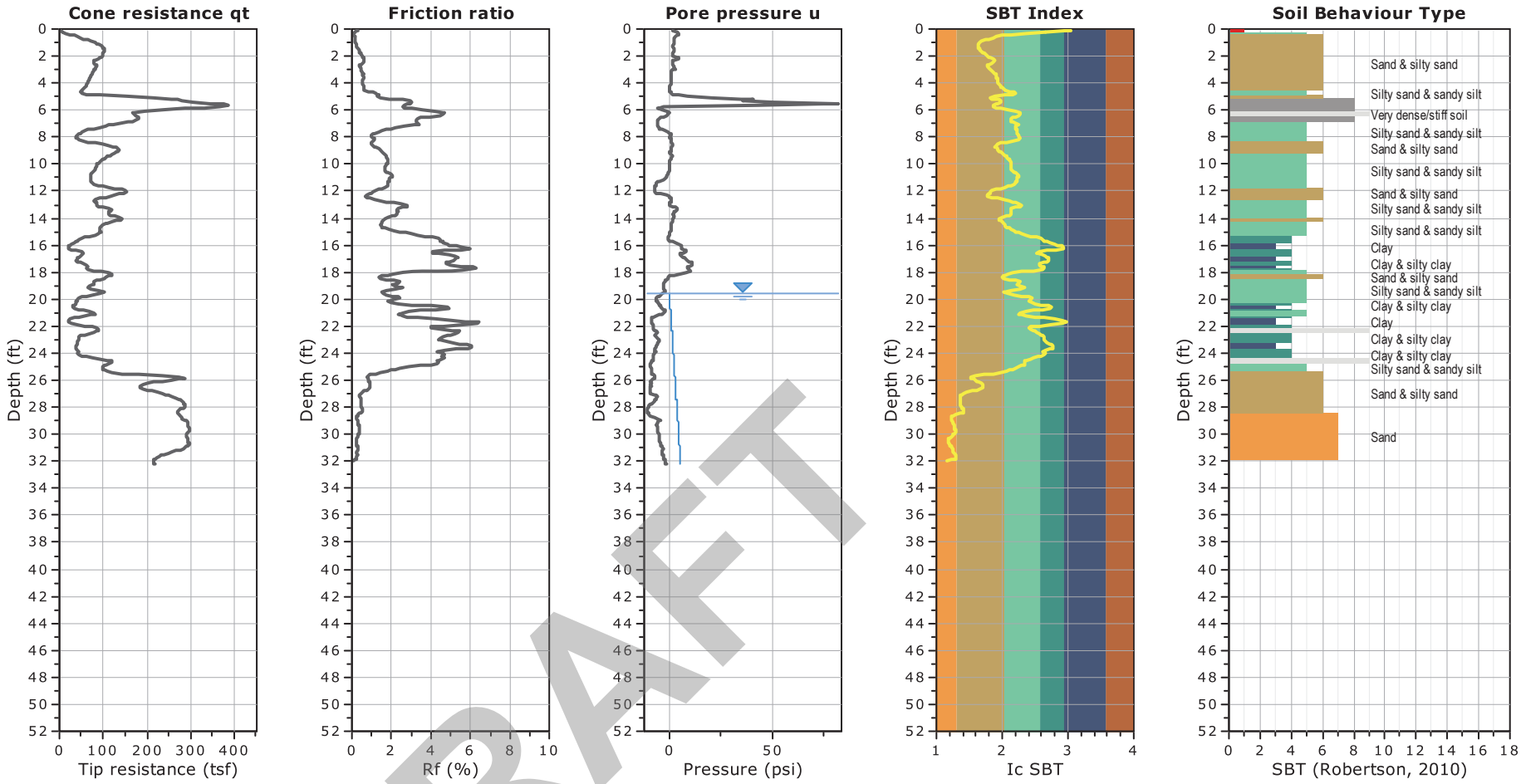
ROCKRIDGE GEOTECHNICAL

CONE PENETRATION TEST RESULTS
CPT-11

Date	Project No.	Figure
10/18/21	21-2059	A-11



DRAFT

Total depth: 32.2 ft, Date: October 5, 2021
Depth to Groundwater: 19.6 feet (measured using a pore pressure dissipation test at a depth of 27 feet)
Cone Operator: ConeTec, Inc.

SBT legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty clay
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravelly sand to sand
8. Very stiff sand to clayey sand
9. Very stiff fine grained

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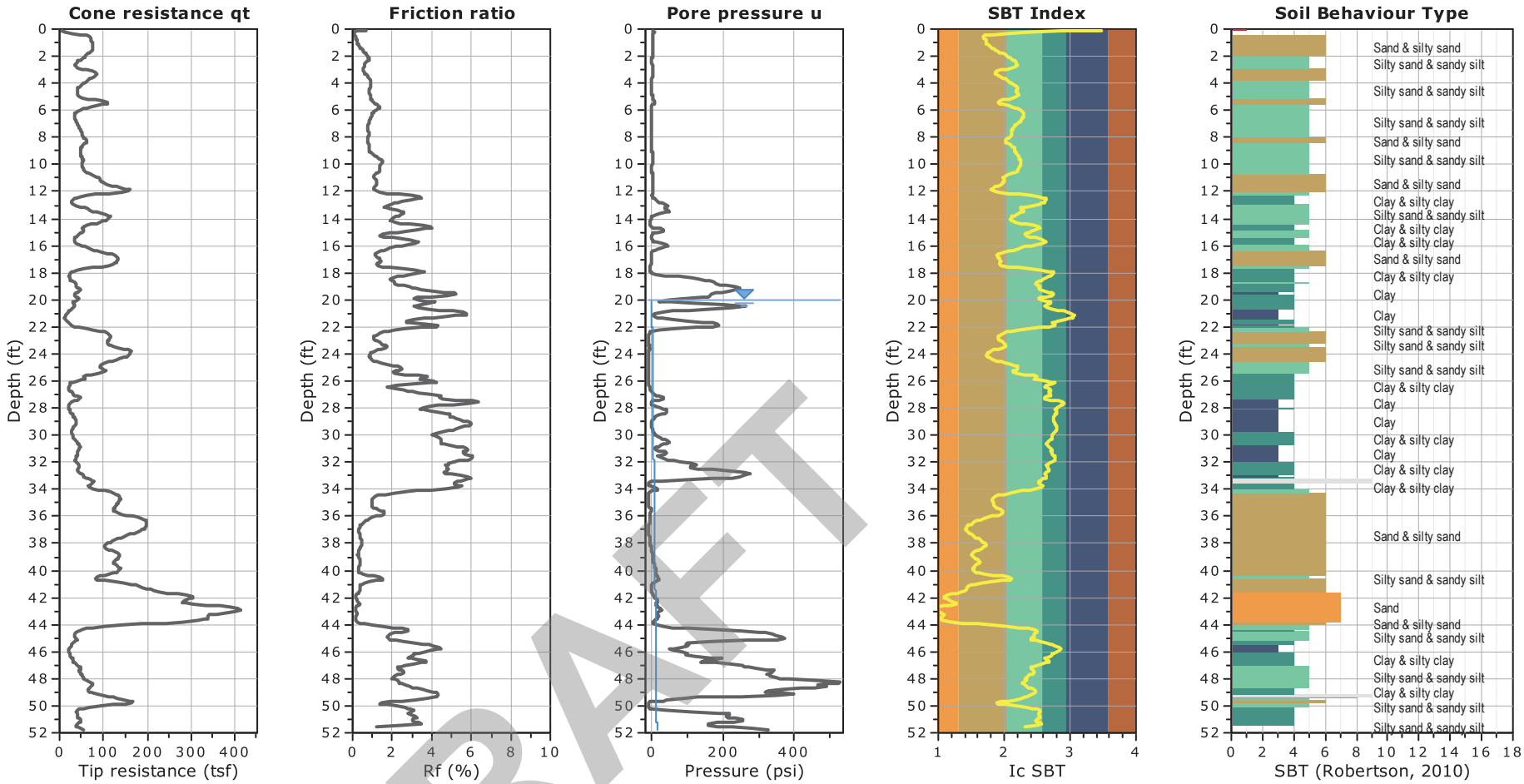
Manteca, California

ROCKRIDGE GEOTECHNICAL

CONE PENETRATION TEST RESULTS
CPT-12

Date	Project No.	Figure
10/18/21	21-2059	A-12



DRAFT

Total depth: 51.8 ft, Date: October 5, 2021
Depth to Groundwater: 20 feet (measured using a pore pressure dissipation test at a depth of 35 feet)
Cone Operator: ConeTec, Inc.

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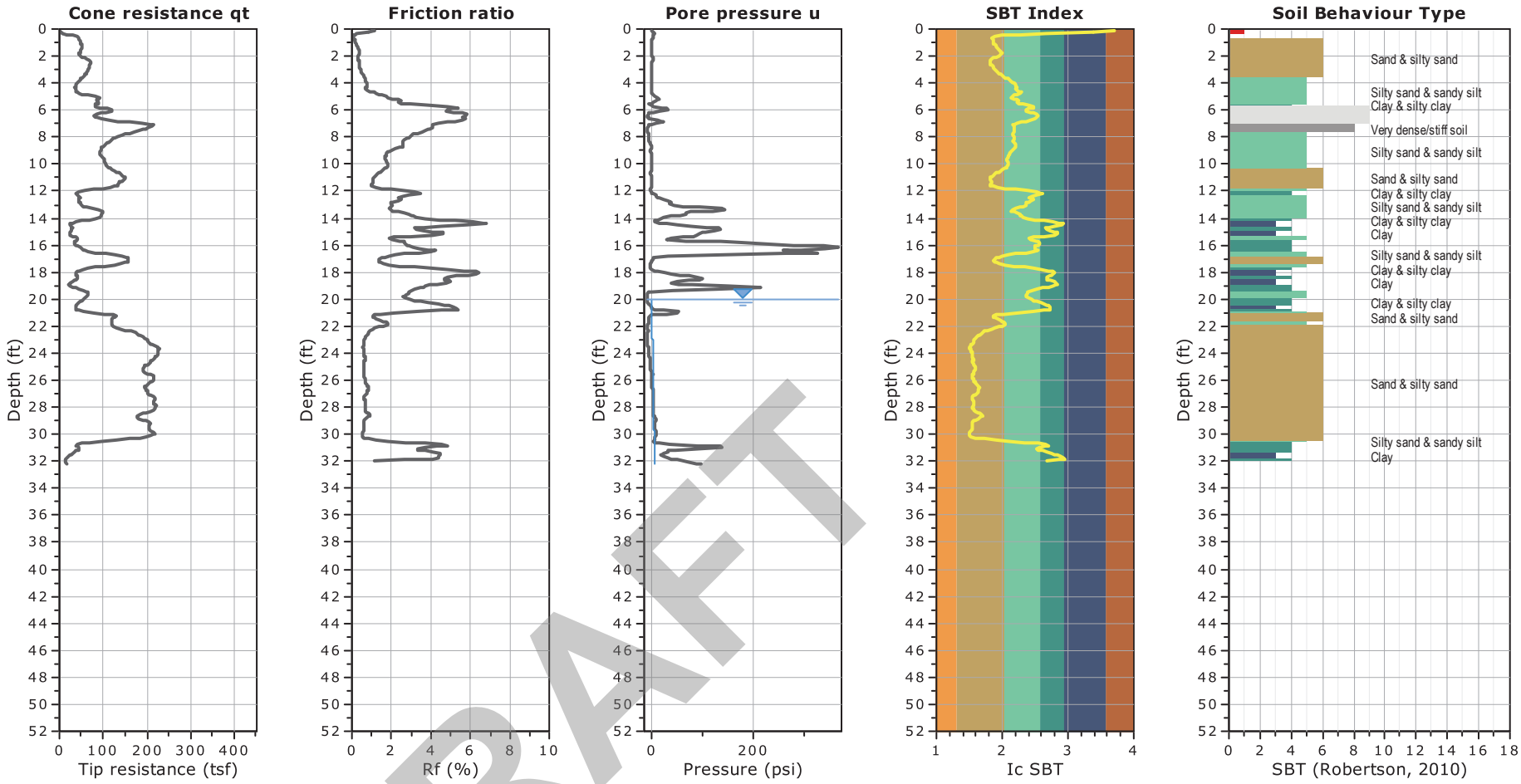
Manteca, California

ROCKRIDGE GEOTECHNICAL

CONE PENETRATION TEST RESULTS
CPT-13

Date 10/18/21	Project No. 21-2059	Figure A-13



DRAFT

Total depth: 32.2 ft, Date: October 5, 2021
Assumed Depth to Groundwater: 20 feet
Cone Operator: ConeTec, Inc.

SBT legend

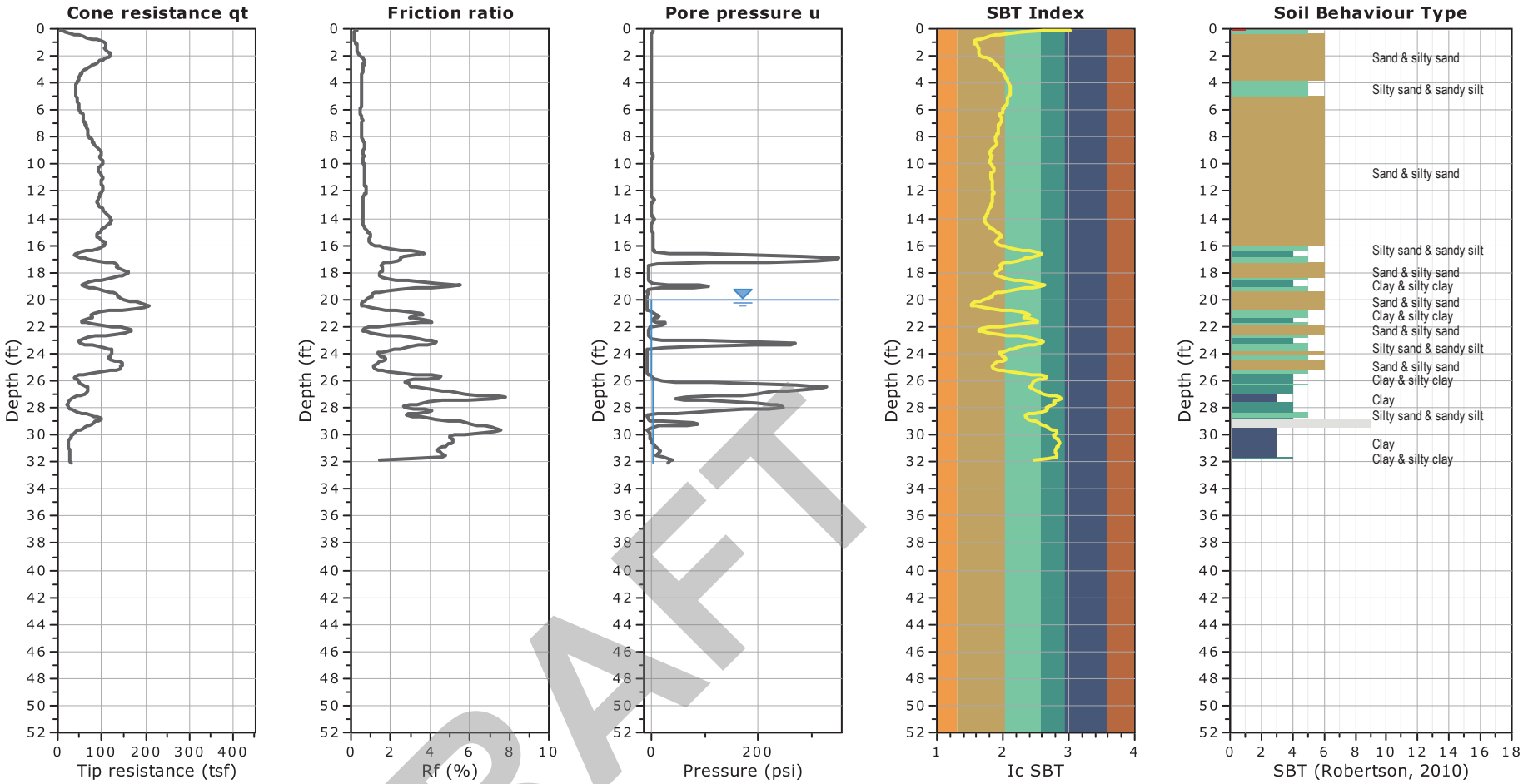
1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty clay
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravelly sand to sand
8. Very stiff sand to clayey sand
9. Very stiff fine grained

EMBLEM MANTECA
144-490 QUINTAL ROAD
Manteca, California

ROCKRIDGE GEOTECHNICAL

CONE PENETRATION TEST RESULTS
CPT-14

Date	Project No.	Figure
10/18/21	21-2059	A-14



DRAFT

Total depth: 32.1 ft, Date: October 5, 2021
Assumed Depth to Groundwater: 20 feet
Cone Operator: ConeTec, Inc.

SBT legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty clay
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravelly sand to sand
8. Very stiff sand to clayey sand
9. Very stiff fine grained

EMBLEM MANTECA
144-490 QUINTAL ROAD
Manteca, California

ROCKRIDGE GEOTECHNICAL

CONE PENETRATION TEST RESULTS
CPT-15

Date	Project No.	Figure
10/18/21	21-2059	A-15

PROJECT: **EMBLEM MANTECA**
144-490 QUINTAL ROAD
Manteca, California

Log of Boring HA-1

Boring location: See Site Plan, Figure 2
Logged by: J. Pisenti
Date started: 10/04/2021 Date finished: 10/04/2021
Drilling method: Hand Auger
Hammer weight/drop: N/A Hammer type: N/A
Sampler: Grab

DEPTH (feet)	SAMPLES: Sampler Type	SAMPLES: Sample	SAMPLES: Blows/ 6"	SAMPLES: SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA: Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
1	GRAB	☒			SP-SM	SAND with SILT (SP-SM) light brown to brown, dry, fine sand, trace organics						
2												
3	GRAB	☒				yellow-brown to brown, moist, no organics						
4	GRAB	☒										
5	GRAB	☒			SM	SILTY SAND (SM) yellow-brown, moist, fine sand						
6												
7												
8												
9												
10												
11												
12												

DRAFT

Boring terminated at a depth of 5 feet below ground surface.
Boring backfilled with soil cuttings.
Groundwater not encountered during hand augering.

ROCKRIDGE GEOTECHNICAL

Project No.: 21-2059
Figure: A-16

PROJECT: **EMBLEM MANTECA**
144-490 QUINTAL ROAD
Manteca, California

Log of Boring HA-2

Boring location: See Site Plan, Figure 2
Logged by: J. Pisenti
Date started: 10/04/2021 Date finished: 10/04/2021
Drilling method: Hand Auger
Hammer weight/drop: N/A Hammer type: N/A
Sampler: Grab

DEPTH (feet)	SAMPLES: Sampler Type	SAMPLES: Sample	SAMPLES: Blows/ 6"	SAMPLES: SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA: Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
1	GRAB					SAND with SILT (SP-SM) light brown, dry, fine sand						
2	GRAB					light brown to brown, moist						
3	GRAB					Particle Size Distribution; see Appendix B				9	3.6	
4	GRAB				SP-SM	yellow-brown						
5	GRAB											
6	GRAB											
7	GRAB					yellow-brown to brown Particle Size Distribution; see Appendix B				11	5.3	
8	GRAB					SILTY SAND (SM) yellow-brown, moist, fine sand						
9	GRAB				SM							
10	GRAB											
11												
12												

DRAFT

Boring terminated at a depth of 10 feet below ground surface.
Boring backfilled with soil cuttings.
Groundwater not encountered during hand augering.

ROCKRIDGE GEOTECHNICAL

Project No.: 21-2059
Figure: A-17

PROJECT: **EMBLEM MANTECA**
144-490 QUINTAL ROAD
Manteca, California

Log of Boring HA-3

Boring location: See Site Plan, Figure 2 | Logged by: J. Pisenti
Date started: 10/04/2021 | Date finished: 10/04/2021
Drilling method: Hand Auger
Hammer weight/drop: N/A | Hammer type: N/A
Sampler: Grab

DEPTH (feet)	SAMPLES: Sampler Type	SAMPLES: Sample	SAMPLES: Blows/ 6"	SAMPLES: SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA: Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
1	GRAB				SP-SM	SAND with SILT (SP-SM) light brown, dry to moist, fine sand						
2	GRAB					SILTY SAND (SM) brown, moist, fine sand						
3	GRAB				SM							
4	GRAB					Particle Size Distribution; see Appendix B				12	6.3	
5	GRAB											
6												
7												
8												
9												
10												
11												
12												

DRAFT

Boring terminated at a depth of 5 feet below ground surface.
Boring backfilled with soil cuttings.
Groundwater not encountered during hand augering.

ROCKRIDGE GEOTECHNICAL

Project No.: 21-2059 | Figure: A-18

PROJECT: **EMBLEM MANTECA**
144-490 QUINTAL ROAD
Manteca, California

Log of Boring HA-4

Boring location: See Site Plan, Figure 2
Logged by: J. Pisenti
Date started: 10/04/2021 Date finished: 10/04/2021
Drilling method: Hand Auger
Hammer weight/drop: N/A Hammer type: N/A
Sampler: Grab

LABORATORY TEST DATA

DEPTH (feet)	SAMPLES: Sampler Type	SAMPLES: Sample	SAMPLES: Blows/ 6"	SAMPLES: SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION	Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
1	GRAB	☒			SM	SILTY SAND (SM) light brown, dry, fine sand						
2	GRAB	☒				dry to moist light brown to brown, moist						
3	GRAB	☒				yellow-brown to brown						
4	GRAB	☒				light olive-brown						
5	GRAB	☒				light gray to light olive with red-yellow oxidation, fine to medium sand						
6												
7												
8												
9												
10												
11												
12												

DRAFT

Boring terminated at a depth of 5 feet below ground surface.
Boring backfilled with soil cuttings.
Groundwater not encountered during hand augering.

ROCKRIDGE GEOTECHNICAL

Project No.: 21-2059
Figure: A-19

PROJECT:	**EMBLEM MANTECA** **144-490 QUINTAL ROAD** Manteca, California	**Log of Boring HA-5** PAGE 1 OF 1

Boring location:	See Site Plan, Figure 2		Logged by: J. Pisenti
Date started:	10/05/2021	Date finished: 10/05/2021	
Drilling method:	Hand Auger		
Hammer weight/drop:	N/A	Hammer type: N/A	LABORATORY TEST DATA
Sampler:	Grab		

DEPTH (feet)	SAMPLES: Sampler Type	SAMPLES: Sample	SAMPLES: Blows/ 6"	SAMPLES: SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION	Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
1	GRAB	☒			SM	SILTY SAND (SM) light brown, dry, fine sand, trace organics dry to moist						
2	GRAB	☒				light brown to yellow-brown, moist						
3	GRAB	☒				light brown to light olive, no organics						
4	GRAB	☒				light gray to light brown, moist						
5	GRAB	☒				light brown to light yellow-brown Particle Size Distribution; see Appendix B				24	5.9	
6												
7												
8												
9												
10												
11												
12												

DRAFT

Boring terminated at a depth of 5 feet below ground surface.
Boring backfilled with soil cuttings.
Groundwater not encountered during hand augering.

ROCKRIDGE GEOTECHNICAL

Project No.:	Figure:
21-2059	A-20

PROJECT: **EMBLEM MANTECA**
144-490 QUINTAL ROAD
Manteca, California

Log of Boring HA-6

Boring location: See Site Plan, Figure 2 | Logged by: J. Pisenti

Date started: 10/05/2021 | Date finished: 10/05/2021

Drilling method: Hand Auger

Hammer weight/drop: N/A | Hammer type: N/A

Sampler: Grab

DEPTH (feet)	SAMPLES: Sampler Type	SAMPLES: Sample	SAMPLES: Blows/ 6"	SAMPLES: SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA: Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
1	GRAB				SP-SM	SAND with SILT (SP-SM) light brown, dry, fine sand, trace organics						
2	GRAB					brown, moist, no organics						
3	GRAB				SM	SILTY SAND (SM) yellow-brown, moist, fine sand						
4	GRAB											
5	GRAB GRAB				SP-SM SM	SAND with SILT (SP-SM) yellow-brown to brown, moist, fine to medium sand SILTY SAND (SM) olive to olive-brown, moist, fine to medium sand, some gravel Particle Size Distribution; see Appendix B				31	16.0	
6												
7												
8												
9												
10												
11												
12												

DRAFT

Boring terminated at a depth of 5 feet below ground surface.
Boring backfilled with soil cuttings.
Groundwater not encountered during hand augering.

ROCKRIDGE GEOTECHNICAL

Project No.: 21-2059 | Figure: A-21

PROJECT:	**EMBLEM MANTECA** **144-490 QUINTAL ROAD** Manteca, California	**Log of Boring HA-7** PAGE 1 OF 1

Boring location:	See Site Plan, Figure 2		Logged by: J. Pisenti
Date started:	10/05/2021	Date finished: 10/05/2021	
Drilling method:	Hand Auger		
Hammer weight/drop:	N/A	Hammer type: N/A	LABORATORY TEST DATA
Sampler:	Grab		

DEPTH (feet)	SAMPLES: Sampler Type	SAMPLES: Sample	SAMPLES: Blows/ 6"	SAMPLES: SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION	Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
1	GRAB	☒			SP-SM	SAND with SILT (SP-SM) light brown, dry, fine sand, trace organics						
2	GRAB	☒				SILTY SAND (SM) yellow-brown to brown, moist, fine sand						
3	GRAB	☒				brown						
4	GRAB	☒				dark brown						
5	GRAB	☒										
6	GRAB	☒			SM	brown to gray-brown						
7	GRAB	☒				olive to olive-brown						
8	GRAB	☒				olive to olive-brown						
9	GRAB	☒				light olive to light gray, decreased silt content Particle Size Distribution; see Appendix B				13	7.3	
10	GRAB	☒										
11												
12												

DRAFT

Boring terminated at a depth of 10 feet below ground surface.
Boring backfilled with soil cuttings.
Groundwater not encountered during hand augering.

ROCKRIDGE GEOTECHNICAL

Project No.: 21-2059 | Figure: A-22

PROJECT: **EMBLEM MANTECA**
144-490 QUINTAL ROAD
Manteca, California

Log of Boring HA-8

Boring location: See Site Plan, Figure 2
Logged by: J. Pisenti
Date started: 10/05/2021 Date finished: 10/05/2021
Drilling method: Hand Auger
Hammer weight/drop: N/A Hammer type: N/A
Sampler: Grab

DEPTH (feet)	SAMPLES: Sampler Type	SAMPLES: Sample	SAMPLES: Blows/ 6"	SAMPLES: SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA: Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
1	GRAB	☒			SM	SILTY SAND (SM) light brown, dry, fine sand, trace organics						
2	GRAB	☒				light brown to brown, dry to moist						
3	GRAB	☒				brown, no organics						
4	GRAB	☒				yellow-brown						
5	GRAB	☒										
6												
7												
8												
9												
10												
11												
12												

DRAFT

Boring terminated at a depth of 5 feet below ground surface.
Boring backfilled with soil cuttings.
Groundwater not encountered during hand augering.

ROCKRIDGE GEOTECHNICAL

Project No.: 21-2059
Figure: A-23

UNIFIED SOIL CLASSIFICATION SYSTEM

Major Divisions		Symbols	Typical Names
Coarse-Grained Soils (more than half of soil > no. 200 sieve size)	Gravels (More than half of coarse fraction > no. 4 sieve size)	GW	Well-graded gravels or gravel-sand mixtures, little or no fines
		GP	Poorly-graded gravels or gravel-sand mixtures, little or no fines
		GM	Silty gravels, gravel-sand-silt mixtures
		GC	Clayey gravels, gravel-sand-clay mixtures
	Sands (More than half of coarse fraction < no. 4 sieve size)	SW	Well-graded sands or gravelly sands, little or no fines
		SP	Poorly-graded sands or gravelly sands, little or no fines
		SM	Silty sands, sand-silt mixtures
		SC	Clayey sands, sand-clay mixtures
Fine -Grained Soils (more than half of soil < no. 200 sieve size)	Silts and Clays LL = < 50	ML	Inorganic silts and clayey silts of low plasticity, sandy silts, gravelly silts
		CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, lean clays
		OL	Organic silts and organic silt-clays of low plasticity
	Silts and Clays LL = > 50	MH	Inorganic silts of high plasticity
		CH	Inorganic clays of high plasticity, fat clays
		OH	Organic silts and clays of high plasticity
Highly Organic Soils		PT	Peat and other highly organic soils

GRAIN SIZE CHART

Classification	Range of Grain Sizes	
	U.S. Standard Sieve Size	Grain Size in Millimeters
Boulders	Above 12"	Above 305
Cobbles	12" to 3"	305 to 76.2
Gravel coarse fine	3" to No. 4 3" to 3/4" 3/4" to No. 4	76.2 to 4.76 76.2 to 19.1 19.1 to 4.76
Sand coarse medium fine	No. 4 to No. 200 No. 4 to No. 10 No. 10 to No. 40 No. 40 to No. 200	4.76 to 0.075 4.76 to 2.00 2.00 to 0.420 0.420 to 0.075
Silt and Clay	Below No. 200	Below 0.075

Unstabilized groundwater level

Stabilized groundwater level

SAMPLE DESIGNATIONS/SYMBOLS

Sample taken with California or Modified California split-barrel sampler. Darkened area indicates soil recovered

Classification sample taken with Standard Penetration Test sampler

Undisturbed sample taken with thin-walled tube

Disturbed sample

Sampling attempted with no recovery

Core sample

Analytical laboratory sample

Sample taken with Direct Push sampler

Sonic

SAMPLER TYPE

C Core barrel

CA California split-barrel sampler with 2.5-inch outside diameter and a 1.93-inch inside diameter

D&M Dames & Moore piston sampler using 2.5-inch outside diameter, thin-walled tube

O Osterberg piston sampler using 3.0-inch outside diameter, thin-walled Shelby tube

PT Pitcher tube sampler using 3.0-inch outside diameter, thin-walled Shelby tube

MC Modified California sampler with a 3.0-inch outside diameter and a 2.43-inch inside diameter

SPT Standard Penetration Test (SPT) split-barrel sampler with a 2.0-inch outside diameter and a 1.5-inch inside diameter

ST Shelby Tube (3.0-inch outside diameter, thin-walled tube) advanced with hydraulic pressure

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Manteca, California

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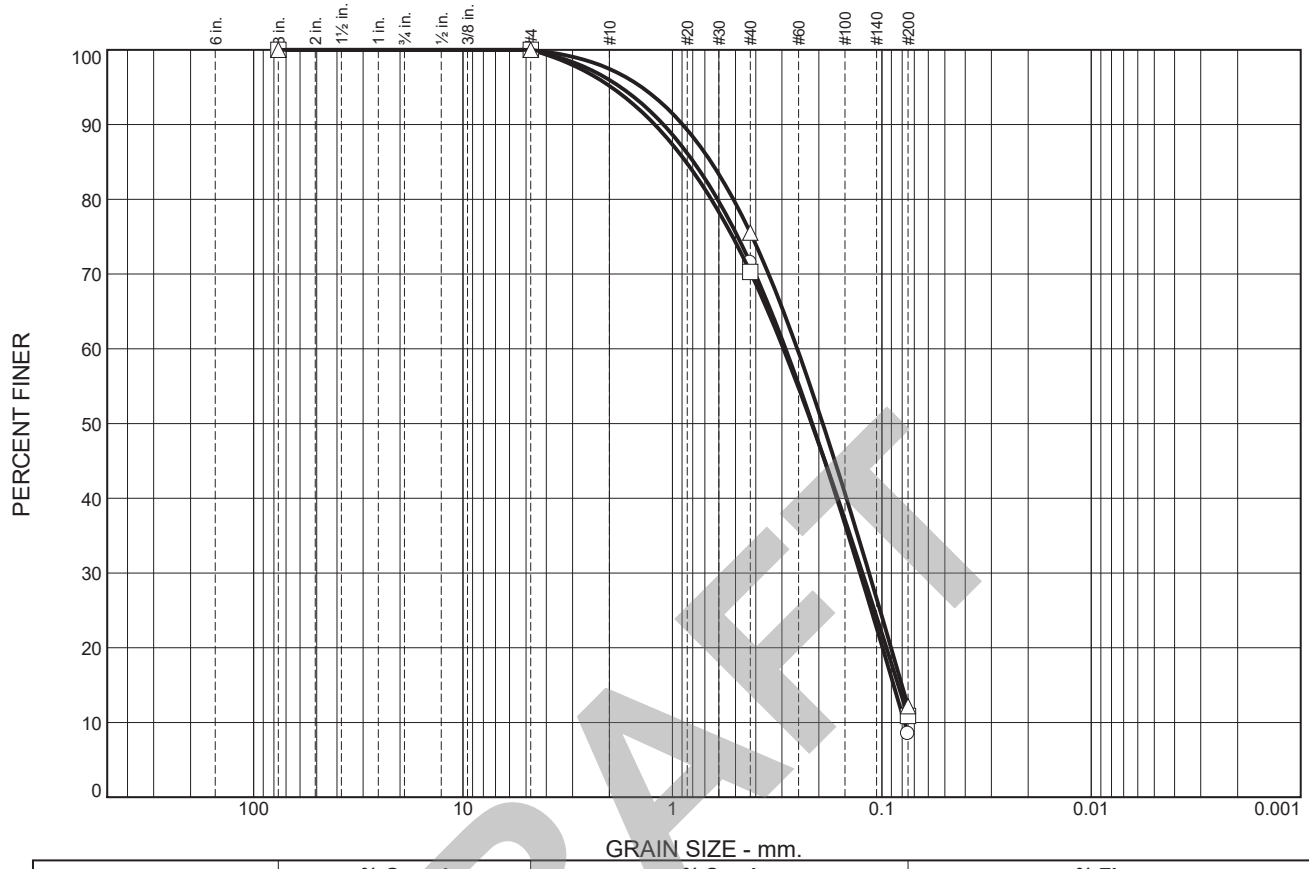
CLASSIFICATION CHART

Date 10/18/21 | Project No. 21-2059 | Figure A-24

ROCKRIDGE GEOTECHNICAL

APPENDIX B
Laboratory Test Results

DRAFT



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.0	4.0	24.5	63.0	8.5	
□	0.0	0.0	0.0	4.8	24.9	59.4	10.9	
△	0.0	0.0	0.0	2.6	21.9	63.3	12.2	

SOIL DATA

SYMBOL	SOURCE	DEPTH (ft.)	Material Description	USCS
○	HA-2	2.5'	SAND with SILT, light brown to brown	SP-SM
□	HA-2	6.5'	SAND with SILT, yellow-brown to brown	SP-SM
△	HA-3	3.5'	SILTY SAND, brown	SM

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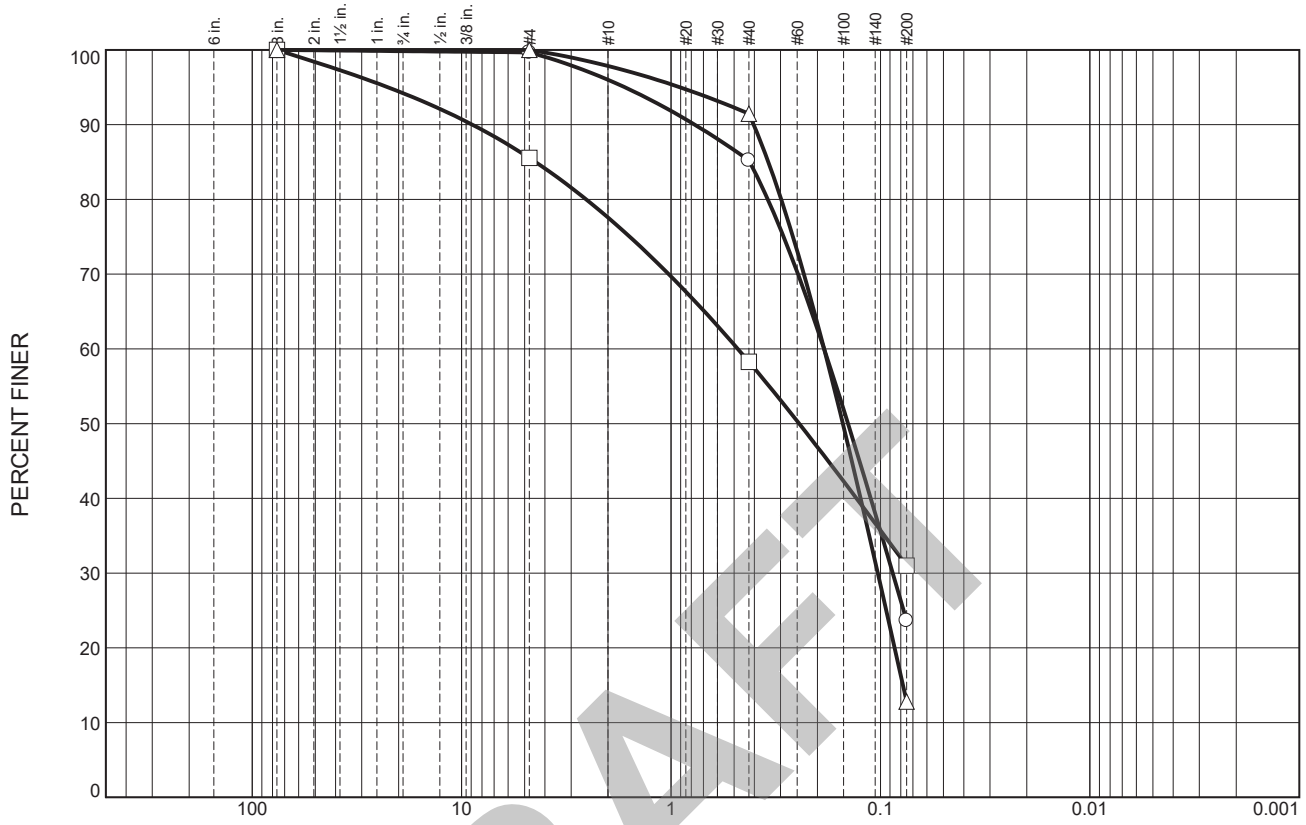
144-490 QUINTAL ROAD
Manteca, California

ROCKRIDGE GEOTECHNICAL

PARTICLE SIZE DISTRIBUTION REPORT

Date 10/18/21 | Project No. 21-2059 | Figure B-1a



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	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.2	0.1	3.7	10.8	61.6	23.6	
□	0.0	5.8	8.7	7.9	19.3	27.3	31.0	
△	0.0	0.0	0.0	2.1	6.4	78.7	12.8	

SOIL DATA

SYMBOL	SOURCE	DEPTH (ft.)	Material Description	USCS
○	HA-5	4.5'	SILTY SAND, light brown to light yellow-brown	SM
□	HA-6	4.5'	SILTY SAND, olive to olive-brown	SM
△	HA-7	8.5'	SILTY SAND, light olive to light gray	SM

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144-490 QUINTAL ROAD
Manteca, California

ROCKRIDGE GEOTECHNICAL

PARTICLE SIZE DISTRIBUTION REPORT

Date 10/18/21 | Project No. 21-2059 | Figure B-1b

APPENDIX G

Report date: 3/22/2024
Case Description: 1 - Preconstruction Utility - Grubbing / Land Clearing

		Baselines (dBA)		---- Receptor #1 ----
Description	Land Use	Daytime	Evening	Night
Residential Homes	Residential	65	65	60

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Tractor	No	40	84		20	0
Excavator	No	40		80.7	20	0
Excavator	No	40		80.7	20	0

Results

	Calculated (dBA)	
Equipment	Lmax	Leq
Tractor	92	88
Excavator	88.7	84.7
Excavator	88.7	84.7
Total	**94.9**	**90.9**

Report date: 3/22/2024
Case Description: 2 - Preconstruction Utility - Grading / Excavation

		Baselines (dBA)		---- Receptor #1 ----
Description	Land Use	Daytime	Evening	Night
Residential Homes	Residential	65	65	60

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Haul Truck	No	40		76.5	20	0
Haul Truck	No	40		76.5	20	0
Haul Truck	No	40		76.5	20	0
Haul Truck	No	40		76.5	20	0
Haul Truck	No	40		76.5	20	0
Haul Truck	No	40		76.5	20	0
Haul Truck	No	40		76.5	20	0
Haul Truck	No	40		76.5	20	0
Haul Truck	No	40		76.5	20	0
Haul Truck	No	40		76.5	20	0

Results

	Calculated (dBA)	
Equipment	Lmax	Leq
Haul Truck	84.5	80.5
Haul Truck	84.5	80.5
Haul Truck	84.5	80.5
Haul Truck	84.5	80.5
Haul Truck	84.5	80.5
Haul Truck	84.5	80.5
Haul Truck	84.5	80.5
Haul Truck	84.5	80.5
Haul Truck	84.5	80.5
Haul Truck	84.5	80.5
Total	**94.5**	**90.5**

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 3/22/2024
Case Description: 2 - Preconstruction Utility - Grading / Excavation

		Baselines (dBA)		---- Receptor #1 ----
Description	Land Use	Daytime	Evening	Night
Residential Homes	Residential	65	65	60

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Tractor	No	40	84		20	0
Tractor	No	40	84		20	0
Tractor	No	40	84		20	0
Excavator	No	40		80.7	20	0
Excavator	No	40		80.7	20	0
Excavator	No	40		80.7	20	0
Grader	No	40	85		20	0
Grader	No	40	85		20	0
Roller	No	20		80	20	0
Roller	No	20		80	20	0
Dozer	No	40		81.7	20	0
Scraper	No	40		83.6	20	0
Front End Loader	No	40		79.1	20	0
Backhoe	No	40		77.6	20	0
Scraper	No	40		83.6	20	0

Results

	Calculated (dBA)	
Equipment	Lmax	Leq
Tractor	92	88
Tractor	92	88
Tractor	92	88
Excavator	88.7	84.7
Excavator	88.7	84.7
Excavator	88.7	84.7
Grader	93	89
Grader	93	89
Roller	88	81
Roller	88	81
Dozer	89.6	85.6
Scraper	91.5	87.6
Front End Loader	87.1	83.1
Backhoe	85.5	81.5
Scraper	91.5	87.6
Total	**102.3**	**98.1**

Report date: 3/22/2024
Case Description: 3 - Preconstruction Utility - Drainage / Utilities / Subgrade

		Baselines (dBA)		---- Receptor #1 ----
Description	Land Use	Daytime	Evening	Night
Residential Homes	Residential	65	65	60

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Compressor (air)	No	40		77.7	20	0
Generator	No	50		80.6	20	0
Grader	No	40	85		20	0
Paver	No	50		77.2	20	0
Pumps	No	50		80.9	20	0
Gradall	No	40		83.4	20	0
Scraper	No	40		83.6	20	0
Tractor	No	40	84		20	0
Front End Loader	No	40		79.1	20	0
Backhoe	No	40		77.6	20	0

Results

	Calculated (dBA)	
Equipment	Lmax	Leq
Compressor (air)	85.6	81.6
Generator	88.6	85.6
Grader	93	89
Paver	85.2	82.2
Pumps	88.9	85.9
Gradall	91.4	87.4
Scraper	91.5	87.6
Tractor	92	88
Front End Loader	87.1	83.1
Backhoe	85.5	81.5
Total	**99.7**	**96**

Report date: 3/22/2024
Case Description: 4 - Phase A Phase B - Site Preparation

		Baselines (dBA)		---- Receptor #1 ----
Description	Land Use	Daytime	Evening	Night
Residential Homes	Residential	65	65	60

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dozer	No	40		81.7	20	0
Dozer	No	40		81.7	20	0
Dozer	No	40		81.7	20	0
Front End Loader	No	40		79.1	20	0
Tractor	No	40	84		20	0
Tractor	No	40	84		20	0
Backhoe	No	40		77.6	20	0

Results

	Calculated (dBA)	
Equipment	Lmax	Leq
Dozer	89.6	85.6
Dozer	89.6	85.6
Dozer	89.6	85.6
Front End Loader	87.1	83.1
Tractor	92	88
Tractor	92	88
Backhoe	85.5	81.5
Total	**98.3**	**94.3**

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 3/22/2024
Case Description: 5 - Phase A Phase B - Grading

		Baselines (dBA)		---- Receptor #1 ----
Description	Land Use	Daytime	Evening	Night
Residential Homes	Residential	65	65	60

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Excavator	No	40		80.7	20	0
Dozer	No	40		81.7	20	0
Front End Loader	No	40		79.1	20	0
Grader	No	40	85		20	0
Tractor	No	40	84		20	0
Haul Truck	No	40		76.5	20	0
Haul Truck	No	40		76.5	20	0
Haul Truck	No	40		76.5	20	0
Haul Truck	No	40		76.5	20	0
Haul Truck	No	40		76.5	20	0
Haul Truck	No	40		76.5	20	0
Haul Truck	No	40		76.5	20	0
Haul Truck	No	40		76.5	20	0
Excavator	No	40		80.7	20	0
Scraper	No	40		83.6	20	0
Scraper	No	40		83.6	20	0

Results

	Calculated (dBA)	
Equipment	Lmax	Leq
Excavator	88.7	84.7
Dozer	89.6	85.6
Front End Loader	87.1	83.1
Grader	93	89
Tractor	92	88
Haul Truck	84.5	80.5
Haul Truck	84.5	80.5
Haul Truck	84.5	80.5
Haul Truck	84.5	80.5
Haul Truck	84.5	80.5
Haul Truck	84.5	80.5
Haul Truck	84.5	80.5
Haul Truck	84.5	80.5
Excavator	88.7	84.7
Scraper	91.5	87.6
Scraper	91.5	87.6
Total	**100.6**	**96.6**

Report date: 3/22/2024
Case Description: 6 - Phase A Phase B - Utilities

		Baselines (dBA)		---- Receptor #1 ----
Description	Land Use	Daytime	Evening	Night
Residential Homes	Residential	65	65	60

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Excavator	No	40		80.7	20	0
Excavator	No	40		80.7	20	0
Front End Loader	No	40		79.1	20	0
Grader	No	40	85		20	0
Tractor	No	40	84		20	0
Dozer	No	40		81.7	20	0
Scraper	No	40		83.6	20	0
Scraper	No	40		83.6	20	0

Results

		Calculated (dBA)	
Equipment		Lmax	Leq
Excavator		88.7	84.7
Excavator		88.7	84.7
Front End Loader		87.1	83.1
Grader		93	89
Tractor		92	88
Dozer		89.6	85.6
Scraper		91.5	87.6
Scraper		91.5	87.6
	Total	**99.7**	**95.7**

Report date: 3/22/2024
Case Description: 7 - Phase A Phase B - Building Construction

		Baselines (dBA)		---- Receptor #1 ----
Description	Land Use	Daytime	Evening	Night
Residential Homes	Residential	65	65	60

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Crane	No	16		80.6	20	0
Gradall	No	40		83.4	20	0
Gradall	No	40		83.4	20	0
Gradall	No	40		83.4	20	0
Generator	No	50		80.6	20	0
Tractor	No	40	84		20	0
Backhoe	No	40		77.6	20	0
Front End Loader	No	40		79.1	20	0
Welder / Torch	No	40		74	20	0
Compressor (air)	No	40		77.7	20	0

Results

	Calculated (dBA)	
Equipment	Lmax	Leq
Crane	88.5	80.6
Gradall	91.4	87.4
Gradall	91.4	87.4
Gradall	91.4	87.4
Generator	88.6	85.6
Tractor	92	88
Backhoe	85.5	81.5
Front End Loader	87.1	83.1
Welder / Torch	82	78
Compressor (air)	85.6	81.6
Total	**99.3**	**95.2**

Report date: 1/21/2023
Case Description: 8 - Phase A Phase B - Paving

		Baselines (dBA)		---- Receptor #1 ----
Description	Land Use	Daytime	Evening	Night
Residential Homes	Residential	65	65	60

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Paver	No	50		77.2	20	0
Paver	No	50		77.2	20	0
Paver	No	50		77.2	20	0
Paver	No	50		77.2	20	0
Roller	No	20		80	20	0
Roller	No	20		80	20	0

Results

		Calculated (dBA)	
Equipment		Lmax	Leq
Paver		85.2	82.2
Paver		85.2	82.2
Paver		85.2	82.2
Paver		85.2	82.2
Roller		88	81
Roller		88	81
	Total	**94.1**	**89.6**

Report date: 1/21/2023
Case Description: 9 - Offsite Improvements - Grubbing / Land Clearing

		Baselines (dBA)		---- Receptor #1 ----
Description	Land Use	Daytime	Evening	Night
Residential Homes	Residential	65	65	60

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Tractor	No	40	84		20	0
Excavator	No	40		80.7	20	0
Excavator	No	40		80.7	20	0

Results

	Calculated (dBA)	
Equipment	Lmax	Leq
Tractor	92	88
Excavator	88.7	84.7
Excavator	88.7	84.7
Total	**94.9**	**90.9**

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 3/22/2024
Case Description: 10 - Offsite Improvements - Grading / Excavation

		Baselines (dBA)			---- Receptor #1 ----			
Description	Land Use	Daytime	Evening	Night				
Residential Homes	Residential	65	65	60				

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Tractor	No	40	84		20	0
Tractor	No	40	84		20	0
Tractor	No	40	84		20	0
Excavator	No	40		80.7	20	0
Excavator	No	40		80.7	20	0
Excavator	No	40		80.7	20	0
Grader	No	40	85		20	0
Grader	No	40	85		20	0
Roller	No	20		80	20	0
Roller	No	20		80	20	0
Dozer	No	40		81.7	20	0
Scraper	No	40		83.6	20	0
Front End Loader	No	40		79.1	20	0
Backhoe	No	40		77.6	20	0
Haul Truck	No	40		76.5	20	0
Haul Truck	No	40		76.5	20	0
Haul Truck	No	40		76.5	20	0
Haul Truck	No	40		76.5	20	0
Haul Truck	No	40		76.5	20	0
Scraper	No	40		83.6	20	0

		Results Calculated (dBA)	
Equipment		Lmax	Leq
Tractor		92	88
Tractor		92	88
Tractor		92	88
Excavator		88.7	84.7
Excavator		88.7	84.7
Excavator		88.7	84.7
Grader		93	89
Grader		93	89
Roller		88	81
Roller		88	81
Dozer		89.6	85.6
Scraper		91.5	87.6
Front End Loader		87.1	83.1
Backhoe		85.5	81.5
Haul Truck		84.5	80.5
Haul Truck		84.5	80.5
Haul Truck		84.5	80.5
Haul Truck		84.5	80.5
Haul Truck		84.5	80.5
Scraper		91.5	87.6
	Total	**102.6**	**98.5**

Report date: 3/22/2024
Case Description: 11 - Offsite Improvements - Drainage / Utilities / Subgrade

		Baselines (dBA)		---- Receptor #1 ----
Description	Land Use	Daytime	Evening	Night
Residential Homes	Residential	65	65	60

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Compressor (air)	No	40		77.7	20	0
Generator	No	50		80.6	20	0
Grader	No	40	85		20	0
Paver	No	50		77.2	20	0
Pumps	No	50		80.9	20	0
Gradall	No	40		83.4	20	0
Scraper	No	40		83.6	20	0
Tractor	No	40	84		20	0
Front End Loader	No	40		79.1	20	0
Backhoe	No	40		77.6	20	0

Results

	Calculated (dBA)	
Equipment	Lmax	Leq
Compressor (air)	85.6	81.6
Generator	88.6	85.6
Grader	93	89
Paver	85.2	82.2
Pumps	88.9	85.9
Gradall	91.4	87.4
Scraper	91.5	87.6
Tractor	92	88
Front End Loader	87.1	83.1
Backhoe	85.5	81.5
Total	**99.7**	**96**

Report date: 1/21/2023
Case Description: 12 - Offsite Improvements - Paving

		Baselines (dBA)		---- Receptor #1 ----
Description	Land Use	Daytime	Evening	Night
Residential Homes	Residential	65	65	60

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Paver	No	50		77.2	20	0
Paver	No	50		77.2	20	0
Roller	No	20		80	20	0
Roller	No	20		80	20	0
Tractor	No	40	84		20	0
Front End Loader	No	40		79.1	20	0
Backhoe	No	40		77.6	20	0

Results

		Calculated (dBA)	
Equipment		Lmax	Leq
Paver		85.2	82.2
Paver		85.2	82.2
Roller		88	81
Roller		88	81
Tractor		92	88
Front End Loader		87.1	83.1
Backhoe		85.5	81.5
	Total	**96.4**	**91.9**

APPENDIX H

144-490 QUINTAL ROAD PROJECT
TRANSPORTATION ANALYSIS

July 31, 2024

Prepared for:
City of Manteca

Prepared by:
Stantec Consulting Services

Project Number:
2042640500

The conclusions in the Report titled *144-490 Quintal Road Project Transportation Analysis* are Stantec's professional opinion, as of the time of the Report, and concerning the scope described in the Report. The opinions in the document are based on conditions and information existing at the time the scope of work was conducted and do not take into account any subsequent changes. The Report relates solely to the specific project for which Stantec was retained and the stated purpose for which the Report was prepared. The Report is not to be used or relied on for any variation or extension of the project, or for any other project or purpose, and any unauthorized use or reliance is at the recipient's own risk.

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1 Introduction

Stantec Consulting Services inc. (Stantec) has prepared a transportation analysis for the proposed 144-490 Quintal Road residential development (Project) in the City of Manteca, California. The purpose of this report is to document the data and findings of the transportation analysis.

1.1 Project Description

The Project includes development of 818 residential units—672 multi-family units, 48 duplex units, and 98 single family residential units—to be built in two phases on approximately 60 acres. The Project also includes an approximately 1.93-acre public open space and associated parking located on site as well as other amenities such as a dog park, game lawn, and club house. The Project site is currently vacant and undeveloped.

The proposed Project is generally located south of State Route 120 (SR 120) and east of S. Main Street. The Project site is bisected by E. Atherton Drive. See Figure 1-1 for the Project Site Location Map. Existing residential development borders the Project site to the south and the east. Primary access to the Project site is proposed via three new intersections intersecting with E. Atherton Drive and a fourth via the existing Quintal Road and S. Main Street intersection. See Figure 1-2 for the Project Site Plan and access locations.

Access to the west portion of the Project would be through a gated entrance on Quintal Road located at S. Main Street. Based on the analysis provided in this traffic study and other factors related to the future widening of S. Main Street and other planned development along the westerly side of S. Main Street, the City has determined that the Quintal Road intersection would be restricted to right-turn-in and right-turn-out movements only. With the restriction on left-turns, provision of a U-turn movement at the downstream Atherton Drive intersection is recommended in order to facilitate access to the Project site.

On S. Main Street, the Project would construct the full half-street improvements along the easterly side of the road between E. Atherton Drive and the SR 120 eastbound ramps. This configuration, as shown by a concept plan provided by the City of Manteca (see Appendix F), consists of three vehicle lanes in the northbound direction, a sidewalk, and a raised median.

The Project proposes three new access roads located off of E. Atherton Drive—referred to herein as West Site Access, Center Site Access/Buena Vista Drive, and East Site Access. The West Site Access would provide a one-way southbound right-turn only exit from the portion of the site north of E. Atherton Drive and a two-way right-in/right-out only entrance and exit for the portion of the site south of E. Atherton Drive.

The Center Site Access would extend the existing Buena Vista Drive northerly from its current terminus to intersect with E. Atherton Drive. In addition to providing access to the Project site, the extension of Buena Vista Drive will provide direct access between E. Atherton Drive and the existing residential neighborhood

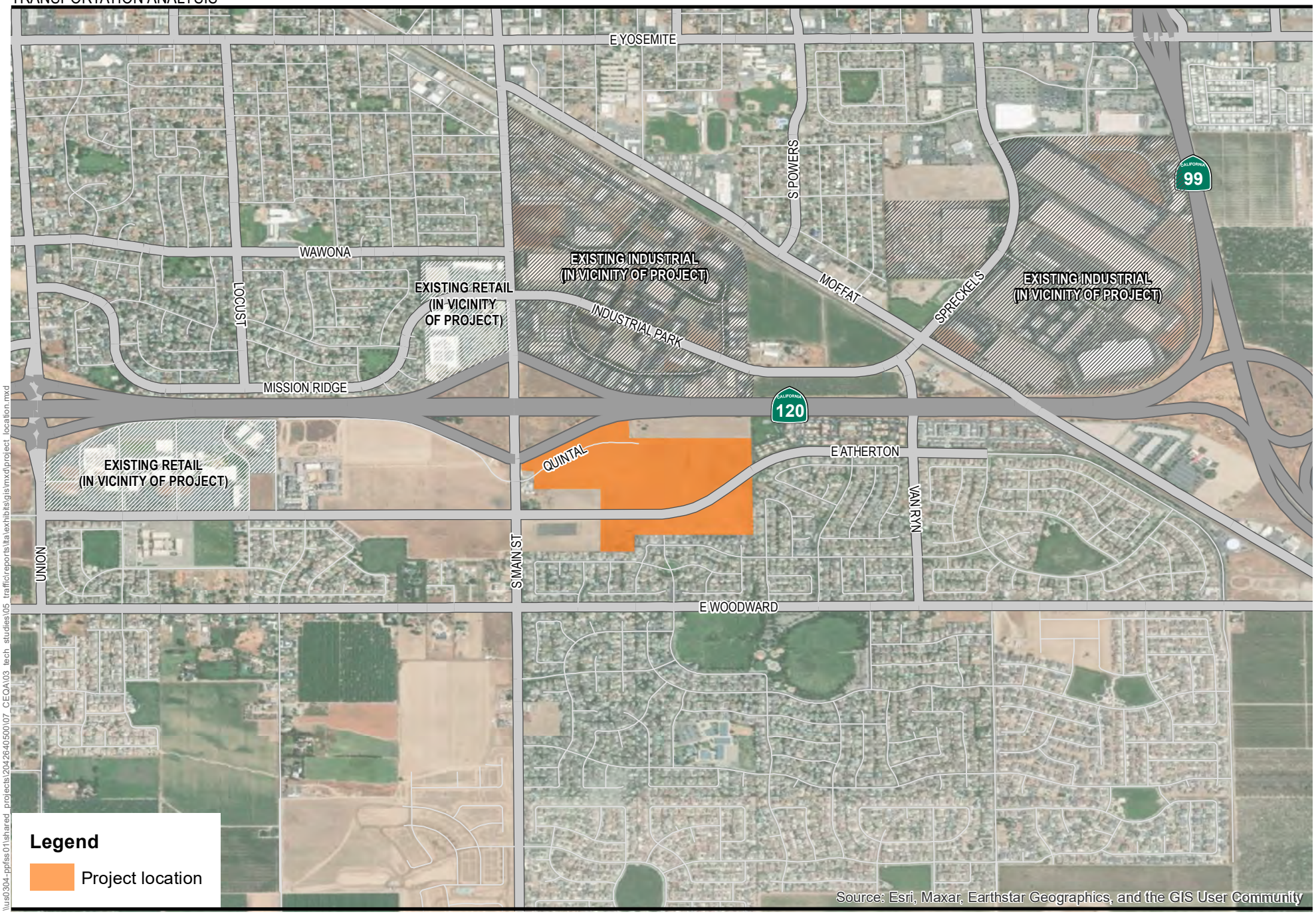

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Figure 1-1
Project Site Location

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Figure 1-2
Project Site Plan

located to the south of the Project site. The north leg of the intersection would provide access to the portion of the Project site north of E. Atherton Drive. The Center Site Access/Buena Vista Drive intersection with E. Atherton Drive would be controlled by a new traffic signal.

The East Site Access intersection would provide a right-turn-in/right-turn-out only entrance and exit from E. Atherton Drive for both the north and south portions of the Project site.

The Project proposes to upgrade traffic signals at the intersection of S. Main Street and E. Atherton Drive, S. Main Street and SR 120 eastbound ramps and S. Main Street and SR 120 westbound ramps with modern traffic signal controllers to update the signal timings of all the traffic signals mentioned above. The Project also proposes to extend the City's existing Class I bicycle trail across the northern frontage of E. Atherton Drive that would be designed and constructed per the City's standard for a 12-foot Class I bicycle facility.

1.2 Study Area

The ten intersections listed below in the vicinity of the Project were selected as the study area intersections, which includes the four proposed Project site access intersections. See Appendix A for the City's approved Scoping Memo outlining the study requirements. The study area intersection locations are shown in Figure 1-3.

1. S. Main Street and Mission Ridge Drive/Industrial Park Drive
2. S. Main Street and SR 120 WB Ramps
3. S. Main Street and SR 120 EB Ramps
4. S. Main Street and Quintal Road/Site Access
5. S. Main Street and E. Atherton Drive
6. S. Main Street and E. Woodward Avenue
7. Buena Vista Drive and E. Woodward Avenue
8. West Site Access and E. Atherton Drive (future)
9. Center Site Access/Buena Vista Drive and E. Atherton Drive (future)
10. East Site Access and E. Atherton Drive (future)

1.3 Methodology

A Local Transportation Analysis (LTA) is commonly prepared if a project generates more than 100 net new peak hour vehicle trips. Since the Project generates more than 100 net new peak hour vehicle trips, an LTA that includes evaluation of the proposed Project during the AM and PM peak hour traffic conditions under the following scenarios has been prepared:

- Existing Conditions (without Project)
- Existing plus Project Conditions
- Cumulative Conditions (without Project)
- Cumulative plus Project Conditions

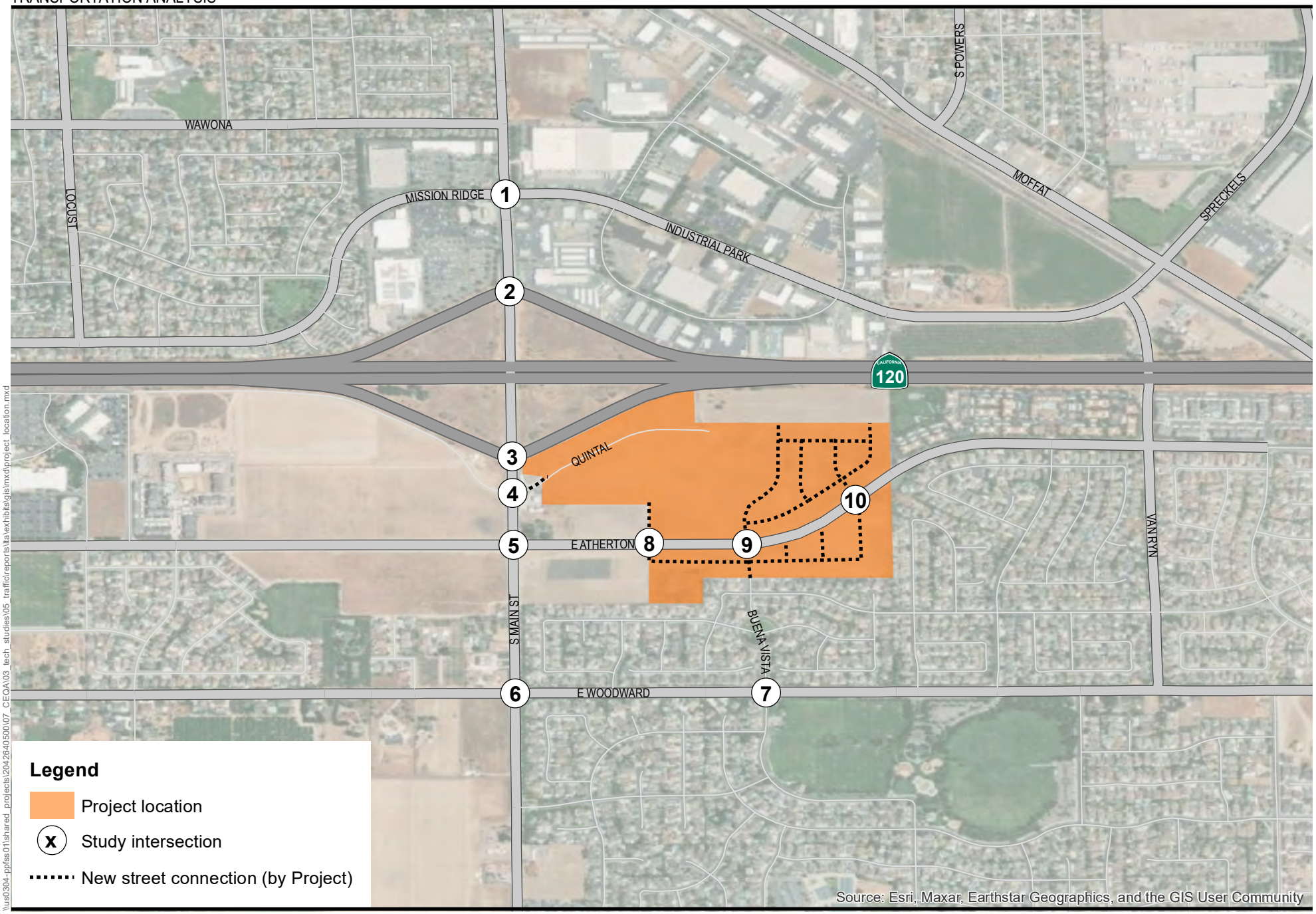

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Figure 1-3
Study Area Intersections

The existing conditions scenario utilizes traffic count data collected at all study intersections during the critical AM and PM peak hours in Fall 2022, when schools were in session. Existing plus Project conditions analyzes existing volumes with the addition of Project generated trips. The Existing plus Project scenario also accounts for the potential redistribution of existing traffic volumes that results from Project design elements, such as the extension of Buena Vista Drive.

For cumulative conditions, the City of Manteca's land use growth assumptions are based on the approved and anticipated projects that are expected to be constructed and occupied by the year 2040. The cumulative conditions baseline scenario utilizes Interim Year (2040) volumes derived from the City's Interim Year Traffic Forecasting Model (TFM) for a scenario in which the Project site remains in its current undeveloped state. Cumulative plus Project conditions assumes Interim Year (2040) volumes with the addition of Project generated trips. The Interim Year (2040) traffic model forecasts were prepared by Fehr & Peers, who developed the TFM through coordination with the Cities of Manteca, Lathrop, and Ripon for use in the City of Manteca's General Plan update (see Appendix B for LMC Manteca Project Traffic Volume Forecast Technical Memorandum, Fehr & Peers, October 2022).

1.4 Performance Criteria

Defined performance criteria are utilized to determine if a proposed Project would cause an undesirable change in LOS. Performance criteria are typically based on two primary measures. The first is "capacity", which establishes the vehicle carrying ability of a roadway, and the second is "volume." The volume measure is either a traffic count (in the case of existing volumes) or a forecast for a future point in time. For arterial roadways in an urban or suburban setting, the intersection of two roadways will typically be the limiting factor in regard to the overall capacity of the roadway network.

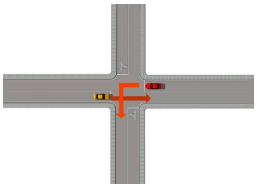
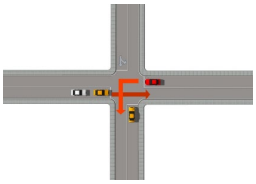
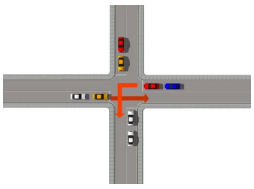
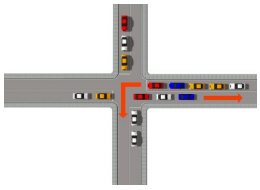
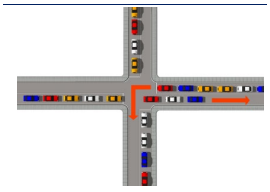
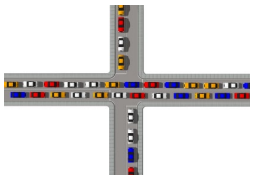
Methodology outlined in the HCM 6th Edition produces estimates of average vehicle delay as a function of intersection capacity and the volume of traffic passing through the intersection. From this, a corresponding LOS is defined. Traffic LOS is designated "A" through "F" with LOS A representing free flow conditions and LOS F representing severe traffic congestion. Traffic flow quality for each LOS is described in Table 1-1 for arterial intersections.

For the arterial roadways the peak hour is the accepted time period used for the evaluation of undesirable changes and a number of techniques are available to define intersection LOS. Certain LOS values are deemed undesirable by the City. These definitions and procedures are established by individual local jurisdictions, such as the City of Manteca.

LOS for arterial roadway intersections are determined based on operating conditions during the AM and PM peak hours and the geometric configuration of the intersection. HCM delay methodology was used to analyze both the signalized intersections and the stop-controlled intersections. Synchro software was used to calculate the intersection delay and LOS. For signalized intersections, optimized signal timing/phasing was assumed for existing and future scenarios.

The HCM 6th Edition calculation methodology and associated LOS performance standards used in this analysis are summarized in Table 1-2.

Table 1-1 Level of Service Descriptions – Arterial Roadways and Intersections

LOS	Traffic Flow Description	Signalized Control Delay (sec/veh)	Stop-Controlled Delay (sec/veh)
A	 Minimal or no vehicle delay	0 – 10.0	0 – 10.0
B	 Slight delay to vehicles	10.1 – 20.0	10.1 – 15.0
C	 Moderate vehicle delays, traffic flow remains stable	20.1 – 35.0	15.1 – 25.0
D	 More extensive delays at intersections	35.1 – 55.0	25.1 – 35.0
E	 Long queues create lengthy delays	55.1 – 80.0	35.1 – 50.0
F	 Severe delays and congestion	Above 80.0	Above 50.0

Source: HCM 6th Edition
LOS = Level of service
sec/veh = seconds per vehicle

Table 1-2 Arterial Intersection Performance Criteria

Delay Methodology **Calculation Methodology** LOS based on "average vehicle delay" calculated as follows: – Synchro/HCM 6 delay-based intersection methodology for traffic signals – HCM 6 delay-based intersection methodology for stop sign control **Performance Standard** LOS D defined as follows: – stopped delay to not exceed 55 seconds for signalized intersections – stopped delay to not exceed 35 seconds for stop sign control
LOS Thresholds An intersection is considered to be affected if the Project would worsen an intersection operating at an acceptable LOS D or better under "No Project" conditions to unacceptable LOS E or F under "with Project conditions". For intersections already operating at unacceptable LOS under either Existing or Cumulative "No Project" conditions, the intersection is considered to be affected if the addition of the Project causes any of the following: • Cause 5 seconds or more increase in average vehicle delay at a signalized intersection • Cause 5 seconds or more increase in average vehicle delay at an all-way stop-controlled intersection and the intersection meets the one-hour peak hour signal warrant • Cause 5 seconds or more increase at the highest delayed side-street movement for a side-street stop-controlled intersection and the intersection meets the one-hour peak hour signal warrant
Source: Manteca Draft Transportation Impact Analysis Guidelines Abbreviations: LOS – Level of Service

1.5 Definitions

Certain terms used throughout this report are defined below to clarify their intended meaning:

ADT	Average Daily Traffic. Generally used to measure the total two-directional traffic volumes passing a given point on a roadway.
LOS	Level of Service. A scale used to evaluate circulation system performance based on intersection delay of arterial segments.

Peak Hour — This refers to the hour during the AM peak period (typically 7 AM – 9 AM) or the PM peak period (typically 4 PM – 6 PM) in which the greatest number of vehicle trips are generated by a given land use or are traveling on a given roadway.

1.6 References

1. "Trip Generation 11th Edition," Institute of Transportation Engineers, 2021.
2. "Highway Capacity Manual 6th Edition," Transportation Research Board, National Research Council, 2010.
3. "Manteca Draft Transportation Impact Analysis Guidelines," City of Manteca, (no date).
4. "LMC Manteca Project Traffic Volume Forecast Technical Memorandum," Fehr & Peers, 2022.
5. "LMC Manteca Project VMT Analysis Technical Memorandum," Fehr & Peers, 2023.
6. "Quantifying Greenhouse Gas Mitigation Measures," CAPCOA, 2010.

2 Project Analysis

This chapter describes the Project in terms of its transportation characteristics. Trip generation is summarized and the distribution of the Project's trips on the adjoining roadway network is presented. The Project's effect on the surrounding road system is then evaluated under existing and cumulative conditions.

2.1 Project Trip Generation

The proposed Project's anticipated trip generation estimates were prepared using the standardized Institute of Transportation Engineers (ITE) 11th Edition trip generation rates for the Multifamily Housing-Low-Rise (220), Single Family Attached Housing (215) and Single-Family Detached Housing (210) land use categories.

As shown in Table 2-1, the proposed Project is anticipated to generate a total of approximately 5,799 average daily trips (ADT), with 360 trips occurring during the AM peak hour and 462 trips occurring during the PM peak hour.

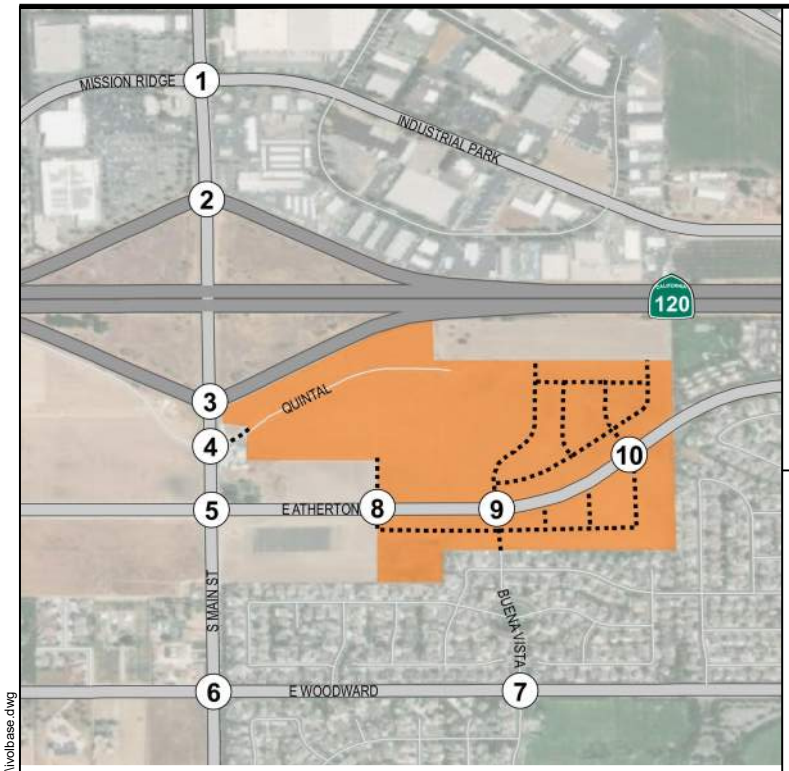
Table 2-1 Trip Generation Summary

Land Use	Amount	Unit	AM Peak Hour			PM Peak Hour			ADT
			In	Out	Total	In	Out	Total	
Trip Rates									
Multifamily Housing – Low-rise (220)	-	DU	0.10	0.30	0.40	0.32	0.19	0.51	6.74
Single-Family Attached Housing (215)	-	DU	0.12	0.36	0.48	0.34	0.23	0.57	7.20
Single-Family Detached Housing (210)	-	DU	0.18	0.53	0.70	0.59	0.35	0.94	9.43
Trip Generation									
Multifamily Low-rise	672	DU	65	204	269	216	127	343	4,529
Duplex	48	DU	6	17	23	16	11	27	346
Single Family	98	DU	17	51	68	58	34	92	924
Total	***818***	***DU***	***88***	***272***	***360***	***290***	***172***	***462***	***5,799***

Note:
ADT – Average Daily Traffic
DU – Dwelling Units
Trip Rate Source: Institute of Transportation Engineers (ITE), 11th Edition, 2021, with ITE code in parentheses

2.2 Project Trip Dsitribution

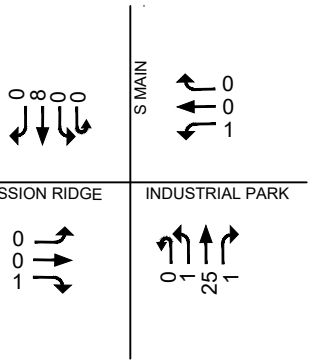
The Project's anticipated trip distribution percentages for existing conditions were derived based on the Project's location in relation to the surrounding uses while taking into account the proposed driveway locations and lane geometry, existing traffic flow patterns, and output from the Base Year (2019) TFM (see Appendix B for the LMC Manteca Project Traffic Volume Forecast Technical Memorandum). Project-Only volumes are illustrated in Figure 2-1 for AM peak hour and Figure 2-2 for PM peak hour.



Legend

- Project location
- Study intersection
- New street connection (by Project)
- XXX Project volumes
- (XXX) Redistribution of existing volumes

1. S Main & Mission Ridge/ Industrial Park



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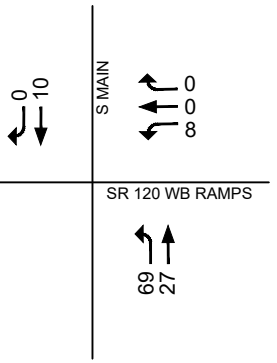

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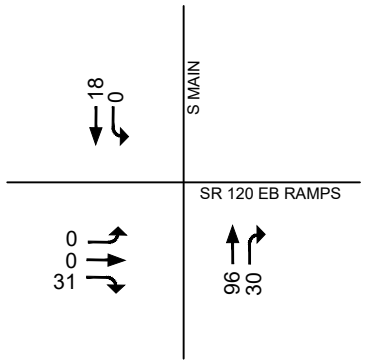
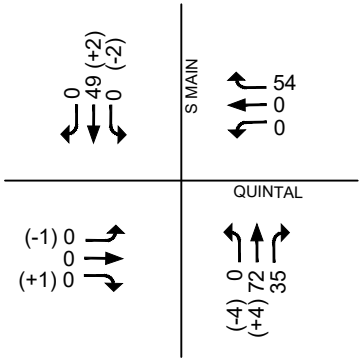
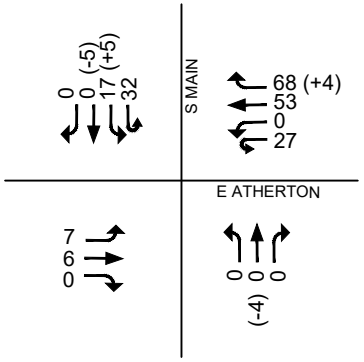


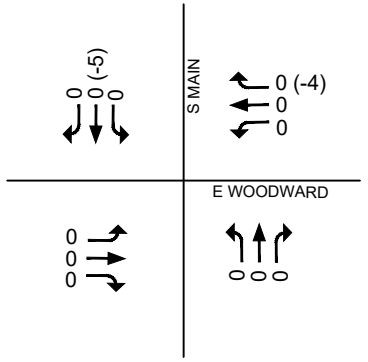
4. S Main & Quintal



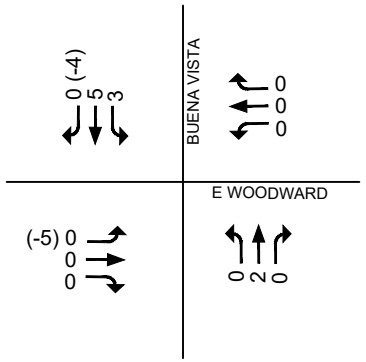
5. S Main & E Atherton



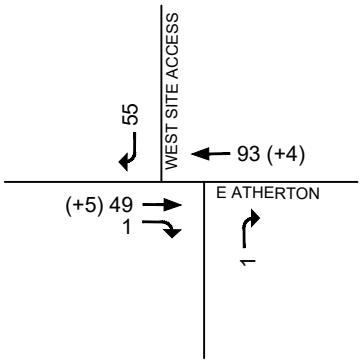
6. S Main & E Woodward



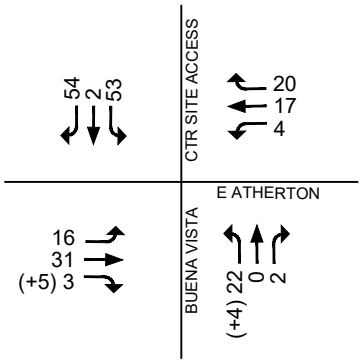
7. Buena Vista & E Woodward



8. West Site Access & E Atherton



9. Center Site Access/Buena Vista & E Atherton



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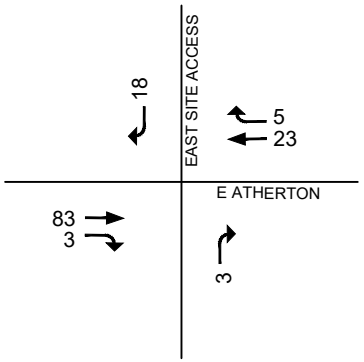

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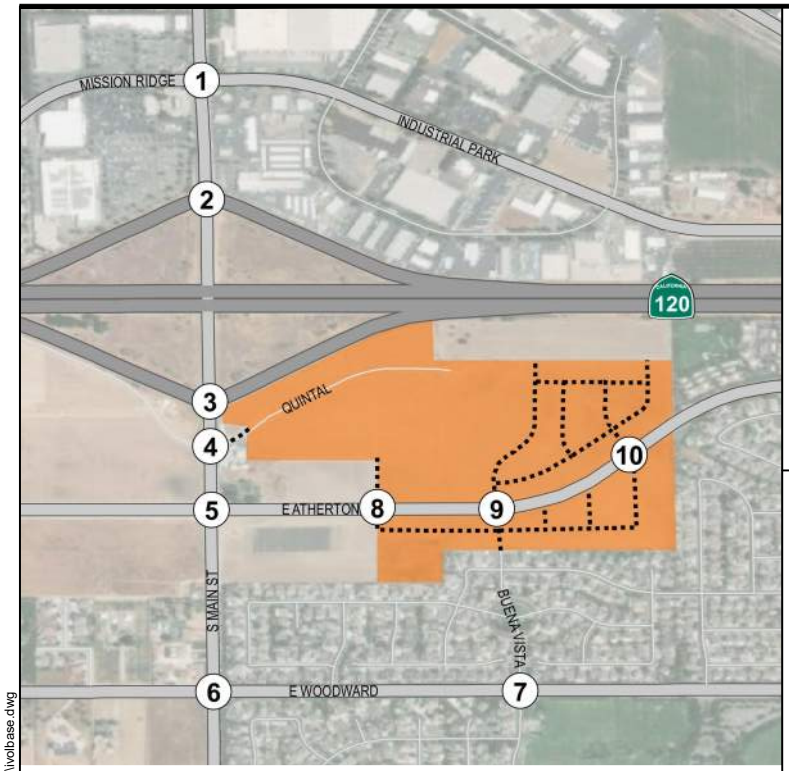
Figure 2-1

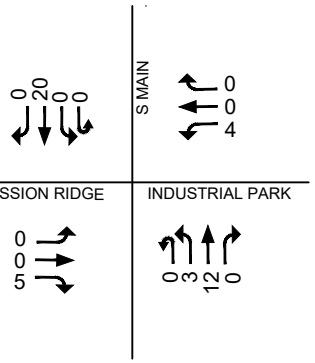
Project-Only AM Peak Hour Intersection Volumes



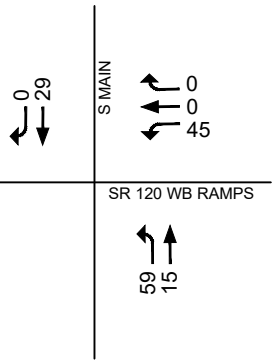
Legend

- Project location
- Study intersection
- New street connection (by Project)
- XXX Project volumes
- (XXX) Redistribution of existing volumes

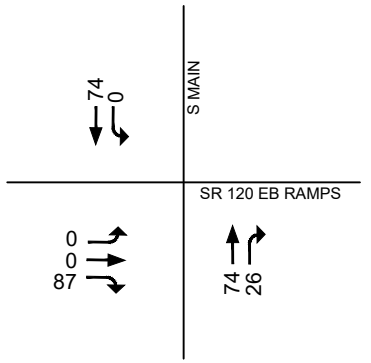
1. S Main & Mission Ridge/ Industrial Park



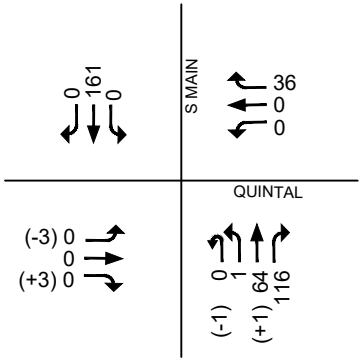
2. S Main SR 120 WB Ramps



3. S Main & SR 120 EB Ramps



4. S Main & Quintal



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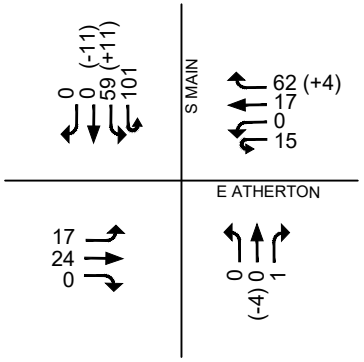
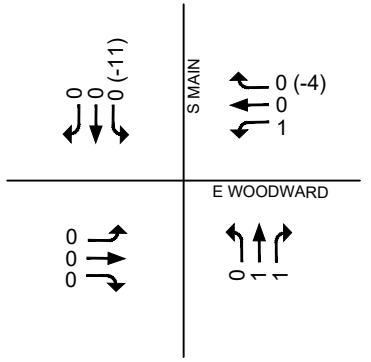
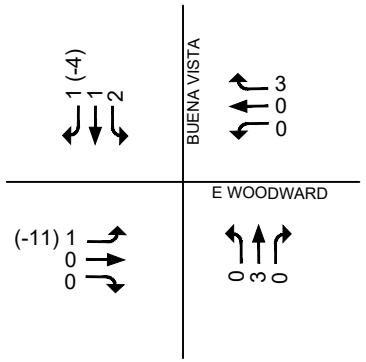


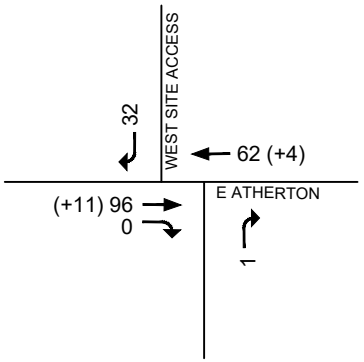
6. S Main & E Woodward



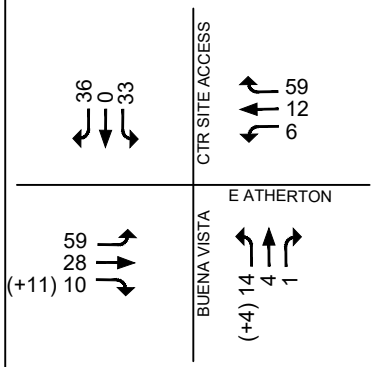
7. Buena Vista & E Woodward



8. West Site Access & E Atherton



9. Center Site Access/Buena Vista & E Atherton



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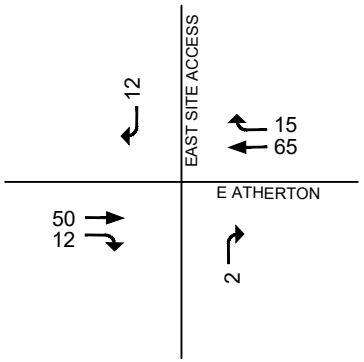

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Figure 2-2

Project-Only PM Peak Hour Intersection Volumes

2.3 Existing Conditions

Existing lane configurations for the study intersections are illustrated in Figure 2-3. Peak hour turning movement volumes are illustrated in Figure 2-4 for AM peak hour and Figure 2-5 for PM peak hour. Traffic count data were collected at all study intersections during the critical AM and PM peak hours in Fall 2022, when schools were in session.

The results of the intersection LOS analysis under existing conditions are shown in Table 2-2 . Both signalized and stop controlled intersections in the study area were analyzed using Synchro traffic analysis software which employs the HCM 6 delay methodology. Detailed LOS calculation worksheets are provided in Appendix C. The table shows that all study intersections currently operate at LOS D or better, except the intersection of S. Main Street and Quintal Road operates at LOS F during the PM peak hour and the intersection of S. Main Street and E. Woodward Avenue operates at LOS E during the AM peak hour and LOS F during the PM peak hour.

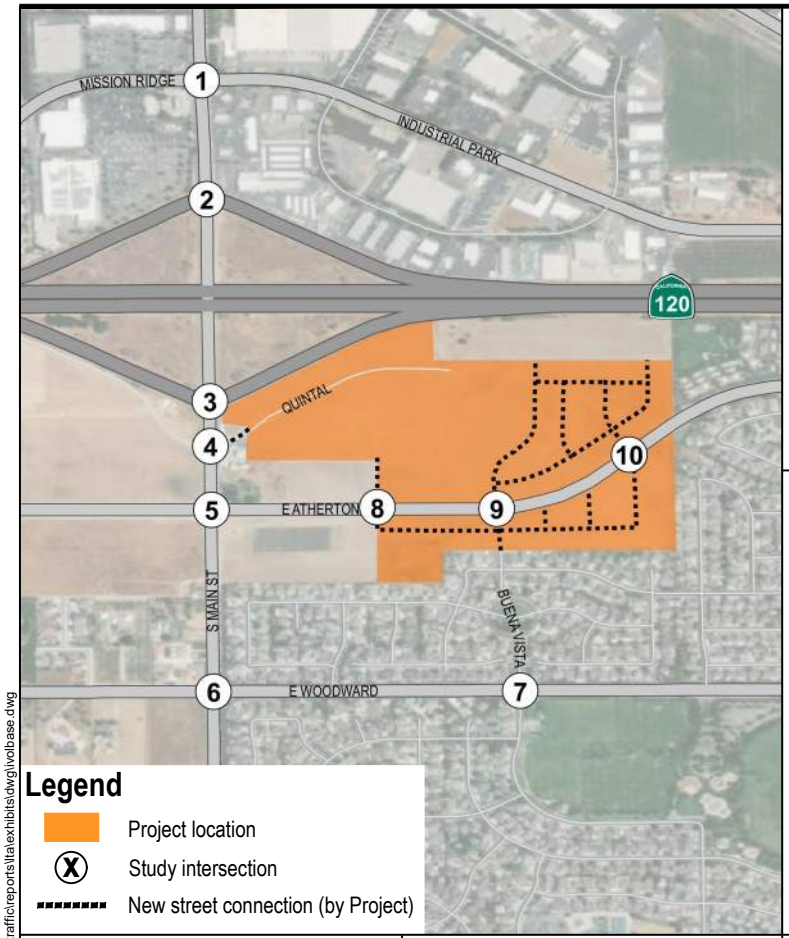
S. Main Street and Quintal Road is a side street stop-controlled intersection which operates at an unacceptable LOS for the side street due to delay experienced by the westbound movements. Although there is a minor amount of westbound left-turning traffic, there is a significant delay to make the left-turn due to a heavy volume of through traffic.

S. Main Street and E. Woodward Avenue is an all-way stop controlled intersection. Unacceptable LOS is attributed to the heavy northbound and southbound left-turn movements.

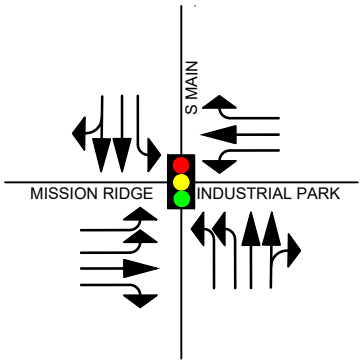
Table 2-2 Intersection LOS Summary – Existing Conditions

Intersection Name	Existing Traffic Control	AM Peak Hour		PM Peak Hour	
		Delay	LOS	Delay	LOS
1. S. Main Street & Mission Ridge Drive/Industrial Park Drive	Signal	27.1	C	44.0	D
2. S. Main Street & SR 120 WB Ramps	Signal	13.3	B	15.6	B
3. S. Main Street & SR 120 EB Ramps	Signal	38.4	D	29.2	C
4. S. Main Street & Quintal Road	Two-way stop[1]	19.7	C	**56.5**	**F**
5. S. Main Street & E. Atherton Drive	Signal	21.8	C	23.5	C
6. S. Main Street & E. Woodward Avenue	All-way stop[1]	**48.4**	**E**	**59.5**	**F**
7. Buena Vista Drive & E. Woodward Avenue	Two-way stop with RRFB[1]	14.9	B	16.0	C

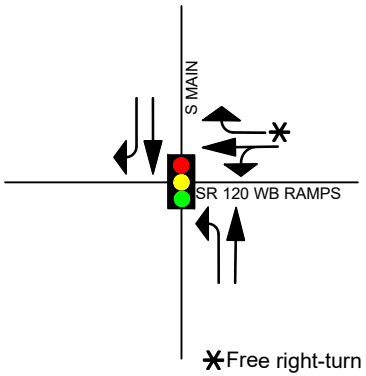
Note:
LOS – Level of Service
Delay – Average vehicle delay (in seconds)
EB – eastbound
WB – westbound
RRFB – Rectangular Rapid Flashing Beacon (crosswalk warning)
[1]delay represents the movement with the highest individual delay
BOLD denotes undesirable LOS (exceeds LOS D)



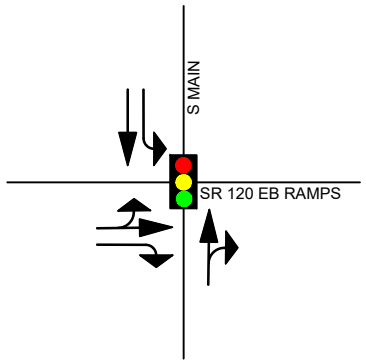
1. S Main & Mission Ridge/ Industrial Park



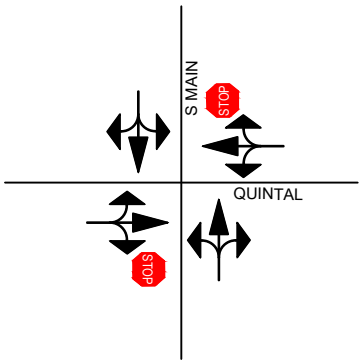
2. S Main SR 120 WB Ramps



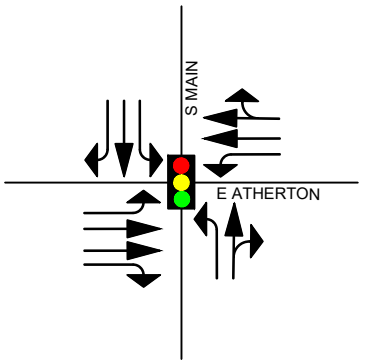
3. S Main & SR 120 EB Ramps



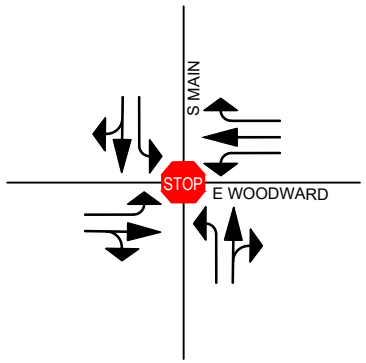
4. S Main & Quintal



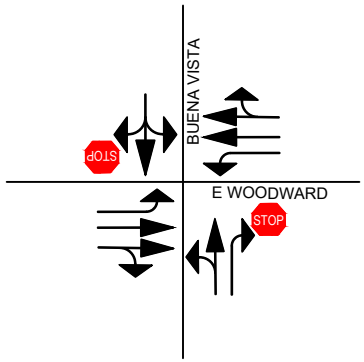
5. S Main & E Atherton



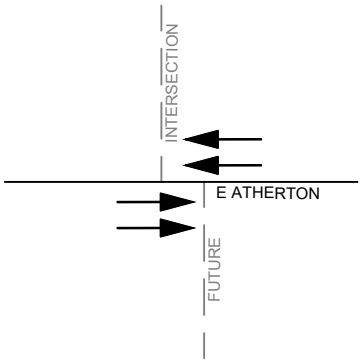
6. S Main & E Woodward



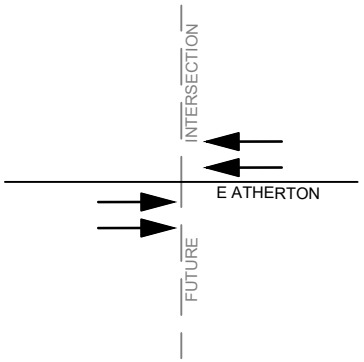
7. Buena Vista & E Woodward



8. West Site Access & E Atherton



9. Center Site Access/Buena Vista & E Atherton



10. East Site Access & E Atherton

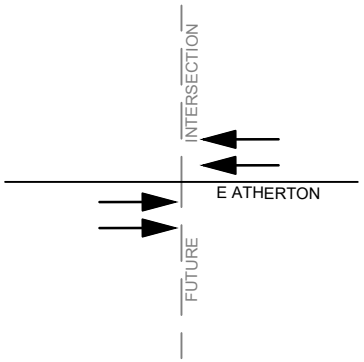


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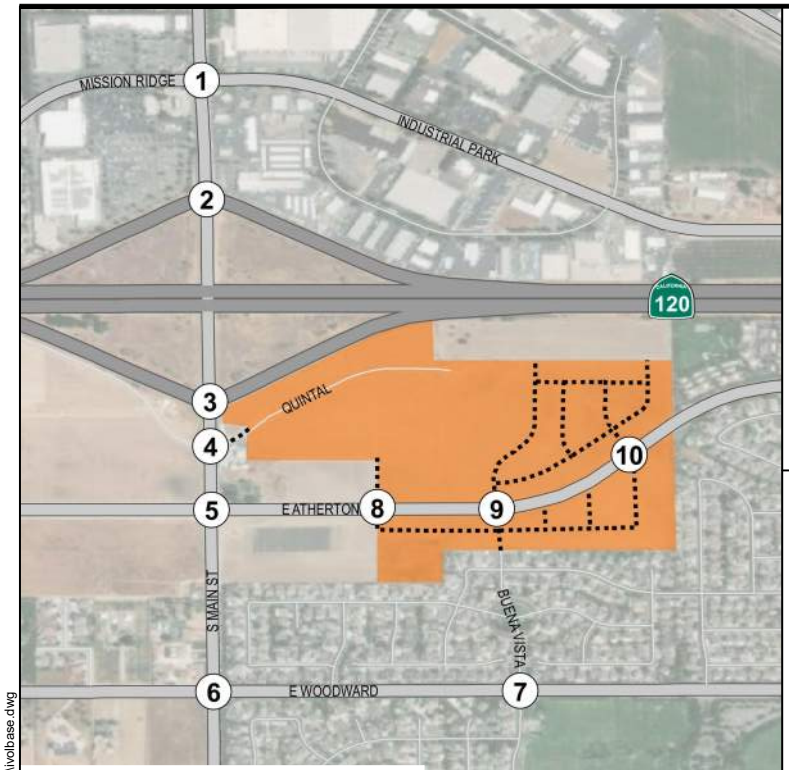
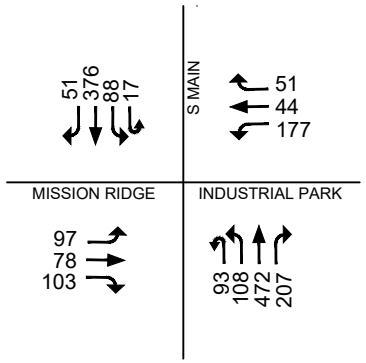
Figure 2-3

Existing Intersection Lane Configurations

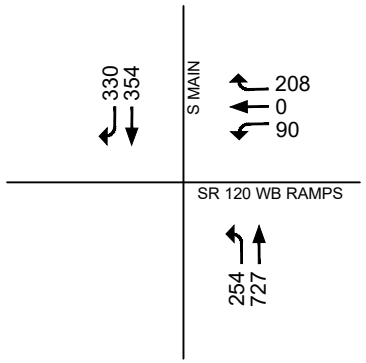


Legend
- Project location
- Study intersection
- New street connection (by Project)

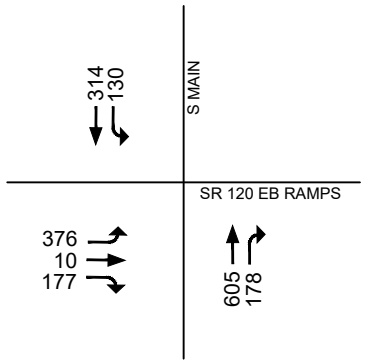
1. S Main & Mission Ridge/ Industrial Park



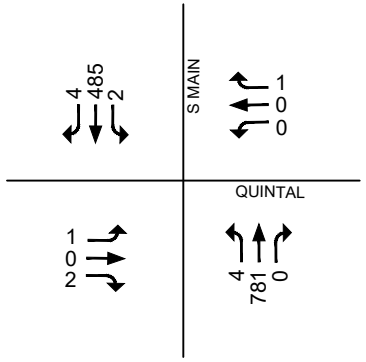
2. S Main SR 120 WB Ramps



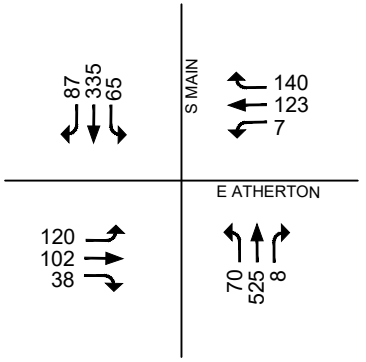
3. S Main & SR 120 EB Ramps



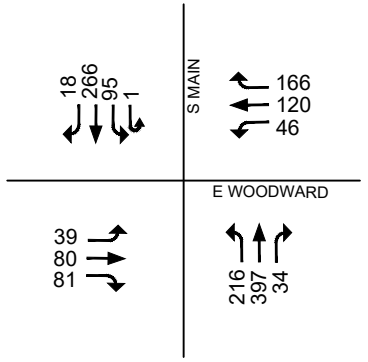
4. S Main & Quintal



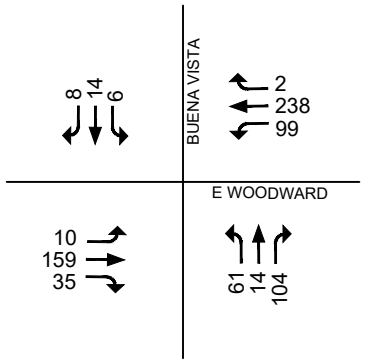
5. S Main & E Atherton



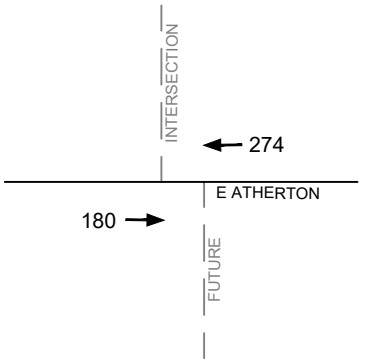
6. S Main & E Woodward



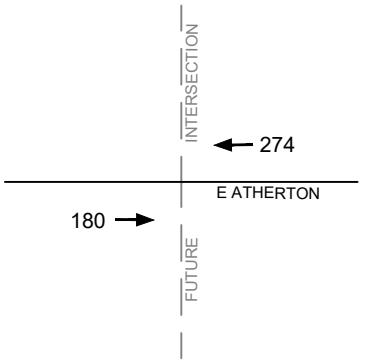
7. Buena Vista & E Woodward



8. West Site Access & E Atherton



9. Center Site Access/Buena Vista & E Atherton



10. East Site Access & E Atherton

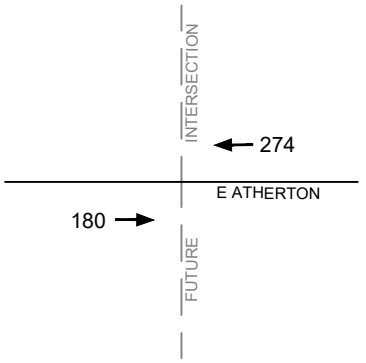


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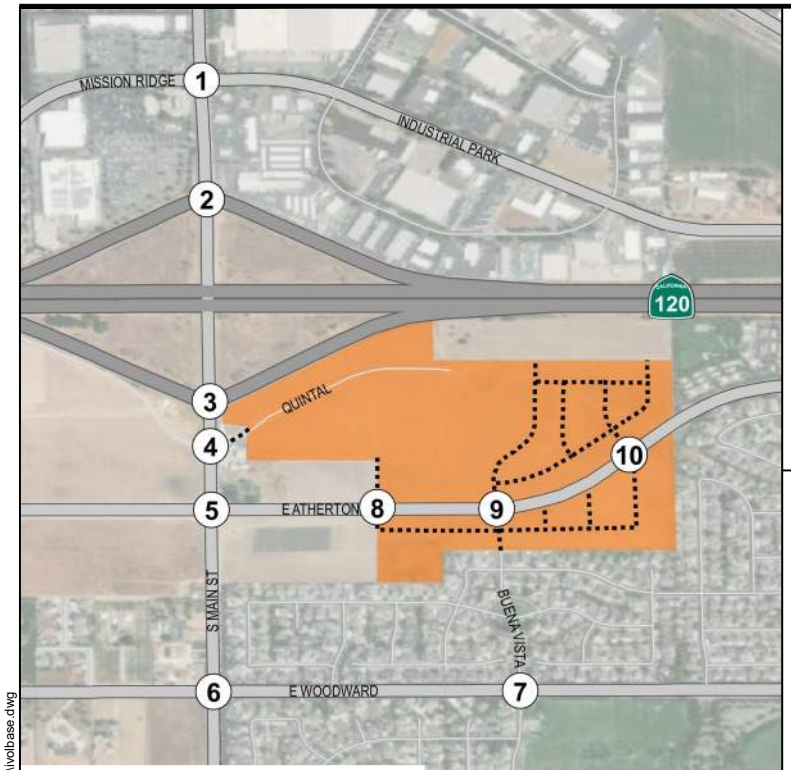
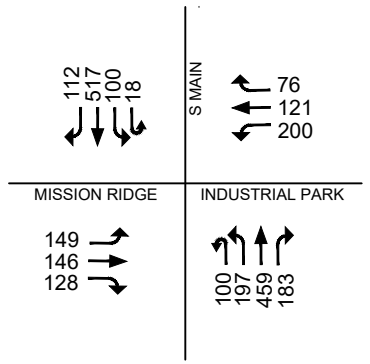
Figure 2-4

Existing AM Peak Hour Intersection Volumes

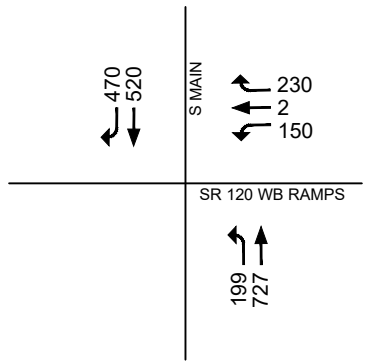


Legend
- Project location
- Study intersection
- New street connection (by Project)

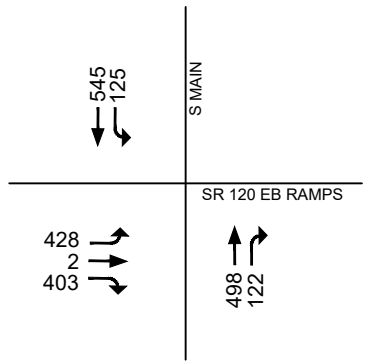
1. S Main & Mission Ridge/ Industrial Park



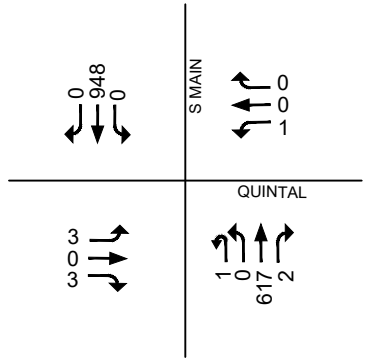
2. S Main SR 120 WB Ramps



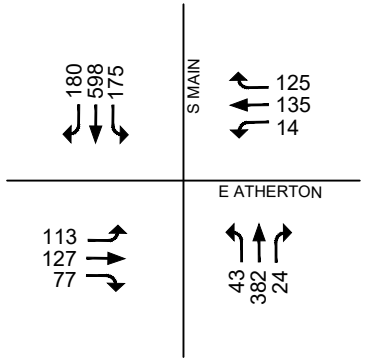
3. S Main & SR 120 EB Ramps



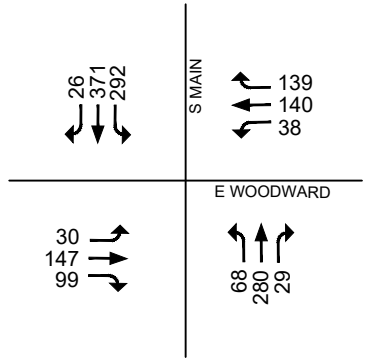
4. S Main & Quintal



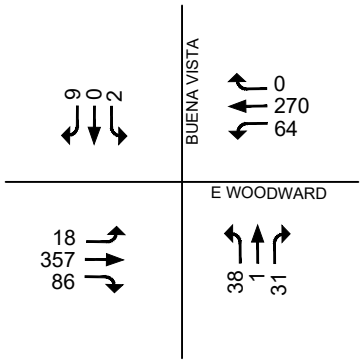
5. S Main & E Atherton



6. S Main & E Woodward

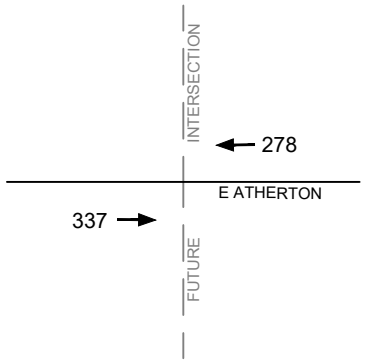


7. Buena Vista & E Woodward



8. West Site Access & E Atherton

9. Center Site Access/Buena Vista & E Atherton



10. East Site Access & E Atherton

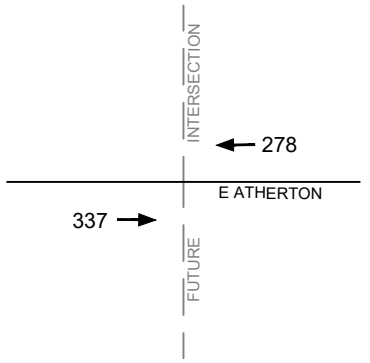


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Figure 2-5

Existing PM Peak Hour Intersection Volumes

2.4 Existing Plus Project Traffic Conditions

For analysis of the existing conditions with the Project, the total volume of trips generated by the proposed Project were added to the existing traffic counts to derive existing plus Project volumes. A small redistribution of existing traffic volumes also occurs due to the extension of Buena Vista Drive to E. Atherton Drive, and the reconfiguration of the S. Main Street/Quintal Road intersection to prohibit left-turn movements. See Section 1.1 for a detailed description of road improvements to be constructed by the Project, which are illustrated in Figure 2-6.

As mentioned in Section 1.3, the TFM was used to develop Project trip distribution patterns during the AM and PM peak hours. Existing conditions with-Project AM and PM peak hour turning movement volumes at the study intersections are shown in Figure 2-7 and Figure 2-8, respectively.

Peak hour vehicle delay values and LOS that correspond with the existing traffic volumes and the existing-plus-Project traffic forecasts can be found in Table 2-3, which provides a comparison between the no-Project and the with-Project conditions The study intersections were analyzed using Synchro traffic analysis software which employs the HCM 6 delay methodology. Detailed LOS calculation worksheets are provided in Appendix C. The intersection of S. Main Street and Quintal Road is analyzed with a right-in/right-out only access; as well as left-turn in access at Quintal Road as an alternative scenario. LOS and delay for both options are shown in the table.

As shown, with the addition of the Project, the study intersections are anticipated to operate at a desirable LOS D or better during the AM and PM peak hour except the intersection of S. Main Street and E. Woodward Avenue, which continues to operate at an LOS E during AM peak hour and LOS F during the PM peak hour with a slight decrease in delay. It should be noted that improvements are currently being designed by the City for the Main Street and E. Woodward Avenue intersection that would improve LOS at that location. The slight decrease in delay resulting from with-Project conditions is due to the minor redistribution of exiting traffic that results from the extension of Buena Vista Drive to E. Atherton Drive. A similar slight reduction in delay occurs at the Buena Vista Drive/E. Woodward Avenue intersection for the same reason.

The intersection of S. Main Street and Quintal Road improves from LOS F to LOS C during the PM peak hour under both site access alternatives—right-in/right-out only access at Quintal Road and left-turn-in/right-turn-in/right-turn-out access at Quintal Road. The improvement in LOS is due to the Project eliminating left-turns from Quintal Road to S. Main Street and the additional northbound through lanes to be constructed between E. Atherton Drive and the SR 120 eastbound ramps. Based on the analysis provided in this traffic study and other factors related to the future widening of S. Main Street and other planned development along the westerly side of S. Main Street, the City has determined that the Quintal Road intersection would be restricted to right-turn-in and right-turn-out movements only. With the restriction on left-turns, provision of a U-turn movement at the downstream Atherton Drive intersection is recommended in order to facilitate access to the Project site.

A slight reduction in delay also occurs at the S. Main Street/SR 120 eastbound ramps intersection due to the northbound road improvements along the Project frontage that facilitate the addition of a right-turn lane at the ramps.

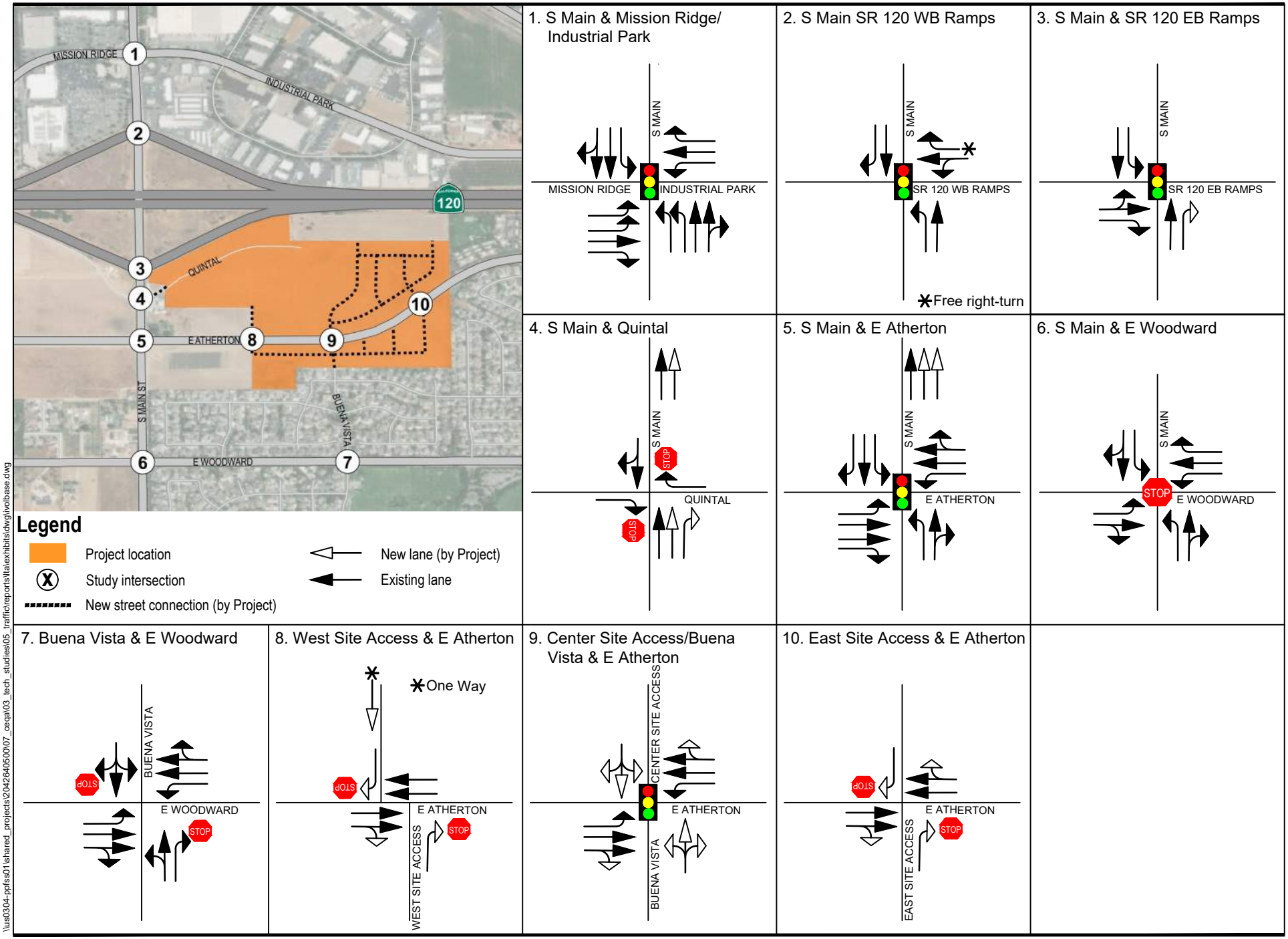

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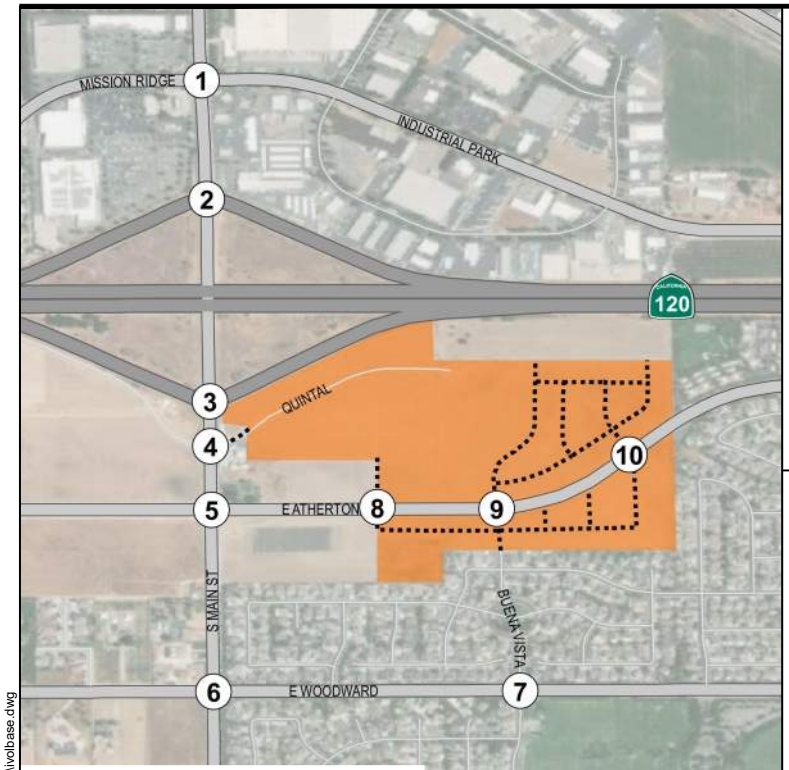
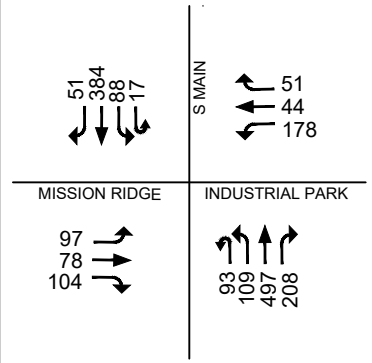
Figure 2-6

Existing plus Project Intersection Lane Configurations

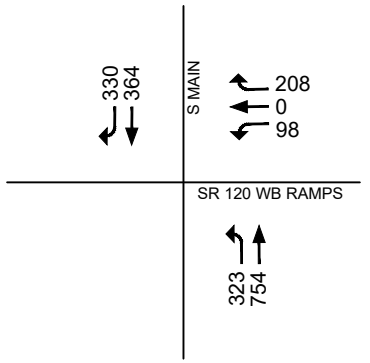


Legend
- Project location
- Study intersection
- New street connection (by Project)

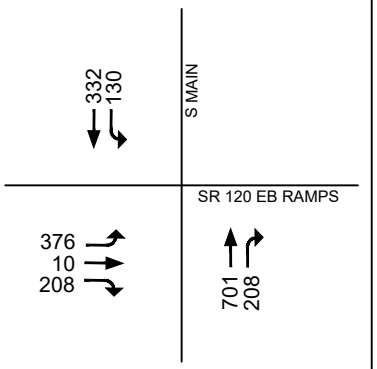
1. S Main & Mission Ridge/ Industrial Park



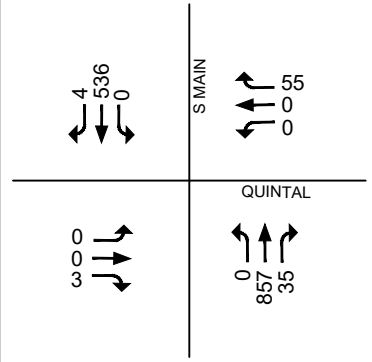
2. S Main SR 120 WB Ramps



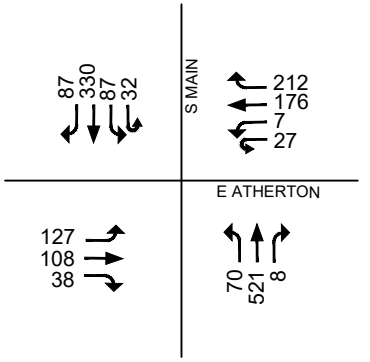
3. S Main & SR 120 EB Ramps



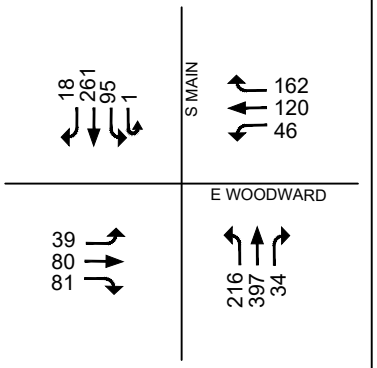
4. S Main & Quintal



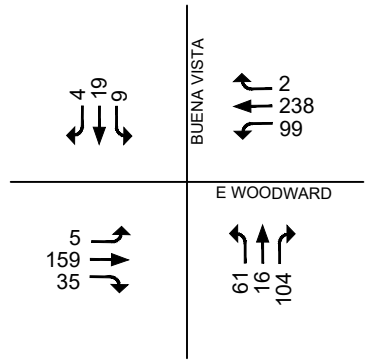
5. S Main & E Atherton



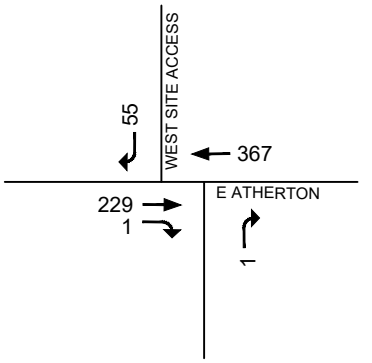
6. S Main & E Woodward



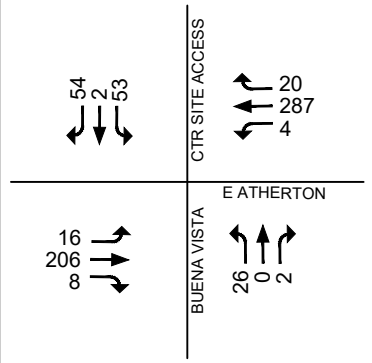
7. Buena Vista & E Woodward



8. West Site Access & E Atherton



9. Center Site Access/Buena Vista & E Atherton



10. East Site Access & E Atherton

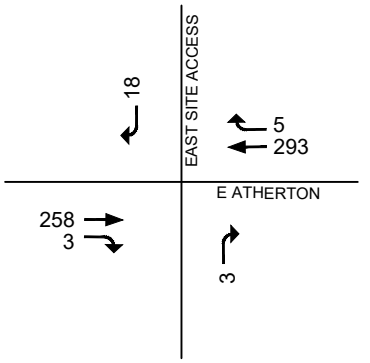


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Figure 2-7

Existing Plus Project AM Peak Hour Intersection Volumes

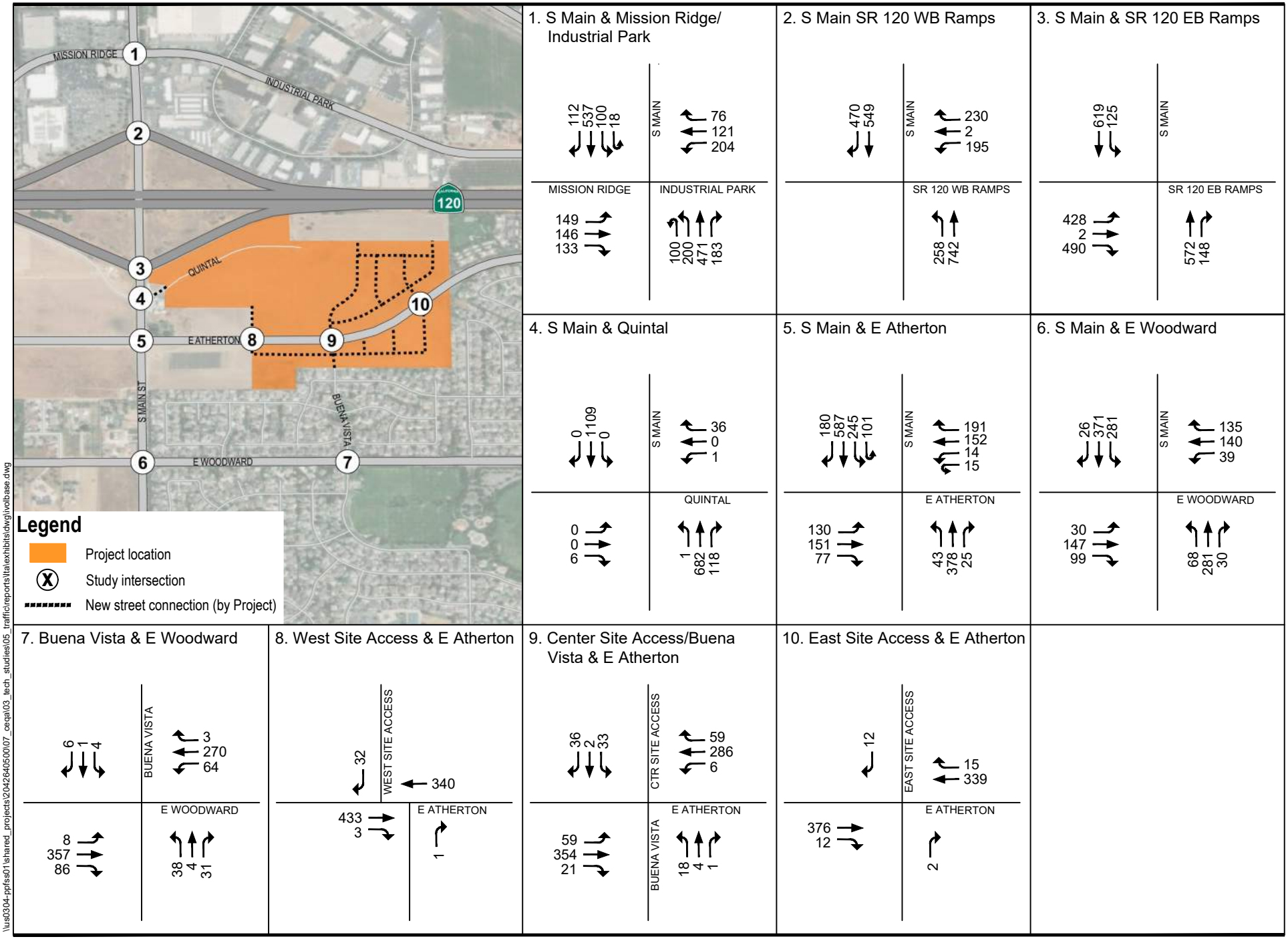

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Figure 2-8

Existing Plus Project PM Peak Hour Intersection Volumes

Table 2-3 Intersection LOS Summary – Existing plus Project Conditions

Intersection Name	Existing				Existing plus Project				Difference	
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour			
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	AM	PM
1. S. Main Street & Mission Ridge Drive/Industrial Park Drive	27.1	C	44.0	D	27.1	C	44.7	D	0.0	0.7
2. S. Main Street & SR 120 WB Ramps	13.3	B	15.6	B	15.6	B	22.2	C	2.3	6.6
3. S. Main Street & SR 120 EB Ramps	38.4	D	29.2	C	32.9	C	27.5	C	-5.5	-1.7
4. S. Main Street & Quintal Road[1]	19.7	C	**56.5**	**F**	12.4[2]	B[2]	21.6[2]	C[2]	-7.3	-34.9
					12.4[3]	B[3]	21.6[3]	C[3]	-7.3	-34.9
5. S. Main Street & E. Atherton Drive	21.8	C	23.5	C	27.2[2]	C[2]	33.1[2]	C[2]	5.4	9.6
					25.4[3]	C[3]	31.0[3]	C[3]	3.6	7.5
6. S. Main Street & E. Woodward Avenue[1]	**48.4**	**E**	**59.5**	**F**	**47.5**	**E**	**58.3**	**F**	-0.9	-1.2
7. Buena Vista Drive & E. Woodward Avenue[1]	14.9	B	16.0	C	15.6	C	15.9	C	0.7	-0.1
8. West Site Access & E. Atherton Drive[1]	--	--	--	--	9.8	A	9.7	A	9.8	9.7
9. Center Site Access/Buena Vista Drive & E. Atherton Drive	--	--	--	--	7.5	A	8.7	A	7.5	8.7
10. East Site Access & E. Atherton Drive[1]	--	--	--	--	9.3	A	9.5	A	9.3	9.5

Note:
LOS – Level of Service
Delay - Average vehicle delay (in seconds)
EB - eastbound
WB – westbound
[1]delay represents the movement with the highest individual delay
[2]alternative 1 scenario with right-turn-in/right-turn-out only access at Quintal Road
[3]alternative 2 scenario with left-turn-in/right-turn-in/right-turn-out only access at Quintal Road
BOLD denotes undesirable LOS

A queuing analysis was performed at the S. Main Street/SR 120 EB and WB ramp intersections, as well as for the Center Site Access/E. Atherton Drive intersection and the Quintal Road left-turn access alternative to evaluate the queuing and determine the necessary storage length. The queue length summary is presented in Table 2-4 below.

Table 2-4 Queue Summary – Existing Conditions

Intersection Name	Movement	Storage length	Estimated 95th Percentile Queue (ft)			
			Existing		Existing plus Project	
			AM	PM	AM	PM
2. S. Main Street & SR 120 WB Ramps	NBL	185	154	145	183	212
	WBL	1,700[1]	81	117	83	137
	WBR	200	0	0	0	0
3. S. Main Street & SR 120 EB Ramps	SBL	185	176	186	212	153
	EBL	1,700[1]	314	374	448	305
	EBR	190	158	295	252	303
	NBR	TBD[2]	n/a	n/a	63	58
4. S. Main Street & Quintal Road (Access Alternative 2)	SBL	TBD[2]	n/a	n/a	40	70
9. Center Site Access/Buena Vista Drive & E. Atherton Drive	EBL	240	0	0	37	61
	WBL	140	0	0	13	16

[1]Approximate length of off-ramp
[2]Length to be determined
n/a not applicable (not existing)
NBL – Northbound left-turn
SBL – Southbound left-turn
EBL/R – Eastbound left-turn/right-turn
WBL/R – Westbound left-turn/right-turn

As shown in Table 2-4, queue lengths at the SR 120 ramp intersections are generally acceptable with the exception of the eastbound right-turns at the eastbound off-ramp. In that case, the estimated 95th percentile queue length exceeds the existing 190-foot right-turn pocket in the PM peak hour for conditions with or without the Project. The queue lengths were determined using SimTraffic, a traffic micro-simulation software. Appendix D shows the queuing reports from the simulation output.

2.5 Cumulative Conditions Analysis

As previously discussed in Section 1.3, the cumulative conditions traffic volumes presented in this analysis were derived using the Interim Year 2040 TFM. A horizon year of 2040 is utilized to encompass the broad range of known and reasonably anticipated projects in the proximity of the study area. Delay and LOS that correspond with Interim Year (2040) cumulative conditions without-Project traffic conditions and with-Project traffic conditions are compared in this section.

The Interim Year 2040 model was developed in coordination with both Manteca and Lathrop city staff who provided to Fehr & Peers the land use growth projections each city anticipates over the next approximately 20 years. The City of Manteca's land use growth assumptions are based on the approved and anticipated projects that are expected to be constructed and occupied by the year 2040. The forecasting model estimates traffic demand volumes based on those land use assumption. Financially constrained transportation network improvements as identified by the Manteca General Plan Update, the City of Manteca Public Facilities Implementation Plan (PFIP), the City of Lathrop Specific Plan (2022) and the San Joaquin Council of Government (SJCOG) Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) project list are included in the 2040 horizon year.

The vacant parcel immediately adjacent to the northerly Project boundary would have access through the Project site and assumptions for traffic to be generated by the parcel (based on the current General Plan and zoning designations) was included in the cumulative conditions baseline to account for the additional traffic that would utilize the Project access points when that site is developed.

Interim Year (2040) cumulative conditions without Project AM and PM peak hour turning movement volumes are illustrated in Figure 2-9 and Figure 2-10, respectively. The City has future plans for making improvements to S. Main Street that are included in the cumulative conditions baseline condition. The future improvements are also assumed to include the reconstruction/reconfiguration of the SR 160 interchange at S. Main Street. The specific configuration of the interchange would be determined through the Caltrans project development process at a later date. For this analysis, the configuration is assumed to include a six-lane bridge and remain as a diamond interchange.

The intersection lane configurations and traffic control used for the analysis of cumulative with Project conditions is illustrated in Figure 2-11. Interim year (2040) cumulative conditions with Project AM and PM peak hour volumes are illustrated in Figure 2-12 and Figure 2-13, respectively.

Peak hour intersection LOS and delay calculated from the Interim Year (2040) cumulative conditions traffic volumes referenced above are summarized in Table 2-5 which provides a comparison between no-Project and with-Project conditions. The study intersections were analyzed using Synchro traffic analysis software which employs the HCM 6 delay methodology. Detailed LOS calculation worksheets are provided in Appendix C. The intersection of S. Main Street and Quintal Road is analyzed with two scenarios, the first being a right-turn-in/right-turn-out only access configuration, and the second being a left-turn-in/right-turn-in/right-turn-out only access configuration. LOS and delay for both scenarios are shown in the table.

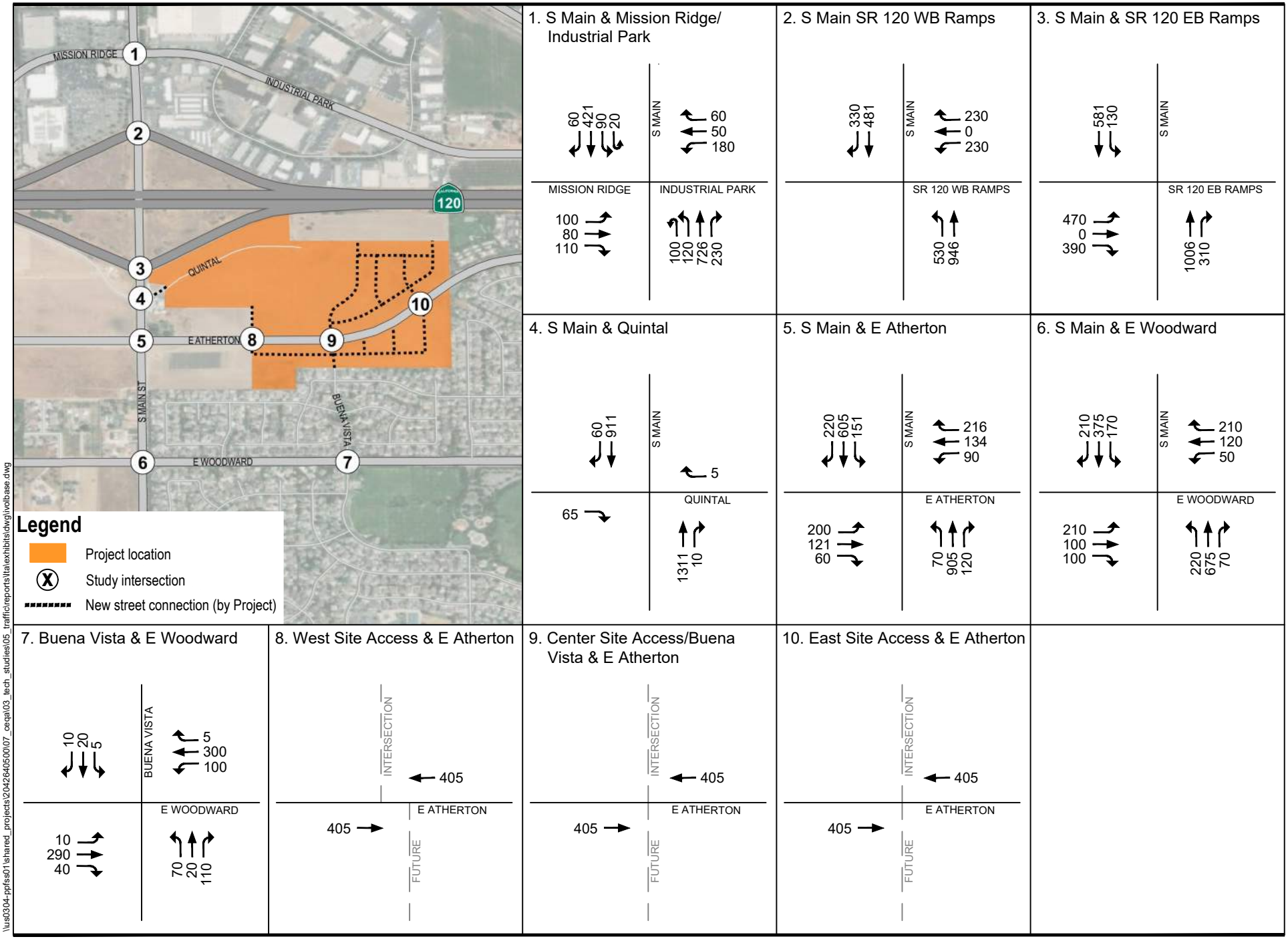

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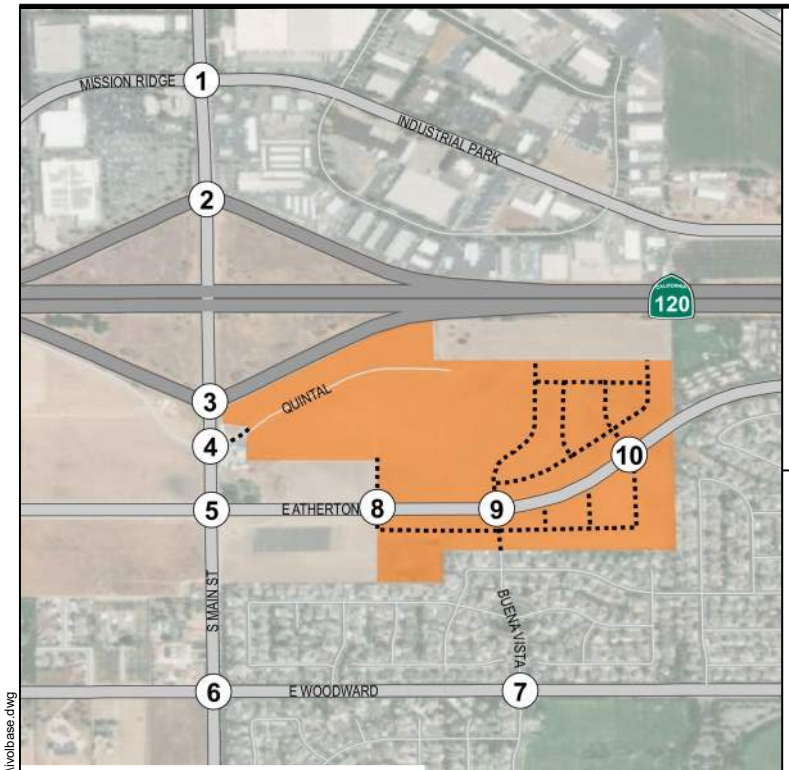
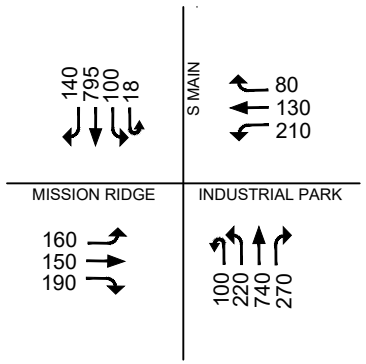
Figure 2-9

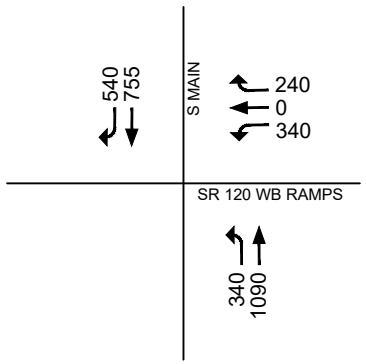
Interim Year (2040) without Project AM Peak Hour Intersection Volumes



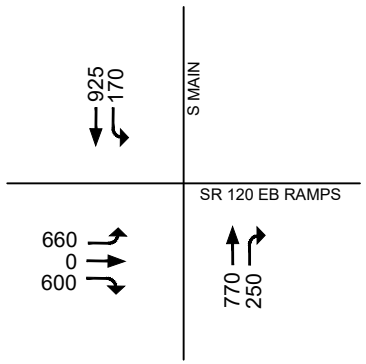
1. S Main & Mission Ridge/ Industrial Park



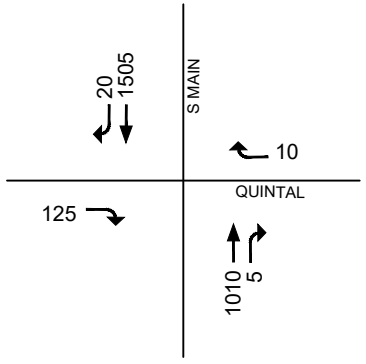
2. S Main SR 120 WB Ramps



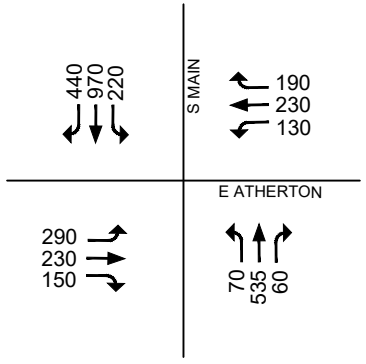
3. S Main & SR 120 EB Ramps



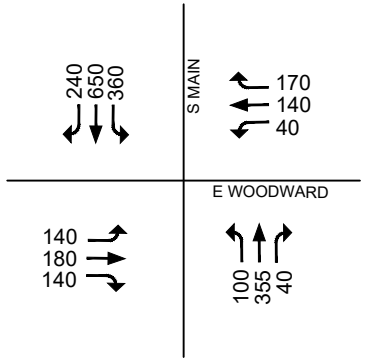
4. S Main & Quintal



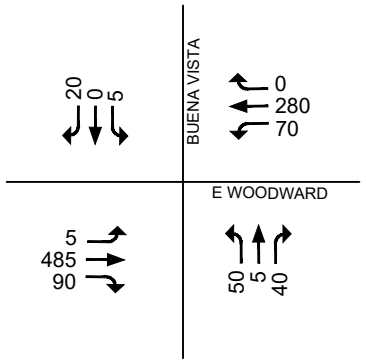
5. S Main & E Atherton



6. S Main & E Woodward



7. Buena Vista & E Woodward



8. West Site Access & E Atherton

9. Center Site Access/Buena Vista & E Atherton

10. East Site Access & E Atherton

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Figure 2-10

Interim Year (2040) without Project PM Peak Hour Intersection Volumes

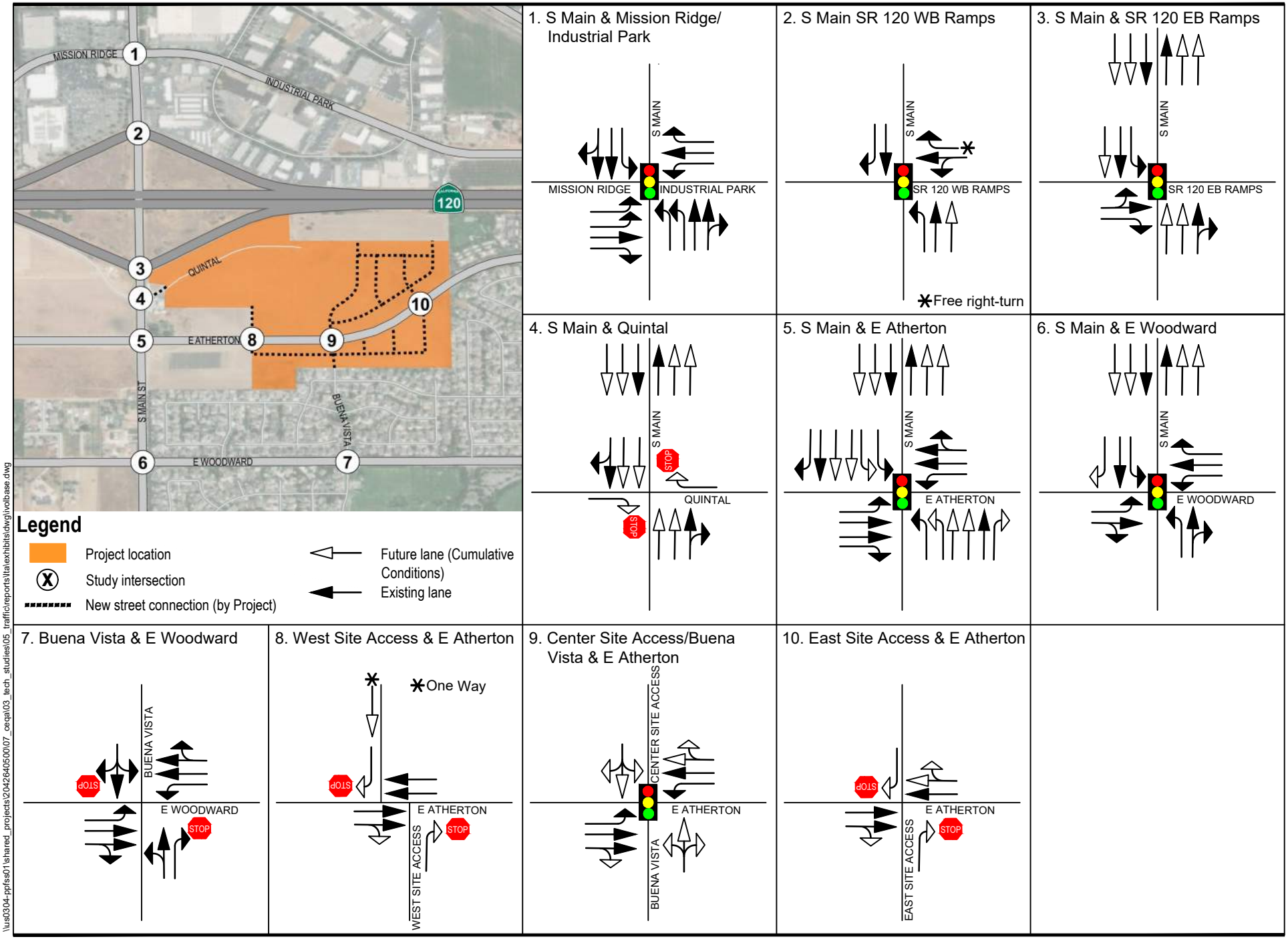

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Figure 2-11

Interim Year (2040) with Project Lane Configurations

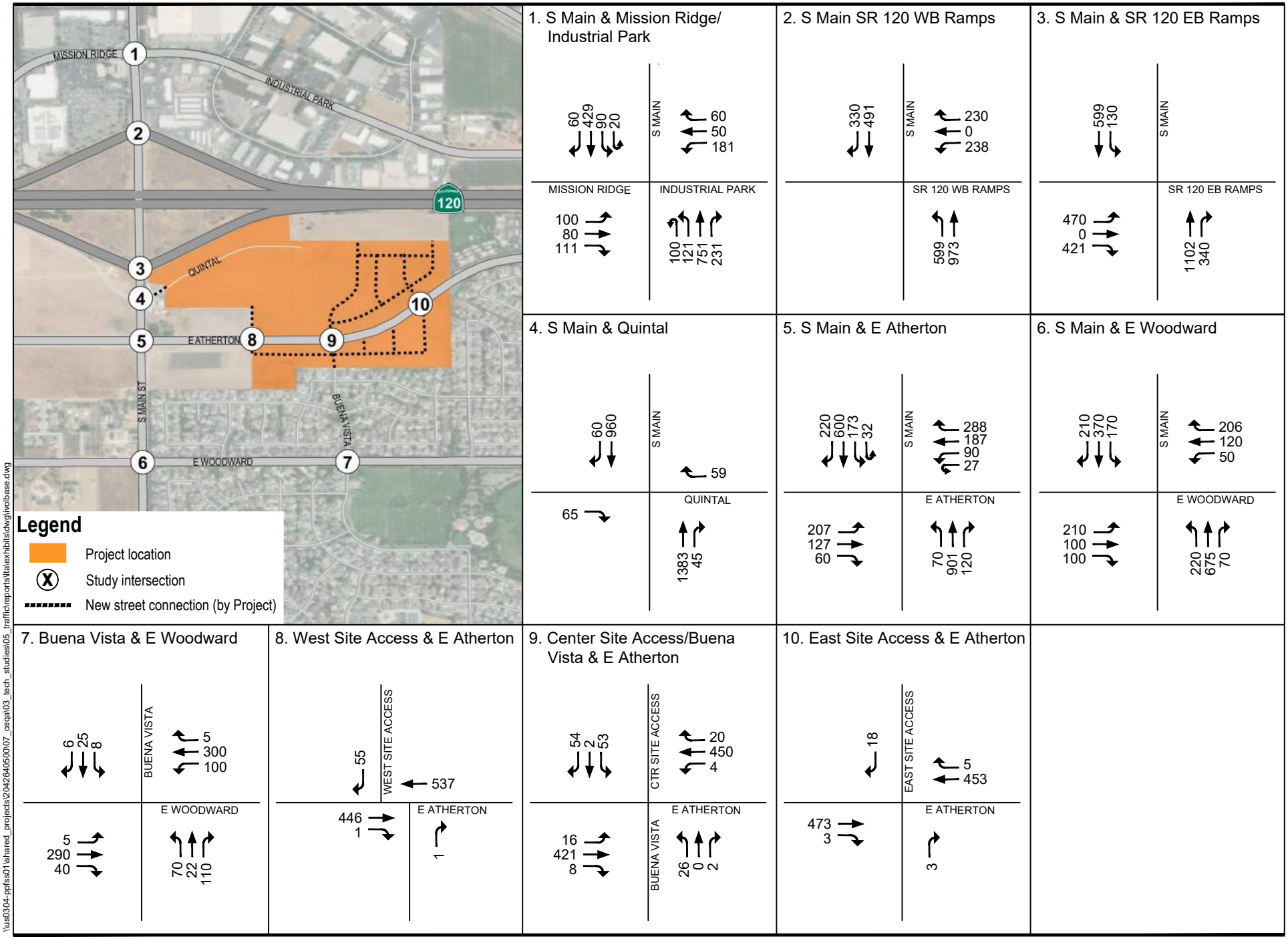

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Figure 2-12

Interim Year (2040) with Project AM Peak Hour Intersection Volumes

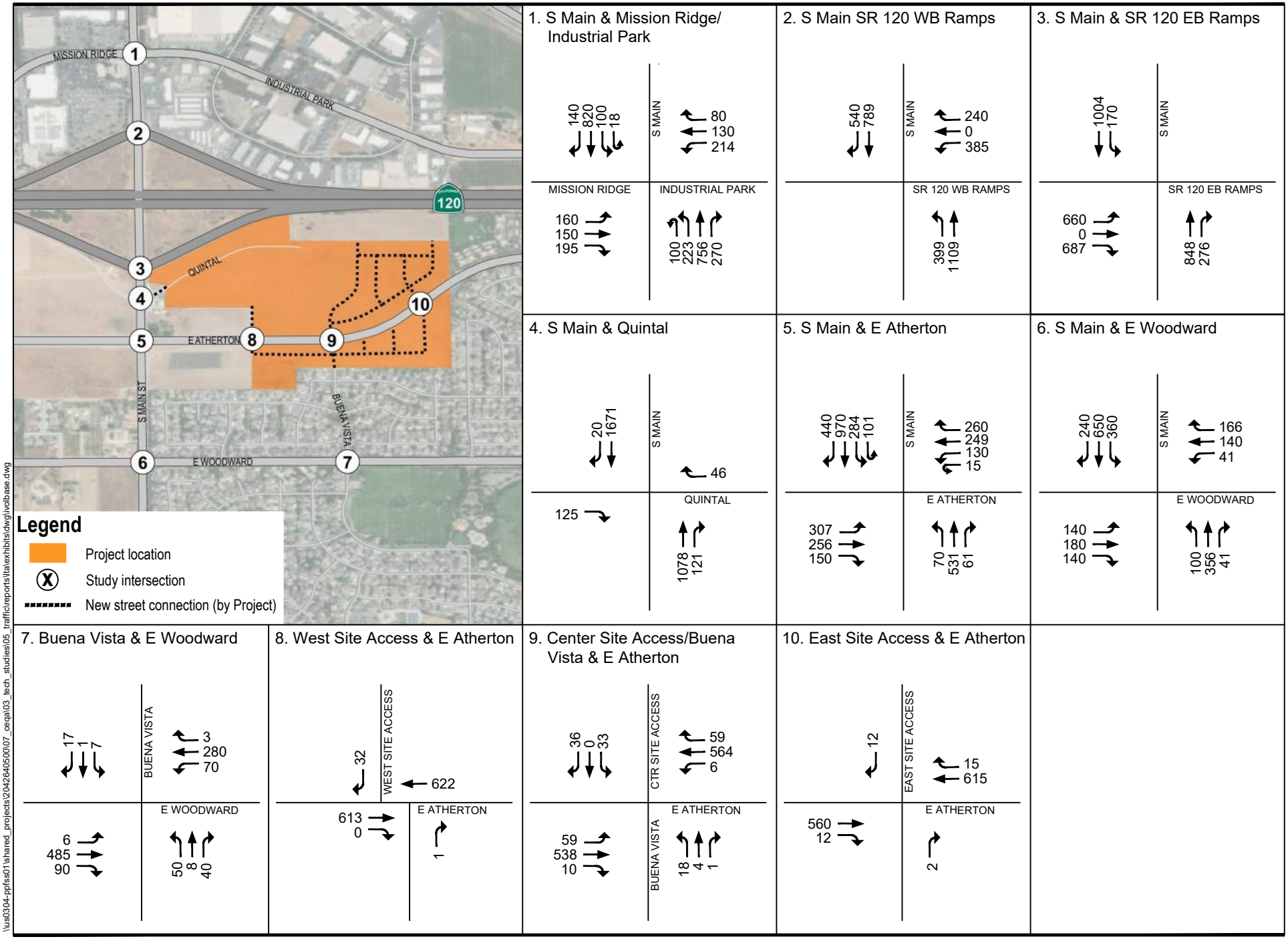

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Figure 2-13

Interim Year (2040) with Project PM Peak Hour Intersection Volumes

The table indicates that under the Interim Year (2040) cumulative conditions, the study area intersections would generally operate at LOS D or better during both the AM and PM peak hour, except for the intersection of S. Main Street and Quintal Road during the PM peak hour for the access scenario based on a right-turn-in/right-turn-out configuration. With this configuration, the west-leg stop controlled approach (eastbound right-turn movement) would experience LOS E conditions with the Project, an increase over LOS D conditions without the Project. Average vehicle delay for the eastbound right-turn movement increases from 31.3 seconds per vehicle to 39.4 seconds per vehicle.

With the second alternative access scenario based on a left-turn-in/right-turn-in/right-turn-out configuration the west-leg stop controlled approach (eastbound right-turn movement) remains at LOS D for conditions with the Project. However, based on the analysis provided in this traffic study and other factors related to the future widening of S. Main Street and other planned development along the westerly side of S. Main Street, the City has determined that the Quintal Road intersection would be restricted to right-turn-in and right-turn-out movements only. With the restriction on left-turns, provision of a U-turn movement at the downstream Atherton Drive intersection is recommended in order to facilitate access to the Project site.

Table 2-5 Intersection LOS Summary – Interim Year (2040) Cumulative Conditions

Intersection Name	Cumulative Conditions without Project				Cumulative Conditions with Project				Difference	
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour			
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	AM	PM
1. S. Main Street & Mission Ridge Drive/Industrial Park Drive	29.2	C	38.8	D	29.4	C	40.4	D	0.2	1.6
2. S. Main Street & SR 120 WB Ramps	27.7	C	36.5	D	32.0	C	50.7	D	4.3	14.2
3. S. Main Street & SR 120 EB Ramps	23.2	C	31.7	C	24.2	C	37.1	D	1.0	5.4
4. S. Main Street & Quintal Road[1]	16.5	C	31.3	D	20.8[2]	C[2]	**39.4**[2]	**E**[2]	4.3	**8.1**[4]
					24.5[3]	C[3]	34.1[3]	D[3]	7.7	2.8
5. S. Main Street & E. Atherton Drive	22.5	C	25.7	C	27.3[2]	C[2]	33.4[2]	C[2]	4.8	7.7
					25.8[3]	C[3]	29.1[3]	C[3]	3.3	3.4
6. S. Main Street & E. Woodward Avenue	48.2	D	42.6	D	48.2	D	42.8	D	0.0	0.2
7. Buena Vista Drive & E. Woodward Avenue[1]	18.8	C	20.7	C	20.7	C	21.4	C	1.9	0.7
8. West Site Access & E. Atherton Drive[1]	--	--	--	--	10.6	B	10.8	B	10.6	10.8
9. Center Site Access/ Buena Vista Drive & E. Atherton Drive	--	--	--	--	8.3	A	8.2	A	8.3	8.2
10. East Site Access & E. Atherton Drive[1]					9.9	A	10.6	B	9.9	10.6

Note:
LOS – Level of Service
Delay – Average vehicle delay (in seconds)
EB – eastbound
WB – westbound
[1]delay represents the movement with the highest individual delay
[2]alternative 1 scenario with right-turn-in/right-turn-out only access at Quintal Road
[3]alternative 2 scenario with left-turn-in/right-turn-in/right-turn-out only access at Quintal Road
[4]Project traffic changes LOS from acceptable LOS D to undesirable LOS E
BOLD denotes undesirable LOS

A queuing analysis was performed at the S. Main Street/SR 120 EB and WB ramp intersections, as well as for the Center Site Access/E. Atherton Drive intersection and the Quintal Road left-turn access alternative to evaluate the queuing and determine the necessary storage length. The queue length summary is presented in Table 2-6 below.

Table 2-6 Queue Summary – Cumulative Conditions

Intersection Name	Movement	Storage length	Estimated 95th Percentile Queue (ft)			
			Cumulative No Project		Cumulative with Project	
			AM	PM	AM	PM
2. S. Main Street & SR 120 WB Ramps	NBL	TBD[2]	459	828	507	1,039
	WBL	1,700[1]	254	461	205	861
	WBR	200	187	266	131	267
3. S. Main Street & SR 120 EB Ramps	SBL	TBD[2]	146	181	133	214
	EBL	1,700[1]	276	627	305	816
	EBR	190	177	356	238	377
4. S. Main Street & Quintal Road (Access Alternative 2)	SBL	TBD[2]	n/a	n/a	48	78
9. Center Site Access/Buena Vista Drive & E. Atherton Drive	EBL	240	0	0	41	66
	WBL	140	0	0	19	16

[1]Approximate length of off-ramp
[2]Length to be determined
n/a not applicable (occurs with Project scenario only)
NBL – Northbound left-turn
SBL – Southbound left-turn
EBL/R – Eastbound left-turn/right-turn
WBL/R – Westbound left-turn/right-turn

As shown in Table 2-6, the Interim Year (2040) cumulative condition queue lengths at the SR 120 ramp intersections increase substantially in comparison to the queue lengths estimated for Existing plus Project conditions (see Table 2-4). In the cumulative condition, the queue lengths would exceed the capacity of the existing interchange for conditions with and without the Project. The queue lengths were determined using SimTraffic, a traffic micro-simulation software. Improvements to the interchange to accommodate the anticipated growth in traffic would be determined through the Caltrans project development process. Appendix D shows the queuing reports from the simulation output.

2.6 Site Access and Circulation

Primary access to the Project site is proposed via three new intersections intersecting with E. Atherton Drive and a fourth via the existing Quintal Road and S. Main Street intersection. See the previously referenced Figure 1-2 for the Project Site Plan and access locations.

Access to the west portion of the Project would be through a gated entrance on Quintal Road located on S. Main Street. Based on the analysis provided in this traffic study and other factors related to the future widening of S. Main Street and other planned development along the westerly side of S. Main Street, the City has determined that the Quintal Road intersection would be restricted to right-turn-in and right-turn-out movements only. With the restriction on left-turns, provision of a U-turn movement at the downstream Atherton Drive intersection is recommended in order to facilitate access to the Project site.

The proposed site design does not allow for internal circulation between the easterly and westerly portions of the site. Quintal Road provides the only inbound access point to the westerly portion of the site (egress is also possible with the one-way exit-only driveway on E. Atherton Drive).

The easterly portion of the site north of E. Atherton Drive would be accessed via a full access intersection at an extension of Buena Vista drive as well as a secondary access point east of the intersection that would be restricted to right-turns-in/right-turns-out only due to the raised median on E. Atherton Drive.

The southerly portion of the site south of E. Atherton Drive would be accessed via the same full access intersection at an extension of Buena Vista drive as well as two secondary access points east and west of the intersection that would be restricted to right-turns-in/right-turns-out only due to the raised median on E. Atherton Drive.

As noted above, the Center Site Access would extend the existing Buena Vista Drive northerly from its current terminus to intersect with E. Atherton Drive. In addition to providing access to the Project site, the extension of Buena Vista Drive will provide direct access between E. Atherton Drive and the existing residential neighborhood located to the south of the Project site. The connection would allow residents of the existing neighborhood to have direct access to E. Atherton Drive, potentially shortening travel times for certain trips. The connection would also result in the potential for residents of the Project to cut-through the existing neighborhood as a short-cut to E. Woodward Ave. The estimated volume of cut through traffic is addressed in the analysis sections above.

The Project also proposes to extend the City's existing Class I bicycle trail across the northern frontage of E. Atherton Drive that would be designed and constructed per the City's standard for a 12-foot Class I bicycle facility.

The vacant parcel immediate adjacent to the northerly Project boundary would have access through the Project site and assumptions for traffic to be generated by the parcel (based on the current General Plan and zoning designations) was included in the cumulative conditions baseline to account for the additional traffic that would utilize the Project access points when that site is developed.

LOS analysis for the site access intersections under existing plus Project conditions, as well as under Interim Year (2040) cumulative conditions are summarized in the previously referenced Table 2-3 and Table 2-5, respectively. As shown in the tables, given the proposed intersection controls, under existing plus Project conditions, the Quintal Road site access intersection would operate at LOS C and the primary access intersection on E. Atherton Drive would operate at LOS A, which would be configured with a traffic signal (see discussion Section 2.7 below).

Under cumulative with Project conditions, the primary access intersection on E. Atherton Drive would continue to operate at LOS A. The Quintal Road access (with turn restrictions) would operate at LOS C for the east (Project) leg; however, the west leg (cumulative project) would operate at LOS D or E based on the amount of future land development anticipated for that site.

2.7 Circulation System Improvements

As mentioned in the above section, installation of a traffic signal is proposed for the Center Site Access/Buena Vista Drive/E. Atherton Drive intersection. Therefore, a peak hour signal warrant analysis was conducted to determine if a traffic signal is warranted for the intersection. The signal warrant analysis summary is shown in Table 2-7. As shown, a signal is warranted based on the peak hour volumes for Existing plus Project conditions as well as cumulative conditions.

Table 2-7 Signal Warrant Analysis Summary

Location	Major Street	Approach Lanes		AM Peak Hour		PM Peak Hour		Warrant Satisfied?
	Speed (mph)	Major Street	Minor Street	Major Street Volume	Minor Street Volume	Major Street Volume	Minor Street Volume	
Existing Plus Project								
Center Site Access/Buena Vista Drive & E. Atherton Drive	45	2	1	541	109	785	71	Yes
Cumulative Conditions With Project								
Center Site Access/Buena Vista Drive & E. Atherton Drive	45	2	1	919	109	1236	69	Yes

Following is a summary of the various roadway improvements proposed by the Project:

- Construct a raised median on S. Main Street between E. Atherton Drive and the SR 120 eastbound ramps
- Provide gated Quintal Road access on S. Main Street with right-turn-in/right-turn-out only movements to/from S. Main Street
- Provide complete half-width street improvements with three northbound lanes and a sidewalk on the easterly side of S. Main Street between E. Atherton Drive and the SR 120 eastbound ramps
- Configure SR 120 eastbound ramp intersection with a northbound right-turn lane to the ramp
- Construct extension of existing Buena Vista Drive northerly from its current terminus to intersect with E. Atherton Drive
- Install traffic signal at Center Site Access/Buena Vista Drive & E. Atherton Drive intersection.

- Upgrade traffic signal controllers at the intersections of S. Main Street and E. Atherton Drive, S. Main Street and SR 120 westbound ramps, and S. Main Street and SR 120 eastbound ramps
- Extend City's existing Class I bicycle trail across the northern frontage E. Atherton Drive, designed and constructed per City's standard for a 12-foot Class I bicycle facility

3 VMT ANALYSIS

This section summarizes the results of a vehicle miles traveled (VMT) analysis prepared in support of the Project's CEQA documentation and complies with the updated California Environmental Quality Act (CEQA) guidelines that incorporates the requirements of Senate Bill 743 (SB 743). See detailed discussion in Appendix E, LMC Manteca Project VMT Analysis Technical Memorandum prepared by Fehr & Peers.

The City of Manteca is in the process of developing new Transportation Impact Analysis (TIA) guidelines. Based on City's direction, methodology and threshold of significance identified in the Draft TIA guidelines are used in the study.

City criteria states that a project would result in a significant impact if it would generate VMT that exceeds 85 percent of the baseline, with the baseline defined as the existing average VMT per household in the City. Table 3-1 shows the baseline city-wide VMT and thresholds of significance for residential developments. Table 3-2 shows the Project generated VMT compared to the baseline city-wide VMT under baseline and cumulative conditions for the same housing type.

Table 3-1 Baseline City-wide VMT and Threshold of Significance for Residential Developments

Land Use	Units	2019 Baseline[1]	Threshold of Significance[2]
Single family	VMT per DU	103.8	88.2
Multi-family	VMT per DU	78.6	66.8

[1]baseline = existing city-wide average VMT/household
[2]threshold of significance = baseline minus 15%
VMT – Vehicle Miles Traveled
DU – Dwelling Unit

Table 3-2 Project VMT Summary

Scenario	Single-Family and Duplex		Multi-Family	
	VMT per Single-Family Household	Compared to Citywide Baseline	VMT per Multi-Family Household	Compared to Citywide Baseline
Existing Baseline without Project	103.8	-	78.6	-
Existing Baseline Project-Generated VMT	106.6	2.7%	83.3	5.9%
Project-Generated VMT-Current GP Buildout	72.0	-30.6%	56.3	-28.4%
Project-Generated VMT - Proposed GP Alternative D	78.9	-24.0%	61.7	-21.5%

source: Fehr & Peers
GP = General Plan

As shown in Table 3-2, under Existing conditions, the proposed Project would generate an estimated average of 106.6 VMT per single-family dwelling unit, which is 2.7% above the baseline city-wide average, and 83.3 VMT per multi-family dwelling unit, which is 5.9% above the baseline city-wide average.

Table 3-3 VMT CEQA Analysis

Scenario	Single-Family and Duplex		Multi-Family	
	VMT per Single-Family Household	Compared to Threshold of Significance	VMT per Multi-Family Household	Compared to Threshold of Significance
Threshold of Significance	88.2	-	66.8	-
Existing Baseline Project-Generated VMT	106.6	20.8%	83.3	24.7%
Project-Generated VMT-Current GP Buildout	72.0	-18.4%	56.3	-15.7%
Project-Generated VMT - Proposed GP Alternative D	78.9	-10.6%	61.7	-7.7%
source: Fehr & Peers, Stantec GP = General Plan				

As shown in Table 3-3, under Existing conditions with an average VMT of 106.6 per single family household, the proposed Project would exceed the City's threshold of significance by 20.8%. With an average VMT of 83.3 per multi-family household, the proposed Project would exceed the City's threshold of significance by 24.7% under existing conditions.

Both the Current General Plan and the Proposed General Plan (Alternative D) identify a substantial increase in employment and commercial land use, which results in shorter travel distances for residents when accessing jobs and services. Because of this, under Cumulative General Plan Buildout conditions, the Project would generate an estimated average of 72.0 VMT per single-family dwelling unit, which is 18.4% below the threshold of significance. The Project would generate 56.3 VMT per multi-family dwelling unit, which is 15.7% below the threshold of significance. Similarly, under Cumulative General Plan (Alternative D) Buildout conditions, the Project would generate an estimated average of 78.9 VMT per single-family dwelling unit, which is 10.6% below the threshold of significance. The Project would generate 61.7 VMT per multi-family dwelling unit, which is 7.7% below the threshold of significance.

Various Project design features that help reduce VMT are as follows:

- Improve Street Connectivity
- Provide Pedestrian Network Improvement
- Construct or Improve Bike Facility
- Expand Bikeway Network
- Implement Transit-Supportive Roadway Treatments

Potential additional Project mitigation to help reduce VMT are as follows:

- Increase Residential Density
- Integrate Affordable and Below Market Rate Housing
- Implement Commute Trip Reduction Marketing
- Provide Ridesharing Program

- Implement Subsidized or Discounted Transit Program
- Provide Community-Based Travel Planning
- Limit Residential Parking Supply
- Unbundle Residential Parking Costs from Property Cost
- Implement Bikeshare/Scooter share Program

The Project design features shown above have been shown to help reduce VMT in suburban residential development. However, the amount of VMT reduction that can feasibly be achieved by a suburban residential development is typically a maximum of approximately 15% (source: CAPCOA). Therefore, with an impact that exceeds 20% of the threshold of significance under existing conditions, the VMT reductions expected to be achieved by the Project's design features would not reduce the Project's impact to less than significant. However, over time as the City develops in accordance with the City's General Plan, trip lengths have been shown to be reduced, resulting in Project VMT that would be less than significant.

Appendix A Approved Scoping Memo

Stantec

Memo

To:	Toben Barnum Associate Planner	From:	Daryl Zerfass and Sandhya Perumalla
	City of Manteca		Stantec
File:	2042640500	Date:	September 2, 2022

Reference: Transportation Analysis Scope of Work for the LMC Residential Project in the City of Manteca

Stantec Consulting Services Inc. (Stantec) is pleased to submit the following proposed transportation analysis scope of work for the proposed LMC Residential development (Project) in the City of Manteca. This proposed scope of work is being provided for the City's review and approval.

The Project includes development of 816 residential units—672 multi-family units, 48 duplex units, and 96 single family residential units—to be built in two phases on approximately 60 acres. The Project also includes an approximately 1.93-acre public open space and associated parking located adjacent to the residential developments as well as other amenities such as a dog park, game lawn, and club house. The site is generally located south of Highway 120 and east of South Main Street. The Project site is bisected by East Atherton Drive. Primary access to the Project site is proposed via two new intersections intersecting with East Atherton Drive and a third via the existing Quintal Road/South Main Street Intersection. The Quintal Road intersection will be modified to prohibit ~~certain~~ left-turn movements, as requested by the City. The Project site is currently vacant. See attachment for the Project's site plan.

Scope of Work:

1. Traffic Generation: Trip generation estimates for the Project were prepared using standardized Institute of Transportation Engineers (ITE) 11th Edition trip generation rates based on Multifamily Housing-Low-Rise (220) and Single Family Detached Housing (210) land use categories. For this analysis, to be conservative, Duplex units are evaluated using single-family detached unit trip rates since the ITE manual doesn't have unique trip rates for duplex housing. Table 1 summarizes the anticipated trip generation of the Project. As shown, on a typical weekday the Project is expected to generate approximately 5,887 average daily trips (ADT), with 370 trips occurring during the AM peak hour and 478 trips occurring during the PM peak hour.

Table 1 - Trip Generation Summary

Land Use	Amount	Unit	AM Peak Hour			PM Peak Hour			ADT
			In	Out	Total	In	Out	Total	
Trip Rates									
Multifamily Housing - Low-rise (220)	-	DU	0.10	0.30	0.40	0.32	0.19	0.51	6.74
Single-Family Detached Housing (210)	-	DU	0.18	0.52	0.70	0.59	0.35	0.94	9.43
Trip Generation									
Multifamily Low-rise	672	DU	65	204	269	216	127	343	4,529
Duplex	48	DU	9	25	34	28	17	45	453
Single Family	96	DU	17	50	67	57	33	90	905
Total			***91***	***279***	***370***	***301***	***177***	***478***	***5,887***

Reference: **Transportation Analysis Scope of Work for the LMC Residential Project in the City of Manteca**

Note:
ADT - Average Daily Traffic
DU - Dwelling Units
Trip Rate Source: Institute of Transportation Engineers (ITE), 11th Edition, 2021, with ITE code in parentheses

2. Analysis and Documentation: A Local Transportation Analysis (non-CEQA) is commonly prepared if a project generates more than 100 net new peak hour vehicle trips. As shown in Table 1, since the Project is expected to generate over 300 net new peak hour vehicle trips, a Local Transportation Analysis will be prepared.

3. Study Area: The study area is proposed to include the following intersections in the vicinity of the Project as listed below. AM and PM peak hour intersection turning movement counts will be collected for typical weekday conditions while school is in session. A 24-hour ADT count will be conducted on Buena Vista Drive (between Woodward Avenue and the traffic circle) in the neighborhood immediately south of the Project site.

Intersection Name	**Existing Traffic control**
S. Main Street and Quintal Road	Two-way stop
S. Main Street and E. Atherton Drive	Signal
S. Main Street and E. Woodward Avenue	All-way stop
S. Main Street and SR 120 EB Ramps	Signal
S. Main Street and SR 120 WB Ramps	Signal
S. Main Street and Mission Ridge Drive/Industrial Park Drive	Signal
Buena Vista Drive and E. Woodward Avenue	Two-way stop with RRFB
West Site Access/Buena Vista Drive and E. Atherton Drive	(future)
East Site Access and E. Atherton Drive	(future)

4. Trip Distribution: Project trip distribution will be estimated based on the recently updated City of Manteca Travel Demand Model, location of project driveways, location of other land uses, freeway access points and engineering judgement.

5. Analysis and Methodology: Intersection level of service (LOS) will be analyzed based on the Highway Capacity Manual Sixth Edition (HCM 6) methodology using Synchro software. The scenarios listed below will be analyzed.

    - Existing Conditions
    - Existing Conditions plus Project
    - Cumulative Conditions (without Project)
    - Cumulative plus Project Conditions

    The City's Cumulative Year (currently adopted General Plan and Proposed General Plan Alternative D) Travel Demand Forecasting Model will be utilized for Cumulative conditions analysis. This includes the proposed Aretakis commercial development south of SR 120 at Quintal Road, the proposed commercial development at the southwest corner of South Main Street and Atherton Drive and the proposed SOMA apartment project at the southeast corner of South Main Street and East Atherton Drive. Based on the

Reference: **Transportation Analysis Scope of Work for the LMC Residential Project in the City of Manteca**

City's request, Quintal Road will have restricted access. Queuing analysis will be prepared using SimTraffic for each site access location and State Highway intersections.

6. Special issues: An evaluation of site access will be prepared. A new connection south of the Project site to the existing neighborhood via Buena Vista drive will be evaluated. Access limitations at the South Main Street and Quintal Road intersection will be investigated in accordance with the direction provided by the City and per Caltrans comments (January 13, 2022, letter), which could also impact the existing gas station on the southeast corner.

7. Vehicle Miles Traveled (VMT) analysis will be prepared to evaluate the Project's transportation impact consistent with the City's impact analysis methodology.

8. Although CEQA now uses the VMT standard for determining significant transportation impacts, the City's General Plan requires an LOS minimum of "D" for all intersections. If the project degrades any of the study intersections to an LOS lower than "D", in accordance with the General Plan, intersection improvements shall be identified where feasible such that the intersection LOS is restored to LOS D or better conditions.

Thank you for the opportunity to provide this scope of work. Please feel free to contact Sandhya or Daryl if you have any questions or would like to discuss.

Stantec Consulting Services Inc.

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Attachment: Figure 1 - Site Plan

SITE PLAN LEGEND

- A COMMUNITY PARK
- B CLUBHOUSE
- C PEDESTRIAN MEWS
- D DOG PARK
- E POCKET PARK
- F MULTI-USE PATHWAY
- G FENCE

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project
LMC MANTECA

drawing
SITE PLAN

date
06.15.22

sheet number
L1

Appendix B LMC Manteca Project Traffic Volume Forecast Technical Memorandum

Memorandum

Date: October 27, 2022

To: Sandhya Perumalla, Stantec

From: Albee Wei, Fehr & Peers

Subject: LMC Manteca Project Traffic Volume Forecast Technical Memorandum

RS22-4223

This technical memorandum documents the methodology used to develop existing traffic counts, trip generation, trip distribution, and traffic volume forecast for the LMC Manteca Project study intersections. Intersection turning movement volumes for the Existing, Existing Plus Project, Cumulative No Project, and Cumulative Plus Project conditions are included in this submittal in the format of Excel spreadsheets.

Project Description

The Project site includes approximately 59.19 acres located in the central portion of the City of Manteca, south of State Route 120, in Manteca, California. The Project site is identified as Assessor's Parcel Numbers (APNs) 224-040-06, -07, -11, and -52, by the San Joaquin County Assessor's Office. The Project site is bisected by E. Atherton Drive, roughly bound by SR 120 on the north, S. Main Street to the west, and existing single-family residential neighborhood to the south and east. **Attachment A** shows the project site location and site plan.

The Project involves the entitlement of the APNs above to allow 816 residential dwelling units consisting of 672 multifamily for-rent apartments, 48 for-sale duplexes, and 96 single family for-sale homes. The Project also includes land dedicated for an approximately 1.93-acre public open space and associated parking located adjacent to the residential developments and other amenities such as a dog park, game lawn, and club house. Additionally, the Project would construct improvements to adjacent streets, on- and off-site utility infrastructure, parking, driveways, frontage improvements, landscaping, and a detention basin.

The Project's residential units and amenities can be accessed by four driveways along E. Atherton Drive (two driveways on the north side of E. Atherton Drive and two driveways on the south side),

a gated driveway on Quintal Road, and an extension of Buena Vista Drive that will be constructed as part of the Project.

Study Area

The study area was selected based on the Project's location, site access, and expected trip distribution and assignment. The analysis considers traffic operations at the following intersections.

Study Intersections

1. S. Main Street/Mission Ridge Drive/Industrial Park Drive
2. S. Main Street/Westbound SR 120 Ramps
3. S. Main Street/Eastbound SR 120 Ramps
4. S. Main Street/Quintal Road
5. S. Main Street/E. Atherton Drive
6. S. Main Street/E. Woodward Avenue
7. E. Woodward Avenue/Buena Vista Drive
8. E. Atherton Drive/Project Driveway 1 (west side)
9. E. Atherton Drive/Project Driveway 2 (east side)

Study Scenarios

The study intersections were evaluated for the following four scenarios:

- **Existing Conditions** – Analyzes operations as they exist today.
- **Existing Plus Project Conditions** – Analyzes existing operations with the addition of trips generated by the Project. The Base Year City of Manteca, Lathrop, and Ripon Travel Forecasting Model (TFM) developed for the City of Manteca General Plan Update was used to develop project trip distribution during the AM peak hour and PM peak hour.
- **Cumulative No Project Conditions** - Analyzes Interim year (2040) volumes based on the Interim Year TFM, assuming the project site remains in its current undeveloped state.
- **Cumulative Plus Project Conditions** – Analyzes Interim year (2040) volumes with the addition of trips generated by the Project. The Interim Year TFM was used to develop project trip distribution during the AM peak hour and PM peak hour.

Data Collection

Traffic count data at all study intersections was collected in Fall 2022, when school was in session and weather condition was dry. Intersection turning movement counts were conducted during the AM (7:00 to 9:00) and PM (4:00 to 6:00) peak periods.

Traffic Volume Forecast

Base Year (2019) TFM

The Base Year City of Manteca, Lathrop, and Ripon Travel Forecasting Model (TFM) developed for the City of Manteca General Plan Update was used to develop trip distribution under Existing Plus Project conditions. The Base Year model represents 2019/2020 pre-COVID 19 AM peak hour, PM peak hour, and Average Daily Traffic (ADT) conditions.

The base year TFM uses land use input data in the form of dwelling units (single-family and multi-family) and employment (food, retail, office, industrial, medical, government, and school). For the transportation network, the base year TFM uses roadway network lanes, speed, and capacity class as inputs. The TFM Trip generation rates were derived from the *Trip Generation Manual 10th Edition* (Institute of Transportation Engineers, 2017) and include appropriate inbound/outbound trip generation rates for residential and employment land uses for AM peak hour, PM peak hour, and daily conditions. The TFM was calibrated to reflect local trip distribution patterns for Internal-to-Internal Trips (II), Internal-to-External Trips (IX), External-to-Internal Trips (XI) and External-to-External (XX or Through) Trips based on a combination of the 2012 California Household Travel Survey (CHTS), the 2018 American Community Survey (ACS), and the California Statewide Travel Demand Model (CSTDM) to replicate the majority of vehicle trips to and from the west (San Francisco Bay Area) and a smaller percentage to and from the north (including Stockton and Sacramento) and to and from the south. For vehicle trips that occur beyond of the model's roadway network, an estimated average trip distance is applied to external gateway links to capture the vehicle miles traveled for the entire journey.

Interim General Plan Year (2040) Scenario TFM

The Interim Year 2040 Traffic Forecasting Model (TFM) was developed based on expected future land use and planned transportation network for the City of Manteca and adjacent areas in 2040. Like other cities in the Central Valley region, the City of Manteca is planning for a large amount of growth for both housing and employment in the General Plan Buildout scenario. The Interim Year 2040 model scenario was developed in coordination with both Manteca and Lathrop city staff who provided land use growth projections they anticipate over the next 20 years. The TFM estimates traffic demand volumes based on this land use input. The City of Manteca 2040 land use inputs were developed based on the City of Manteca's approved and anticipated projects that are expected to be constructed and occupied by year 2040. The City of Lathrop 2040 land use inputs were developed based on the City's historic rate of growth in households and employment for the past 5 years (2016 to 2020). The location of the growth in Manteca and Lathrop was allocated across the cities where future growth is anticipated, including the areas west of I-5 and south of the SR 120 corridor. Financially constrained transportation network improvements as identified by the Manteca General Plan Update, the City of Manteca Public Facilities

Implementation Plan (PFIP), the City of Lathrop Specific Plan (2022), and the San Joaquin Council of Government (SJCOG) Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) Project List are included.

The Interim Year 2040 TFM scenarios were updated to reflect the project proposed access to the nearby street system. The traffic forecasting adjustment procedure known as the difference method was used to develop Interim Year (2040) AM and PM peak hour traffic forecasts. For a given intersection, this forecasting procedure is calculated as follows for every movement:

Interim Year Forecast =
Existing Volume + (Interim Year TFM Volume – Baseline TFM Volume)

This method corrects any potential anomalies within the base year model that could presumably be replicated in future year model.

Project Trip Generation

The Project's trip generation was estimated using trip rates published in the *Trip Generation Manual 11th Edition* (Institute of Transportation Engineers, 2021). **Table 1** displays the estimated number of daily, AM peak hour, and PM peak hour vehicle trips for the proposed Project.

Table 1: Project Trip Generation

Land Use	Quantity (Dwelling Units)	Daily	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
Single-Family Detached Housing (ITE 210)	96	905	17	50	67	57	33	90
Single-Family Attached Housing (ITE 215)	48	346	7	16	23	16	11	27
Multi-Family Housing (Low-Rise) (ITE 220)	672	4,529	65	204	269	216	127	343
Total			**89**	**270**	**359**	**289**	**171**	**460**

Notes:
Trip generation is based on trip rates published in *Trip Generation Manuel 11th Edition* (Institute of Transportation Engineers, 2021).
Source: Fehr & Peers, 2022

Project Trip Distribution

Under Existing Plus Project conditions, project trips were distributed throughout the study area based on the location of access roads, existing directional patterns, and output from the Base Year TFM. Project trips were assigned to the project driveways based on the type and number of dwelling units that can be accessed by each driveway, directional patterns of the project trips, and vehicle turning movements permitted at each driveway. Based on the project's site plan, all turning movements are permitted at the three project driveway intersections (two on E. Atherton Drive, one at S. Main Street/Quintal Road).

Under Cumulative Plus Project conditions, project trips were distributed based on output from the Interim Year TFM. The City of Manteca Public Facilities Implementation Plan (PFIP) identifies widening and constructing a median along S. Main Street; therefore, under cumulative conditions, access to Quintal Road would be restricted to right-in/right-out only. All project driveways along E. Atherton Drive would remain full access.

Attachment A - Project Site Plan

SITE PLAN LEGEND

- A COMMUNITY PARK
- B CLUBHOUSE
- C PEDESTRIAN MEWS
- D DOG PARK
- E POCKET PARK
- F MULTI-USE PATHWAY
- G FENCE

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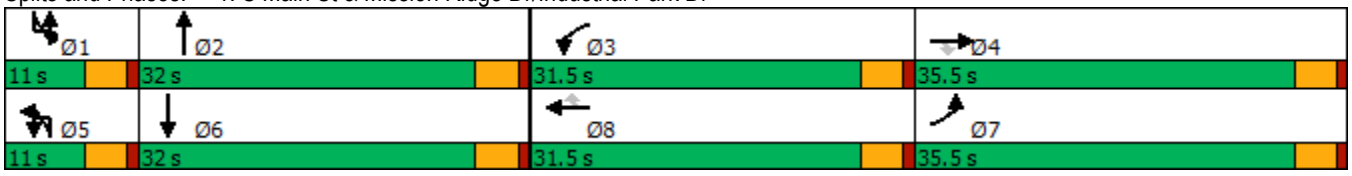
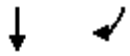
Appendix C LOS Worksheets

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	97	78	103	177	44	51	93	108	472	207	17	88
Future Volume (vph)	97	78	103	177	44	51	93	108	472	207	17	88
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	130		130	120		0		150		0		135
Storage Lanes	1		1	1		1		2		0		1
Taper Length (ft)	70			25				70				100
Satd. Flow (prot)	3433	1863	1583	1770	1863	1583	0	3433	3376	0	0	1770
Flt Permitted	0.950			0.950				0.950				0.950
Satd. Flow (perm)	3433	1863	1583	1770	1863	1583	0	3433	3376	0	0	1770
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)			112			104			60			
Link Speed (mph)		35			35				35			
Link Distance (ft)		536			796				800			
Travel Time (s)		10.4			15.5				15.6			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	105	85	112	192	48	55	0	218	738	0	0	114
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	Prot	NA		Prot	Prot
Protected Phases	7	4		3	8		5	5	2		1	1
Permitted Phases			4			8						
Total Split (s)	35.5	35.5	35.5	31.5	31.5	31.5	11.0	11.0	32.0		11.0	11.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5			4.5
Act Effct Green (s)	16.9	8.9	8.9	13.3	7.4	7.4		6.5	27.6			6.5
Actuated g/C Ratio	0.23	0.12	0.12	0.18	0.10	0.10		0.09	0.37			0.09
v/c Ratio	0.13	0.38	0.39	0.61	0.26	0.22		0.72	0.57			0.74
Control Delay	24.7	36.4	11.3	37.2	35.8	3.6		50.1	20.1			64.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0
Total Delay	24.7	36.4	11.3	37.2	35.8	3.6		50.1	20.1			64.3
LOS	C	D	B	D	D	A		D	C			E
Approach Delay		23.0			30.7				26.9			
Approach LOS		C			C				C			

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 74.4			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.74			
Intersection Signal Delay: 27.1		Intersection LOS: C	
Intersection Capacity Utilization 53.2%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 1: S Main St & Mission Ridge Dr/Industrial Park Dr





Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	376	51
Future Volume (vph)	376	51
Ideal Flow (vphpl)	1900	1900
Storage Length (ft)		0
Storage Lanes		0
Taper Length (ft)		
Satd. Flow (prot)	3476	0
Flt Permitted		
Satd. Flow (perm)	3476	0
Right Turn on Red		Yes
Satd. Flow (RTOR)	13	
Link Speed (mph)	35	
Link Distance (ft)	444	
Travel Time (s)	8.6	
Peak Hour Factor	0.92	0.92
Shared Lane Traffic (%)		
Lane Group Flow (vph)	464	0
Turn Type	NA	
Protected Phases	6	
Permitted Phases		
Total Split (s)	32.0	
Total Lost Time (s)	4.5	
Act Effct Green (s)	27.6	
Actuated g/C Ratio	0.37	
v/c Ratio	0.36	
Control Delay	18.5	
Queue Delay	0.0	
Total Delay	18.5	
LOS	B	
Approach Delay	27.5	
Approach LOS	C	

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	90	0	208	254	727	0	0	354	330
Future Volume (vph)	0	0	0	90	0	208	254	727	0	0	354	330
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		100	190		0	0		0
Storage Lanes	0		0	0		1	1		0	0		1
Taper Length (ft)	25			25			100			25		
Satd. Flow (prot)	0	0	0	0	1770	1583	1770	1863	0	0	1863	1583
Flt Permitted					0.950		0.950					
Satd. Flow (perm)	0	0	0	0	1770	1583	1770	1863	0	0	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						186						359
Link Speed (mph)		55			55			35			35	
Link Distance (ft)		890			958			1496			800	
Travel Time (s)		11.0			11.9			29.1			15.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	98	226	276	790	0	0	385	359
Turn Type				Perm	NA	Perm	Prot	NA			NA	Perm
Protected Phases					8		5	2			6	
Permitted Phases				8		8						6
Total Split (s)				22.5	22.5	22.5	19.0	42.5			23.5	23.5
Total Lost Time (s)					4.5	4.5	4.5	4.5			4.5	4.5
Act Effct Green (s)					8.6	8.6	12.7	38.0			20.8	20.8
Actuated g/C Ratio					0.15	0.15	0.23	0.68			0.37	0.37
v/c Ratio					0.36	0.56	0.68	0.62			0.55	0.44
Control Delay					24.6	11.9	29.6	8.2			18.9	4.1
Queue Delay					0.0	0.0	0.0	0.0			0.0	0.0
Total Delay					24.6	11.9	29.6	8.2			18.9	4.1
LOS					C	B	C	A			B	A
Approach Delay					15.7			13.7			11.7	
Approach LOS					B			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 65			
Actuated Cycle Length: 55.7			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.68			
Intersection Signal Delay: 13.3		Intersection LOS: B	
Intersection Capacity Utilization 82.5%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 2: S Main St & SR 120 WB Ramps

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	376	10	177	0	0	0	0	605	178	130	314	0
Future Volume (vph)	376	10	177	0	0	0	0	605	178	130	314	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		190	0		0	0		0	185		0
Storage Lanes	0		1	0		0	0		0	1		0
Taper Length (ft)	25			25			25			100		
Satd. Flow (prot)	0	1777	1583	0	0	0	0	1805	0	1770	1863	0
Flt Permitted		0.954								0.950		
Satd. Flow (perm)	0	1777	1583	0	0	0	0	1805	0	1770	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			192					24				
Link Speed (mph)		55			55			35			35	
Link Distance (ft)		745			687			289			1496	
Travel Time (s)		9.2			8.5			5.6			29.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	420	192	0	0	0	0	851	0	141	341	0
Turn Type	Perm	NA	Perm					NA		Prot	NA	
Protected Phases		4						2		1	6	
Permitted Phases	4		4									
Total Split (s)	27.4	27.4	27.4					49.6		13.0	62.6	
Total Lost Time (s)		4.5	4.5					4.5		4.5	4.5	
Act Effct Green (s)		22.5	22.5					45.1		8.5	58.1	
Actuated g/C Ratio		0.25	0.25					0.50		0.09	0.65	
v/c Ratio		0.94	0.35					0.93		0.84	0.28	
Control Delay		64.7	6.2					38.1		79.8	7.6	
Queue Delay		0.0	0.0					0.0		0.0	0.0	
Total Delay		64.7	6.2					38.1		79.8	7.6	
LOS		E	A					D		E	A	
Approach Delay		46.3						38.1			28.7	
Approach LOS		D						D			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 89.6			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.94			
Intersection Signal Delay: 38.4		Intersection LOS: D	
Intersection Capacity Utilization 82.5%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 3: S Main St & SR 120 EB Ramps

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	1	0	2	0	0	1	4	781	0	2	485	4
Future Vol, veh/h	1	0	2	0	0	1	4	781	0	2	485	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	2	0	0	1	4	849	0	2	527	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1391	1390	529	1391	1392	849	531	0	0	849	0	0
Stage 1	533	533	-	857	857	-	-	-	-	-	-	-
Stage 2	858	857	-	534	535	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	120	142	550	120	142	361	1036	-	-	789	-	-
Stage 1	531	525	-	352	374	-	-	-	-	-	-	-
Stage 2	352	374	-	530	524	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	119	140	550	119	140	361	1036	-	-	789	-	-
Mov Cap-2 Maneuver	119	140	-	119	140	-	-	-	-	-	-	-
Stage 1	527	523	-	350	371	-	-	-	-	-	-	-
Stage 2	348	371	-	526	522	-	-	-	-	-	-	-

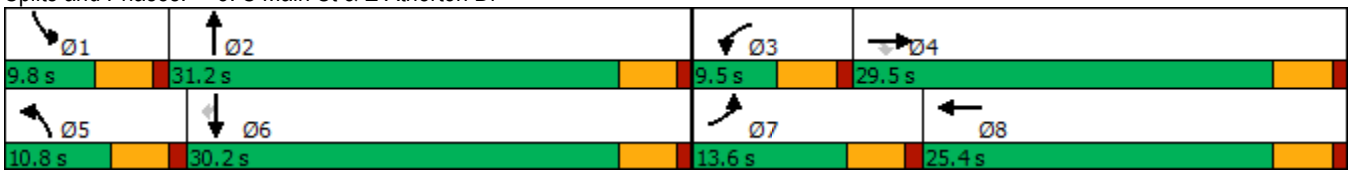
Approach	EB	WB	NB	SB
HCM Control Delay, s	19.7	15	0	0
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1036	-	-	249	361	789	-	-
HCM Lane V/C Ratio	0.004	-	-	0.013	0.003	0.003	-	-
HCM Control Delay (s)	8.5	0	-	19.7	15	9.6	0	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	120	102	38	7	123	140	70	525	8	65	335	87
Future Volume (vph)	120	102	38	7	123	140	70	525	8	65	335	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	460		125	340		0	150		0	220		290
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (ft)	120			100			25			60		
Satd. Flow (prot)	1770	3539	1583	1770	3256	0	1770	1859	0	1770	1863	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3539	1583	1770	3256	0	1770	1859	0	1770	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			143		152			1				143
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		833			932			726			457	
Travel Time (s)		18.9			21.2			14.1			8.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	130	111	41	8	286	0	76	580	0	71	364	95
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4									6
Total Split (s)	13.6	29.5	29.5	9.5	25.4		10.8	31.2		9.8	30.2	30.2
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	4.5
Act Effct Green (s)	8.7	16.7	16.7	5.2	8.4		6.3	27.8		5.5	27.1	27.1
Actuated g/C Ratio	0.14	0.27	0.27	0.08	0.13		0.10	0.44		0.09	0.43	0.43
v/c Ratio	0.53	0.12	0.08	0.05	0.51		0.43	0.70		0.46	0.45	0.12
Control Delay	37.0	18.7	0.3	31.1	16.7		37.7	24.0		41.8	18.2	1.6
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	37.0	18.7	0.3	31.1	16.7		37.7	24.0		41.8	18.2	1.6
LOS	D	B	A	C	B		D	C		D	B	A
Approach Delay		24.5			17.1			25.5			18.4	
Approach LOS		C			B			C			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 62.8			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.70			
Intersection Signal Delay: 21.8		Intersection LOS: C	
Intersection Capacity Utilization 61.8%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 5: S Main St & E Atherton Dr



Intersection	
Intersection Delay, s/veh	48.4
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Vol, veh/h	39	80	81	46	120	166	216	397	34	1	95	266
Future Vol, veh/h	39	80	81	46	120	166	216	397	34	1	95	266
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	42	87	88	50	130	180	235	432	37	1	103	289
Number of Lanes	1	1	0	1	1	1	1	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	3	2
HCM Control Delay	19.9	17.9	81.9	32.9
HCM LOS	C	C	F	D

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	100%	0%	0%	100%	0%
Vol Thru, %	0%	92%	0%	50%	0%	100%	0%	0%	94%
Vol Right, %	0%	8%	0%	50%	0%	0%	100%	0%	6%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	216	431	39	161	46	120	166	96	284
LT Vol	216	0	39	0	46	0	0	96	0
Through Vol	0	397	0	80	0	120	0	0	266
RT Vol	0	34	0	81	0	0	166	0	18
Lane Flow Rate	235	468	42	175	50	130	180	104	309
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.6	1.122	0.123	0.466	0.139	0.343	0.44	0.279	0.779
Departure Headway (Hd)	9.196	8.625	10.906	10.01	10.411	9.89	9.161	9.989	9.426
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	392	422	331	362	347	367	395	362	386
Service Time	6.957	6.386	8.606	7.71	8.111	7.59	6.861	7.689	7.126
HCM Lane V/C Ratio	0.599	1.109	0.127	0.483	0.144	0.354	0.456	0.287	0.801
HCM Control Delay	24.9	110.5	15.1	21.1	14.8	17.7	18.9	16.5	38.4
HCM Lane LOS	C	F	C	C	B	C	C	C	E
HCM 95th-tile Q	3.8	16.7	0.4	2.4	0.5	1.5	2.2	1.1	6.5

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBR
Lane Configurations	
Traffic Vol, veh/h	18
Future Vol, veh/h	18
Peak Hour Factor	0.92
Heavy Vehicles, %	2
Mvmt Flow	20
Number of Lanes	0

Approach	
Opposing Approach	
Opposing Lanes	
Conflicting Approach Left	
Conflicting Lanes Left	
Conflicting Approach Right	
Conflicting Lanes Right	
HCM Control Delay	
HCM LOS	

Intersection	
Int Delay, s/veh	4.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	159	35	99	238	2	61	14	104	6	14	8
Future Vol, veh/h	10	159	35	99	238	2	61	14	104	6	14	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	-	-	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	173	38	108	259	2	66	15	113	7	15	9

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	261	0	0	211	0	0	567	691	106	592	709	131
Stage 1	-	-	-	-	-	-	214	214	-	476	476	-
Stage 2	-	-	-	-	-	-	353	477	-	116	233	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1300	-	-	1357	-	-	406	366	928	390	358	894
Stage 1	-	-	-	-	-	-	768	724	-	539	555	-
Stage 2	-	-	-	-	-	-	637	554	-	876	711	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1300	-	-	1357	-	-	362	334	928	308	327	894
Mov Cap-2 Maneuver	-	-	-	-	-	-	362	334	-	308	327	-
Stage 1	-	-	-	-	-	-	762	718	-	535	511	-
Stage 2	-	-	-	-	-	-	563	510	-	747	705	-

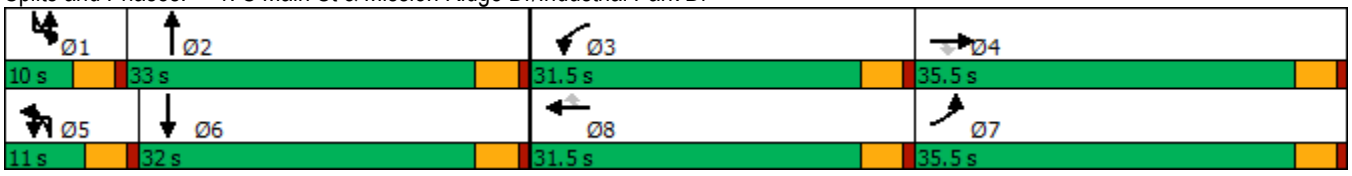
Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	2.3	13	14.9
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	356	928	1300	-	-	1357	-	-	393
HCM Lane V/C Ratio	0.229	0.122	0.008	-	-	0.079	-	-	0.077
HCM Control Delay (s)	18.1	9.4	7.8	-	-	7.9	-	-	14.9
HCM Lane LOS	C	A	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.9	0.4	0	-	-	0.3	-	-	0.2

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	149	146	128	200	121	76	100	197	459	183	18	100
Future Volume (vph)	149	146	128	200	121	76	100	197	459	183	18	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	130		130	120		0		150		0		135
Storage Lanes	1		1	1		1		2		0		1
Taper Length (ft)	70			25				70				100
Satd. Flow (prot)	3433	1863	1583	1770	1863	1583	0	3433	3387	0	0	1770
Flt Permitted	0.950			0.950				0.950				0.950
Satd. Flow (perm)	3433	1863	1583	1770	1863	1583	0	3433	3387	0	0	1770
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)			139			104			52			
Link Speed (mph)		35			35				35			
Link Distance (ft)		536			796				800			
Travel Time (s)		10.4			15.5				15.6			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	162	159	139	217	132	83	0	323	698	0	0	129
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	Prot	NA		Prot	Prot
Protected Phases	7	4		3	8		5	5	2		1	1
Permitted Phases			4			8						
Total Split (s)	35.5	35.5	35.5	31.5	31.5	31.5	11.0	11.0	33.0		10.0	10.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5			4.5
Act Effct Green (s)	16.2	12.3	12.3	15.0	11.1	11.1		6.6	28.8			5.6
Actuated g/C Ratio	0.20	0.15	0.15	0.19	0.14	0.14		0.08	0.36			0.07
v/c Ratio	0.23	0.55	0.39	0.65	0.51	0.27		1.15	0.56			1.05
Control Delay	27.4	39.7	9.3	40.1	40.0	7.0		136.0	22.1			137.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0
Total Delay	27.4	39.7	9.3	40.1	40.0	7.0		136.0	22.1			137.2
LOS	C	D	A	D	D	A		F	C			F
Approach Delay		26.2			33.7				58.1			
Approach LOS		C			C				E			

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 79.8			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.15			
Intersection Signal Delay: 44.0		Intersection LOS: D	
Intersection Capacity Utilization 60.3%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 1: S Main St & Mission Ridge Dr/Industrial Park Dr



Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	517	112
Future Volume (vph)	517	112
Ideal Flow (vphpl)	1900	1900
Storage Length (ft)		0
Storage Lanes		0
Taper Length (ft)		
Satd. Flow (prot)	3444	0
Flt Permitted		
Satd. Flow (perm)	3444	0
Right Turn on Red		Yes
Satd. Flow (RTOR)	22	
Link Speed (mph)	35	
Link Distance (ft)	444	
Travel Time (s)	8.6	
Peak Hour Factor	0.92	0.92
Shared Lane Traffic (%)		
Lane Group Flow (vph)	684	0
Turn Type	NA	
Protected Phases	6	
Permitted Phases		
Total Split (s)	32.0	
Total Lost Time (s)	4.5	
Act Effct Green (s)	27.8	
Actuated g/C Ratio	0.35	
v/c Ratio	0.56	
Control Delay	23.9	
Queue Delay	0.0	
Total Delay	23.9	
LOS	C	
Approach Delay	41.9	
Approach LOS	D	

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	150	2	230	199	727	0	0	520	470
Future Volume (vph)	0	0	0	150	2	230	199	727	0	0	520	470
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		100	190		0	0		0
Storage Lanes	0		0	0		1	1		0	0		1
Taper Length (ft)	25			25			100			25		
Satd. Flow (prot)	0	0	0	0	1775	1583	1770	1863	0	0	1863	1583
Flt Permitted					0.953		0.950					
Satd. Flow (perm)	0	0	0	0	1775	1583	1770	1863	0	0	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						186						511
Link Speed (mph)		55			55			35			35	
Link Distance (ft)		890			958			1496			800	
Travel Time (s)		11.0			11.9			29.1			15.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	165	250	216	790	0	0	565	511
Turn Type				Perm	NA	Perm	Prot	NA			NA	Perm
Protected Phases					8		5	2			6	
Permitted Phases				8		8						6
Total Split (s)				22.5	22.5	22.5	14.0	42.5			28.5	28.5
Total Lost Time (s)					4.5	4.5	4.5	4.5			4.5	4.5
Act Effct Green (s)					10.7	10.7	9.4	38.1			24.2	24.2
Actuated g/C Ratio					0.18	0.18	0.16	0.66			0.42	0.42
v/c Ratio					0.50	0.56	0.75	0.64			0.73	0.53
Control Delay					26.5	11.9	43.5	9.8			22.4	3.9
Queue Delay					0.0	0.0	0.0	0.0			0.0	0.0
Total Delay					26.5	11.9	43.5	9.8			22.4	3.9
LOS					C	B	D	A			C	A
Approach Delay					17.7			17.0			13.6	
Approach LOS					B			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 65			
Actuated Cycle Length: 57.9			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.75			
Intersection Signal Delay: 15.6		Intersection LOS: B	
Intersection Capacity Utilization 75.6%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 2: S Main St & SR 120 WB Ramps

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	428	2	403	0	0	0	0	498	122	125	545	0
Future Volume (vph)	428	2	403	0	0	0	0	498	122	125	545	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		190	0		0	0		0	185		0
Storage Lanes	0		1	0		0	0		0	1		0
Taper Length (ft)	25			25			25			100		
Satd. Flow (prot)	0	1775	1583	0	0	0	0	1812	0	1770	1863	0
Flt Permitted		0.953								0.950		
Satd. Flow (perm)	0	1775	1583	0	0	0	0	1812	0	1770	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			299					18				
Link Speed (mph)		55			55			35			35	
Link Distance (ft)		745			687			289			1496	
Travel Time (s)		9.2			8.5			5.6			29.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	467	438	0	0	0	0	674	0	136	592	0
Turn Type	Perm	NA	Perm					NA		Prot	NA	
Protected Phases		4						2		1	6	
Permitted Phases	4		4									
Total Split (s)	32.0	32.0	32.0					44.0		14.0	58.0	
Total Lost Time (s)		4.5	4.5					4.5		4.5	4.5	
Act Effct Green (s)		25.9	25.9					39.9		9.2	53.6	
Actuated g/C Ratio		0.29	0.29					0.45		0.10	0.61	
v/c Ratio		0.90	0.65					0.82		0.74	0.53	
Control Delay		52.2	13.6					31.0		64.3	12.6	
Queue Delay		0.0	0.0					0.0		0.0	0.0	
Total Delay		52.2	13.6					31.0		64.3	12.6	
LOS		D	B					C		E	B	
Approach Delay		33.5						31.0			22.2	
Approach LOS		C						C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 88.5			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.90			
Intersection Signal Delay: 29.2		Intersection LOS: C	
Intersection Capacity Utilization 75.6%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 3: S Main St & SR 120 EB Ramps

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕				⇕			⇕	
Traffic Vol, veh/h	3	0	3	1	0	0	1	0	617	2	0	948	0
Future Vol, veh/h	3	0	3	1	0	0	1	0	617	2	0	948	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	0	3	1	0	0	1	0	671	2	0	1030	0

Major/Minor	Minor2			Minor1			Major1				Major2		
Conflicting Flow All	1702	1705	1030	1704	1704	672	-	1030	0	0	673	0	0
Stage 1	1030	1030	-	672	674	-	-	-	-	-	-	-	-
Stage 2	672	675	-	1032	1030	-	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	-	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	-	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	72	91	283	72	91	456	-	674	-	-	918	-	-
Stage 1	282	311	-	445	454	-	-	-	-	-	-	-	-
Stage 2	445	453	-	281	311	-	-	-	-	-	-	-	-
Platoon blocked, %									-	-		-	-
Mov Cap-1 Maneuver	72	91	283	71	91	456	-	-	-	-	918	-	-
Mov Cap-2 Maneuver	72	91	-	71	91	-	-	-	-	-	-	-	-
Stage 1	282	311	-	445	454	-	-	-	-	-	-	-	-
Stage 2	445	453	-	278	311	-	-	-	-	-	-	-	-

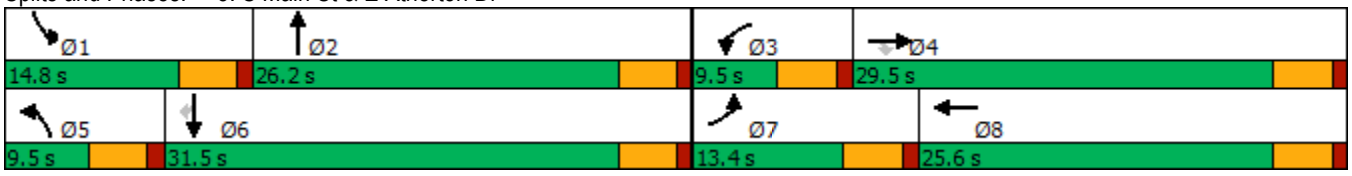
Approach	EB	WB	NB	SB
HCM Control Delay, s	38.2	56.5		0
HCM LOS	E	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	-	-	-	115	71	918	-	-
HCM Lane V/C Ratio	-	-	-	0.057	0.015	-	-	-
HCM Control Delay (s)	-	-	-	38.2	56.5	0	-	-
HCM Lane LOS	-	-	-	E	F	A	-	-
HCM 95th %tile Q(veh)	-	-	-	0.2	0	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	113	127	77	14	135	125	43	382	24	175	598	180
Future Volume (vph)	113	127	77	14	135	125	43	382	24	175	598	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	460		125	340		0	150		0	220		290
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (ft)	120			100			25			60		
Satd. Flow (prot)	1770	3539	1583	1770	3284	0	1770	1846	0	1770	1863	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3539	1583	1770	3284	0	1770	1846	0	1770	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			205		136			4				196
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		833			932			726			457	
Travel Time (s)		18.9			21.2			14.1			8.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	123	138	84	15	283	0	47	441	0	190	650	196
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4									6
Total Split (s)	13.4	29.5	29.5	9.5	25.6		9.5	26.2		14.8	31.5	31.5
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5		4.5	4.5	4.5
Act Effct Green (s)	8.4	16.9	16.9	5.1	8.5		5.1	22.0		10.1	31.4	31.4
Actuated g/C Ratio	0.13	0.26	0.26	0.08	0.13		0.08	0.34		0.16	0.49	0.49
v/c Ratio	0.53	0.15	0.15	0.11	0.51		0.34	0.70		0.69	0.72	0.23
Control Delay	37.6	18.9	0.6	32.1	17.8		37.6	27.6		42.9	23.6	3.3
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	37.6	18.9	0.6	32.1	17.8		37.6	27.6		42.9	23.6	3.3
LOS	D	B	A	C	B		D	C		D	C	A
Approach Delay		21.1			18.6			28.6			23.3	
Approach LOS		C			B			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 64.5			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.72			
Intersection Signal Delay: 23.5		Intersection LOS: C	
Intersection Capacity Utilization 64.6%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 5: S Main St & E Atherton Dr



Intersection	
Intersection Delay, s/veh	59.5
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	147	99	38	140	139	68	280	29	292	371	26
Future Vol, veh/h	30	147	99	38	140	139	68	280	29	292	371	26
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	33	160	108	41	152	151	74	304	32	317	403	28
Number of Lanes	1	1	0	1	1	1	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	3	2
HCM Control Delay	36.3	20.1	54.4	89.8
HCM LOS	E	C	F	F

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	100%	0%	0%	100%	0%
Vol Thru, %	0%	91%	0%	60%	0%	100%	0%	0%	93%
Vol Right, %	0%	9%	0%	40%	0%	0%	100%	0%	7%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	68	309	30	246	38	140	139	292	397
LT Vol	68	0	30	0	38	0	0	292	0
Through Vol	0	280	0	147	0	140	0	0	371
RT Vol	0	29	0	99	0	0	139	0	26
Lane Flow Rate	74	336	33	267	41	152	151	317	432
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.214	0.922	0.098	0.749	0.125	0.44	0.408	0.879	1.128
Departure Headway (Hd)	10.806	10.218	11.356	10.533	11.355	10.831	10.096	9.974	9.408
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	334	356	318	345	318	335	360	365	388
Service Time	8.506	7.918	9.056	8.233	9.055	8.531	7.796	7.728	7.162
HCM Lane V/C Ratio	0.222	0.944	0.104	0.774	0.129	0.454	0.419	0.868	1.113
HCM Control Delay	16.4	62.8	15.3	38.9	15.7	21.8	19.6	54.1	116
HCM Lane LOS	C	F	C	E	C	C	C	F	F
HCM 95th-tile Q	0.8	9.5	0.3	5.8	0.4	2.2	1.9	8.5	16.1

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	18	357	86	64	270	0	38	1	31	2	0	9
Future Vol, veh/h	18	357	86	64	270	0	38	1	31	2	0	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	-	-	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	20	388	93	70	293	0	41	1	34	2	0	10

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	293	0	0	481	0	0	762	908	241	668	954	147
Stage 1	-	-	-	-	-	-	475	475	-	433	433	-
Stage 2	-	-	-	-	-	-	287	433	-	235	521	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1265	-	-	1078	-	-	294	274	760	344	257	873
Stage 1	-	-	-	-	-	-	539	556	-	571	580	-
Stage 2	-	-	-	-	-	-	696	580	-	747	530	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1265	-	-	1078	-	-	273	252	760	308	236	873
Mov Cap-2 Maneuver	-	-	-	-	-	-	273	252	-	308	236	-
Stage 1	-	-	-	-	-	-	530	547	-	562	542	-
Stage 2	-	-	-	-	-	-	644	542	-	701	522	-

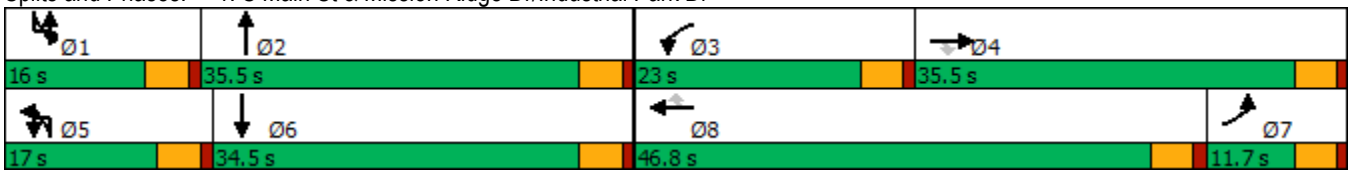
Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	1.6	16	10.6
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	272	760	1265	-	-	1078	-	-	655
HCM Lane V/C Ratio	0.156	0.044	0.015	-	-	0.065	-	-	0.018
HCM Control Delay (s)	20.7	10	7.9	-	-	8.6	-	-	10.6
HCM Lane LOS	C	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.5	0.1	0	-	-	0.2	-	-	0.1

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	97	78	104	178	44	51	93	109	497	208	17	88
Future Volume (vph)	97	78	104	178	44	51	93	109	497	208	17	88
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	130		130	120		0		150		0		135
Storage Lanes	1		1	1		1		2		0		1
Taper Length (ft)	70			25				70				100
Satd. Flow (prot)	3433	1863	1583	1770	1863	1583	0	3433	3383	0	0	1770
Flt Permitted	0.950			0.950				0.950				0.950
Satd. Flow (perm)	3433	1863	1583	1770	1863	1583	0	3433	3383	0	0	1770
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)			113			104			58			
Link Speed (mph)		35			35				35			
Link Distance (ft)		536			796				800			
Travel Time (s)		10.4			15.5				15.6			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	105	85	113	193	48	55	0	219	766	0	0	114
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	Prot	NA		Prot	Prot
Protected Phases	7	4		3	8		5	5	2		1	1
Permitted Phases			4			8						
Total Split (s)	11.7	35.5	35.5	23.0	46.8	46.8	17.0	17.0	35.5		16.0	16.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5			4.5
Act Effct Green (s)	17.8	9.2	9.2	13.9	7.6	7.6		10.4	31.2			9.9
Actuated g/C Ratio	0.22	0.11	0.11	0.17	0.09	0.09		0.13	0.38			0.12
v/c Ratio	0.14	0.41	0.41	0.65	0.28	0.23		0.51	0.58			0.54
Control Delay	28.5	41.6	12.3	43.3	40.9	3.6		39.0	22.1			45.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0
Total Delay	28.5	41.6	12.3	43.3	40.9	3.6		39.0	22.1			45.4
LOS	C	D	B	D	D	A		D	C			D
Approach Delay		26.1			35.5				25.9			
Approach LOS		C			D				C			

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 82.4			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.65			
Intersection Signal Delay: 27.1		Intersection LOS: C	
Intersection Capacity Utilization 54.0%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 1: S Main St & Mission Ridge Dr/Industrial Park Dr



Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	384	51
Future Volume (vph)	384	51
Ideal Flow (vphpl)	1900	1900
Storage Length (ft)		0
Storage Lanes		0
Taper Length (ft)		
Satd. Flow (prot)	3479	0
Flt Permitted		
Satd. Flow (perm)	3479	0
Right Turn on Red		Yes
Satd. Flow (RTOR)	13	
Link Speed (mph)	35	
Link Distance (ft)	444	
Travel Time (s)	8.6	
Peak Hour Factor	0.92	0.92
Shared Lane Traffic (%)		
Lane Group Flow (vph)	472	0
Turn Type	NA	
Protected Phases	6	
Permitted Phases		
Total Split (s)	34.5	
Total Lost Time (s)	4.5	
Act Effct Green (s)	30.8	
Actuated g/C Ratio	0.37	
v/c Ratio	0.36	
Control Delay	20.5	
Queue Delay	0.0	
Total Delay	20.5	
LOS	C	
Approach Delay	25.4	
Approach LOS	C	

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	98	0	208	323	754	0	0	364	330
Future Volume (vph)	0	0	0	98	0	208	323	754	0	0	364	330
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		100	190		0	0		0
Storage Lanes	0		0	0		1	1		0	0		1
Taper Length (ft)	25			25			100			25		
Satd. Flow (prot)	0	0	0	0	1770	1583	1770	1863	0	0	1863	1583
Flt Permitted					0.950		0.950					
Satd. Flow (perm)	0	0	0	0	1770	1583	1770	1863	0	0	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						173						359
Link Speed (mph)		55			55			35			35	
Link Distance (ft)		890			958			1496			800	
Travel Time (s)		11.0			11.9			29.1			15.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	107	226	351	820	0	0	396	359
Turn Type				Perm	NA	Perm	Prot	NA			NA	Perm
Protected Phases					8		5	2			6	
Permitted Phases				8		8						6
Total Split (s)				22.5	22.5	22.5	19.0	42.5			23.5	23.5
Total Lost Time (s)					4.5	4.5	4.5	4.5			4.5	4.5
Act Effct Green (s)					8.9	8.9	14.1	38.1			19.5	19.5
Actuated g/C Ratio					0.16	0.16	0.25	0.68			0.35	0.35
v/c Ratio					0.38	0.57	0.79	0.65			0.61	0.46
Control Delay					24.9	12.9	35.9	8.8			21.0	4.3
Queue Delay					0.0	0.0	0.0	0.0			0.0	0.0
Total Delay					24.9	12.9	35.9	8.8			21.0	4.3
LOS					C	B	D	A			C	A
Approach Delay					16.7			16.9			13.1	
Approach LOS					B			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 65			
Actuated Cycle Length: 56			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.79			
Intersection Signal Delay: 15.6		Intersection LOS: B	
Intersection Capacity Utilization 76.7%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 2: S Main St & SR 120 WB Ramps

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	376	10	208	0	0	0	0	701	208	130	332	0
Future Volume (vph)	376	10	208	0	0	0	0	701	208	130	332	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		190	0		0	0		0	185		0
Storage Lanes	0		1	0		0	0		1	1		0
Taper Length (ft)	25			25			25			100		
Satd. Flow (prot)	0	1777	1583	0	0	0	0	1863	1583	1770	1863	0
Flt Permitted		0.954								0.950		
Satd. Flow (perm)	0	1777	1583	0	0	0	0	1863	1583	1770	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			219						226			
Link Speed (mph)		55			55			35			35	
Link Distance (ft)		745			687			289			1496	
Travel Time (s)		9.2			8.5			5.6			29.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	420	226	0	0	0	0	762	226	141	361	0
Turn Type	Perm	NA	Perm					NA	Perm	Prot	NA	
Protected Phases		4						2		1	6	
Permitted Phases	4		4						2			
Total Split (s)	28.6	28.6	28.6					58.0	58.0	13.4	71.4	
Total Lost Time (s)		4.5	4.5					4.5	4.5	4.5	4.5	
Act Effct Green (s)		24.1	24.1					53.5	53.5	8.9	66.9	
Actuated g/C Ratio		0.24	0.24					0.54	0.54	0.09	0.67	
v/c Ratio		0.98	0.41					0.77	0.24	0.90	0.29	
Control Delay		78.3	7.4					24.7	2.3	95.9	7.5	
Queue Delay		0.0	0.0					0.3	0.0	0.0	0.0	
Total Delay		78.3	7.4					25.0	2.3	95.9	7.5	
LOS		E	A					C	A	F	A	
Approach Delay		53.5						19.8			32.3	
Approach LOS		D						B			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.98			
Intersection Signal Delay: 32.9		Intersection LOS: C	
Intersection Capacity Utilization 76.7%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 3: S Main St & SR 120 EB Ramps

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	3	0	0	55	0	857	35	0	536	4
Future Vol, veh/h	0	0	3	0	0	55	0	857	35	0	536	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	3	0	0	60	0	932	38	0	583	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	585	-	-	466	-	0	0	-	-	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.23	-	-	6.93	-	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.319	-	-	3.319	-	-	-	-	-	-
Pot Cap-1 Maneuver	0	0	510	0	0	544	0	-	-	0	-	-
Stage 1	0	0	-	0	0	-	0	-	-	0	-	-
Stage 2	0	0	-	0	0	-	0	-	-	0	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	510	-	-	544	-	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.1	12.4	0	0
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	WBLn1	SBT	SBR
Capacity (veh/h)	-	-	510	544	-	-
HCM Lane V/C Ratio	-	-	0.006	0.11	-	-
HCM Control Delay (s)	-	-	12.1	12.4	-	-
HCM Lane LOS	-	-	B	B	-	-
HCM 95th %tile Q(veh)	-	-	0	0.4	-	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	3	0	0	55	0	857	3	32	504	4
Future Vol, veh/h	0	0	3	0	0	55	0	857	3	32	504	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	0	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	3	0	0	60	0	932	3	35	548	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	550	-	-	466	-	0	0	935	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.23	-	-	6.93	-	-	-	4.13	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.319	-	-	3.319	-	-	-	2.219	-	-
Pot Cap-1 Maneuver	0	0	534	0	0	544	0	-	-	730	-	-
Stage 1	0	0	-	0	0	-	0	-	-	-	-	-
Stage 2	0	0	-	0	0	-	0	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	534	-	-	544	-	-	-	730	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.8	12.4	0	0.6
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	-	-	534	544	730	-	-
HCM Lane V/C Ratio	-	-	0.006	0.11	0.048	-	-
HCM Control Delay (s)	-	-	11.8	12.4	10.2	-	-
HCM Lane LOS	-	-	B	B	B	-	-
HCM 95th %tile Q(veh)	-	-	0	0.4	0.1	-	-

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	127	108	38	27	7	176	212	70	521	8	32	87
Future Volume (vph)	127	108	38	27	7	176	212	70	521	8	32	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	460		125		340		0	150		0		250
Storage Lanes	1		1		1		0	1		0		1
Taper Length (ft)	120				100			25				60
Satd. Flow (prot)	1770	3539	1583	0	1770	3249	0	1770	1859	0	0	1770
Flt Permitted	0.950				0.950			0.950				0.950
Satd. Flow (perm)	1770	3539	1583	0	1770	3249	0	1770	1859	0	0	1770
Right Turn on Red			Yes				Yes			Yes		
Satd. Flow (RTOR)			127			230			1			
Link Speed (mph)		30				30			35			
Link Distance (ft)		833				960			726			
Travel Time (s)		18.9				21.8			14.1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	138	117	41	0	37	421	0	76	575	0	0	130
Turn Type	Prot	NA	Perm	Prot	Prot	NA		Prot	NA		Prot	Prot
Protected Phases	7	4		3	3	8		5	2		1	1
Permitted Phases			4									
Total Split (s)	14.6	29.5	29.5	9.5	9.5	24.4		13.9	38.0		13.0	13.0
Total Lost Time (s)	4.5	4.5	4.5		4.5	4.5		4.5	4.5			4.5
Act Effct Green (s)	9.6	19.3	19.3		5.0	10.7		8.1	33.6			8.4
Actuated g/C Ratio	0.12	0.24	0.24		0.06	0.13		0.10	0.42			0.10
v/c Ratio	0.65	0.14	0.09		0.34	0.67		0.43	0.74			0.71
Control Delay	50.9	25.7	0.3		46.5	20.0		42.7	27.9			58.2
Queue Delay	0.0	0.0	0.0		0.0	0.0		0.0	0.0			0.0
Total Delay	50.9	25.7	0.3		46.5	20.0		42.7	27.9			58.2
LOS	D	C	A		D	C		D	C			E
Approach Delay		33.9				22.2			29.7			
Approach LOS		C				C			C			

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 80.4			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.74			
Intersection Signal Delay: 27.2		Intersection LOS: C	
Intersection Capacity Utilization 68.2%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 5: S Main St & E Atherton Dr

Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	330	87
Future Volume (vph)	330	87
Ideal Flow (vphpl)	1900	1900
Storage Length (ft)		290
Storage Lanes		1
Taper Length (ft)		
Satd. Flow (prot)	1863	1583
Flt Permitted		
Satd. Flow (perm)	1863	1583
Right Turn on Red		Yes
Satd. Flow (RTOR)		182
Link Speed (mph)	35	
Link Distance (ft)	457	
Travel Time (s)	8.9	
Peak Hour Factor	0.92	0.92
Shared Lane Traffic (%)		
Lane Group Flow (vph)	359	95
Turn Type	NA	Perm
Protected Phases	6	
Permitted Phases		6
Total Split (s)	37.1	37.1
Total Lost Time (s)	4.5	4.5
Act Effct Green (s)	36.2	36.2
Actuated g/C Ratio	0.45	0.45
v/c Ratio	0.43	0.12
Control Delay	19.5	0.3
Queue Delay	0.0	0.0
Total Delay	19.5	0.3
LOS	B	A
Approach Delay	25.0	
Approach LOS	C	

Intersection Summary

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	127	108	38	27	7	176	212	70	521	8	87	330
Future Volume (vph)	127	108	38	27	7	176	212	70	521	8	87	330
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	460		125		340		0	150		0	250	
Storage Lanes	1		1		1		0	1		0	1	
Taper Length (ft)	120				100			25			60	
Satd. Flow (prot)	1770	3539	1583	0	1770	3249	0	1770	1859	0	1770	1863
Flt Permitted	0.950				0.950			0.950			0.950	
Satd. Flow (perm)	1770	3539	1583	0	1770	3249	0	1770	1859	0	1770	1863
Right Turn on Red			Yes				Yes			Yes		
Satd. Flow (RTOR)			127			230			1			
Link Speed (mph)		30				30			35			35
Link Distance (ft)		833				960			726			457
Travel Time (s)		18.9				21.8			14.1			8.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	138	117	41	0	37	421	0	76	575	0	95	359
Turn Type	Prot	NA	Perm	Prot	Prot	NA		Prot	NA		Prot	NA
Protected Phases	7	4		3	3	8		5	2		1	6
Permitted Phases			4									
Total Split (s)	14.6	29.5	29.5	9.5	9.5	24.4		13.9	38.0		13.0	37.1
Total Lost Time (s)	4.5	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5
Act Effct Green (s)	9.5	19.4	19.4		5.1	10.6		8.1	34.0		8.0	33.8
Actuated g/C Ratio	0.12	0.25	0.25		0.07	0.14		0.10	0.44		0.10	0.44
v/c Ratio	0.64	0.13	0.08		0.32	0.66		0.42	0.71		0.52	0.44
Control Delay	49.4	25.6	0.3		45.6	19.7		42.1	26.1		46.9	19.9
Queue Delay	0.0	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	49.4	25.6	0.3		45.6	19.7		42.1	26.1		46.9	19.9
LOS	D	C	A		D	B		D	C		D	B
Approach Delay		33.2				21.8			28.0			21.2
Approach LOS		C				C			C			C

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 77.7			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.71			
Intersection Signal Delay: 25.4		Intersection LOS: C	
Intersection Capacity Utilization 66.4%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 5: S Main St & E Atherton Dr

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	87
Future Volume (vph)	87
Ideal Flow (vphpl)	1900
Storage Length (ft)	290
Storage Lanes	1
Taper Length (ft)	
Satd. Flow (prot)	1583
Flt Permitted	
Satd. Flow (perm)	1583
Right Turn on Red	Yes
Satd. Flow (RTOR)	182
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.92
Shared Lane Traffic (%)	
Lane Group Flow (vph)	95
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Total Split (s)	37.1
Total Lost Time (s)	4.5
Act Effct Green (s)	33.8
Actuated g/C Ratio	0.44
v/c Ratio	0.12
Control Delay	0.3
Queue Delay	0.0
Total Delay	0.3
LOS	A
Approach Delay	
Approach LOS	

Intersection Summary

Intersection	
Intersection Delay, s/veh	47.5
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Vol, veh/h	39	80	81	46	120	162	216	397	34	1	95	261
Future Vol, veh/h	39	80	81	46	120	162	216	397	34	1	95	261
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	42	87	88	50	130	176	235	432	37	1	103	284
Number of Lanes	1	1	0	1	1	1	1	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	3	2
HCM Control Delay	19.8	17.6	80.4	31.5
HCM LOS	C	C	F	D

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	100%	0%	0%	100%	0%
Vol Thru, %	0%	92%	0%	50%	0%	100%	0%	0%	94%
Vol Right, %	0%	8%	0%	50%	0%	0%	100%	0%	6%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	216	431	39	161	46	120	162	96	279
LT Vol	216	0	39	0	46	0	0	96	0
Through Vol	0	397	0	80	0	120	0	0	261
RT Vol	0	34	0	81	0	0	162	0	18
Lane Flow Rate	235	468	42	175	50	130	176	104	303
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.596	1.116	0.122	0.464	0.139	0.342	0.428	0.278	0.763
Departure Headway (Hd)	9.145	8.574	10.847	9.951	10.369	9.848	9.119	9.952	9.389
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	394	422	332	364	348	368	398	363	388
Service Time	6.906	6.336	8.547	7.651	8.069	7.548	6.819	7.652	7.089
HCM Lane V/C Ratio	0.596	1.109	0.127	0.481	0.144	0.353	0.442	0.287	0.781
HCM Control Delay	24.6	108.3	15	21	14.7	17.6	18.5	16.4	36.7
HCM Lane LOS	C	F	B	C	B	C	C	C	E
HCM 95th-tile Q	3.7	16.6	0.4	2.4	0.5	1.5	2.1	1.1	6.2

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBR
Lane Configurations	
Traffic Vol, veh/h	18
Future Vol, veh/h	18
Peak Hour Factor	0.92
Heavy Vehicles, %	2
Mvmt Flow	20
Number of Lanes	0

Approach	
Opposing Approach	
Opposing Lanes	
Conflicting Approach Left	
Conflicting Lanes Left	
Conflicting Approach Right	
Conflicting Lanes Right	
HCM Control Delay	
HCM LOS	

Intersection	
Int Delay, s/veh	5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	159	35	99	238	2	61	16	104	9	19	8
Future Vol, veh/h	5	159	35	99	238	2	61	16	104	9	19	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	-	-	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	173	38	108	259	2	66	17	113	10	21	9

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	261	0	0	211	0	0	558	679	106	581	697	131
Stage 1	-	-	-	-	-	-	202	202	-	476	476	-
Stage 2	-	-	-	-	-	-	356	477	-	105	221	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1300	-	-	1357	-	-	412	372	928	397	363	894
Stage 1	-	-	-	-	-	-	781	733	-	539	555	-
Stage 2	-	-	-	-	-	-	634	554	-	889	719	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1300	-	-	1357	-	-	364	341	928	314	333	894
Mov Cap-2 Maneuver	-	-	-	-	-	-	364	341	-	314	333	-
Stage 1	-	-	-	-	-	-	778	730	-	537	511	-
Stage 2	-	-	-	-	-	-	555	510	-	759	716	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	2.3	13.1	15.6
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	359	928	1300	-	-	1357	-	-	380
HCM Lane V/C Ratio	0.233	0.122	0.004	-	-	0.079	-	-	0.103
HCM Control Delay (s)	18.1	9.4	7.8	-	-	7.9	-	-	15.6
HCM Lane LOS	C	A	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.9	0.4	0	-	-	0.3	-	-	0.3

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	229	1	0	367	0	0	0	1	0	0	55
Future Vol, veh/h	0	229	1	0	367	0	0	0	1	0	0	55
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	249	1	0	399	0	0	0	1	0	0	60

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	-	-	0	-	-	125	-	-	200
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	0	-	0	0	0	902	0	0	808
Stage 1	0	-	-	0	-	0	0	0	-	0	0	-
Stage 2	0	-	-	0	-	0	0	0	-	0	0	-
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	902	-	-	808
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

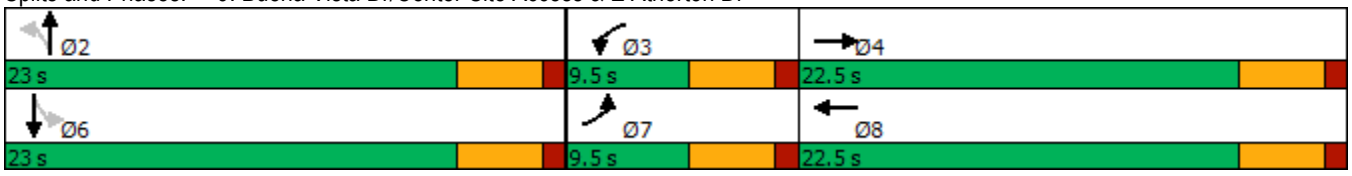
Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	9	9.8
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	SBLn1
Capacity (veh/h)	902	-	-	-	808
HCM Lane V/C Ratio	0.001	-	-	-	0.074
HCM Control Delay (s)	9	-	-	-	9.8
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	206	8	4	287	20	26	0	2	53	2	54
Future Volume (vph)	16	206	8	4	287	20	26	0	2	53	2	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	240		0	140		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	80			80			25			25		
Satd. Flow (prot)	1770	3518	0	1770	3504	0	0	1763	0	0	1696	0
Flt Permitted	0.950			0.950				0.724			0.842	
Satd. Flow (perm)	1770	3518	0	1770	3504	0	0	1336	0	0	1463	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			14			119			59	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		683			914			392			415	
Travel Time (s)		15.5			20.8			8.9			9.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	17	233	0	4	334	0	0	30	0	0	119	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2			6		
Total Split (s)	9.5	22.5		9.5	22.5		23.0	23.0		23.0	23.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5			4.5			4.5	
Act Effct Green (s)	5.6	8.2		5.6	8.3			10.2			10.2	
Actuated g/C Ratio	0.23	0.33		0.23	0.34			0.42			0.42	
v/c Ratio	0.04	0.20		0.01	0.28			0.05			0.18	
Control Delay	12.4	7.7		12.5	7.9			0.1			6.7	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	12.4	7.7		12.5	7.9			0.1			6.7	
LOS	B	A		B	A			A			A	
Approach Delay		8.1			8.0			0.1			6.7	
Approach LOS		A			A			A			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 55			
Actuated Cycle Length: 24.5			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.28			
Intersection Signal Delay: 7.5		Intersection LOS: A	
Intersection Capacity Utilization 26.6%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 9: Buena Vista Dr/Center Site Access & E Atherton Dr



Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↱			↑↱				↱			↱
Traffic Vol, veh/h	0	258	3	0	293	5	0	0	3	0	0	18
Future Vol, veh/h	0	258	3	0	293	5	0	0	3	0	0	18
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	280	3	0	318	5	0	0	3	0	0	20

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	-	-	0	-	-	142	-	-	162
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	0	-	-	0	0	880	0	0	854
Stage 1	0	-	-	0	-	-	0	0	-	0	0	-
Stage 2	0	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	880	-	-	854
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

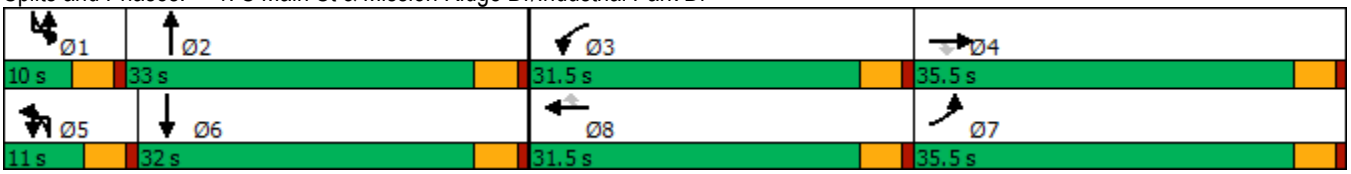
Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	9.1	9.3
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	880	-	-	-	-	854
HCM Lane V/C Ratio	0.004	-	-	-	-	0.023
HCM Control Delay (s)	9.1	-	-	-	-	9.3
HCM Lane LOS	A	-	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-	0.1

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	149	146	133	204	121	76	100	200	471	183	18	100
Future Volume (vph)	149	146	133	204	121	76	100	200	471	183	18	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	130		130	120		0		150		0		135
Storage Lanes	1		1	1		1		2		0		1
Taper Length (ft)	70			25				70				100
Satd. Flow (prot)	3433	1863	1583	1770	1863	1583	0	3433	3391	0	0	1770
Flt Permitted	0.950			0.950				0.950				0.950
Satd. Flow (perm)	3433	1863	1583	1770	1863	1583	0	3433	3391	0	0	1770
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)			145			104			50			
Link Speed (mph)		35			35				35			
Link Distance (ft)		536			796				800			
Travel Time (s)		10.4			15.5				15.6			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	162	159	145	222	132	83	0	326	711	0	0	129
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	Prot	NA		Prot	Prot
Protected Phases	7	4		3	8		5	5	2		1	1
Permitted Phases			4			8						
Total Split (s)	35.5	35.5	35.5	31.5	31.5	31.5	11.0	11.0	33.0		10.0	10.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5			4.5
Act Effct Green (s)	16.4	12.3	12.3	15.2	11.1	11.1		6.6	28.8			5.6
Actuated g/C Ratio	0.20	0.15	0.15	0.19	0.14	0.14		0.08	0.36			0.07
v/c Ratio	0.23	0.56	0.40	0.66	0.51	0.27		1.16	0.57			1.06
Control Delay	27.4	39.9	9.3	40.4	40.0	7.0		140.8	22.5			139.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0
Total Delay	27.4	39.9	9.3	40.4	40.0	7.0		140.8	22.5			139.4
LOS	C	D	A	D	D	A		F	C			F
Approach Delay		26.0			34.0				59.7			
Approach LOS		C			C				E			

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 80			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.16			
Intersection Signal Delay: 44.7		Intersection LOS: D	
Intersection Capacity Utilization 61.5%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 1: S Main St & Mission Ridge Dr/Industrial Park Dr



Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	537	112
Future Volume (vph)	537	112
Ideal Flow (vphpl)	1900	1900
Storage Length (ft)		0
Storage Lanes		0
Taper Length (ft)		
Satd. Flow (prot)	3447	0
Flt Permitted		
Satd. Flow (perm)	3447	0
Right Turn on Red		Yes
Satd. Flow (RTOR)	21	
Link Speed (mph)	35	
Link Distance (ft)	444	
Travel Time (s)	8.6	
Peak Hour Factor	0.92	0.92
Shared Lane Traffic (%)		
Lane Group Flow (vph)	706	0
Turn Type	NA	
Protected Phases	6	
Permitted Phases		
Total Split (s)	32.0	
Total Lost Time (s)	4.5	
Act Effct Green (s)	27.8	
Actuated g/C Ratio	0.35	
v/c Ratio	0.58	
Control Delay	24.4	
Queue Delay	0.0	
Total Delay	24.4	
LOS	C	
Approach Delay	42.2	
Approach LOS	D	

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	195	2	230	258	742	0	0	549	470
Future Volume (vph)	0	0	0	195	2	230	258	742	0	0	549	470
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		100	190		0	0		0
Storage Lanes	0		0	0		1	1		0	0		1
Taper Length (ft)	25			25			100			25		
Satd. Flow (prot)	0	0	0	0	1775	1583	1770	1863	0	0	1863	1583
Flt Permitted					0.953		0.950					
Satd. Flow (perm)	0	0	0	0	1775	1583	1770	1863	0	0	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						178						511
Link Speed (mph)		55			55			35			35	
Link Distance (ft)		890			958			1496			800	
Travel Time (s)		11.0			11.9			29.1			15.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	214	250	280	807	0	0	597	511
Turn Type				Perm	NA	Perm	Prot	NA			NA	Perm
Protected Phases					8		5	2			6	
Permitted Phases				8		8						6
Total Split (s)				22.5	22.5	22.5	14.0	42.5			28.5	28.5
Total Lost Time (s)					4.5	4.5	4.5	4.5			4.5	4.5
Act Effct Green (s)					12.3	12.3	9.5	38.1			24.1	24.1
Actuated g/C Ratio					0.21	0.21	0.16	0.64			0.41	0.41
v/c Ratio					0.58	0.53	0.99	0.68			0.79	0.54
Control Delay					27.8	11.4	82.2	11.4			26.8	4.0
Queue Delay					0.0	0.0	0.0	0.0			0.0	0.0
Total Delay					27.8	11.4	82.2	11.4			26.8	4.0
LOS					C	B	F	B			C	A
Approach Delay					18.9			29.6			16.3	
Approach LOS					B			C			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 65			
Actuated Cycle Length: 59.5			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.99			
Intersection Signal Delay: 22.2		Intersection LOS: C	
Intersection Capacity Utilization 72.1%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 2: S Main St & SR 120 WB Ramps

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	428	2	490	0	0	0	0	572	148	125	619	0
Future Volume (vph)	428	2	490	0	0	0	0	572	148	125	619	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		190	0		0	0		0	185		0
Storage Lanes	0		1	0		0	0		1	1		0
Taper Length (ft)	25			25			25			100		
Satd. Flow (prot)	0	1775	1583	0	0	0	0	1863	1583	1770	1863	0
Flt Permitted		0.953								0.950		
Satd. Flow (perm)	0	1775	1583	0	0	0	0	1863	1583	1770	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			231						161			
Link Speed (mph)		55			55			35			35	
Link Distance (ft)		745			687			289			1496	
Travel Time (s)		9.2			8.5			5.6			29.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	467	533	0	0	0	0	622	161	136	673	0
Turn Type	Perm	NA	Perm					NA	Perm	Prot	NA	
Protected Phases		4						2		1	6	
Permitted Phases	4		4						2			
Total Split (s)	28.0	28.0	28.0					35.0	35.0	12.0	47.0	
Total Lost Time (s)		4.5	4.5					4.5	4.5	4.5	4.5	
Act Effct Green (s)		22.3	22.3					30.5	30.5	7.5	42.6	
Actuated g/C Ratio		0.30	0.30					0.41	0.41	0.10	0.58	
v/c Ratio		0.87	0.83					0.81	0.22	0.76	0.63	
Control Delay		43.4	26.8					29.8	3.5	60.8	14.0	
Queue Delay		0.0	0.0					0.0	0.0	0.0	0.0	
Total Delay		43.4	26.8					29.8	3.5	60.8	14.0	
LOS		D	C					C	A	E	B	
Approach Delay		34.5						24.4			21.9	
Approach LOS		C						C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 75			
Actuated Cycle Length: 73.9			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.87			
Intersection Signal Delay: 27.5		Intersection LOS: C	
Intersection Capacity Utilization 72.1%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 3: S Main St & SR 120 EB Ramps

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	6	0	0	36	0	682	81	0	1109	0
Future Vol, veh/h	0	0	6	0	0	36	0	682	81	0	1109	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	7	0	0	39	0	741	88	0	1205	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	1205	-	-	371	-	0	0	-	-	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.23	-	-	6.93	-	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.319	-	-	3.319	-	-	-	-	-	-
Pot Cap-1 Maneuver	0	0	223	0	0	627	0	-	-	0	-	-
Stage 1	0	0	-	0	0	-	0	-	-	0	-	-
Stage 2	0	0	-	0	0	-	0	-	-	0	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	223	-	-	627	-	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	21.6	11.1	0	0
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	WBLn1	SBT	SBR
Capacity (veh/h)	-	-	223	627	-	-
HCM Lane V/C Ratio	-	-	0.029	0.062	-	-
HCM Control Delay (s)	-	-	21.6	11.1	-	-
HCM Lane LOS	-	-	C	B	-	-
HCM 95th %tile Q(veh)	-	-	0.1	0.2	-	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	6	0	0	36	0	682	15	101	1109	0
Future Vol, veh/h	0	0	6	0	0	36	0	682	15	101	1109	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	0	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	7	0	0	39	0	741	16	110	1205	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	1205	-	-	371	-	0	0	757	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.23	-	-	6.93	-	-	-	4.13	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.319	-	-	3.319	-	-	-	2.219	-	-
Pot Cap-1 Maneuver	0	0	223	0	0	627	0	-	-	852	-	-
Stage 1	0	0	-	0	0	-	0	-	-	-	-	-
Stage 2	0	0	-	0	0	-	0	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	223	-	-	627	-	-	-	852	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	21.6	11.1	0	0.8
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	-	-	223	627	852	-	-
HCM Lane V/C Ratio	-	-	0.029	0.062	0.129	-	-
HCM Control Delay (s)	-	-	21.6	11.1	9.8	-	-
HCM Lane LOS	-	-	C	B	A	-	-
HCM 95th %tile Q(veh)	-	-	0.1	0.2	0.4	-	-

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	130	151	77	15	14	152	191	43	378	25	101	245
Future Volume (vph)	130	151	77	15	14	152	191	43	378	25	101	245
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	460		125		340		0	150		0		250
Storage Lanes	1		1		1		0	1		0		1
Taper Length (ft)	120				100			25				60
Satd. Flow (prot)	1770	3539	1583	0	1770	3242	0	1770	1846	0	0	1770
Flt Permitted	0.950				0.950			0.950				0.950
Satd. Flow (perm)	1770	3539	1583	0	1770	3242	0	1770	1846	0	0	1770
Right Turn on Red			Yes				Yes			Yes		
Satd. Flow (RTOR)			123			208			3			
Link Speed (mph)		30				30			35			
Link Distance (ft)		833				960			726			
Travel Time (s)		18.9				21.8			14.1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	141	164	84	0	31	373	0	47	438	0	0	376
Turn Type	Prot	NA	Perm	Prot	Prot	NA		Prot	NA		Prot	Prot
Protected Phases	7	4		3	3	8		5	2		1	1
Permitted Phases			4									
Total Split (s)	19.0	29.5	29.5	10.0	10.0	20.5		13.2	37.5		43.0	43.0
Total Lost Time (s)	4.5	4.5	4.5		4.5	4.5		4.5	4.5			3.0
Act Effct Green (s)	12.7	22.8	22.8		5.6	11.2		7.6	41.5			28.7
Actuated g/C Ratio	0.11	0.21	0.21		0.05	0.10		0.07	0.37			0.26
v/c Ratio	0.70	0.23	0.20		0.35	0.73		0.39	0.63			0.82
Control Delay	67.3	39.2	3.4		65.6	30.1		61.7	36.4			53.8
Queue Delay	0.0	0.0	0.0		0.0	0.0		0.0	0.0			0.0
Total Delay	67.3	39.2	3.4		65.6	30.1		61.7	36.4			53.8
LOS	E	D	A		E	C		E	D			D
Approach Delay		41.7				32.8			38.9			
Approach LOS		D				C			D			

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 110.7			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.82			
Intersection Signal Delay: 33.1		Intersection LOS: C	
Intersection Capacity Utilization 72.7%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 5: S Main St & E Atherton Dr

Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	587	180
Future Volume (vph)	587	180
Ideal Flow (vphpl)	1900	1900
Storage Length (ft)		290
Storage Lanes		1
Taper Length (ft)		
Satd. Flow (prot)	1863	1583
Flt Permitted		
Satd. Flow (perm)	1863	1583
Right Turn on Red		Yes
Satd. Flow (RTOR)		196
Link Speed (mph)	35	
Link Distance (ft)	457	
Travel Time (s)	8.9	
Peak Hour Factor	0.92	0.92
Shared Lane Traffic (%)		
Lane Group Flow (vph)	638	196
Turn Type	NA	Perm
Protected Phases	6	
Permitted Phases		6
Total Split (s)	67.3	67.3
Total Lost Time (s)	4.5	4.5
Act Effct Green (s)	63.4	63.4
Actuated g/C Ratio	0.57	0.57
v/c Ratio	0.60	0.20
Control Delay	20.4	2.5
Queue Delay	0.4	0.0
Total Delay	20.8	2.5
LOS	C	A
Approach Delay	28.1	
Approach LOS	C	

Intersection Summary

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	130	151	77	15	14	152	191	43	378	25	245	587
Future Volume (vph)	130	151	77	15	14	152	191	43	378	25	245	587
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	460		125		340		0	150		0	250	
Storage Lanes	1		1		1		0	1		0	1	
Taper Length (ft)	120				100			25			60	
Satd. Flow (prot)	1770	3539	1583	0	1770	3242	0	1770	1846	0	1770	1863
Flt Permitted	0.950				0.950			0.950			0.950	
Satd. Flow (perm)	1770	3539	1583	0	1770	3242	0	1770	1846	0	1770	1863
Right Turn on Red			Yes				Yes			Yes		
Satd. Flow (RTOR)			123			208			3			
Link Speed (mph)		30				30			35			35
Link Distance (ft)		833				960			726			457
Travel Time (s)		18.9				21.8			14.1			8.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	141	164	84	0	31	373	0	47	438	0	266	638
Turn Type	Prot	NA	Perm	Prot	Prot	NA		Prot	NA		Prot	NA
Protected Phases	7	4		3	3	8		5	2		1	6
Permitted Phases			4									
Total Split (s)	19.0	29.5	29.5	10.0	10.0	20.5		13.2	37.5		43.0	67.3
Total Lost Time (s)	4.5	4.5	4.5		4.5	4.5		4.5	4.5		3.0	4.5
Act Effct Green (s)	12.7	22.8	22.8		5.6	11.2		7.6	48.0		22.1	63.4
Actuated g/C Ratio	0.11	0.21	0.21		0.05	0.10		0.07	0.43		0.20	0.57
v/c Ratio	0.70	0.23	0.20		0.35	0.73		0.39	0.55		0.75	0.60
Control Delay	67.3	39.2	3.4		65.6	30.1		61.7	29.0		55.9	20.4
Queue Delay	0.0	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.4
Total Delay	67.3	39.2	3.4		65.6	30.1		61.7	29.0		55.9	20.8
LOS	E	D	A		E	C		E	C		E	C
Approach Delay		41.7				32.8			32.2			26.0
Approach LOS		D				C			C			C

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 110.7			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.75			
Intersection Signal Delay: 31.0		Intersection LOS: C	
Intersection Capacity Utilization 67.6%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 5: S Main St & E Atherton Dr

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	180
Future Volume (vph)	180
Ideal Flow (vphpl)	1900
Storage Length (ft)	290
Storage Lanes	1
Taper Length (ft)	
Satd. Flow (prot)	1583
Flt Permitted	
Satd. Flow (perm)	1583
Right Turn on Red	Yes
Satd. Flow (RTOR)	196
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.92
Shared Lane Traffic (%)	
Lane Group Flow (vph)	196
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Total Split (s)	67.3
Total Lost Time (s)	4.5
Act Effct Green (s)	63.4
Actuated g/C Ratio	0.57
v/c Ratio	0.20
Control Delay	2.5
Queue Delay	0.0
Total Delay	2.5
LOS	A
Approach Delay	
Approach LOS	

Intersection Summary

Intersection	
Intersection Delay, s/veh	58.3
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	147	99	39	140	135	68	281	30	281	371	26
Future Vol, veh/h	30	147	99	39	140	135	68	281	30	281	371	26
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	33	160	108	42	152	147	74	305	33	305	403	28
Number of Lanes	1	1	0	1	1	1	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	3	2
HCM Control Delay	35.9	19.9	54.5	87.4
HCM LOS	E	C	F	F

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	100%	0%	0%	100%	0%
Vol Thru, %	0%	90%	0%	60%	0%	100%	0%	0%	93%
Vol Right, %	0%	10%	0%	40%	0%	0%	100%	0%	7%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	68	311	30	246	39	140	135	281	397
LT Vol	68	0	30	0	39	0	0	281	0
Through Vol	0	281	0	147	0	140	0	0	371
RT Vol	0	30	0	99	0	0	135	0	26
Lane Flow Rate	74	338	33	267	42	152	147	305	432
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.213	0.923	0.098	0.746	0.128	0.439	0.395	0.844	1.125
Departure Headway (Hd)	10.757	10.167	11.314	10.491	11.323	10.798	10.064	9.952	9.386
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	336	358	319	348	319	336	360	363	388
Service Time	8.457	7.867	9.014	8.191	9.023	8.498	7.764	7.706	7.14
HCM Lane V/C Ratio	0.22	0.944	0.103	0.767	0.132	0.452	0.408	0.84	1.113
HCM Control Delay	16.3	62.8	15.2	38.4	15.7	21.7	19.2	48.5	114.9
HCM Lane LOS	C	F	C	E	C	C	C	E	F
HCM 95th-tile Q	0.8	9.5	0.3	5.8	0.4	2.1	1.8	7.7	16

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	357	86	64	270	3	38	4	31	6	1	4
Future Vol, veh/h	8	357	86	64	270	3	38	4	31	6	1	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	-	-	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	388	93	70	293	3	41	4	34	7	1	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	296	0	0	481	0	0	740	889	241	649	934	148
Stage 1	-	-	-	-	-	-	453	453	-	435	435	-
Stage 2	-	-	-	-	-	-	287	436	-	214	499	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1262	-	-	1078	-	-	305	281	760	355	264	872
Stage 1	-	-	-	-	-	-	556	568	-	570	579	-
Stage 2	-	-	-	-	-	-	696	578	-	768	542	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1262	-	-	1078	-	-	286	261	760	317	245	872
Mov Cap-2 Maneuver	-	-	-	-	-	-	286	261	-	317	245	-
Stage 1	-	-	-	-	-	-	552	564	-	566	541	-
Stage 2	-	-	-	-	-	-	646	540	-	723	538	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	1.6	15.9	14.3
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	283	760	1262	-	-	1078	-	-	399
HCM Lane V/C Ratio	0.161	0.044	0.007	-	-	0.065	-	-	0.03
HCM Control Delay (s)	20.2	10	7.9	-	-	8.6	-	-	14.3
HCM Lane LOS	C	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.6	0.1	0	-	-	0.2	-	-	0.1

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	433	3	0	340	0	0	0	1	0	0	32
Future Vol, veh/h	0	433	3	0	340	0	0	0	1	0	0	32
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	471	3	0	370	0	0	0	1	0	0	35

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	-	-	0	-	-	237	-	-	185
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	0	-	0	0	0	764	0	0	826
Stage 1	0	-	-	0	-	0	0	0	-	0	0	-
Stage 2	0	-	-	0	-	0	0	0	-	0	0	-
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	764	-	-	826
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

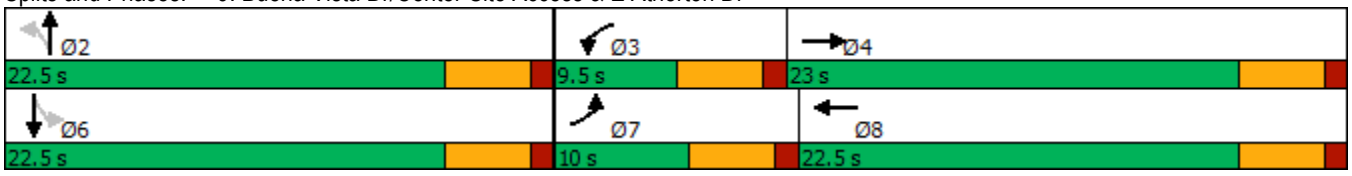
Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	9.7	9.6
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	SBLn1
Capacity (veh/h)	764	-	-	-	826
HCM Lane V/C Ratio	0.001	-	-	-	0.042
HCM Control Delay (s)	9.7	-	-	-	9.6
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	59	354	21	6	286	59	18	4	1	33	2	36
Future Volume (vph)	59	354	21	6	286	59	18	4	1	33	2	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	240		0	140		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	80			80			25			25		
Satd. Flow (prot)	1770	3511	0	1770	3447	0	0	1783	0	0	1696	0
Flt Permitted	0.950			0.950				0.742			0.838	
Satd. Flow (perm)	1770	3511	0	1770	3447	0	0	1375	0	0	1455	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12			47			1			39	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		683			914			392			415	
Travel Time (s)		15.5			20.8			8.9			9.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	64	408	0	7	375	0	0	25	0	0	77	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2			6		
Total Split (s)	10.0	23.0		9.5	22.5		22.5	22.5		22.5	22.5	
Total Lost Time (s)	4.5	4.5		4.5	4.5			4.5			4.5	
Act Effct Green (s)	5.9	10.5		5.4	8.9			6.8			6.8	
Actuated g/C Ratio	0.21	0.37		0.19	0.31			0.24			0.24	
v/c Ratio	0.17	0.31		0.02	0.34			0.08			0.20	
Control Delay	14.2	7.5		14.2	8.6			11.8			8.9	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	14.2	7.5		14.2	8.6			11.8			8.9	
LOS	B	A		B	A			B			A	
Approach Delay		8.4			8.7			11.8			8.9	
Approach LOS		A			A			B			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 55			
Actuated Cycle Length: 28.4			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.34			
Intersection Signal Delay: 8.7		Intersection LOS: A	
Intersection Capacity Utilization 30.0%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 9: Buena Vista Dr/Center Site Access & E Atherton Dr



Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	376	12	0	339	15	0	0	2	0	0	12
Future Vol, veh/h	0	376	12	0	339	15	0	0	2	0	0	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	409	13	0	368	16	0	0	2	0	0	13

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	-	-	0	-	-	211	-	-	192
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	0	-	-	0	0	794	0	0	817
Stage 1	0	-	-	0	-	-	0	0	-	0	0	-
Stage 2	0	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	794	-	-	817
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

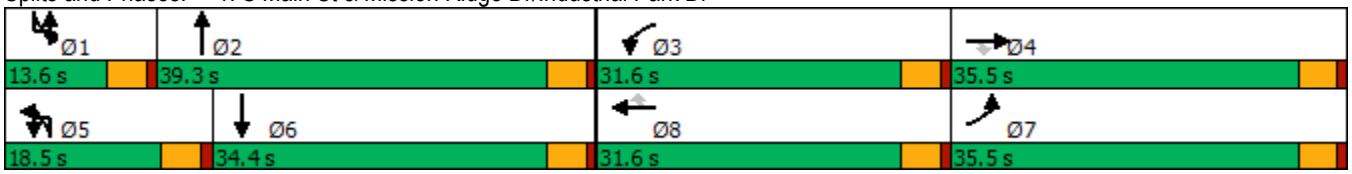
Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	9.5	9.5
HCM LOS			A	A

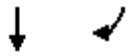
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	794	-	-	-	-	817
HCM Lane V/C Ratio	0.003	-	-	-	-	0.016
HCM Control Delay (s)	9.5	-	-	-	-	9.5
HCM Lane LOS	A	-	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	100	80	110	180	50	60	100	120	726	230	20	90
Future Volume (vph)	100	80	110	180	50	60	100	120	726	230	20	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	130		130	120		0		150		0		135
Storage Lanes	1		1	1		1		2		0		1
Taper Length (ft)	70			25				70				100
Satd. Flow (prot)	3433	1863	1583	1770	1863	1583	0	3433	3412	0	0	1770
Flt Permitted	0.950			0.950				0.950				0.950
Satd. Flow (perm)	3433	1863	1583	1770	1863	1583	0	3433	3412	0	0	1770
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)			136			136			36			
Link Speed (mph)		35			35				35			
Link Distance (ft)		536			796				800			
Travel Time (s)		10.4			15.5				15.6			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	109	87	120	196	54	65	0	239	1039	0	0	120
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	Prot	NA		Prot	Prot
Protected Phases	7	4		3	8		5	5	2		1	1
Permitted Phases			4			8						
Total Split (s)	35.5	35.5	35.5	31.6	31.6	31.6	18.5	18.5	39.3		13.6	13.6
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5			4.5
Act Effct Green (s)	18.5	9.5	9.5	14.8	8.0	8.0		11.2	35.0			9.1
Actuated g/C Ratio	0.21	0.11	0.11	0.17	0.09	0.09		0.13	0.40			0.11
v/c Ratio	0.15	0.42	0.41	0.65	0.32	0.24		0.54	0.74			0.64
Control Delay	29.4	43.5	9.8	44.3	43.0	2.1		40.7	26.2			56.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0
Total Delay	29.4	43.5	9.8	44.3	43.0	2.1		40.7	26.2			56.3
LOS	C	D	A	D	D	A		D	C			E
Approach Delay		25.8			35.4				28.9			
Approach LOS		C			D				C			

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 86.5			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.74			
Intersection Signal Delay: 29.2		Intersection LOS: C	
Intersection Capacity Utilization 61.4%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 1: S Main St & Mission Ridge Dr/Industrial Park Dr





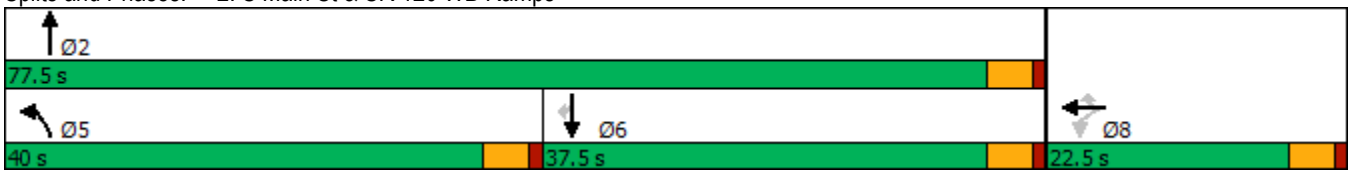
Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	421	60
Future Volume (vph)	421	60
Ideal Flow (vphpl)	1900	1900
Storage Length (ft)		0
Storage Lanes		0
Taper Length (ft)		
Satd. Flow (prot)	3472	0
Flt Permitted		
Satd. Flow (perm)	3472	0
Right Turn on Red		Yes
Satd. Flow (RTOR)	12	
Link Speed (mph)	35	
Link Distance (ft)	444	
Travel Time (s)	8.6	
Peak Hour Factor	0.92	0.92
Shared Lane Traffic (%)		
Lane Group Flow (vph)	523	0
Turn Type	NA	
Protected Phases	6	
Permitted Phases		
Total Split (s)	34.4	
Total Lost Time (s)	4.5	
Act Effct Green (s)	32.9	
Actuated g/C Ratio	0.38	
v/c Ratio	0.39	
Control Delay	21.8	
Queue Delay	0.0	
Total Delay	21.8	
LOS	C	
Approach Delay	28.2	
Approach LOS	C	

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	230	0	230	530	946	0	0	481	330
Future Volume (vph)	0	0	0	230	0	230	530	946	0	0	481	330
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		100	0		0	0		0
Storage Lanes	0		0	0		1	1		0	0		1
Taper Length (ft)	25			25			100			25		
Satd. Flow (prot)	0	0	0	0	1770	1583	1770	3539	0	0	1863	1583
Flt Permitted					0.950		0.950					
Satd. Flow (perm)	0	0	0	0	1770	1583	1770	3539	0	0	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						172						359
Link Speed (mph)		55			55			35			35	
Link Distance (ft)		890			958			1496			800	
Travel Time (s)		11.0			11.9			29.1			15.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	250	250	576	1028	0	0	523	359
Turn Type				Perm	NA	Perm	Prot	NA			NA	Perm
Protected Phases					8		5	2			6	
Permitted Phases				8		8						6
Total Split (s)				22.5	22.5	22.5	40.0	77.5			37.5	37.5
Total Lost Time (s)					4.5	4.5	4.5	4.5			4.5	4.5
Act Effct Green (s)					16.8	16.8	34.1	73.0			34.4	34.4
Actuated g/C Ratio					0.17	0.17	0.35	0.74			0.35	0.35
v/c Ratio					0.83	0.61	0.94	0.39			0.81	0.46
Control Delay					63.6	19.6	57.2	5.4			41.6	4.8
Queue Delay					0.0	0.0	0.0	0.0			0.0	0.0
Total Delay					63.6	19.6	57.2	5.4			41.6	4.8
LOS					E	B	E	A			D	A
Approach Delay					41.6			24.0			26.6	
Approach LOS					D			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 98.8			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.94			
Intersection Signal Delay: 27.7		Intersection LOS: C	
Intersection Capacity Utilization 78.7%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 2: S Main St & SR 120 WB Ramps



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	470	0	390	0	0	0	0	1006	310	130	581	0
Future Volume (vph)	470	0	390	0	0	0	0	1006	310	130	581	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		190	0		0	0		0	0		0
Storage Lanes	0		1	0		0	0		0	1		0
Taper Length (ft)	25			25			25			100		
Satd. Flow (prot)	0	1770	1583	0	0	0	0	4907	0	1770	3539	0
Flt Permitted		0.950								0.950		
Satd. Flow (perm)	0	1770	1583	0	0	0	0	4907	0	1770	3539	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			222					112				
Link Speed (mph)		55			55			35			35	
Link Distance (ft)		745			687			289			1496	
Travel Time (s)		9.2			8.5			5.6			29.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	511	424	0	0	0	0	1430	0	141	632	0
Turn Type	Perm	NA	Perm					NA		Prot	NA	
Protected Phases		4						2		1	6	
Permitted Phases	4		4									
Total Split (s)	31.6	31.6	31.6					29.6		13.8	43.4	
Total Lost Time (s)		4.5	4.5					4.5		4.5	4.5	
Act Effct Green (s)		24.3	24.3					25.7		8.8	39.0	
Actuated g/C Ratio		0.34	0.34					0.36		0.12	0.54	
v/c Ratio		0.86	0.63					0.79		0.66	0.33	
Control Delay		38.6	13.6					23.8		47.0	10.4	
Queue Delay		0.0	0.0					0.0		0.0	0.0	
Total Delay		38.6	13.6					23.8		47.0	10.4	
LOS		D	B					C		D	B	
Approach Delay		27.3						23.8			17.1	
Approach LOS		C						C			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 75			
Actuated Cycle Length: 72.3			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.86			
Intersection Signal Delay: 23.2		Intersection LOS: C	
Intersection Capacity Utilization 78.7%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 3: S Main St & SR 120 EB Ramps

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↱			↱		↑↑↑↳			↑↑↑↳	
Traffic Vol, veh/h	0	0	65	0	0	5	0	1311	10	0	911	60
Future Vol, veh/h	0	0	65	0	0	5	0	1311	10	0	911	60
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	71	0	0	5	0	1425	11	0	990	65

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	528	-	-	718	-	0	0	-	-	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	7.14	-	-	7.14	-	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.92	-	-	3.92	-	-	-	-	-	-
Pot Cap-1 Maneuver	0	0	424	0	0	319	0	-	-	0	-	-
Stage 1	0	0	-	0	0	-	0	-	-	0	-	-
Stage 2	0	0	-	0	0	-	0	-	-	0	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	424	-	-	319	-	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

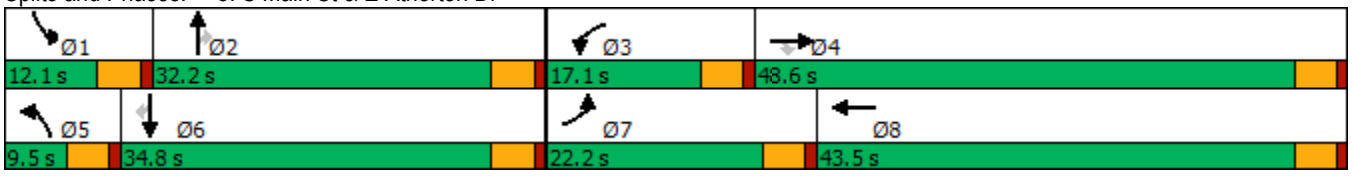
Approach	EB	WB	NB	SB
HCM Control Delay, s	15.2	16.5	0	0
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	WBLn1	SBT	SBR
Capacity (veh/h)	-	-	424	319	-	-
HCM Lane V/C Ratio	-	-	0.167	0.017	-	-
HCM Control Delay (s)	-	-	15.2	16.5	-	-
HCM Lane LOS	-	-	C	C	-	-
HCM 95th %tile Q(veh)	-	-	0.6	0.1	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	200	121	60	90	134	216	70	905	120	151	605	220
Future Volume (vph)	200	121	60	90	134	216	70	905	120	151	605	220
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	460		125	340		0	200		250	250		255
Storage Lanes	1		1	1		0	2		1	2		1
Taper Length (ft)	120			100			25			60		
Satd. Flow (prot)	1770	3539	1583	1770	3210	0	3433	5085	1583	3433	5085	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3539	1583	1770	3210	0	3433	5085	1583	3433	5085	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			104		175				149			239
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		833			932			726			457	
Travel Time (s)		18.9			21.2			14.1			8.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	217	132	65	98	381	0	76	984	130	164	658	239
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Total Split (s)	22.2	48.6	48.6	17.1	43.5		9.5	32.2	32.2	12.1	34.8	34.8
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Act Effct Green (s)	14.7	18.6	18.6	9.5	10.9		5.0	27.9	27.9	7.5	32.5	32.5
Actuated g/C Ratio	0.19	0.24	0.24	0.12	0.14		0.06	0.35	0.35	0.09	0.41	0.41
v/c Ratio	0.66	0.16	0.14	0.46	0.64		0.35	0.55	0.20	0.50	0.31	0.30
Control Delay	40.7	26.2	2.8	40.7	22.6		42.3	22.9	3.8	41.3	18.0	4.0
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.7	26.2	2.8	40.7	22.6		42.3	22.9	3.8	41.3	18.0	4.0
LOS	D	C	A	D	C		D	C	A	D	B	A
Approach Delay		30.2			26.3			22.0			18.5	
Approach LOS		C			C			C			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 79.1			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.66			
Intersection Signal Delay: 22.5		Intersection LOS: C	
Intersection Capacity Utilization 58.5%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 5: S Main St & E Atherton Dr



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	210	100	100	50	120	210	220	675	70	170	375	210
Future Volume (vph)	210	100	100	50	120	210	220	675	70	170	375	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	40		0	180		0	140		0	150		0
Storage Lanes	1		0	1		1	1		0	0		1
Taper Length (ft)	55			60			25			25		
Satd. Flow (prot)	1770	1723	0	1770	1863	1583	1770	1837	0	1770	1863	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	1723	0	1770	1863	1583	1770	1837	0	1770	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		34				228		5				228
Link Speed (mph)		45			45			35			35	
Link Distance (ft)		707			1725			481			576	
Travel Time (s)		10.7			26.1			9.4			11.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	228	218	0	54	130	228	239	810	0	185	408	228
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8						6
Total Split (s)	23.7	42.7		14.5	33.5	33.5	35.4	67.4		20.4	52.4	52.4
Total Lost Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Act Effct Green (s)	19.2	27.1		8.6	14.3	14.3	22.5	62.9		15.9	56.3	56.3
Actuated g/C Ratio	0.15	0.21		0.07	0.11	0.11	0.17	0.48		0.12	0.43	0.43
v/c Ratio	0.88	0.57		0.47	0.64	0.61	0.78	0.91		0.86	0.51	0.28
Control Delay	86.3	46.3		72.5	69.7	13.7	69.2	47.3		90.2	31.8	4.5
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	86.3	46.3		72.5	69.7	13.7	69.2	47.3		90.2	31.8	4.5
LOS	F	D		E	E	B	E	D		F	C	A
Approach Delay		66.8			39.0			52.3			37.4	
Approach LOS		E			D			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 145			
Actuated Cycle Length: 130.4			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.91			
Intersection Signal Delay: 48.2		Intersection LOS: D	
Intersection Capacity Utilization 82.1%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 6: S Main St & E Woodward Ave

Intersection	
Int Delay, s/veh	5.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	290	40	100	300	5	70	20	110	5	20	10
Future Vol, veh/h	10	290	40	100	300	5	70	20	110	5	20	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	-	-	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	315	43	109	326	5	76	22	120	5	22	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	331	0	0	358	0	0	751	908	179	738	927	166
Stage 1	-	-	-	-	-	-	359	359	-	547	547	-
Stage 2	-	-	-	-	-	-	392	549	-	191	380	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1225	-	-	1197	-	-	299	274	833	306	267	849
Stage 1	-	-	-	-	-	-	632	626	-	489	516	-
Stage 2	-	-	-	-	-	-	604	515	-	792	612	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1225	-	-	1197	-	-	254	247	833	226	241	849
Mov Cap-2 Maneuver	-	-	-	-	-	-	254	247	-	226	241	-
Stage 1	-	-	-	-	-	-	626	620	-	485	469	-
Stage 2	-	-	-	-	-	-	517	468	-	649	606	-

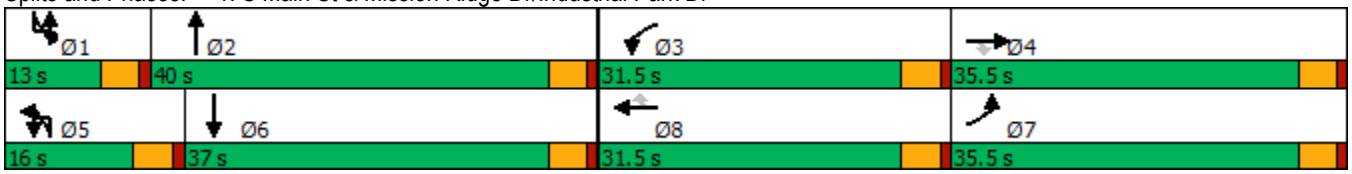
Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	2.1	18.1	18.8
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	252	833	1225	-	-	1197	-	-	299
HCM Lane V/C Ratio	0.388	0.144	0.009	-	-	0.091	-	-	0.127
HCM Control Delay (s)	28.1	10	8	-	-	8.3	-	-	18.8
HCM Lane LOS	D	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	1.7	0.5	0	-	-	0.3	-	-	0.4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	160	150	190	210	130	80	100	220	740	270	18	100
Future Volume (vph)	160	150	190	210	130	80	100	220	740	270	18	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	130		130	120		0		150		0		135
Storage Lanes	1		1	1		1		2		0		1
Taper Length (ft)	70			25				70				100
Satd. Flow (prot)	3433	1863	1583	1770	1863	1583	0	3433	3398	0	0	1770
Flt Permitted	0.950			0.950				0.950				0.950
Satd. Flow (perm)	3433	1863	1583	1770	1863	1583	0	3433	3398	0	0	1770
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)			153			95			44			
Link Speed (mph)		35			35				35			
Link Distance (ft)		536			796				800			
Travel Time (s)		10.4			15.5				15.6			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	174	163	207	228	141	87	0	348	1097	0	0	129
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	Prot	NA		Prot	Prot
Protected Phases	7	4		3	8		5	5	2		1	1
Permitted Phases			4			8						
Total Split (s)	35.5	35.5	35.5	31.5	31.5	31.5	16.0	16.0	40.0		13.0	13.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5			4.5
Act Effct Green (s)	18.5	13.8	13.8	17.3	12.5	12.5		11.6	35.8			8.6
Actuated g/C Ratio	0.20	0.15	0.15	0.18	0.13	0.13		0.12	0.38			0.09
v/c Ratio	0.26	0.60	0.57	0.70	0.57	0.30		0.82	0.83			0.80
Control Delay	32.6	47.4	18.3	48.2	48.3	10.0		58.2	33.1			77.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0
Total Delay	32.6	47.4	18.3	48.2	48.3	10.0		58.2	33.1			77.9
LOS	C	D	B	D	D	B		E	C			E
Approach Delay		31.6			40.9				39.1			
Approach LOS		C			D				D			

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 93.6			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.83			
Intersection Signal Delay: 38.8		Intersection LOS: D	
Intersection Capacity Utilization 74.0%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 1: S Main St & Mission Ridge Dr/Industrial Park Dr



Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	795	140
Future Volume (vph)	795	140
Ideal Flow (vphpl)	1900	1900
Storage Length (ft)		0
Storage Lanes		0
Taper Length (ft)		
Satd. Flow (prot)	3461	0
Flt Permitted		
Satd. Flow (perm)	3461	0
Right Turn on Red		Yes
Satd. Flow (RTOR)	16	
Link Speed (mph)	35	
Link Distance (ft)	444	
Travel Time (s)	8.6	
Peak Hour Factor	0.92	0.92
Shared Lane Traffic (%)		
Lane Group Flow (vph)	1016	0
Turn Type	NA	
Protected Phases	6	
Permitted Phases		
Total Split (s)	37.0	
Total Lost Time (s)	4.5	
Act Effct Green (s)	32.8	
Actuated g/C Ratio	0.35	
v/c Ratio	0.83	
Control Delay	36.1	
Queue Delay	0.0	
Total Delay	36.1	
LOS	D	
Approach Delay	40.8	
Approach LOS	D	

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	340	0	240	340	1090	0	0	755	540
Future Volume (vph)	0	0	0	340	0	240	340	1090	0	0	755	540
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		100	0		0	0		0
Storage Lanes	0		0	0		1	1		0	0		1
Taper Length (ft)	25			25			100			25		
Satd. Flow (prot)	0	0	0	0	1770	1583	1770	3539	0	0	1863	1583
Flt Permitted					0.950		0.950					
Satd. Flow (perm)	0	0	0	0	1770	1583	1770	3539	0	0	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						117						512
Link Speed (mph)		55			55			35			35	
Link Distance (ft)		890			958			1496			800	
Travel Time (s)		11.0			11.9			29.1			15.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	370	261	370	1185	0	0	821	587
Turn Type				Perm	NA	Perm	Prot	NA			NA	Perm
Protected Phases					8		5	2			6	
Permitted Phases				8		8						6
Total Split (s)				25.4	25.4	25.4	25.4	74.6			49.2	49.2
Total Lost Time (s)					4.5	4.5	4.5	4.5			4.5	4.5
Act Effct Green (s)					20.9	20.9	20.9	70.1			44.7	44.7
Actuated g/C Ratio					0.21	0.21	0.21	0.70			0.45	0.45
v/c Ratio					1.00	0.62	1.00	0.48			0.99	0.59
Control Delay					88.6	26.5	88.6	7.5			56.8	5.7
Queue Delay					0.0	0.0	0.0	0.0			0.0	0.0
Total Delay					88.6	26.5	88.6	7.5			56.8	5.7
LOS					F	C	F	A			E	A
Approach Delay					62.9			26.8			35.5	
Approach LOS					E			C			D	

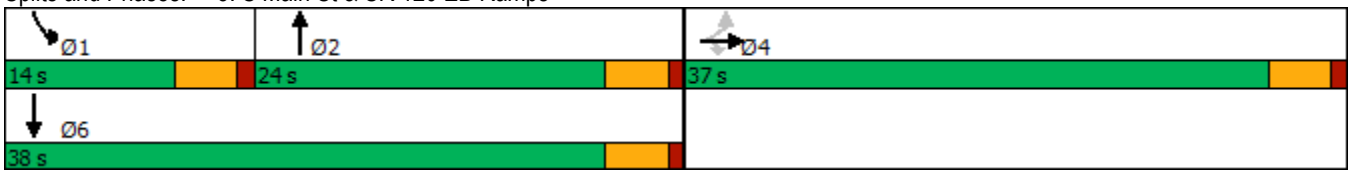
Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.00			
Intersection Signal Delay: 36.5		Intersection LOS: D	
Intersection Capacity Utilization 88.7%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 2: S Main St & SR 120 WB Ramps

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	660	0	600	0	0	0	0	770	250	170	925	0
Future Volume (vph)	660	0	600	0	0	0	0	770	250	170	925	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		190	0		0	0		0	0		0
Storage Lanes	0		1	0		0	0		0	1		0
Taper Length (ft)	25			25			25			100		
Satd. Flow (prot)	0	1770	1583	0	0	0	0	4897	0	1770	3539	0
Flt Permitted		0.950								0.950		
Satd. Flow (perm)	0	1770	1583	0	0	0	0	4897	0	1770	3539	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			87					106				
Link Speed (mph)		55			55			35			35	
Link Distance (ft)		745			687			289			1496	
Travel Time (s)		9.2			8.5			5.6			29.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	717	652	0	0	0	0	1109	0	185	1005	0
Turn Type	Perm	NA	Perm					NA		Prot	NA	
Protected Phases		4						2		1	6	
Permitted Phases	4		4									
Total Split (s)	37.0	37.0	37.0					24.0		14.0	38.0	
Total Lost Time (s)		4.5	4.5					4.5		4.5	4.5	
Act Effct Green (s)		31.9	31.9					19.6		9.4	33.5	
Actuated g/C Ratio		0.43	0.43					0.26		0.13	0.45	
v/c Ratio		0.94	0.90					0.81		0.83	0.63	
Control Delay		44.3	34.7					29.1		62.6	18.0	
Queue Delay		0.0	0.0					0.0		0.0	0.0	
Total Delay		44.3	34.7					29.1		62.6	18.0	
LOS		D	C					C		E	B	
Approach Delay		39.7						29.1			25.0	
Approach LOS		D						C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 75			
Actuated Cycle Length: 74.4			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.94			
Intersection Signal Delay: 31.7		Intersection LOS: C	
Intersection Capacity Utilization 88.7%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 3: S Main St & SR 120 EB Ramps



Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↱			↱		↑↑↑↳			↑↑↑↳	
Traffic Vol, veh/h	0	0	125	0	0	10	0	1010	5	0	1505	20
Future Vol, veh/h	0	0	125	0	0	10	0	1010	5	0	1505	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	136	0	0	11	0	1098	5	0	1636	22

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	829	-	-	552	-	0	0	-	-	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	7.14	-	-	7.14	-	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.92	-	-	3.92	-	-	-	-	-	-
Pot Cap-1 Maneuver	0	0	269	0	0	409	0	-	-	0	-	-
Stage 1	0	0	-	0	0	-	0	-	-	0	-	-
Stage 2	0	0	-	0	0	-	0	-	-	0	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	269	-	-	409	-	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

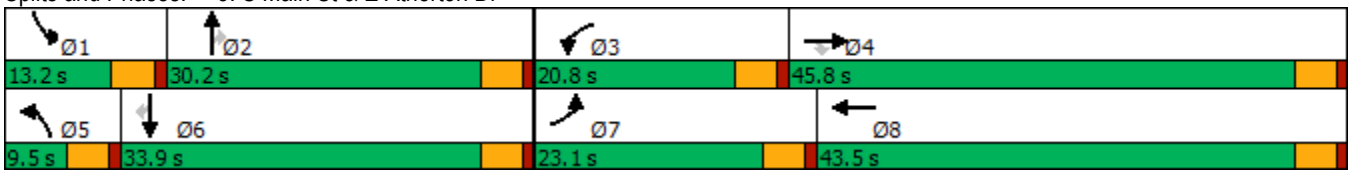
Approach	EB	WB	NB	SB
HCM Control Delay, s	31.3	14	0	0
HCM LOS	D	B		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	WBLn1	SBT	SBR
Capacity (veh/h)	-	-	269	409	-	-
HCM Lane V/C Ratio	-	-	0.505	0.027	-	-
HCM Control Delay (s)	-	-	31.3	14	-	-
HCM Lane LOS	-	-	D	B	-	-
HCM 95th %tile Q(veh)	-	-	2.6	0.1	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	290	230	150	130	230	190	70	535	60	220	970	440
Future Volume (vph)	290	230	150	130	230	190	70	535	60	220	970	440
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	460		125	340		0	200		250	250		255
Storage Lanes	1		1	1		0	2		1	2		1
Taper Length (ft)	120			100			25			60		
Satd. Flow (prot)	1770	3539	1583	1770	3299	0	3433	5085	1583	3433	5085	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3539	1583	1770	3299	0	3433	5085	1583	3433	5085	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			163		169				104			478
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		833			932			726			457	
Travel Time (s)		18.9			21.2			14.1			8.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	315	250	163	141	457	0	76	582	65	239	1054	478
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Total Split (s)	23.1	45.8	45.8	20.8	43.5		9.5	30.2	30.2	13.2	33.9	33.9
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Act Effct Green (s)	18.6	20.1	20.1	11.8	13.3		5.0	25.7	25.7	8.7	31.5	31.5
Actuated g/C Ratio	0.22	0.24	0.24	0.14	0.16		0.06	0.30	0.30	0.10	0.37	0.37
v/c Ratio	0.81	0.30	0.33	0.57	0.69		0.37	0.38	0.12	0.68	0.56	0.54
Control Delay	49.8	28.0	6.8	43.4	26.5		44.9	24.4	2.4	47.9	23.5	4.8
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.8	28.0	6.8	43.4	26.5		44.9	24.4	2.4	47.9	23.5	4.8
LOS	D	C	A	D	C		D	C	A	D	C	A
Approach Delay		32.7			30.5			24.6			21.7	
Approach LOS		C			C			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 84.4			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay: 25.7		Intersection LOS: C	
Intersection Capacity Utilization 66.4%		ICU Level of Service C	
Analysis Period (min) 15			

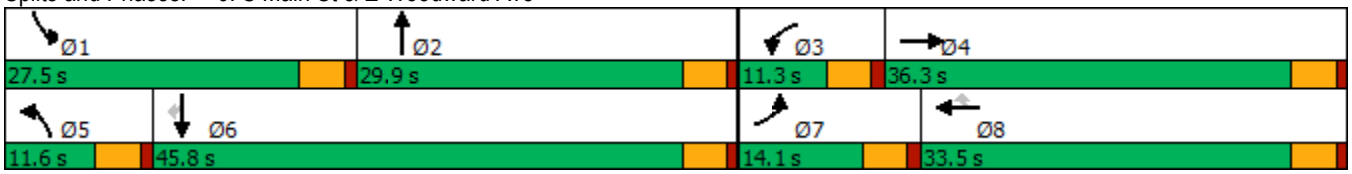
Splits and Phases: 5: S Main St & E Atherton Dr



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	140	180	140	40	140	170	100	355	40	360	650	240
Future Volume (vph)	140	180	140	40	140	170	100	355	40	360	650	240
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	40		0	180		0	140		0	150		0
Storage Lanes	1		0	1		1	1		0	0		1
Taper Length (ft)	55			60			25			25		
Satd. Flow (prot)	1770	1740	0	1770	1863	1583	1770	1835	0	1770	1863	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	1740	0	1770	1863	1583	1770	1835	0	1770	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		38				185		5				229
Link Speed (mph)		45			45			35			35	
Link Distance (ft)		707			1725			481			576	
Travel Time (s)		10.7			26.1			9.4			11.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	152	348	0	43	152	185	109	429	0	391	707	261
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8						6
Total Split (s)	14.1	36.3		11.3	33.5	33.5	11.6	29.9		27.5	45.8	45.8
Total Lost Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Act Effct Green (s)	9.7	25.4		6.5	17.5	17.5	7.2	24.8		23.2	40.8	40.8
Actuated g/C Ratio	0.10	0.27		0.07	0.19	0.19	0.08	0.27		0.25	0.44	0.44
v/c Ratio	0.83	0.69		0.35	0.44	0.41	0.81	0.88		0.89	0.87	0.32
Control Delay	78.5	36.2		52.8	36.6	7.6	85.1	54.4		59.6	38.7	5.2
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	78.5	36.2		52.8	36.6	7.6	85.1	54.4		59.6	38.7	5.2
LOS	E	D		D	D	A	F	D		E	D	A
Approach Delay		49.0			24.3			60.6			38.3	
Approach LOS		D			C			E			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 105			
Actuated Cycle Length: 93.4			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.89			
Intersection Signal Delay: 42.6		Intersection LOS: D	
Intersection Capacity Utilization 78.2%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 6: S Main St & E Woodward Ave



Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	485	90	70	280	0	50	5	40	5	0	20
Future Vol, veh/h	5	485	90	70	280	0	50	5	40	5	0	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	-	-	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	527	98	76	304	0	54	5	43	5	0	22

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	304	0	0	625	0	0	890	1042	313	732	1091	152
Stage 1	-	-	-	-	-	-	586	586	-	456	456	-
Stage 2	-	-	-	-	-	-	304	456	-	276	635	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1254	-	-	952	-	-	237	228	683	309	213	867
Stage 1	-	-	-	-	-	-	463	495	-	554	567	-
Stage 2	-	-	-	-	-	-	681	567	-	707	471	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1254	-	-	952	-	-	216	209	683	265	195	867
Mov Cap-2 Maneuver	-	-	-	-	-	-	216	209	-	265	195	-
Stage 1	-	-	-	-	-	-	461	493	-	552	522	-
Stage 2	-	-	-	-	-	-	611	522	-	652	469	-

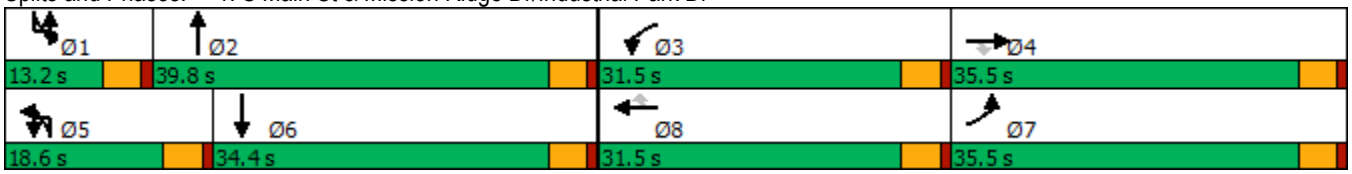
Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	1.8	20.7	11.3
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	215	683	1254	-	-	952	-	-	596
HCM Lane V/C Ratio	0.278	0.064	0.004	-	-	0.08	-	-	0.046
HCM Control Delay (s)	28.1	10.6	7.9	-	-	9.1	-	-	11.3
HCM Lane LOS	D	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	1.1	0.2	0	-	-	0.3	-	-	0.1

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	100	80	111	181	50	60	100	121	751	231	20	90
Future Volume (vph)	100	80	111	181	50	60	100	121	751	231	20	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	130		130	120		0		150		0		135
Storage Lanes	1		1	1		1		2		0		1
Taper Length (ft)	70			25				70				100
Satd. Flow (prot)	3433	1863	1583	1770	1863	1583	0	3433	3415	0	0	1770
Flt Permitted	0.950			0.950				0.950				0.950
Satd. Flow (perm)	3433	1863	1583	1770	1863	1583	0	3433	3415	0	0	1770
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)			136			136			34			
Link Speed (mph)		35			35				35			
Link Distance (ft)		536			796				800			
Travel Time (s)		10.4			15.5				15.6			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	109	87	121	197	54	65	0	241	1067	0	0	120
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	Prot	NA		Prot	Prot
Protected Phases	7	4		3	8		5	5	2		1	1
Permitted Phases			4			8						
Total Split (s)	35.5	35.5	35.5	31.5	31.5	31.5	18.6	18.6	39.8		13.2	13.2
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5			4.5
Act Effct Green (s)	18.6	9.6	9.6	14.8	8.0	8.0		11.2	35.5			8.7
Actuated g/C Ratio	0.21	0.11	0.11	0.17	0.09	0.09		0.13	0.41			0.10
v/c Ratio	0.15	0.42	0.41	0.65	0.32	0.24		0.54	0.75			0.67
Control Delay	29.4	43.6	9.9	44.4	43.2	2.1		40.8	26.5			59.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0
Total Delay	29.4	43.6	9.9	44.4	43.2	2.1		40.8	26.5			59.7
LOS	C	D	A	D	D	A		D	C			E
Approach Delay		25.9			35.5				29.1			
Approach LOS		C			D				C			

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 86.7			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.75			
Intersection Signal Delay: 29.4		Intersection LOS: C	
Intersection Capacity Utilization 62.2%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 1: S Main St & Mission Ridge Dr/Industrial Park Dr



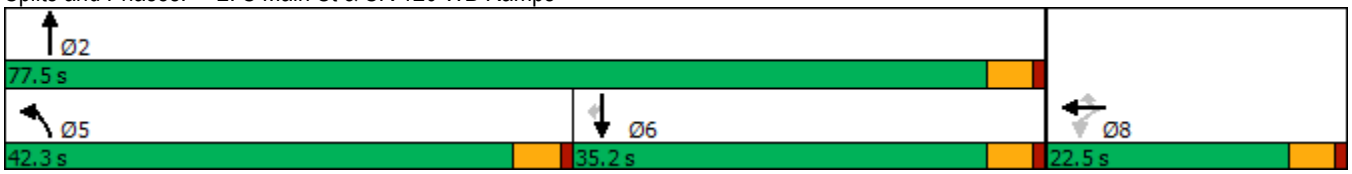
Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	429	60
Future Volume (vph)	429	60
Ideal Flow (vphpl)	1900	1900
Storage Length (ft)		0
Storage Lanes		0
Taper Length (ft)		
Satd. Flow (prot)	3476	0
Flt Permitted		
Satd. Flow (perm)	3476	0
Right Turn on Red		Yes
Satd. Flow (RTOR)	12	
Link Speed (mph)	35	
Link Distance (ft)	444	
Travel Time (s)	8.6	
Peak Hour Factor	0.92	0.92
Shared Lane Traffic (%)		
Lane Group Flow (vph)	531	0
Turn Type	NA	
Protected Phases	6	
Permitted Phases		
Total Split (s)	34.4	
Total Lost Time (s)	4.5	
Act Effct Green (s)	33.0	
Actuated g/C Ratio	0.38	
v/c Ratio	0.40	
Control Delay	22.0	
Queue Delay	0.0	
Total Delay	22.0	
LOS	C	
Approach Delay	28.9	
Approach LOS	C	

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	238	0	230	599	973	0	0	491	330
Future Volume (vph)	0	0	0	238	0	230	599	973	0	0	491	330
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		100	0		0	0		0
Storage Lanes	0		0	0		1	1		0	0		1
Taper Length (ft)	25			25			100			25		
Satd. Flow (prot)	0	0	0	0	1770	1583	1770	3539	0	0	1863	1583
Flt Permitted					0.950		0.950					
Satd. Flow (perm)	0	0	0	0	1770	1583	1770	3539	0	0	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						162						359
Link Speed (mph)		55			55			35			35	
Link Distance (ft)		890			958			1496			800	
Travel Time (s)		11.0			11.9			29.1			15.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	259	250	651	1058	0	0	534	359
Turn Type				Perm	NA	Perm	Prot	NA			NA	Perm
Protected Phases					8		5	2			6	
Permitted Phases				8		8						6
Total Split (s)				22.5	22.5	22.5	42.3	77.5			35.2	35.2
Total Lost Time (s)					4.5	4.5	4.5	4.5			4.5	4.5
Act Effct Green (s)					17.1	17.1	37.4	73.0			31.1	31.1
Actuated g/C Ratio					0.17	0.17	0.38	0.74			0.31	0.31
v/c Ratio					0.85	0.62	0.97	0.41			0.91	0.48
Control Delay					65.5	21.2	60.9	5.6			55.7	5.3
Queue Delay					0.0	0.0	0.0	0.0			0.0	0.0
Total Delay					65.5	21.2	60.9	5.6			55.7	5.3
LOS					E	C	E	A			E	A
Approach Delay					43.7			26.6			35.4	
Approach LOS					D			C			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 99.1			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.97			
Intersection Signal Delay: 32.0		Intersection LOS: C	
Intersection Capacity Utilization 83.5%		ICU Level of Service E	
Analysis Period (min) 15			

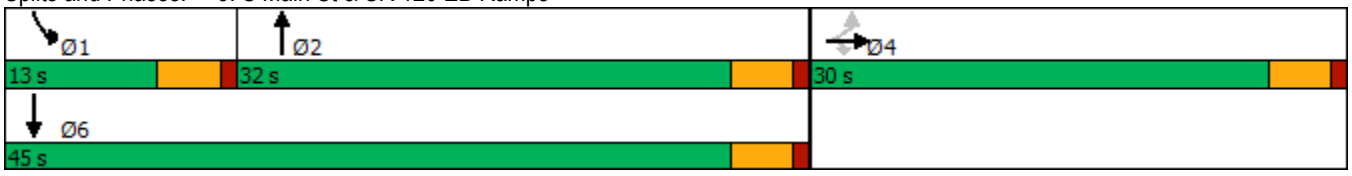
Splits and Phases: 2: S Main St & SR 120 WB Ramps



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	470	0	421	0	0	0	0	1102	340	130	599	0
Future Volume (vph)	470	0	421	0	0	0	0	1102	340	130	599	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		190	0		0	0		0	0		0
Storage Lanes	0		1	0		0	0		0	1		0
Taper Length (ft)	25			25			25			100		
Satd. Flow (prot)	0	1770	1583	0	0	0	0	4907	0	1770	3539	0
Flt Permitted		0.950								0.950		
Satd. Flow (perm)	0	1770	1583	0	0	0	0	4907	0	1770	3539	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			226					117				
Link Speed (mph)		55			55			35			35	
Link Distance (ft)		745			687			289			1496	
Travel Time (s)		9.2			8.5			5.6			29.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	511	458	0	0	0	0	1568	0	141	651	0
Turn Type	Perm	NA	Perm					NA		Prot	NA	
Protected Phases		4						2		1	6	
Permitted Phases	4		4									
Total Split (s)	30.0	30.0	30.0					32.0		13.0	45.0	
Total Lost Time (s)		4.5	4.5					4.5		4.5	4.5	
Act Effct Green (s)		24.0	24.0					27.8		8.3	40.6	
Actuated g/C Ratio		0.33	0.33					0.38		0.11	0.55	
v/c Ratio		0.89	0.69					0.81		0.71	0.33	
Control Delay		43.0	16.4					23.6		53.7	10.0	
Queue Delay		0.0	0.0					0.0		0.0	0.0	
Total Delay		43.0	16.4					23.6		53.7	10.0	
LOS		D	B					C		D	A	
Approach Delay		30.5						23.6			17.7	
Approach LOS		C						C			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 75			
Actuated Cycle Length: 73.6			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.89			
Intersection Signal Delay: 24.2		Intersection LOS: C	
Intersection Capacity Utilization 83.5%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 3: S Main St & SR 120 EB Ramps



Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	65	0	0	59	0	1383	45	0	960	60
Future Vol, veh/h	0	0	65	0	0	59	0	1383	45	0	960	60
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	71	0	0	64	0	1503	49	0	1043	65

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	554	-	-	776	-	0	0	-	-	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	7.14	-	-	7.14	-	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.92	-	-	3.92	-	-	-	-	-	-
Pot Cap-1 Maneuver	0	0	408	0	0	292	0	-	-	0	-	-
Stage 1	0	0	-	0	0	-	0	-	-	0	-	-
Stage 2	0	0	-	0	0	-	0	-	-	0	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	408	-	-	292	-	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15.7	20.8	0	0
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	WBLn1	SBT	SBR
Capacity (veh/h)	-	-	408	292	-	-
HCM Lane V/C Ratio	-	-	0.173	0.22	-	-
HCM Control Delay (s)	-	-	15.7	20.8	-	-
HCM Lane LOS	-	-	C	C	-	-
HCM 95th %tile Q(veh)	-	-	0.6	0.8	-	-

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	65	0	0	59	0	1383	13	32	928	60
Future Vol, veh/h	0	0	65	0	0	59	0	1383	13	32	928	60
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	71	0	0	64	0	1503	14	35	1009	65

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	537	-	-	759	-	0	0	1517	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	7.14	-	-	7.14	-	-	-	5.34	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.92	-	-	3.92	-	-	-	3.12	-	-
Pot Cap-1 Maneuver	0	0	418	0	0	300	0	-	-	219	-	-
Stage 1	0	0	-	0	0	-	0	-	-	-	-	-
Stage 2	0	0	-	0	0	-	0	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	418	-	-	300	-	-	-	219	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

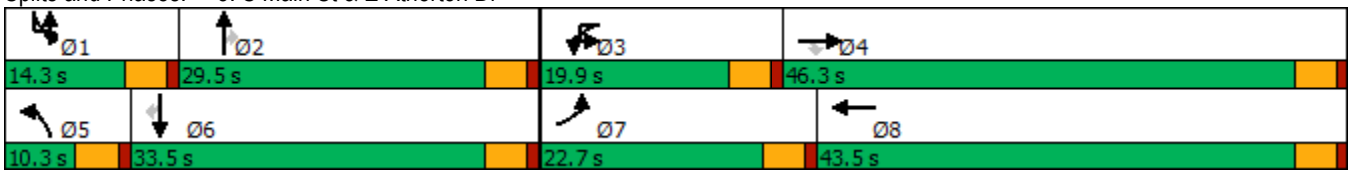
Approach	EB	WB	NB	SB
HCM Control Delay, s	15.4	20.2	0	0.8
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	-	-	418	300	219	-	-
HCM Lane V/C Ratio	-	-	0.169	0.214	0.159	-	-
HCM Control Delay (s)	-	-	15.4	20.2	24.5	-	-
HCM Lane LOS	-	-	C	C	C	-	-
HCM 95th %tile Q(veh)	-	-	0.6	0.8	0.6	-	-

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	207	127	60	27	90	187	288	70	901	120	32	173
Future Volume (vph)	207	127	60	27	90	187	288	70	901	120	32	173
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	460		125		340		0	200		250		250
Storage Lanes	1		1		1		0	2		1		2
Taper Length (ft)	120				100			25				60
Satd. Flow (prot)	1770	3539	1583	0	1770	3217	0	3433	5085	1583	0	3433
Flt Permitted	0.950				0.950			0.950				0.950
Satd. Flow (perm)	1770	3539	1583	0	1770	3217	0	3433	5085	1583	0	3433
Right Turn on Red			Yes				Yes			Yes		
Satd. Flow (RTOR)			104			145				130		
Link Speed (mph)		30				30			35			
Link Distance (ft)		833				940			726			
Travel Time (s)		18.9				21.4			14.1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	225	138	65	0	127	516	0	76	979	130	0	223
Turn Type	Prot	NA	Perm	Prot	Prot	NA		Prot	NA	Perm	Prot	Prot
Protected Phases	7	4		3	3	8		5	2		1	1
Permitted Phases			4							2		
Total Split (s)	22.7	46.3	46.3	19.9	19.9	43.5		10.3	29.5	29.5	14.3	14.3
Total Lost Time (s)	4.5	4.5	4.5		4.5	4.5		4.5	4.5	4.5		4.5
Act Effct Green (s)	15.4	20.3	20.3		11.2	16.1		5.8	25.2	25.2		9.5
Actuated g/C Ratio	0.18	0.24	0.24		0.13	0.19		0.07	0.30	0.30		0.11
v/c Ratio	0.70	0.16	0.14		0.54	0.71		0.32	0.64	0.23		0.58
Control Delay	45.4	26.0	2.6		44.3	28.4		44.0	29.2	6.2		43.7
Queue Delay	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0		0.0
Total Delay	45.4	26.0	2.6		44.3	28.4		44.0	29.2	6.2		43.7
LOS	D	C	A		D	C		D	C	A		D
Approach Delay		32.6				31.6			27.6			
Approach LOS		C				C			C			

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 84.4			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.71			
Intersection Signal Delay: 27.3		Intersection LOS: C	
Intersection Capacity Utilization 64.2%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 5: S Main St & E Atherton Dr



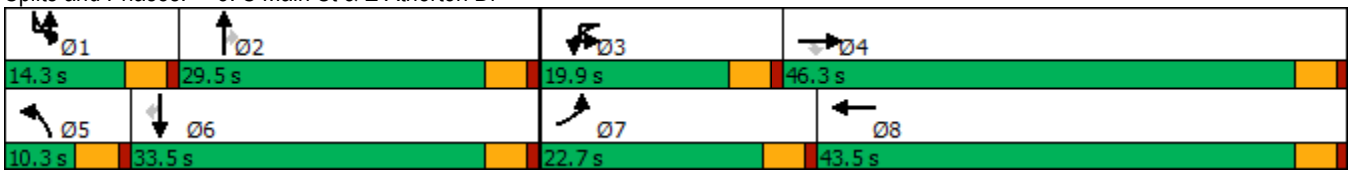
Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	600	220
Future Volume (vph)	600	220
Ideal Flow (vphpl)	1900	1900
Storage Length (ft)		255
Storage Lanes		1
Taper Length (ft)		
Satd. Flow (prot)	5085	1583
Flt Permitted		
Satd. Flow (perm)	5085	1583
Right Turn on Red		Yes
Satd. Flow (RTOR)		239
Link Speed (mph)	35	
Link Distance (ft)	457	
Travel Time (s)	8.9	
Peak Hour Factor	0.92	0.92
Shared Lane Traffic (%)		
Lane Group Flow (vph)	652	239
Turn Type	NA	Perm
Protected Phases	6	
Permitted Phases		6
Total Split (s)	33.5	33.5
Total Lost Time (s)	4.5	4.5
Act Effct Green (s)	31.3	31.3
Actuated g/C Ratio	0.37	0.37
v/c Ratio	0.35	0.32
Control Delay	21.9	4.7
Queue Delay	0.0	0.0
Total Delay	21.9	4.7
LOS	C	A
Approach Delay	22.6	
Approach LOS	C	

Intersection Summary

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	207	127	60	27	90	187	288	70	901	120	173	600
Future Volume (vph)	207	127	60	27	90	187	288	70	901	120	173	600
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	460		125		340		0	200		250	250	
Storage Lanes	1		1		1		0	2		1	2	
Taper Length (ft)	120				100			25			60	
Satd. Flow (prot)	1770	3539	1583	0	1770	3217	0	3433	5085	1583	3433	5085
Flt Permitted	0.950				0.950			0.950			0.950	
Satd. Flow (perm)	1770	3539	1583	0	1770	3217	0	3433	5085	1583	3433	5085
Right Turn on Red			Yes				Yes			Yes		
Satd. Flow (RTOR)			104			199				130		
Link Speed (mph)		30				30			35			35
Link Distance (ft)		833				940			726			457
Travel Time (s)		18.9				21.4			14.1			8.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	225	138	65	0	127	516	0	76	979	130	188	652
Turn Type	Prot	NA	Perm	Prot	Prot	NA		Prot	NA	Perm	Prot	NA
Protected Phases	7	4		3	3	8		5	2		1	6
Permitted Phases			4							2		
Total Split (s)	22.7	46.3	46.3	19.9	19.9	43.5		10.3	29.5	29.5	14.3	33.5
Total Lost Time (s)	4.5	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5
Act Effct Green (s)	15.3	18.8	18.8		11.1	14.6		5.8	25.4	25.4	9.1	31.1
Actuated g/C Ratio	0.19	0.23	0.23		0.13	0.18		0.07	0.31	0.31	0.11	0.38
v/c Ratio	0.69	0.17	0.15		0.54	0.70		0.31	0.63	0.23	0.50	0.34
Control Delay	44.0	26.4	2.7		43.2	25.0		43.0	27.9	6.1	41.2	21.1
Queue Delay	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Delay	44.0	26.4	2.7		43.2	25.0		43.0	27.9	6.1	41.2	21.1
LOS	D	C	A		D	C		D	C	A	D	C
Approach Delay		32.0				28.6			26.5			20.9
Approach LOS		C				C			C			C

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 82.6			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.70			
Intersection Signal Delay: 25.8		Intersection LOS: C	
Intersection Capacity Utilization 63.3%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 5: S Main St & E Atherton Dr



Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	220
Future Volume (vph)	220
Ideal Flow (vphpl)	1900
Storage Length (ft)	255
Storage Lanes	1
Taper Length (ft)	
Satd. Flow (prot)	1583
Flt Permitted	
Satd. Flow (perm)	1583
Right Turn on Red	Yes
Satd. Flow (RTOR)	239
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.92
Shared Lane Traffic (%)	
Lane Group Flow (vph)	239
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Total Split (s)	33.5
Total Lost Time (s)	4.5
Act Effct Green (s)	31.1
Actuated g/C Ratio	0.38
v/c Ratio	0.32
Control Delay	4.6
Queue Delay	0.0
Total Delay	4.6
LOS	A
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	210	100	100	50	120	206	220	675	70	170	370	210
Future Volume (vph)	210	100	100	50	120	206	220	675	70	170	370	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	40		0	180		0	140		0	0		0
Storage Lanes	1		0	1		1	1		0	1		1
Taper Length (ft)	55			60			25			25		
Satd. Flow (prot)	1770	1723	0	1770	1863	1583	1770	1837	0	1770	1863	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	1723	0	1770	1863	1583	1770	1837	0	1770	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		34				224		5				228
Link Speed (mph)		45			45			35			35	
Link Distance (ft)		707			1725			481			576	
Travel Time (s)		10.7			26.1			9.4			11.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	228	218	0	54	130	224	239	810	0	185	402	228
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8						6
Total Split (s)	23.7	42.7		14.5	33.5	33.5	35.4	67.4		20.4	52.4	52.4
Total Lost Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Act Effct Green (s)	19.2	27.1		8.6	14.3	14.3	22.5	62.9		15.9	56.3	56.3
Actuated g/C Ratio	0.15	0.21		0.07	0.11	0.11	0.17	0.48		0.12	0.43	0.43
v/c Ratio	0.88	0.57		0.47	0.64	0.60	0.78	0.91		0.86	0.50	0.28
Control Delay	86.3	46.3		72.5	69.7	13.6	69.2	47.3		90.2	31.6	4.5
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	86.3	46.3		72.5	69.7	13.6	69.2	47.3		90.2	31.6	4.5
LOS	F	D		E	E	B	E	D		F	C	A
Approach Delay		66.8			39.3			52.3			37.3	
Approach LOS		E			D			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 145			
Actuated Cycle Length: 130.4			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.91			
Intersection Signal Delay: 48.2		Intersection LOS: D	
Intersection Capacity Utilization 82.1%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 6: S Main St & E Woodward Ave

Intersection	
Int Delay, s/veh	5.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	290	40	100	300	5	70	22	110	8	25	6
Future Vol, veh/h	5	290	40	100	300	5	70	22	110	8	25	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	-	-	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	315	43	109	326	5	76	24	120	9	27	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	331	0	0	358	0	0	742	896	179	727	915	166
Stage 1	-	-	-	-	-	-	347	347	-	547	547	-
Stage 2	-	-	-	-	-	-	395	549	-	180	368	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1225	-	-	1197	-	-	304	278	833	312	271	849
Stage 1	-	-	-	-	-	-	642	633	-	489	516	-
Stage 2	-	-	-	-	-	-	602	515	-	804	620	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1225	-	-	1197	-	-	256	252	833	230	245	849
Mov Cap-2 Maneuver	-	-	-	-	-	-	256	252	-	230	245	-
Stage 1	-	-	-	-	-	-	639	630	-	487	469	-
Stage 2	-	-	-	-	-	-	512	468	-	660	618	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	2.1	18.2	20.7
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	255	833	1225	-	-	1197	-	-	271
HCM Lane V/C Ratio	0.392	0.144	0.004	-	-	0.091	-	-	0.156
HCM Control Delay (s)	27.9	10	8	-	-	8.3	-	-	20.7
HCM Lane LOS	D	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	1.8	0.5	0	-	-	0.3	-	-	0.5

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	446	1	0	537	0	0	0	1	0	0	55
Future Vol, veh/h	0	446	1	0	537	0	0	0	1	0	0	55
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	485	1	0	584	0	0	0	1	0	0	60

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	-	-	0	-	-	243	-	-	292
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	0	-	0	0	0	758	0	0	704
Stage 1	0	-	-	0	-	0	0	0	-	0	0	-
Stage 2	0	-	-	0	-	0	0	0	-	0	0	-
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	758	-	-	704
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

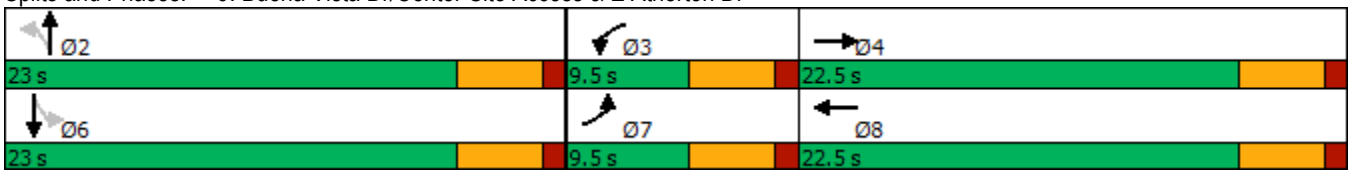
Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	9.8	10.6
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	SBLn1
Capacity (veh/h)	758	-	-	-	704
HCM Lane V/C Ratio	0.001	-	-	-	0.085
HCM Control Delay (s)	9.8	-	-	-	10.6
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.3

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	421	8	4	450	20	26	0	2	53	2	54
Future Volume (vph)	16	421	8	4	450	20	26	0	2	53	2	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	240		0	240		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	80			80			25			25		
Satd. Flow (prot)	1770	3529	0	1770	3518	0	0	1763	0	0	1696	0
Flt Permitted	0.950			0.950				0.683			0.830	
Satd. Flow (perm)	1770	3529	0	1770	3518	0	0	1261	0	0	1442	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			9			119			59	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		703			914			392			415	
Travel Time (s)		16.0			20.8			8.9			9.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	17	467	0	4	511	0	0	30	0	0	119	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2			6		
Total Split (s)	9.5	22.5		9.5	22.5		23.0	23.0		23.0	23.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5			4.5			4.5	
Act Effct Green (s)	5.4	10.1		5.4	10.1			7.2			7.2	
Actuated g/C Ratio	0.19	0.36		0.19	0.36			0.26			0.26	
v/c Ratio	0.05	0.37		0.01	0.40			0.07			0.29	
Control Delay	14.3	8.3		14.5	8.4			0.4			8.6	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	14.3	8.3		14.5	8.4			0.4			8.6	
LOS	B	A		B	A			A			A	
Approach Delay		8.5			8.5			0.4			8.6	
Approach LOS		A			A			A			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 55			
Actuated Cycle Length: 28.2			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.40			
Intersection Signal Delay: 8.3		Intersection LOS: A	
Intersection Capacity Utilization 26.6%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 9: Buena Vista Dr/Center Site Access & E Atherton Dr



Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↱			↑↱				↱			↱
Traffic Vol, veh/h	0	473	3	0	453	5	0	0	3	0	0	18
Future Vol, veh/h	0	473	3	0	453	5	0	0	3	0	0	18
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	514	3	0	492	5	0	0	3	0	0	20

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	-	-	0	-	-	259	-	-	249
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	0	-	-	0	0	740	0	0	751
Stage 1	0	-	-	0	-	-	0	0	-	0	0	-
Stage 2	0	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	740	-	-	751
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

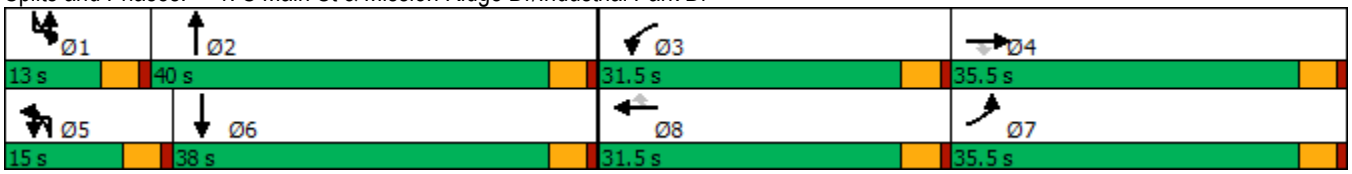
Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	9.9	9.9
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	740	-	-	-	-	751
HCM Lane V/C Ratio	0.004	-	-	-	-	0.026
HCM Control Delay (s)	9.9	-	-	-	-	9.9
HCM Lane LOS	A	-	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-	0.1

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	160	150	195	214	130	80	100	223	756	270	18	100
Future Volume (vph)	160	150	195	214	130	80	100	223	756	270	18	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	130		130	120		0		150		0		135
Storage Lanes	1		1	1		1		2		0		1
Taper Length (ft)	70			25				70				100
Satd. Flow (prot)	3433	1863	1583	1770	1863	1583	0	3433	3401	0	0	1770
Flt Permitted	0.950			0.950				0.950				0.950
Satd. Flow (perm)	3433	1863	1583	1770	1863	1583	0	3433	3401	0	0	1770
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)			144			95			42			
Link Speed (mph)		35			35				35			
Link Distance (ft)		536			796				800			
Travel Time (s)		10.4			15.5				15.6			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	174	163	212	233	141	87	0	351	1115	0	0	129
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	Prot	NA		Prot	Prot
Protected Phases	7	4		3	8		5	5	2		1	1
Permitted Phases			4			8						
Total Split (s)	35.5	35.5	35.5	31.5	31.5	31.5	15.0	15.0	40.0		13.0	13.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5			4.5
Act Effct Green (s)	18.8	13.8	13.8	17.5	12.6	12.6		10.6	35.8			8.6
Actuated g/C Ratio	0.20	0.15	0.15	0.19	0.13	0.13		0.11	0.38			0.09
v/c Ratio	0.25	0.60	0.60	0.71	0.57	0.30		0.91	0.84			0.80
Control Delay	32.5	47.6	21.1	48.4	48.4	10.1		71.2	34.2			78.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0
Total Delay	32.5	47.6	21.1	48.4	48.4	10.1		71.2	34.2			78.7
LOS	C	D	C	D	D	B		E	C			E
Approach Delay		32.6			41.2				43.1			
Approach LOS		C			D				D			

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 93.9			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.91			
Intersection Signal Delay: 40.4		Intersection LOS: D	
Intersection Capacity Utilization 75.3%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 1: S Main St & Mission Ridge Dr/Industrial Park Dr



Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	820	140
Future Volume (vph)	820	140
Ideal Flow (vphpl)	1900	1900
Storage Length (ft)		0
Storage Lanes		0
Taper Length (ft)		
Satd. Flow (prot)	3461	0
Flt Permitted		
Satd. Flow (perm)	3461	0
Right Turn on Red		Yes
Satd. Flow (RTOR)	16	
Link Speed (mph)	35	
Link Distance (ft)	444	
Travel Time (s)	8.6	
Peak Hour Factor	0.92	0.92
Shared Lane Traffic (%)		
Lane Group Flow (vph)	1043	0
Turn Type	NA	
Protected Phases	6	
Permitted Phases		
Total Split (s)	38.0	
Total Lost Time (s)	4.5	
Act Effct Green (s)	33.8	
Actuated g/C Ratio	0.36	
v/c Ratio	0.83	
Control Delay	35.6	
Queue Delay	0.0	
Total Delay	35.6	
LOS	D	
Approach Delay	40.3	
Approach LOS	D	

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	385	0	240	399	1109	0	0	789	540
Future Volume (vph)	0	0	0	385	0	240	399	1109	0	0	789	540
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		100	0		0	0		0
Storage Lanes	0		0	0		1	1		0	0		1
Taper Length (ft)	25			25			100			25		
Satd. Flow (prot)	0	0	0	0	1770	1583	1770	3539	0	0	1863	1583
Flt Permitted					0.950		0.950					
Satd. Flow (perm)	0	0	0	0	1770	1583	1770	3539	0	0	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						110						471
Link Speed (mph)		55			55			35			35	
Link Distance (ft)		890			958			1496			800	
Travel Time (s)		11.0			11.9			29.1			15.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	418	261	434	1205	0	0	858	587
Turn Type				Perm	NA	Perm	Prot	NA			NA	Perm
Protected Phases					8		5	2			6	
Permitted Phases				8		8						6
Total Split (s)				26.0	26.0	26.0	27.0	74.0			47.0	47.0
Total Lost Time (s)					4.5	4.5	4.5	4.5			4.5	4.5
Act Effct Green (s)					21.5	21.5	22.5	69.5			42.5	42.5
Actuated g/C Ratio					0.22	0.22	0.22	0.70			0.42	0.42
v/c Ratio					1.10	0.61	1.09	0.49			1.08	0.62
Control Delay					114.1	27.1	109.7	7.9			86.8	7.7
Queue Delay					0.0	0.0	0.0	0.0			0.0	0.0
Total Delay					114.1	27.1	109.7	7.9			86.8	7.7
LOS					F	C	F	A			F	A
Approach Delay					80.7			34.8			54.7	
Approach LOS					F			C			D	

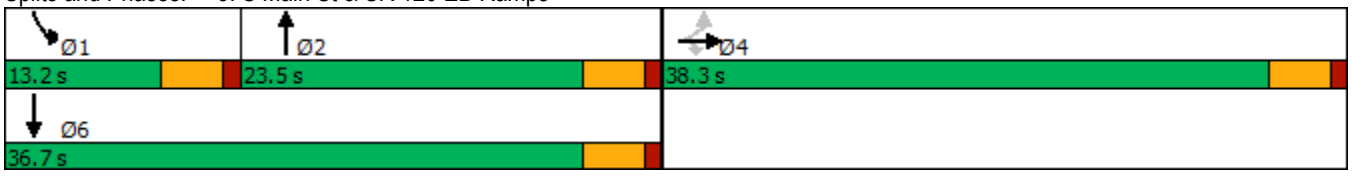
Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.10			
Intersection Signal Delay: 50.7		Intersection LOS: D	
Intersection Capacity Utilization 96.2%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 2: S Main St & SR 120 WB Ramps

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	660	0	687	0	0	0	0	848	276	170	1004	0
Future Volume (vph)	660	0	687	0	0	0	0	848	276	170	1004	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		190	0		0	0		0	0		0
Storage Lanes	0		1	0		0	0		0	1		0
Taper Length (ft)	25			25			25			100		
Satd. Flow (prot)	0	1770	1583	0	0	0	0	4897	0	1770	3539	0
Flt Permitted		0.950								0.950		
Satd. Flow (perm)	0	1770	1583	0	0	0	0	4897	0	1770	3539	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			87					105				
Link Speed (mph)		55			55			35			35	
Link Distance (ft)		745			687			289			1496	
Travel Time (s)		9.2			8.5			5.6			29.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	717	747	0	0	0	0	1222	0	185	1091	0
Turn Type	Perm	NA	Perm					NA		Prot	NA	
Protected Phases		4						2		1	6	
Permitted Phases	4		4									
Total Split (s)	38.3	38.3	38.3					23.5		13.2	36.7	
Total Lost Time (s)		4.5	4.5					4.5		4.5	4.5	
Act Effct Green (s)		33.8	33.8					19.0		8.7	32.2	
Actuated g/C Ratio		0.45	0.45					0.25		0.12	0.43	
v/c Ratio		0.90	0.98					0.93		0.90	0.72	
Control Delay		36.1	49.0					38.6		78.1	21.0	
Queue Delay		0.0	0.0					0.0		0.0	0.0	
Total Delay		36.1	49.0					38.6		78.1	21.0	
LOS		D	D					D		E	C	
Approach Delay		42.7						38.6			29.3	
Approach LOS		D						D			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 75			
Actuated Cycle Length: 75			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.98			
Intersection Signal Delay: 37.1		Intersection LOS: D	
Intersection Capacity Utilization 96.2%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 3: S Main St & SR 120 EB Ramps



Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↱			↱		↑↑↑↳			↑↑↑↳	
Traffic Vol, veh/h	0	0	125	0	0	46	0	1078	121	0	1671	20
Future Vol, veh/h	0	0	125	0	0	46	0	1078	121	0	1671	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	136	0	0	50	0	1172	132	0	1816	22

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	919	-	-	652	-	0	0	-	-	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	7.14	-	-	7.14	-	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.92	-	-	3.92	-	-	-	-	-	-
Pot Cap-1 Maneuver	0	0	235	0	0	352	0	-	-	0	-	-
Stage 1	0	0	-	0	0	-	0	-	-	0	-	-
Stage 2	0	0	-	0	0	-	0	-	-	0	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	235	-	-	352	-	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	39.4	16.9	0	0
HCM LOS	E	C		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	WBLn1	SBT	SBR
Capacity (veh/h)	-	-	235	352	-	-
HCM Lane V/C Ratio	-	-	0.578	0.142	-	-
HCM Control Delay (s)	-	-	39.4	16.9	-	-
HCM Lane LOS	-	-	E	C	-	-
HCM 95th %tile Q(veh)	-	-	3.3	0.5	-	-

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↱			↱		↑↑↑↳		↰	↑↑↑↳	
Traffic Vol, veh/h	0	0	125	0	0	46	0	1078	20	101	1570	20
Future Vol, veh/h	0	0	125	0	0	46	0	1078	20	101	1570	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	136	0	0	50	0	1172	22	110	1707	22

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	865	-	-	597	-	0	0	1194	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	7.14	-	-	7.14	-	-	-	5.34	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.92	-	-	3.92	-	-	-	3.12	-	-
Pot Cap-1 Maneuver	0	0	255	0	0	382	0	-	-	315	-	-
Stage 1	0	0	-	0	0	-	0	-	-	-	-	-
Stage 2	0	0	-	0	0	-	0	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	255	-	-	382	-	-	-	315	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

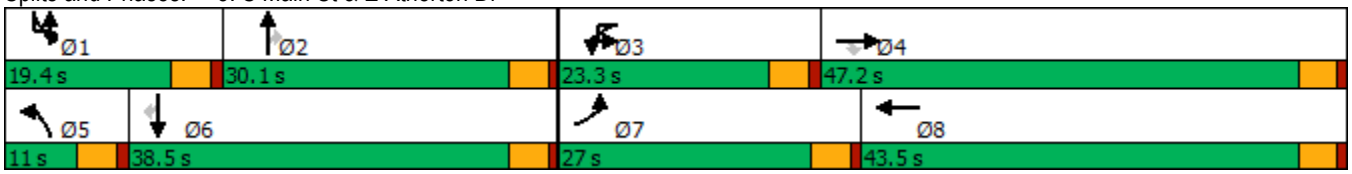
Approach	EB	WB	NB	SB
HCM Control Delay, s	34.1	15.8	0	1.3
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	-	-	255	382	315	-	-
HCM Lane V/C Ratio	-	-	0.533	0.131	0.349	-	-
HCM Control Delay (s)	-	-	34.1	15.8	22.4	-	-
HCM Lane LOS	-	-	D	C	C	-	-
HCM 95th %tile Q(veh)	-	-	2.9	0.4	1.5	-	-

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	307	256	150	15	130	249	260	70	531	61	101	284
Future Volume (vph)	307	256	150	15	130	249	260	70	531	61	101	284
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	460		125		340		0	200		250		250
Storage Lanes	1		1		1		0	2		1		2
Taper Length (ft)	120				100			25				60
Satd. Flow (prot)	1770	3539	1583	0	1770	3267	0	3433	5085	1583	0	3433
Flt Permitted	0.950				0.950			0.950				0.950
Satd. Flow (perm)	1770	3539	1583	0	1770	3267	0	3433	5085	1583	0	3433
Right Turn on Red			Yes				Yes			Yes		
Satd. Flow (RTOR)			163			114				136		
Link Speed (mph)		30				30			35			
Link Distance (ft)		833				940			726			
Travel Time (s)		18.9				21.4			14.1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	334	278	163	0	157	554	0	76	577	66	0	419
Turn Type	Prot	NA	Perm	Prot	Prot	NA		Prot	NA	Perm	Prot	Prot
Protected Phases	7	4		3	3	8		5	2		1	1
Permitted Phases			4							2		
Total Split (s)	27.0	47.2	47.2	23.3	23.3	43.5		11.0	30.1	30.1	19.4	19.4
Total Lost Time (s)	4.5	4.5	4.5		4.5	4.5		4.5	4.5	4.5		4.5
Act Effct Green (s)	22.6	28.7	28.7		13.9	20.0		6.4	25.7	25.7		14.9
Actuated g/C Ratio	0.22	0.28	0.28		0.14	0.20		0.06	0.25	0.25		0.15
v/c Ratio	0.85	0.28	0.29		0.65	0.75		0.35	0.45	0.13		0.83
Control Delay	59.4	29.5	6.1		54.4	36.9		51.6	33.8	0.5		57.6
Queue Delay	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0		0.0
Total Delay	59.4	29.5	6.1		54.4	36.9		51.6	33.8	0.5		57.6
LOS	E	C	A		D	D		D	C	A		E
Approach Delay		37.5				40.8			32.6			
Approach LOS		D				D			C			

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 101.2			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.85			
Intersection Signal Delay: 33.4		Intersection LOS: C	
Intersection Capacity Utilization 70.2%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 5: S Main St & E Atherton Dr



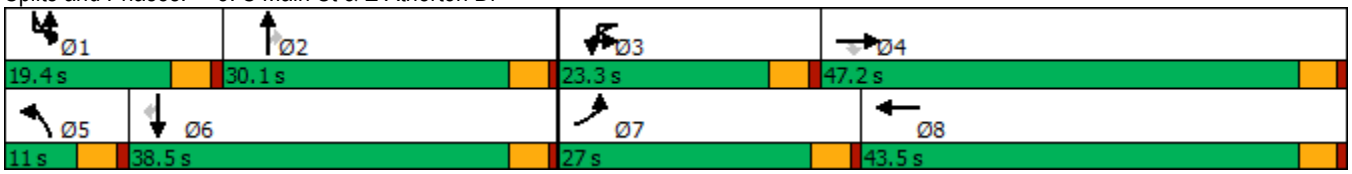
Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	970	440
Future Volume (vph)	970	440
Ideal Flow (vphpl)	1900	1900
Storage Length (ft)		255
Storage Lanes		1
Taper Length (ft)		
Satd. Flow (prot)	5085	1583
Flt Permitted		
Satd. Flow (perm)	5085	1583
Right Turn on Red		Yes
Satd. Flow (RTOR)		478
Link Speed (mph)	35	
Link Distance (ft)	457	
Travel Time (s)	8.9	
Peak Hour Factor	0.92	0.92
Shared Lane Traffic (%)		
Lane Group Flow (vph)	1054	478
Turn Type	NA	Perm
Protected Phases	6	
Permitted Phases		6
Total Split (s)	38.5	38.5
Total Lost Time (s)	4.5	4.5
Act Effct Green (s)	36.4	36.4
Actuated g/C Ratio	0.36	0.36
v/c Ratio	0.58	0.55
Control Delay	29.0	5.2
Queue Delay	0.0	0.0
Total Delay	29.0	5.2
LOS	C	A
Approach Delay	29.3	
Approach LOS	C	

Intersection Summary

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	307	256	150	15	130	249	260	70	531	61	284	970
Future Volume (vph)	307	256	150	15	130	249	260	70	531	61	284	970
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	460		125		340		0	200		250	250	
Storage Lanes	1		1		1		0	2		1	2	
Taper Length (ft)	120				100			25			60	
Satd. Flow (prot)	1770	3539	1583	0	1770	3267	0	3433	5085	1583	3433	5085
Flt Permitted	0.950				0.950			0.950			0.950	
Satd. Flow (perm)	1770	3539	1583	0	1770	3267	0	3433	5085	1583	3433	5085
Right Turn on Red			Yes				Yes			Yes		
Satd. Flow (RTOR)			163			233				136		
Link Speed (mph)		30				30			35			35
Link Distance (ft)		833				940			726			457
Travel Time (s)		18.9				21.4			14.1			8.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	334	278	163	0	157	554	0	76	577	66	309	1054
Turn Type	Prot	NA	Perm	Prot	Prot	NA		Prot	NA	Perm	Prot	NA
Protected Phases	7	4		3	3	8		5	2		1	6
Permitted Phases			4							2		
Total Split (s)	27.0	47.2	47.2	23.3	23.3	43.5		11.0	30.1	30.1	19.4	38.5
Total Lost Time (s)	4.5	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5
Act Effct Green (s)	22.6	25.3	25.3		13.5	16.2		6.4	26.4	26.4	13.1	35.5
Actuated g/C Ratio	0.23	0.26	0.26		0.14	0.17		0.07	0.27	0.27	0.14	0.37
v/c Ratio	0.81	0.30	0.30		0.63	0.75		0.34	0.41	0.12	0.66	0.56
Control Delay	52.6	30.4	6.5		51.4	28.3		49.2	30.7	0.5	47.6	27.0
Queue Delay	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Delay	52.6	30.4	6.5		51.4	28.3		49.2	30.7	0.5	47.6	27.0
LOS	D	C	A		D	C		D	C	A	D	C
Approach Delay		35.0				33.4			29.9			24.8
Approach LOS		C				C			C			C

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 96.5			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay: 29.1		Intersection LOS: C	
Intersection Capacity Utilization 70.2%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 5: S Main St & E Atherton Dr



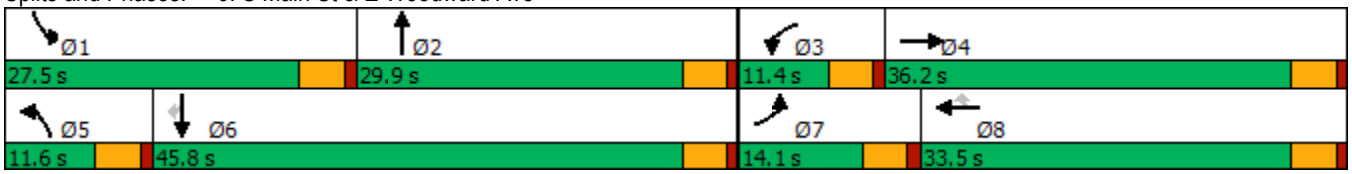
Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	440
Future Volume (vph)	440
Ideal Flow (vphpl)	1900
Storage Length (ft)	255
Storage Lanes	1
Taper Length (ft)	
Satd. Flow (prot)	1583
Flt Permitted	
Satd. Flow (perm)	1583
Right Turn on Red	Yes
Satd. Flow (RTOR)	478
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.92
Shared Lane Traffic (%)	
Lane Group Flow (vph)	478
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Total Split (s)	38.5
Total Lost Time (s)	4.5
Act Effct Green (s)	35.5
Actuated g/C Ratio	0.37
v/c Ratio	0.54
Control Delay	5.0
Queue Delay	0.0
Total Delay	5.0
LOS	A
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	140	180	140	41	140	166	100	356	41	360	650	240
Future Volume (vph)	140	180	140	41	140	166	100	356	41	360	650	240
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	40		0	180		0	140		0	0		0
Storage Lanes	1		0	1		1	1		0	1		1
Taper Length (ft)	55			60			25			25		
Satd. Flow (prot)	1770	1740	0	1770	1863	1583	1770	1833	0	1770	1863	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	1740	0	1770	1863	1583	1770	1833	0	1770	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		38				180		5				229
Link Speed (mph)		45			45			35			35	
Link Distance (ft)		707			1725			481			576	
Travel Time (s)		10.7			26.1			9.4			11.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	152	348	0	45	152	180	109	432	0	391	707	261
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8						6
Total Split (s)	14.1	36.2		11.4	33.5	33.5	11.6	29.9		27.5	45.8	45.8
Total Lost Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Act Effct Green (s)	9.7	25.4		6.6	17.6	17.6	7.2	25.0		23.2	41.0	41.0
Actuated g/C Ratio	0.10	0.27		0.07	0.19	0.19	0.08	0.27		0.25	0.44	0.44
v/c Ratio	0.83	0.70		0.36	0.44	0.41	0.81	0.88		0.89	0.87	0.32
Control Delay	78.9	36.3		53.2	36.7	7.6	85.5	54.5		60.2	38.6	5.2
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	78.9	36.3		53.2	36.7	7.6	85.5	54.5		60.2	38.6	5.2
LOS	E	D		D	D	A	F	D		E	D	A
Approach Delay		49.3			24.7			60.7			38.4	
Approach LOS		D			C			E			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 105			
Actuated Cycle Length: 93.6			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.89			
Intersection Signal Delay: 42.8		Intersection LOS: D	
Intersection Capacity Utilization 78.4%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 6: S Main St & E Woodward Ave



Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	485	90	70	280	3	50	8	40	7	1	17
Future Vol, veh/h	6	485	90	70	280	3	50	8	40	7	1	17
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	-	-	-	100	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	527	98	76	304	3	54	9	43	8	1	18

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	307	0	0	625	0	0	895	1049	313	740	1097	154
Stage 1	-	-	-	-	-	-	590	590	-	458	458	-
Stage 2	-	-	-	-	-	-	305	459	-	282	639	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1250	-	-	952	-	-	235	226	683	305	212	864
Stage 1	-	-	-	-	-	-	461	493	-	552	565	-
Stage 2	-	-	-	-	-	-	680	565	-	701	469	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1250	-	-	952	-	-	214	207	683	259	194	864
Mov Cap-2 Maneuver	-	-	-	-	-	-	214	207	-	259	194	-
Stage 1	-	-	-	-	-	-	458	490	-	549	520	-
Stage 2	-	-	-	-	-	-	611	520	-	641	466	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	1.8	21.4	12.9
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	213	683	1250	-	-	952	-	-	482
HCM Lane V/C Ratio	0.296	0.064	0.005	-	-	0.08	-	-	0.056
HCM Control Delay (s)	28.9	10.6	7.9	-	-	9.1	-	-	12.9
HCM Lane LOS	D	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	1.2	0.2	0	-	-	0.3	-	-	0.2

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	613	0	0	622	0	0	0	1	0	0	32
Future Vol, veh/h	0	613	0	0	622	0	0	0	1	0	0	32
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	666	0	0	676	0	0	0	1	0	0	35

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	-	-	0	-	-	333	-	-	338
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	0	-	0	0	0	663	0	0	658
Stage 1	0	-	-	0	-	0	0	0	-	0	0	-
Stage 2	0	-	-	0	-	0	0	0	-	0	0	-
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	663	-	-	658
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

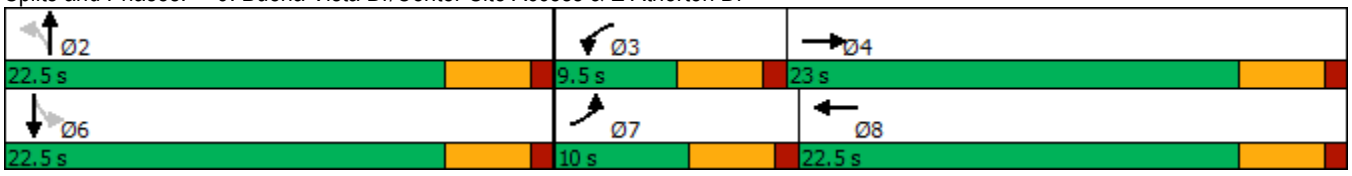
Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	10.4	10.8
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	SBLn1
Capacity (veh/h)	663	-	-	-	658
HCM Lane V/C Ratio	0.002	-	-	-	0.053
HCM Control Delay (s)	10.4	-	-	-	10.8
HCM Lane LOS	B	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	59	538	10	6	564	59	18	4	1	33	0	36
Future Volume (vph)	59	538	10	6	564	59	18	4	1	33	0	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	240		0	240		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	80			80			25			25		
Satd. Flow (prot)	1770	3529	0	1770	3490	0	0	1783	0	0	1693	0
Flt Permitted	0.950			0.950				0.733			0.835	
Satd. Flow (perm)	1770	3529	0	1770	3490	0	0	1359	0	0	1447	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			21			1			119	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		703			914			392			415	
Travel Time (s)		16.0			20.8			8.9			9.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	64	596	0	7	677	0	0	25	0	0	75	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2			6		
Total Split (s)	10.0	23.0		9.5	22.5		22.5	22.5		22.5	22.5	
Total Lost Time (s)	4.5	4.5		4.5	4.5			4.5			4.5	
Act Effct Green (s)	6.0	14.6		5.4	13.0			6.5			6.5	
Actuated g/C Ratio	0.19	0.45		0.17	0.40			0.20			0.20	
v/c Ratio	0.20	0.37		0.02	0.48			0.09			0.19	
Control Delay	17.1	6.8		16.7	8.8			15.3			3.4	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	17.1	6.8		16.7	8.8			15.3			3.4	
LOS	B	A		B	A			B			A	
Approach Delay		7.8			8.9			15.3			3.4	
Approach LOS		A			A			B			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 55			
Actuated Cycle Length: 32.3			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.48			
Intersection Signal Delay: 8.2		Intersection LOS: A	
Intersection Capacity Utilization 37.1%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 9: Buena Vista Dr/Center Site Access & E Atherton Dr



Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↱			↑↱				↱			↱
Traffic Vol, veh/h	0	560	12	0	615	15	0	0	2	0	0	12
Future Vol, veh/h	0	560	12	0	615	15	0	0	2	0	0	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	609	13	0	668	16	0	0	2	0	0	13

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	-	-	0	-	-	311	-	-	342
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	0	-	-	0	0	685	0	0	654
Stage 1	0	-	-	0	-	-	0	0	-	0	0	-
Stage 2	0	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	685	-	-	654
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	10.3	10.6
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	685	-	-	-	-	654
HCM Lane V/C Ratio	0.003	-	-	-	-	0.02
HCM Control Delay (s)	10.3	-	-	-	-	10.6
HCM Lane LOS	B	-	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	-	0.1

Appendix D Queue Reports

Intersection: 1: S Main St & Mission Ridge Dr/Industrial Park Dr

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	L	T	R	L	T	R	UL	L	T	TR	UL
Maximum Queue (ft)	43	108	103	74	140	108	49	122	124	139	204	136
Average Queue (ft)	3	48	48	38	91	36	24	73	56	77	127	69
95th Queue (ft)	29	95	90	65	139	88	47	120	106	133	201	122
Link Distance (ft)		483	483			743	743			733	733	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	130			130	120			150	150			135
Storage Blk Time (%)	0	0	0		4			0	0	0		1
Queuing Penalty (veh)	0	0	0		2			1	0	0		2

Intersection: 1: S Main St & Mission Ridge Dr/Industrial Park Dr

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (ft)	133	116
Average Queue (ft)	69	71
95th Queue (ft)	124	114
Link Distance (ft)	391	391
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)	0	
Queuing Penalty (veh)	0	

Intersection: 2: S Main St & SR 120 WB Ramps

Movement	WB	NB	NB	SB	SB
Directions Served	LT	L	T	T	R
Maximum Queue (ft)	92	172	158	179	130
Average Queue (ft)	44	101	76	92	71
95th Queue (ft)	81	154	150	162	120
Link Distance (ft)	913		1440	733	733
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		190			
Storage Blk Time (%)	0	0	0		
Queuing Penalty (veh)	0	1	0		

Existing Conditions - AM Peak Hour

Intersection: 3: S Main St & SR 120 EB Ramps

Movement	EB	EB	NB	SB	SB
Directions Served	LT	R	TR	L	T
Maximum Queue (ft)	336	220	240	177	183
Average Queue (ft)	209	53	219	104	81
95th Queue (ft)	314	158	278	176	159
Link Distance (ft)	706		225		1440
Upstream Blk Time (%)			18		
Queuing Penalty (veh)			143		
Storage Bay Dist (ft)		190		185	
Storage Blk Time (%)	14			1	0
Queuing Penalty (veh)	25			3	0

Intersection: 4: S Main St & Quintal Rd

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	30	18	316	15
Average Queue (ft)	3	2	158	1
95th Queue (ft)	19	15	380	15
Link Distance (ft)	326	307	381	225
Upstream Blk Time (%)			2	
Queuing Penalty (veh)			13	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: S Main St & E Atherton Dr

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	B17	SB	SB
Directions Served	L	T	T	R	L	T	TR	L	TR	T	L	T
Maximum Queue (ft)	146	68	38	29	29	90	121	174	336	12	85	205
Average Queue (ft)	78	29	13	11	4	56	62	60	186	1	45	113
95th Queue (ft)	142	64	36	31	22	86	105	146	391	12	84	203
Link Distance (ft)		787	787			897	897		640	502		381
Upstream Blk Time (%)									1			
Queuing Penalty (veh)									6			
Storage Bay Dist (ft)	460			125	340			150			220	
Storage Blk Time (%)									14			0
Queuing Penalty (veh)									10			1

Intersection: 5: S Main St & E Atherton Dr

Movement	SB
Directions Served	R
Maximum Queue (ft)	58
Average Queue (ft)	27
95th Queue (ft)	56
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	290
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 6: S Main St & E Woodward Ave

Movement	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	T	R	L	TR	UL	TR
Maximum Queue (ft)	66	91	47	79	62	146	267	118	182
Average Queue (ft)	26	47	21	42	39	64	116	40	88
95th Queue (ft)	56	81	44	74	61	137	227	91	148
Link Distance (ft)		672		1645	1645		434		502
Upstream Blk Time (%)							0		
Queuing Penalty (veh)							0		
Storage Bay Dist (ft)	40		180			140		150	
Storage Blk Time (%)	2	10				0	7		2
Queuing Penalty (veh)	3	4				1	14		2

Existing Conditions - AM Peak Hour

Intersection: 7: Buena Vista Dr & E Woodward Ave

Movement	EB	WB	NB	NB	SB
Directions Served	L	L	LT	R	LTR
Maximum Queue (ft)	20	39	66	54	30
Average Queue (ft)	2	12	34	34	16
95th Queue (ft)	13	36	59	50	40
Link Distance (ft)			261		241
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	150	150		100	
Storage Blk Time (%)			0		
Queuing Penalty (veh)			0		

Network Summary

Network wide Queuing Penalty: 233

Intersection: 1: S Main St & Mission Ridge Dr/Industrial Park Dr

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	L	T	R	L	T	R	UL	L	T	TR	UL
Maximum Queue (ft)	60	132	138	110	144	215	78	172	186	262	264	177
Average Queue (ft)	9	69	77	48	101	98	34	119	127	134	156	113
95th Queue (ft)	47	121	136	92	154	198	67	192	215	301	259	186
Link Distance (ft)		483	483			743	743			733	733	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	130			130	120			150	150			135
Storage Blk Time (%)	0	1	1		8	2		15	12	1		19
Queuing Penalty (veh)	0	1	2		10	5		34	27	2		48

Intersection: 1: S Main St & Mission Ridge Dr/Industrial Park Dr

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (ft)	227	229
Average Queue (ft)	136	140
95th Queue (ft)	224	227
Link Distance (ft)	391	391
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)	6	
Queuing Penalty (veh)	7	

Intersection: 2: S Main St & SR 120 WB Ramps

Movement	WB	NB	NB	SB	SB
Directions Served	LT	L	T	T	R
Maximum Queue (ft)	131	157	166	289	181
Average Queue (ft)	73	91	94	153	91
95th Queue (ft)	117	145	167	265	164
Link Distance (ft)	913		1440	733	733
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		190			
Storage Blk Time (%)	2	0	0		
Queuing Penalty (veh)	4	1	0		

Intersection: 3: S Main St & SR 120 EB Ramps

Movement	EB	EB	NB	SB	SB
Directions Served	LT	R	TR	L	T
Maximum Queue (ft)	436	309	238	218	266
Average Queue (ft)	221	156	200	97	154
95th Queue (ft)	374	295	270	186	255
Link Distance (ft)	706		225		1440
Upstream Blk Time (%)			7		
Queuing Penalty (veh)			42		
Storage Bay Dist (ft)		190		185	
Storage Blk Time (%)	12	3		1	4
Queuing Penalty (veh)	48	15		4	5

Intersection: 4: S Main St & Quintal Rd

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	ULTR	LTR
Maximum Queue (ft)	32	18	135	15
Average Queue (ft)	5	1	38	1
95th Queue (ft)	22	12	124	15
Link Distance (ft)	326	307	381	225
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: S Main St & E Atherton Dr

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	T	T	R	L	T	TR	L	TR	L	T	R
Maximum Queue (ft)	98	106	55	74	35	102	93	92	218	238	286	168
Average Queue (ft)	58	41	17	23	13	62	54	29	131	105	176	48
95th Queue (ft)	94	86	45	60	38	100	92	74	205	203	272	124
Link Distance (ft)		787	787			897	897		640		381	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	460			125	340			150		220		290
Storage Blk Time (%)									5	1	3	0
Queuing Penalty (veh)									2	9	10	0

Existing Conditions - PM Peak Hour

Intersection: 6: S Main St & E Woodward Ave

Movement	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	T	R	L	TR	L	TR
Maximum Queue (ft)	77	134	43	76	73	51	155	174	337
Average Queue (ft)	24	65	18	43	36	28	84	113	151
95th Queue (ft)	60	117	40	72	63	47	146	198	304
Link Distance (ft)		672		1645	1645		434		502
Upstream Blk Time (%)									0
Queuing Penalty (veh)									1
Storage Bay Dist (ft)	40		180			140		150	
Storage Blk Time (%)	2	25					2	6	8
Queuing Penalty (veh)	4	7					1	22	23

Intersection: 7: Buena Vista Dr & E Woodward Ave

Movement	EB	EB	WB	NB	NB	SB
Directions Served	L	TR	L	LT	R	LTR
Maximum Queue (ft)	24	3	53	44	53	30
Average Queue (ft)	3	0	18	22	24	10
95th Queue (ft)	16	3	44	47	51	32
Link Distance (ft)		1645		261		241
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	150		150		100	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Network Summary

Network wide Queuing Penalty: 334

Intersection: 1: S Main St & Mission Ridge Dr/Industrial Park Dr

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	L	T	R	L	T	R	UL	L	T	TR	UL
Maximum Queue (ft)	30	111	105	72	133	147	53	117	116	154	202	125
Average Queue (ft)	3	48	52	39	90	44	26	62	59	86	128	63
95th Queue (ft)	18	98	98	67	143	108	51	107	106	145	196	110
Link Distance (ft)		483	483			743	743			733	733	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	130			130	120			150	150			135
Storage Blk Time (%)		0	0		6	0		0	0	0		0
Queuing Penalty (veh)		0	0		3	0		0	0	1		1

Intersection: 1: S Main St & Mission Ridge Dr/Industrial Park Dr

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (ft)	137	132
Average Queue (ft)	79	78
95th Queue (ft)	135	127
Link Distance (ft)	391	391
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)	0	
Queuing Penalty (veh)	0	

Intersection: 2: S Main St & SR 120 WB Ramps

Movement	WB	NB	NB	SB	SB
Directions Served	LT	L	T	T	R
Maximum Queue (ft)	96	191	172	190	143
Average Queue (ft)	45	121	76	99	75
95th Queue (ft)	83	183	155	171	136
Link Distance (ft)	913		1440	733	733
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		190			
Storage Blk Time (%)	0	0	0		
Queuing Penalty (veh)	1	3	0		

Existing Plus Project - AM Peak Hour

Intersection: 3: S Main St & SR 120 EB Ramps

Movement	EB	EB	NB	NB	SB	SB
Directions Served	LT	R	T	R	L	T
Maximum Queue (ft)	474	309	242	71	204	217
Average Queue (ft)	252	90	179	30	118	96
95th Queue (ft)	448	252	273	63	212	201
Link Distance (ft)	706		224	224		1440
Upstream Blk Time (%)			5			
Queuing Penalty (veh)			23			
Storage Bay Dist (ft)		190			185	
Storage Blk Time (%)	21				5	0
Queuing Penalty (veh)	44				17	0

Intersection: 4: S Main St & Quintal Rd

Movement	EB	WB	NB	NB
Directions Served	R	R	T	T
Maximum Queue (ft)	23	50	189	69
Average Queue (ft)	3	23	37	5
95th Queue (ft)	17	47	149	70
Link Distance (ft)	326	284	382	382
Upstream Blk Time (%)			0	
Queuing Penalty (veh)			0	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: S Main St & E Atherton Dr

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	T	T	R	UL	T	TR	L	TR	UL	T	R
Maximum Queue (ft)	133	88	43	24	57	110	190	174	310	147	217	58
Average Queue (ft)	74	35	10	11	19	54	104	72	184	83	118	26
95th Queue (ft)	133	72	32	27	50	102	177	164	293	138	199	56
Link Distance (ft)		787	787			873	873		640		382	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	460			125	340			150		250		290
Storage Blk Time (%)									13		0	
Queuing Penalty (veh)									9		0	

Intersection: 6: S Main St & E Woodward Ave

Movement	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	T	R	L	TR	UL	TR
Maximum Queue (ft)	52	79	54	73	53	135	234	153	196
Average Queue (ft)	24	46	20	38	35	61	108	45	98
95th Queue (ft)	48	74	45	65	51	122	195	108	177
Link Distance (ft)		672		1645	1645		434		502
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	40		180			140		150	
Storage Blk Time (%)	2	10				0	5	0	3
Queuing Penalty (veh)	3	4				0	10	0	3

Intersection: 7: Buena Vista Dr & E Woodward Ave

Movement	EB	EB	WB	NB	NB	SB
Directions Served	L	TR	L	LT	R	LTR
Maximum Queue (ft)	9	3	52	73	64	53
Average Queue (ft)	1	0	18	37	35	23
95th Queue (ft)	7	3	44	66	54	49
Link Distance (ft)		1645		261		241
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	150		150		100	
Storage Blk Time (%)				0	0	
Queuing Penalty (veh)				0	0	

Intersection: 8: E Atherton Dr & West Site Access

Movement	NB	SB
Directions Served	R	R
Maximum Queue (ft)	12	56
Average Queue (ft)	1	27
95th Queue (ft)	9	51
Link Distance (ft)	215	312
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Existing Plus Project - AM Peak Hour

Intersection: 9: Buena Vista Dr/Center Site Access & E Atherton Dr

Movement	EB	EB	EB	WB	WB	WB	NB	SB
Directions Served	L	T	TR	L	T	TR	LTR	LTR
Maximum Queue (ft)	31	58	59	15	62	80	43	62
Average Queue (ft)	13	27	32	2	33	36	13	28
95th Queue (ft)	37	52	64	13	57	68	41	56
Link Distance (ft)		625	625		844	844	346	363
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	240			140				
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 10: East Site Access & E Atherton Dr

Movement	NB	SB
Directions Served	R	R
Maximum Queue (ft)	27	35
Average Queue (ft)	3	15
95th Queue (ft)	16	40
Link Distance (ft)	156	181
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 123

Intersection: 4: S Main St & Quintal Rd

Movement	EB	WB	NB	SB
Directions Served	R	R	T	L
Maximum Queue (ft)	24	59	159	42
Average Queue (ft)	4	26	32	13
95th Queue (ft)	21	55	119	40
Link Distance (ft)	326	284	382	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				150
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 1: S Main St & Mission Ridge Dr/Industrial Park Dr

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	L	T	R	L	T	R	UL	L	T	TR	UL
Maximum Queue (ft)	49	139	151	89	144	237	66	176	189	185	258	154
Average Queue (ft)	5	72	80	49	107	100	31	104	103	99	145	87
95th Queue (ft)	33	126	140	82	157	208	59	166	168	176	243	154
Link Distance (ft)		483	483			743	743			733	733	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	130			130	120			150	150			135
Storage Blk Time (%)	0	1	1		11	4		3	3	1		7
Queuing Penalty (veh)	0	1	1		13	7		7	6	3		18

Intersection: 1: S Main St & Mission Ridge Dr/Industrial Park Dr

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (ft)	207	222
Average Queue (ft)	120	138
95th Queue (ft)	199	222
Link Distance (ft)	391	391
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)	5	
Queuing Penalty (veh)	5	

Intersection: 2: S Main St & SR 120 WB Ramps

Movement	WB	NB	NB	SB	SB
Directions Served	LT	L	T	T	R
Maximum Queue (ft)	142	218	236	243	190
Average Queue (ft)	81	139	120	146	109
95th Queue (ft)	137	212	229	248	183
Link Distance (ft)	913		1440	733	733
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		190			
Storage Blk Time (%)	4	3	1		
Queuing Penalty (veh)	8	26	2		

Existing Plus Project - PM Peak Hour

Intersection: 3: S Main St & SR 120 EB Ramps

Movement	EB	EB	NB	NB	SB	SB
Directions Served	LT	R	T	R	L	T
Maximum Queue (ft)	342	310	248	76	164	245
Average Queue (ft)	186	174	174	24	90	147
95th Queue (ft)	305	303	270	58	153	241
Link Distance (ft)	706		224	224		1440
Upstream Blk Time (%)			4			
Queuing Penalty (veh)			14			
Storage Bay Dist (ft)		190			185	
Storage Blk Time (%)	6	8			1	4
Queuing Penalty (veh)	29	33			3	4

Intersection: 4: S Main St & Quintal Rd

Movement	EB	WB	NB	SB
Directions Served	R	R	T	TR
Maximum Queue (ft)	30	46	106	95
Average Queue (ft)	4	19	19	10
95th Queue (ft)	20	45	79	66
Link Distance (ft)	326	284	382	224
Upstream Blk Time (%)				0
Queuing Penalty (veh)				2
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: S Main St & E Atherton Dr

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	T	T	R	UL	T	TR	L	TR	UL	T	R
Maximum Queue (ft)	176	118	68	62	58	121	210	131	289	308	371	265
Average Queue (ft)	92	56	23	28	19	59	126	46	192	222	197	66
95th Queue (ft)	164	108	57	57	47	107	213	122	292	326	354	208
Link Distance (ft)		787	787			873	873		640		382	
Upstream Blk Time (%)											1	
Queuing Penalty (veh)											6	
Storage Bay Dist (ft)	460			125	340			150		250		290
Storage Blk Time (%)									18	6	3	0
Queuing Penalty (veh)									8	46	15	0

Existing Plus Project - PM Peak Hour

Intersection: 6: S Main St & E Woodward Ave

Movement	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	T	R	L	TR	L	TR
Maximum Queue (ft)	59	128	38	69	62	73	167	174	307
Average Queue (ft)	20	67	19	42	34	30	93	103	128
95th Queue (ft)	53	114	40	68	54	72	174	180	251
Link Distance (ft)		672		1645	1645		434		502
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	40		180			140		150	
Storage Blk Time (%)	1	24					4	1	7
Queuing Penalty (veh)	3	7					3	5	18

Intersection: 7: Buena Vista Dr & E Woodward Ave

Movement	EB	EB	WB	NB	NB	SB
Directions Served	L	TR	L	LT	R	LTR
Maximum Queue (ft)	14	4	36	63	44	34
Average Queue (ft)	1	0	16	29	20	8
95th Queue (ft)	10	4	40	57	48	31
Link Distance (ft)		1645		261		241
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	150		150		100	
Storage Blk Time (%)				0		
Queuing Penalty (veh)				0		

Intersection: 8: E Atherton Dr & West Site Access

Movement	NB	SB
Directions Served	R	R
Maximum Queue (ft)	12	47
Average Queue (ft)	1	22
95th Queue (ft)	9	50
Link Distance (ft)	215	312
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Existing Plus Project - PM Peak Hour

Intersection: 9: Buena Vista Dr/Center Site Access & E Atherton Dr

Movement	EB	EB	EB	WB	WB	WB	NB	SB
Directions Served	L	T	TR	L	T	TR	LTR	LTR
Maximum Queue (ft)	58	72	83	24	73	90	34	53
Average Queue (ft)	31	31	44	3	34	47	10	25
95th Queue (ft)	61	68	79	16	64	79	34	49
Link Distance (ft)		625	625		844	844	346	363
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	240			140				
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 10: East Site Access & E Atherton Dr

Movement	NB	SB
Directions Served	R	R
Maximum Queue (ft)	11	30
Average Queue (ft)	1	8
95th Queue (ft)	10	31
Link Distance (ft)	156	181
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 297

Existing Plus Project (Access Alt 2) - PM Peak Hour

Intersection: 4: S Main St & Quintal Rd

Movement	EB	WB	NB	NB	SB	SB
Directions Served	R	R	T	R	L	TR
Maximum Queue (ft)	30	50	155	3	73	29
Average Queue (ft)	8	20	19	0	31	2
95th Queue (ft)	28	44	100	3	70	23
Link Distance (ft)	326	284	382	382		225
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)					150	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 1: S Main St & Mission Ridge Dr/Industrial Park Dr

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	L	T	R	L	T	R	UL	L	T	TR	UL
Maximum Queue (ft)	24	102	94	71	140	116	57	126	180	246	290	149
Average Queue (ft)	3	50	51	40	96	42	30	69	71	132	168	76
95th Queue (ft)	16	92	95	73	149	99	55	118	140	235	276	140
Link Distance (ft)		483	483			743	743			733	733	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	130			130	120			150	150			135
Storage Blk Time (%)		0		0	8	0		0		6		2
Queuing Penalty (veh)		0		0	4	0		0		13		4

Intersection: 1: S Main St & Mission Ridge Dr/Industrial Park Dr

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (ft)	183	160
Average Queue (ft)	94	89
95th Queue (ft)	166	150
Link Distance (ft)	391	391
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)	3	
Queuing Penalty (veh)	3	

Intersection: 2: S Main St & SR 120 WB Ramps

Movement	WB	WB	NB	NB	NB	SB	SB
Directions Served	LT	R	L	T	T	T	R
Maximum Queue (ft)	285	200	471	220	145	423	324
Average Queue (ft)	146	73	310	70	65	229	119
95th Queue (ft)	254	187	459	166	133	404	253
Link Distance (ft)	899		1413	1413	1413	733	733
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)		100					
Storage Blk Time (%)	23	2					
Queuing Penalty (veh)	54	4					

Intersection: 3: S Main St & SR 120 EB Ramps

Movement	EB	EB	NB	NB	NB	SB	SB	SB
Directions Served	LT	R	T	T	TR	L	T	T
Maximum Queue (ft)	318	221	234	226	248	158	140	215
Average Queue (ft)	186	94	138	147	172	84	60	103
95th Queue (ft)	276	177	219	227	252	146	130	209
Link Distance (ft)	694		238	238	238	1413	1413	1413
Upstream Blk Time (%)			0	0	1			
Queuing Penalty (veh)			1	0	5			
Storage Bay Dist (ft)		190						
Storage Blk Time (%)	6	0						
Queuing Penalty (veh)	22	1						

Intersection: 4: S Main St & Quintal Rd

Movement	EB	WB	NB
Directions Served	R	R	TR
Maximum Queue (ft)	44	24	43
Average Queue (ft)	28	4	5
95th Queue (ft)	46	20	31
Link Distance (ft)	296	276	380
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: S Main St & E Atherton Dr

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	T	TR	L	L	T	T	T
Maximum Queue (ft)	221	87	52	41	105	101	161	56	68	173	181	190
Average Queue (ft)	109	37	21	19	52	55	80	19	38	94	111	126
95th Queue (ft)	192	73	50	38	99	95	143	50	65	157	175	193
Link Distance (ft)		757	757			855	855			641	641	641
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	460			125	340			200	200			
Storage Blk Time (%)										0		
Queuing Penalty (veh)										0		

Intersection: 5: S Main St & E Atherton Dr

Movement	NB	SB	SB	SB	SB	SB	SB
Directions Served	R	L	L	T	T	T	R
Maximum Queue (ft)	62	84	113	158	170	141	99
Average Queue (ft)	25	32	60	71	99	67	52
95th Queue (ft)	53	74	96	138	171	127	89
Link Distance (ft)				380	380	380	
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	250	250	250				255
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 6: S Main St & E Woodward Ave

Movement	EB	EB	WB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	T	R	L	TR	L	T	R
Maximum Queue (ft)	95	638	110	126	107	165	474	202	329	137
Average Queue (ft)	91	437	43	69	48	150	441	129	176	57
95th Queue (ft)	103	773	98	124	90	192	522	210	319	123
Link Distance (ft)		658		1632	1632		434	501	501	501
Upstream Blk Time (%)		17					48			
Queuing Penalty (veh)		0					0			
Storage Bay Dist (ft)	40		180			140				
Storage Blk Time (%)	75	24				27	37			
Queuing Penalty (veh)	150	51				202	81			

Intersection: 7: Buena Vista Dr & E Woodward Ave

Movement	EB	WB	NB	NB	SB
Directions Served	L	L	LT	R	LTR
Maximum Queue (ft)	15	45	92	85	46
Average Queue (ft)	3	18	42	41	22
95th Queue (ft)	15	44	76	71	47
Link Distance (ft)			261		241
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	150	150		100	
Storage Blk Time (%)			0	0	
Queuing Penalty (veh)			0	0	

Network Summary

Network wide Queuing Penalty: 596

Intersection: 1: S Main St & Mission Ridge Dr/Industrial Park Dr

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	L	T	R	L	T	R	UL	L	T	TR	UL
Maximum Queue (ft)	115	152	167	144	144	294	62	164	220	406	405	212
Average Queue (ft)	16	91	88	70	114	128	33	105	141	213	239	105
95th Queue (ft)	79	156	152	127	164	268	62	167	244	374	387	212
Link Distance (ft)		483	483			743	743			733	733	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	130			130	120			150	150			135
Storage Blk Time (%)	0	3	3	0	14	6		4	2	19		3
Queuing Penalty (veh)	0	3	6	1	18	13		13	9	60		11

Intersection: 1: S Main St & Mission Ridge Dr/Industrial Park Dr

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (ft)	383	370
Average Queue (ft)	240	233
95th Queue (ft)	396	378
Link Distance (ft)	391	391
Upstream Blk Time (%)	3	3
Queuing Penalty (veh)	0	0
Storage Bay Dist (ft)		
Storage Blk Time (%)	29	
Queuing Penalty (veh)	35	

Intersection: 2: S Main St & SR 120 WB Ramps

Movement	WB	WB	NB	NB	NB	SB	SB
Directions Served	LT	R	L	T	T	T	R
Maximum Queue (ft)	529	200	687	371	271	664	492
Average Queue (ft)	268	132	447	122	103	428	215
95th Queue (ft)	461	266	828	309	218	702	498
Link Distance (ft)	899		1413	1413	1413	733	733
Upstream Blk Time (%)						1	0
Queuing Penalty (veh)						5	0
Storage Bay Dist (ft)		100					
Storage Blk Time (%)	48	6					
Queuing Penalty (veh)	115	19					

Intersection: 3: S Main St & SR 120 EB Ramps

Movement	EB	EB	NB	NB	NB	SB	SB	SB
Directions Served	LT	R	T	T	TR	L	T	T
Maximum Queue (ft)	615	310	189	217	249	186	215	251
Average Queue (ft)	334	212	110	132	166	99	128	175
95th Queue (ft)	627	356	175	202	252	181	200	251
Link Distance (ft)	694		238	238	238	1413	1413	1413
Upstream Blk Time (%)	2			0	1			
Queuing Penalty (veh)	0			0	5			
Storage Bay Dist (ft)		190						
Storage Blk Time (%)	18	8						
Queuing Penalty (veh)	110	51						

Intersection: 4: S Main St & Quintal Rd

Movement	EB	WB	NB	SB
Directions Served	R	R	TR	T
Maximum Queue (ft)	130	30	58	4
Average Queue (ft)	58	10	6	0
95th Queue (ft)	108	33	35	4
Link Distance (ft)	296	276	380	238
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: S Main St & E Atherton Dr

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	T	TR	L	L	T	T	T
Maximum Queue (ft)	308	134	89	85	148	143	160	44	63	122	148	154
Average Queue (ft)	176	65	45	35	84	83	90	20	33	62	79	92
95th Queue (ft)	295	119	90	70	148	140	154	47	62	121	147	160
Link Distance (ft)		757	757			855	855			641	641	641
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	460			125	340			200	200			
Storage Blk Time (%)			0	0								
Queuing Penalty (veh)			0	0								

Intersection: 5: S Main St & E Atherton Dr

Movement	NB	SB	SB	SB	SB	SB	SB
Directions Served	R	L	L	T	T	T	R
Maximum Queue (ft)	42	114	124	227	246	197	217
Average Queue (ft)	17	62	83	144	161	119	94
95th Queue (ft)	41	112	125	226	255	197	176
Link Distance (ft)				380	380	380	
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	250	250	250				255
Storage Blk Time (%)				0		0	0
Queuing Penalty (veh)				0		0	0

Intersection: 6: S Main St & E Woodward Ave

Movement	EB	EB	WB	WB	WB	NB	NB	SB	SB	SB	B17	B17
Directions Served	L	TR	L	T	R	L	TR	L	T	R	T	T
Maximum Queue (ft)	95	412	62	140	76	164	388	401	541	137	9	20
Average Queue (ft)	79	215	23	72	39	97	209	250	319	60	1	1
95th Queue (ft)	111	395	56	126	70	180	354	449	553	127	11	12
Link Distance (ft)		658		1632	1632		434	501	501	501	641	641
Upstream Blk Time (%)							1	1	2			
Queuing Penalty (veh)							0	3	7			
Storage Bay Dist (ft)	40		180			140						
Storage Blk Time (%)	55	43				2	24					
Queuing Penalty (veh)	176	60				7	24					

Intersection: 7: Buena Vista Dr & E Woodward Ave

Movement	EB	EB	WB	NB	NB	SB
Directions Served	L	TR	L	LT	R	LTR
Maximum Queue (ft)	14	17	65	59	39	35
Average Queue (ft)	1	1	20	30	25	18
95th Queue (ft)	10	9	50	56	47	43
Link Distance (ft)		1632		261		241
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	150		150		100	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Network Summary

Network wide Queuing Penalty: 752

Intersection: 1: S Main St & Mission Ridge Dr/Industrial Park Dr

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	L	T	R	L	T	R	UL	L	T	TR	UL
Maximum Queue (ft)	61	132	98	71	135	129	65	125	172	286	310	153
Average Queue (ft)	7	58	50	38	96	44	28	63	72	149	182	81
95th Queue (ft)	43	111	93	65	146	107	56	111	146	252	288	143
Link Distance (ft)		483	483			743	743			733	733	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	130			130	120			150	150			135
Storage Blk Time (%)	0	1	0		7	0		0		8		1
Queuing Penalty (veh)	0	0	0		3	0		1		18		3

Intersection: 1: S Main St & Mission Ridge Dr/Industrial Park Dr

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (ft)	211	217
Average Queue (ft)	105	101
95th Queue (ft)	179	198
Link Distance (ft)	391	391
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)	3	
Queuing Penalty (veh)	3	

Intersection: 2: S Main St & SR 120 WB Ramps

Movement	WB	WB	NB	NB	NB	SB	SB
Directions Served	LT	R	L	T	T	T	R
Maximum Queue (ft)	228	164	516	260	244	432	224
Average Queue (ft)	127	46	325	86	82	255	118
95th Queue (ft)	205	131	507	210	198	413	206
Link Distance (ft)	899		1413	1413	1413	733	733
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)		100					
Storage Blk Time (%)	17	1					
Queuing Penalty (veh)	40	3					

Intersection: 3: S Main St & SR 120 EB Ramps

Movement	EB	EB	NB	NB	NB	SB	SB	SB
Directions Served	LT	R	T	T	TR	L	T	T
Maximum Queue (ft)	302	248	218	225	249	128	174	188
Average Queue (ft)	195	118	136	141	183	79	73	97
95th Queue (ft)	305	238	215	230	271	133	153	173
Link Distance (ft)	694		238	238	238	1413	1413	1413
Upstream Blk Time (%)			0	0	2			
Queuing Penalty (veh)			0	1	10			
Storage Bay Dist (ft)		190						
Storage Blk Time (%)	9	0						
Queuing Penalty (veh)	38	2						

Intersection: 4: S Main St & Quintal Rd

Movement	EB	WB	NB	NB
Directions Served	R	R	T	TR
Maximum Queue (ft)	51	64	15	75
Average Queue (ft)	28	31	1	12
95th Queue (ft)	52	58	12	61
Link Distance (ft)	296	276	380	380
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: S Main St & E Atherton Dr

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	NB
Directions Served	L	T	T	R	UL	T	TR	L	L	T	T	T
Maximum Queue (ft)	184	106	48	58	153	137	239	44	71	168	198	217
Average Queue (ft)	110	46	19	18	72	66	137	19	39	109	125	140
95th Queue (ft)	176	97	46	42	136	124	222	46	71	165	189	213
Link Distance (ft)		757	757			835	835			641	641	641
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	460			125	340			200	200			
Storage Blk Time (%)										0		0
Queuing Penalty (veh)										0		0

Intersection: 5: S Main St & E Atherton Dr

Movement	NB	SB	SB	SB	SB	SB	SB
Directions Served	R	UL	L	T	T	T	R
Maximum Queue (ft)	70	110	129	136	189	132	89
Average Queue (ft)	32	57	70	70	98	74	48
95th Queue (ft)	61	103	118	127	168	129	80
Link Distance (ft)				380	380	380	
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	250	250	250				255
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 6: S Main St & E Woodward Ave

Movement	EB	EB	WB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	T	R	L	TR	L	T	R
Maximum Queue (ft)	94	604	86	178	110	165	469	240	361	112
Average Queue (ft)	92	498	32	82	56	156	452	145	187	60
95th Queue (ft)	102	850	75	158	99	183	463	237	335	121
Link Distance (ft)		658		1632	1632		434	501	501	501
Upstream Blk Time (%)		40					55			
Queuing Penalty (veh)		0					0			
Storage Bay Dist (ft)	40		180			140				
Storage Blk Time (%)	78	20		1		34	35			
Queuing Penalty (veh)	156	43		1		250	77			

Intersection: 7: Buena Vista Dr & E Woodward Ave

Movement	EB	EB	WB	NB	NB	SB
Directions Served	L	TR	L	LT	R	LTR
Maximum Queue (ft)	10	11	61	66	66	46
Average Queue (ft)	1	1	20	39	35	22
95th Queue (ft)	9	6	50	64	61	48
Link Distance (ft)		1632		261		241
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	150		150		100	
Storage Blk Time (%)					0	
Queuing Penalty (veh)					0	

Intersection: 8: E Atherton Dr & West Site Access

Movement	NB	SB
Directions Served	R	R
Maximum Queue (ft)	6	45
Average Queue (ft)	0	27
95th Queue (ft)	6	50
Link Distance (ft)	229	292
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 9: Buena Vista Dr/Center Site Access & E Atherton Dr

Movement	EB	EB	EB	WB	WB	WB	NB	SB
Directions Served	L	T	TR	L	T	TR	LTR	LTR
Maximum Queue (ft)	39	80	79	20	91	97	46	76
Average Queue (ft)	15	32	49	4	43	47	12	34
95th Queue (ft)	41	69	80	19	78	84	39	68
Link Distance (ft)		646	646		844	844	346	363
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	240			240				
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 10: East Site Access & E Atherton Dr

Movement	NB	SB
Directions Served	R	R
Maximum Queue (ft)	16	30
Average Queue (ft)	1	13
95th Queue (ft)	10	37
Link Distance (ft)	156	181
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 649

Intersection: 4: S Main St & Quintal Rd

Movement	EB	WB	NB	NB	SB
Directions Served	R	R	T	TR	L
Maximum Queue (ft)	62	82	24	76	58
Average Queue (ft)	32	33	2	9	17
95th Queue (ft)	55	73	14	48	48
Link Distance (ft)	296	276	380	380	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					150
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 1: S Main St & Mission Ridge Dr/Industrial Park Dr

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	L	T	R	L	T	R	UL	L	T	TR	UL
Maximum Queue (ft)	92	150	171	121	144	355	198	180	220	446	439	234
Average Queue (ft)	11	84	95	60	117	171	50	133	164	271	282	142
95th Queue (ft)	59	142	163	102	167	426	237	200	267	492	465	275
Link Distance (ft)		483	483			743	743			733	733	
Upstream Blk Time (%)						3	0					
Queuing Penalty (veh)						0	0					
Storage Bay Dist (ft)	130			130	120			150	150			135
Storage Blk Time (%)	0	2	3	0	24	7		18	16	18		7
Queuing Penalty (veh)	0	1	7	1	31	14		68	60	59		29

Intersection: 1: S Main St & Mission Ridge Dr/Industrial Park Dr

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (ft)	395	397
Average Queue (ft)	291	290
95th Queue (ft)	446	445
Link Distance (ft)	391	391
Upstream Blk Time (%)	14	12
Queuing Penalty (veh)	0	0
Storage Bay Dist (ft)		
Storage Blk Time (%)	45	
Queuing Penalty (veh)	53	

Intersection: 2: S Main St & SR 120 WB Ramps

Movement	WB	WB	NB	NB	NB	SB	SB
Directions Served	LT	R	L	T	T	T	R
Maximum Queue (ft)	736	200	824	509	413	738	643
Average Queue (ft)	439	162	604	198	161	608	352
95th Queue (ft)	861	267	1039	488	362	853	743
Link Distance (ft)	899		1413	1413	1413	733	733
Upstream Blk Time (%)	6					5	1
Queuing Penalty (veh)	0					36	8
Storage Bay Dist (ft)		100					
Storage Blk Time (%)	57	6					
Queuing Penalty (veh)	138	24					

Intersection: 3: S Main St & SR 120 EB Ramps

Movement	EB	EB	NB	NB	NB	SB	SB	SB
Directions Served	LT	R	T	T	TR	L	T	T
Maximum Queue (ft)	728	310	232	255	264	221	242	255
Average Queue (ft)	479	280	151	168	197	121	159	187
95th Queue (ft)	816	377	225	243	271	214	241	271
Link Distance (ft)	694		238	238	238	1413	1413	1413
Upstream Blk Time (%)	8		0	1	3			
Queuing Penalty (veh)	0		1	4	13			
Storage Bay Dist (ft)		190						
Storage Blk Time (%)	19	25						
Queuing Penalty (veh)	131	163						

Intersection: 4: S Main St & Quintal Rd

Movement	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	R	R	T	T	TR	T	T	TR
Maximum Queue (ft)	136	60	11	35	83	50	27	11
Average Queue (ft)	64	25	1	3	13	3	2	1
95th Queue (ft)	117	56	8	24	55	40	28	11
Link Distance (ft)	296	276	380	380	380	238	238	238
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)								
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 5: S Main St & E Atherton Dr

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	NB
Directions Served	L	T	T	R	UL	T	TR	L	L	T	T	T
Maximum Queue (ft)	340	139	126	98	168	199	243	56	64	155	182	192
Average Queue (ft)	206	69	48	38	94	94	154	19	30	81	106	127
95th Queue (ft)	330	124	101	79	157	167	242	48	59	142	173	189
Link Distance (ft)		757	757			835	835			641	641	641
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	460			125	340			200	200			
Storage Blk Time (%)	0		1	0								
Queuing Penalty (veh)	0		1	0								

Intersection: 5: S Main St & E Atherton Dr

Movement	NB	SB	SB	SB	SB	SB	SB
Directions Served	R	UL	L	T	T	T	R
Maximum Queue (ft)	47	211	273	330	338	268	223
Average Queue (ft)	21	144	151	180	200	146	100
95th Queue (ft)	39	214	235	291	313	251	182
Link Distance (ft)				380	380	380	
Upstream Blk Time (%)				0	0	0	
Queuing Penalty (veh)				2	1	0	
Storage Bay Dist (ft)	250	250	250				255
Storage Blk Time (%)		0	0	2		0	
Queuing Penalty (veh)		0	1	7		0	

Intersection: 6: S Main St & E Woodward Ave

Movement	EB	EB	WB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	T	R	L	TR	L	T	R
Maximum Queue (ft)	94	313	65	139	85	165	432	366	501	167
Average Queue (ft)	77	185	23	74	41	121	254	233	287	63
95th Queue (ft)	114	312	56	132	74	203	423	366	504	144
Link Distance (ft)		658		1632	1632		434	501	501	501
Upstream Blk Time (%)							1		1	
Queuing Penalty (veh)							0		3	
Storage Bay Dist (ft)	40		180			140				
Storage Blk Time (%)	53	41		0		5	31			
Queuing Penalty (veh)	171	58		0		21	31			

Intersection: 7: Buena Vista Dr & E Woodward Ave

Movement	EB	EB	WB	NB	NB	SB
Directions Served	L	TR	L	LT	R	LTR
Maximum Queue (ft)	20	4	67	65	51	38
Average Queue (ft)	2	1	23	32	24	16
95th Queue (ft)	12	6	55	60	52	41
Link Distance (ft)		1632		261		241
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	150		150		100	
Storage Blk Time (%)				0		
Queuing Penalty (veh)				0		

Intersection: 8: E Atherton Dr & West Site Access

Movement	NB	SB
Directions Served	R	R
Maximum Queue (ft)	6	47
Average Queue (ft)	1	24
95th Queue (ft)	7	49
Link Distance (ft)	229	292
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 9: Buena Vista Dr/Center Site Access & E Atherton Dr

Movement	EB	EB	EB	WB	WB	WB	NB	SB
Directions Served	L	T	TR	L	T	TR	LTR	LTR
Maximum Queue (ft)	73	88	112	20	105	121	39	61
Average Queue (ft)	34	38	61	3	59	64	14	25
95th Queue (ft)	66	82	105	16	103	113	41	52
Link Distance (ft)		646	646		844	844	346	363
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	240			240				
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 10: East Site Access & E Atherton Dr

Movement	NB	SB
Directions Served	R	R
Maximum Queue (ft)	16	30
Average Queue (ft)	1	8
95th Queue (ft)	11	31
Link Distance (ft)	156	181
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 1134

Intersection: 4: S Main St & Quintal Rd

Movement	EB	WB	NB	NB	SB	SB	SB
Directions Served	R	R	T	TR	L	T	TR
Maximum Queue (ft)	130	69	5	49	80	4	4
Average Queue (ft)	53	28	0	9	43	0	0
95th Queue (ft)	118	60	5	52	78	4	4
Link Distance (ft)	296	276	380	380		238	238
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)					150		
Storage Blk Time (%)							
Queuing Penalty (veh)							

Appendix E VMT Analysis Technical Memorandum

Memorandum

Date: February 9, 2023

To: Sandhya Perumalla, Stantec

From: Albee Wei and Fred Choa, P.E., Fehr & Peers

Subject: 144-490 Quintal Road Project VMT Analysis Technical Memorandum

RS22-4223

Introduction

This technical memorandum presents results of the Vehicle Miles Traveled (VMT) analysis for the 144-490 Quintal Road Project in Manteca, CA. The analysis methodology and threshold of significance were reviewed and selected by the City of Manteca Community Development Department staff. Information presented in this memo is intended for use in planning and environmental review efforts for the 144-490 Quintal Road Project.

Project Description

The Project site includes approximately 59.19 acres located in the central portion of the City of Manteca, south of State Route 120, in Manteca, California. The Project site is identified as Assessor's Parcel Numbers (APNs) 224-040-06, -07, -11, and -52, by the San Joaquin County Assessor's Office. The Project site is bisected by E. Atherton Drive, roughly bound by SR 120 on the north, S. Main Street to the west, and existing single-family residential neighborhood to the south and east. **Attachment A** shows the project site location and site plan.

The Project involves the entitlement of the APNs above to allow 818 residential dwelling units consisting of 672 multifamily for-rent apartments, 48 for-sale duplexes, and 98 single family for-sale homes. The Project also includes land dedicated for an approximately 1.93-acre public open space and associated parking located adjacent to the residential developments and other amenities such as a dog park, game lawn, and club house. Additionally, the Project would construct improvements to adjacent streets, on- and off-site utility infrastructure, parking, driveways, frontage improvements, landscaping, and a detention basin.

The Project's residential units and amenities can be accessed by four driveways along E. Atherton Drive (two driveways on the north side of E. Atherton Drive and two driveways on the south side), a gated driveway on Quintal Road, and an extension of Buena Vista Drive that will be constructed as part of the Project.

Vehicle Miles Traveled

This chapter describes the significance criteria and the methodology used to evaluate project impacts related to vehicle miles traveled (VMT).

Applicable Policies and Significance Criteria

Vehicle Miles Traveled

The City of Manteca is in the process of developing guidelines for transportation impact analysis. By City's direction, for the purpose of this study, methodology and thresholds identified in the *Transportation Impact Analysis Guidelines* (TIA Guidelines) (City of Manteca, July 2022) will be applied.

The TIA Guidelines identify VMT per dwelling unit as the VMT metric for residential land uses. VMT per dwelling unit includes VMT associated with trips produced by a dwelling unit's residents, such as to work, school, or shop, and with one end of the trip at the home, on a typical weekday. By the City's direction, the City of Manteca General Plan Update travel forecasting model was used to develop baseline and cumulative (General Plan Buildout) VMT per dwelling unit.

The TIA Guidelines identify a threshold of 15 percent below baseline city-wide average VMT of the project's land use category. For single-family residential projects, the baseline city-wide VMT is 103.8 VMT per dwelling unit. Therefore, single-family projects that exceeds 85 percent of the baseline, or 88.2 VMT per dwelling unit, may be considered to have a significant VMT impact. For multi-family residential projects, the baseline city-wide VMT is 78.6 VMT per dwelling unit. Therefore, multi-family projects that exceeds 85 percent of the baseline, or 66.8 VMT per dwelling unit, may be considered to have a significant VMT impact.

The TIA Guidelines states that, "due to the timing issues involved with development, it is foreseeable that under a project only scenario, a project may exceed threshold levels. As development occurs around the project, the project may assist the City in achieving cumulative VMT reduction goals. In these cases, the project is considered consistent with the City's VMT reduction goals." By the City's direction, the cumulative VMT per dwelling unit is compared to the baseline city-wide average VMT per dwelling unit for the VMT analysis.

VMT Analysis Methodology

As part of the City of Manteca General Plan Update project, Fehr & Peers developed the City of Manteca, Lathrop, and Ripon Travel Forecasting Model (TFM). The TFM is a modified version of the Three-County RTP/SCS Air Quality Conformity Model, with improvements to all major

components focused on this three-city area. Each scenario of the TFM used for VMT forecasting is described below.

Base Year (2019) TFM

The Base Year TFM developed for the General Plan Update was used to develop baseline (2019) city-wide average weekday daily VMT estimates per single-family and multi-family dwelling unit. The base year TFM uses land use input data in the form of dwelling units (single-family and multi-family) and employment (food, retail, office, industrial, medical, government, and school). For the transportation network, the base year TFM uses roadway network lanes, speed, and capacity class as inputs. The TFM Trip generation rates were derived from the *Trip Generation Manual 10th Edition* (Institute of Transportation Engineers, 2017) and include appropriate inbound/outbound trip generation rates for residential and employment land uses for AM peak hour, PM peak hour, and daily conditions. The TFM was calibrated to reflect local trip distribution patterns for Internal-to-Internal Trips (II), Internal-to-External Trips (IX), External-to-Internal Trips (XI) and External-to-External (XX or Through) Trips based on a combination of the 2012 California Household Travel Survey (CHTS), the 2018 American Community Survey (ACS), and the California Statewide Travel Demand Model (CSTDM) to replicate the majority of vehicle trips to and from the west (San Francisco Bay Area) and a smaller percentage to and from the north (including Stockton and Sacramento) and to and from the south. For vehicle trips that occur beyond of the model's roadway network, an estimated average trip distance is applied to external gateway links to capture the vehicle miles traveled for the entire journey.

For the Existing (Baseline) Project-Generated VMT analysis, the proposed Project was added to the base year model's land use (new single-family and multi-family dwelling units) and roadway network inputs (new driveway locations). The proposed Project is represented by a Traffic Analysis Zone (TAZ). The TFM applies the trip generation and distribution pattern as described above and outputs total daily VMT generated by the Project TAZ, for all trip purposes and for the entire journey's length.

Cumulative Current General Plan Buildout Scenario TFM

The Current General Plan Buildout Scenario TFM was used to estimate the Project's weekday daily home-based VMT per single-family and multi-family dwelling unit under cumulative Current General Plan Buildout conditions. This scenario of the TFM incorporates land use data (dwelling units and employment) and reflects the City's jobs-housing balance, II, IX, XI, and XX trips under cumulative conditions where the current City of Manteca General Plan is built out. This scenario also incorporates roadway network (lanes, speed, capacity class) based on the current City of Manteca General Plan, the City of Manteca Public Facilities Implementation Plan (PFIP), and the San Joaquin Council of Government (SJCOG) Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) Project List. For the VMT analysis, the TFM's land use and roadway network inputs were updated to reflect the project's proposed land use and driveway

locations. The proposed Project is represented by a TAZ. The TFM applies the trip generation and forecasted distribution pattern under the Current General Plan Buildout scenario and outputs total daily VMT generated by the Project TAZ, for all trip purposes and for the entire journey's length.

Cumulative Proposed General Plan (Alternative D) Buildout Scenario TFM

The City of Manteca is in the process of updating its General Plan, and the City has selected Alternative D to be the preferred General Plan alternative. The Proposed General Plan (Alternative D) Buildout Scenario TFM was used to forecast the Project's weekday daily home-based VMT per single-family and multi-family dwelling unit under cumulative Proposed General Plan (Alternative D) Buildout conditions. This scenario of the TFM incorporates land use data (dwelling units and employment) and reflects the City's jobs-housing balance, II, IX, XI, and XX trips under cumulative conditions where the proposed City of Manteca General Plan (Alternative D) is built out. This scenario also incorporates roadway network (lanes, speed, capacity class) based on the Proposed General Plan (Alternative D), the City of Manteca PFIP, and the SJCOG RTP/SCS Project List. For the VMT analysis, the TFM's land use and roadway network inputs were updated to reflect the project's proposed land use and driveway locations. The proposed Project is represented by a TAZ. The TFM applies the trip generation and forecasted distribution pattern under the Proposed General Plan (Alternative D) Buildout scenario and outputs total daily VMT generated by the Project TAZ, for all trip purposes and for the entire journey's length.

VMT Impact Analysis

The proposed Project would develop 672 multi-family apartments, 48 for-sale duplexes, and 98 for-sale single-family homes. For the purpose of the VMT analysis, all duplex units are categorized as single-family, as the trip generation characteristics of duplex homeowners are more like that of single-family homeowners than that of multi-family renters. **Table 1** presents the baseline city-wide VMT and threshold of significance for residential developments. As stated earlier in this chapter, the proposed Project would result in a significant transportation impact if it would generate VMT that exceeds 85 percent of the established baseline.

Table 1: Baseline City-wide VMT and Threshold of Significance for Residential Developments

Land Use	Units	2019 Baseline	Threshold of Significance
Single family residential	VMT per dwelling unit	103.8	88.2
Multi-family residential	VMT per dwelling unit	78.6	66.8
Age restricted residential	VMT per dwelling unit	44.1	37.5

Source: City of Manteca Travel Demand Model - Fehr & Peers, 2022

Table 2 presents the established baseline city-wide VMT and the Project generated VMT under baseline and cumulative conditions. VMT generated by the Project is compared to the baseline city-wide average VMT for the same housing type.

Table 2: Project Vehicle Miles Traveled Analysis – Project-Generated VMT

	Single-Family and Duplex		Multi-Family	
Scenario	**VMT per Single-Family Household**	**Compared to Baseline City-Wide Average**	**VMT per Multi-Family Household**	**Compared to Baseline City-Wide Average**
Existing (Baseline) City-Wide Average Without Project	103.8	-	78.6	-
Existing (Baseline) Project-Generated VMT	106.6	2.7%	83.3	5.9%
Project-Generated VMT - Current General Plan Buildout Scenario	72.0	-30.6%	56.3	-28.4%
Project-Generated VMT - Proposed General Plan Alternative D Scenario	78.9	-24.0%	61.7	-21.5%

Source: City of Manteca Travel Demand Model - Fehr & Peers, 2022

As displayed, under Existing Conditions, the proposed Project would generate an estimated average of 106.6 VMT per single-family dwelling unit (2.7% above the baseline city-wide average) and 83.3 VMT per multi-family dwelling unit (5.9% above the baseline city-wide average).

Under Cumulative Current General Plan Buildout conditions, the Project would generate an estimated average of 72.0 VMT per single-family dwelling unit (30.6% below the baseline city-wide average) and 56.3 VMT per multi-family dwelling unit (28.4% below the baseline city-wide average). Under Cumulative Proposed General Plan (Alternative D) Buildout conditions, the Project would generate an estimated average of 78.9 VMT per single-family dwelling unit (24.0% below the baseline city-wide average) and 61.7 VMT per multi-family dwelling unit (21.5% below the baseline city-wide average).

Both the Current General Plan and Proposed General Plan (Alternative D) identify substantial increase in employment and commercial land uses, which would allow residents to travel shorter distances to access jobs and services. Conversely, the proposed residential project would complement the employment and commercial land uses by supplying workers and patrons to businesses. The improved jobs-housing balance under either cumulative scenario is consistent with the City's vision for future development.

Because the development would generate VMT per dwelling unit that is less than 85 percent of the established baseline city-wide average VMT under cumulative conditions, the impact would be less-than-significant**.**

Analysis Limitations

This analysis concludes that the Project would have a less-than-significant impact on VMT under cumulative conditions. This conclusion relies on land use and transportation network data reviewed and approved by the City of Manteca. It is important to note that both the Current General Plan and Proposed General Plan (Alternative D) TFM scenarios have limitations in the ability to reasonably forecast cumulative and project-generated VMT as explained below.

Cumulative Inputs and Emerging Trends

Both the Current General Plan and Proposed General Plan (Alternative D) identify long-term land use developments and transportation infrastructure improvements that are planned to occur beyond the 20-year analysis period for cumulative conditions. The land use inputs to both General Plan TFM scenarios do not reflect expected 2040 absorption based on economic development trends and constraints, and the transportation network improvements are included in both scenarios regardless of funding status. The combined influence of these inputs is to create future scenarios that deviate substantially from current conditions in the city. Whether these conditions could be realized is uncertain.

The City of Manteca TFM was developed based on travel behavior survey data collected before the COVID-19 pandemic. While the TFM was calibrated to replicate base year traffic conditions, travel behavior and the transportation systems are changing quickly in response to emerging trends and new technologies, such as on-demand ride-hailing (e.g., Uber and Lyft) and micro-transit services, car-sharing, bicycle/scooter-sharing, and automation of vehicles. These changes combined with the current effects of the COVID-19 pandemic increase uncertainty about how VMT generation rates may change for land use projects over the time.

Historical VMT Trends

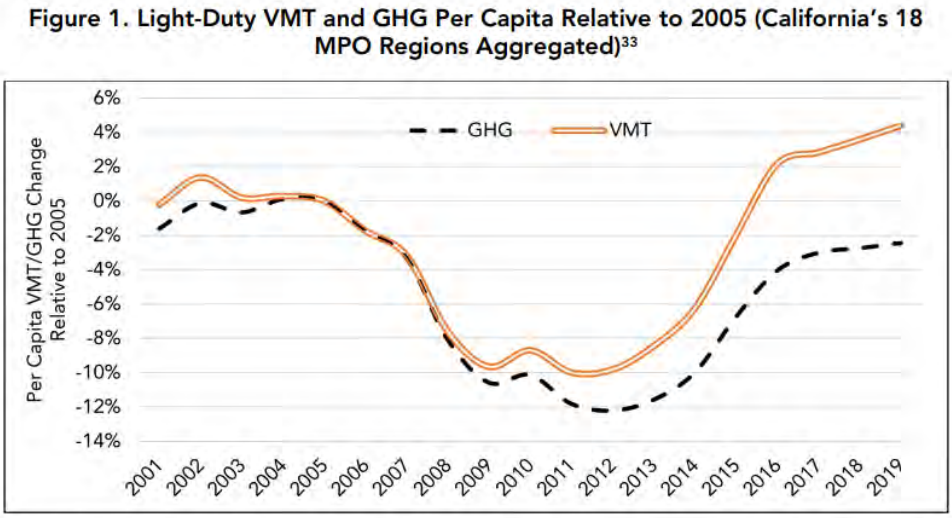
When making a final VMT impact determination, other available evidence related to VMT trends When making a final VMT impact determination, other available evidence related to VMT trends should be considered. This analysis identified the following relevant information.

- 2018 Progress Report, California's Sustainable Communities and Climate Protection Act (2018 Progress Report) (California Air Resources Board 2018).
- Draft 2022 Progress Report, California's Sustainable Communities and Climate Protection Act (2022 Progress Report) (California Air Resources Board 2022).

- California Air Resources Board Improved Program Measurement Would Help California Work More Strategically to Meet Its Climate Change Goals (Audit Report) (Auditor of the State of California 2021).
- Draft 2022 Scoping Plan Update (Scoping Plan) (California Air Resources Board, May 10, 2022).

The 2018 and Draft 2022 Progress Reports measure the effect of SB 375, revealing that VMT and Greenhouse Gas (GHG) per capita increased in California between 2010 and 2019 and are trending upward (Figure 1).

Figure 1. 2022 Progress Report VMT/Capita Trends



Source: California Air Resources Board, 2022

The Scoping Plan reviews California's progress for meeting GHG reduction goals and sets forth strategies to achieve those goals based on past performance. The plan acknowledges that the state is not meeting its VMT reduction objectives and that VMT growth is returning after COVID-19 pandemic effects diminish.

> *After a significant pandemic-induced reduction in VMT during 2020, passenger VMT has steadily climbed back up and is now closing in on pre-pandemic levels. Driving alone with no passengers remains the primary mode of travel in California, amounting to 75 percent of the mode share for daily commute trips. Conversely, transit ridership, which was also heavily*

affected during the lockdown months, has not recovered at the same pace as VMT, and roughly averages two-thirds of pre-pandemic levels of ridership.[1]

This evidence demonstrates the challenge of reducing VMT when background macro-level conditions are contributing to higher VMT generation rates.

The evidence above suggests greater action on the part of the State and local agencies may be needed to achieve the State's VMT and GHG reduction goals and to provide a high level of confidence that the project's VMT impact findings will be realized in the future. The Project contributes to the basic objectives of SB 743 for local land projects such as adding development in a planned mixed-use growth area where shorter trip lengths to destinations allows more multimodal choices. However, the type of project and location alone are not likely to produce much lower VMT generation rates than existing development without additional actions by the State and City. Fully achieving the general plan model forecast levels of VMT generation would require State and local actions that discourage vehicle travel (i.e., increasing the cost of driving or making it less convenient) while reducing the barriers or constraints that prevent more efficient use of vehicles and greater use of transit, walking, and bicycling.

[1] https://ww2.arb.ca.gov/sites/default/files/2022-05/2022-draft-sp.pdf (page 155)

Attachment A - Project Site Plan

SITE PLAN LEGEND

- A PUBLIC OPEN SPACE
- B CLUBHOUSE
- C PEDESTRIAN MEWS
- D DOG PARK
- E POCKET PARK
- F MULTI-USE PATHWAY
- G FENCE
- H MULTI-USE DRIVEWAY

GROUNDWORKS office
1792 5th Street
Berkeley, California
94710

project
LMC MANTECA

drawing
SITE PLAN

date
11.21.22

sheet number
L1

Appendix F City of Manteca Concept Plans

DESCRIPTION OF WORK

-Widen S. Main Street from (2) lanes to (6) lanes with a 14'0 wide landscaped median. Construct (2) dedicated left turn lanes and (1) dedicated right turn lane on both North-bound and South-bound approaches.
-Contractor shall protect existing Curb, Gutter, Sidewalk, and Landscaping along the east side of S. Main Street.
-Modify existing traffic signal.
(±) -A portion of the required right-of-way and/or improvements are already in place as noted on the plan. No additional right-of-way and/or improvements are required in this area. Contractor shall conform proposed improvements to existing improvements and protect existing curb, gutter, sidewalk, and landscaping throughout the course of construction and repair/replace if damaged.

LEGEND

- CENTERLINE
- EXISTING PROPERTY LINES (PER GIS MAP)
- EXISTING RIGHT-OF-WAY (PER GIS MAP)
- PROPOSED RIGHT-OF-WAY – 2 LANE SEE SHEET C2.01 FOR TYPICAL SECTION
- PROPOSED RIGHT-OF-WAY – 4 LANE SEE SHEET C2.03 FOR TYPICAL SECTION
- PROPOSED RIGHT-OF-WAY – 6 LANE SEE SHEET C2.06 FOR TYPICAL SECTION
- PROPOSED CURB, GUTTER AND SIDEWALK
- PROPOSED MEDIAN CURB
- PROPOSED P.F.I.P. IMPROVEMENT LIMITS
- PROPOSED R/W ACQUISITION AREA

S. MAIN STREET

E. ATHERTON DRIVE

W. ATHERTON DRIVE

20700 20600 20500 20400 20300 20200 20100 20000 19900 19800

0 100 200 300 400 500 600 700 800 900 1000 1100 1200 1300 1400

SEE SHEET (NT24)

224-02-034 224-02-035

G1 C2.06 G1 C2.06 F1 C2.06 F2 C2.06

50 25 0 50
1" = 100'

ROTH RD. LOVELACE RD. LATHROP RD. LOUISE AVE. YOSEMITE AVE. DANIELS RD. WOODWARD AVE. ANTONE RAYMUS EXPY AIRPORT WAY UNION RD. FRENCH CAMP RD. HWY 99 MILLS BURY RD. ATHERTON RD. AUSTIN RD. ANN ST. LATHROP RD. LOUISE AVE. YOSEMITE AVE. WOODWARD AVE. HWY 99

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REVISIONS

NO	DESCRIPTION	DATE	APPROVED

ATHERTON DR & S. MAIN ST

PRELIMINARY OPINION OF PROBABLE COST

PFIP TRANSPORTATION

MANTECA, CALIFORNIA

Northstar Engineering Inc.
CIVIL ENGINEERING • SURVEYING • PLANNING
600 12th Street Modesto, CA 95354
(209) 524-8525 Phone (209) 524-8525 Fax

JOB #:	14-1489
DATE:	8/9/2017
SCALE:	AS NOTED
DRAWN:	KM
REVISED:	KM
CHK'D:	TD

SHEET NUMBER

INT15

PLOTTED: 08/9/17 9:08 PLOTTED BY: Taylor
PLOT SCALE: 0.5000 '/ Inch File Name: C:\Users\Taylor\Documents\Projects\221-Atherton - 11-15.dwg

APPENDIX I

Memorandum

Date: February 9, 2023

To: Sandhya Perumalla, Stantec

From: Albee Wei and Fred Choa, P.E., Fehr & Peers

Subject: 144-490 Quintal Road Project VMT Analysis Technical Memorandum

RS22-4223

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The TIA Guidelines identify VMT per dwelling unit as the VMT metric for residential land uses. VMT per dwelling unit includes VMT associated with trips produced by a dwelling unit's residents, such as to work, school, or shop, and with one end of the trip at the home, on a typical weekday. By the City's direction, the City of Manteca General Plan Update travel forecasting model was used to develop baseline and cumulative (General Plan Buildout) VMT per dwelling unit.

The TIA Guidelines identify a threshold of 15 percent below baseline city-wide average VMT of the project's land use category. For single-family residential projects, the baseline city-wide VMT is 103.8 VMT per dwelling unit. Therefore, single-family projects that exceeds 85 percent of the baseline, or 88.2 VMT per dwelling unit, may be considered to have a significant VMT impact. For multi-family residential projects, the baseline city-wide VMT is 78.6 VMT per dwelling unit. Therefore, multi-family projects that exceeds 85 percent of the baseline, or 66.8 VMT per dwelling unit, may be considered to have a significant VMT impact.

The TIA Guidelines states that, "due to the timing issues involved with development, it is foreseeable that under a project only scenario, a project may exceed threshold levels. As development occurs around the project, the project may assist the City in achieving cumulative VMT reduction goals. In these cases, the project is considered consistent with the City's VMT reduction goals." By the City's direction, the cumulative VMT per dwelling unit is compared to the baseline city-wide average VMT per dwelling unit for the VMT analysis.

VMT Analysis Methodology

As part of the City of Manteca General Plan Update project, Fehr & Peers developed the City of Manteca, Lathrop, and Ripon Travel Forecasting Model (TFM). The TFM is a modified version of the Three-County RTP/SCS Air Quality Conformity Model, with improvements to all major

components focused on this three-city area. Each scenario of the TFM used for VMT forecasting is described below.

Base Year (2019) TFM

The Base Year TFM developed for the General Plan Update was used to develop baseline (2019) city-wide average weekday daily VMT estimates per single-family and multi-family dwelling unit. The base year TFM uses land use input data in the form of dwelling units (single-family and multi-family) and employment (food, retail, office, industrial, medical, government, and school). For the transportation network, the base year TFM uses roadway network lanes, speed, and capacity class as inputs. The TFM Trip generation rates were derived from the *Trip Generation Manual 10th Edition* (Institute of Transportation Engineers, 2017) and include appropriate inbound/outbound trip generation rates for residential and employment land uses for AM peak hour, PM peak hour, and daily conditions. The TFM was calibrated to reflect local trip distribution patterns for Internal-to-Internal Trips (II), Internal-to-External Trips (IX), External-to-Internal Trips (XI) and External-to-External (XX or Through) Trips based on a combination of the 2012 California Household Travel Survey (CHTS), the 2018 American Community Survey (ACS), and the California Statewide Travel Demand Model (CSTDM) to replicate the majority of vehicle trips to and from the west (San Francisco Bay Area) and a smaller percentage to and from the north (including Stockton and Sacramento) and to and from the south. For vehicle trips that occur beyond of the model's roadway network, an estimated average trip distance is applied to external gateway links to capture the vehicle miles traveled for the entire journey.

For the Existing (Baseline) Project-Generated VMT analysis, the proposed Project was added to the base year model's land use (new single-family and multi-family dwelling units) and roadway network inputs (new driveway locations). The proposed Project is represented by a Traffic Analysis Zone (TAZ). The TFM applies the trip generation and distribution pattern as described above and outputs total daily VMT generated by the Project TAZ, for all trip purposes and for the entire journey's length.

Cumulative Current General Plan Buildout Scenario TFM

The Current General Plan Buildout Scenario TFM was used to estimate the Project's weekday daily home-based VMT per single-family and multi-family dwelling unit under cumulative Current General Plan Buildout conditions. This scenario of the TFM incorporates land use data (dwelling units and employment) and reflects the City's jobs-housing balance, II, IX, XI, and XX trips under cumulative conditions where the current City of Manteca General Plan is built out. This scenario also incorporates roadway network (lanes, speed, capacity class) based on the current City of Manteca General Plan, the City of Manteca Public Facilities Implementation Plan (PFIP), and the San Joaquin Council of Government (SJCOG) Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) Project List. For the VMT analysis, the TFM's land use and roadway network inputs were updated to reflect the project's proposed land use and driveway

locations. The proposed Project is represented by a TAZ. The TFM applies the trip generation and forecasted distribution pattern under the Current General Plan Buildout scenario and outputs total daily VMT generated by the Project TAZ, for all trip purposes and for the entire journey's length.

Cumulative Proposed General Plan (Alternative D) Buildout Scenario TFM

The City of Manteca is in the process of updating its General Plan, and the City has selected Alternative D to be the preferred General Plan alternative. The Proposed General Plan (Alternative D) Buildout Scenario TFM was used to forecast the Project's weekday daily home-based VMT per single-family and multi-family dwelling unit under cumulative Proposed General Plan (Alternative D) Buildout conditions. This scenario of the TFM incorporates land use data (dwelling units and employment) and reflects the City's jobs-housing balance, II, IX, XI, and XX trips under cumulative conditions where the proposed City of Manteca General Plan (Alternative D) is built out. This scenario also incorporates roadway network (lanes, speed, capacity class) based on the Proposed General Plan (Alternative D), the City of Manteca PFIP, and the SJCOG RTP/SCS Project List. For the VMT analysis, the TFM's land use and roadway network inputs were updated to reflect the project's proposed land use and driveway locations. The proposed Project is represented by a TAZ. The TFM applies the trip generation and forecasted distribution pattern under the Proposed General Plan (Alternative D) Buildout scenario and outputs total daily VMT generated by the Project TAZ, for all trip purposes and for the entire journey's length.

VMT Impact Analysis

The proposed Project would develop 672 multi-family apartments, 48 for-sale duplexes, and 98 for-sale single-family homes. For the purpose of the VMT analysis, all duplex units are categorized as single-family, as the trip generation characteristics of duplex homeowners are more like that of single-family homeowners than that of multi-family renters. **Table 1** presents the baseline city-wide VMT and threshold of significance for residential developments. As stated earlier in this chapter, the proposed Project would result in a significant transportation impact if it would generate VMT that exceeds 85 percent of the established baseline.

Table 1: Baseline City-wide VMT and Threshold of Significance for Residential Developments

Land Use	Units	2019 Baseline	Threshold of Significance
Single family residential	VMT per dwelling unit	103.8	88.2
Multi-family residential	VMT per dwelling unit	78.6	66.8
Age restricted residential	VMT per dwelling unit	44.1	37.5

Source: City of Manteca Travel Demand Model - Fehr & Peers, 2022

Table 2 presents the established baseline city-wide VMT and the Project generated VMT under baseline and cumulative conditions. VMT generated by the Project is compared to the baseline city-wide average VMT for the same housing type.

Table 2: Project Vehicle Miles Traveled Analysis – Project-Generated VMT

	Single-Family and Duplex		Multi-Family	
Scenario	**VMT per Single-Family Household**	**Compared to Baseline City-Wide Average**	**VMT per Multi-Family Household**	**Compared to Baseline City-Wide Average**
Existing (Baseline) City-Wide Average Without Project	103.8	-	78.6	-
Existing (Baseline) Project-Generated VMT	106.6	2.7%	83.3	5.9%
Project-Generated VMT - Current General Plan Buildout Scenario	72.0	-30.6%	56.3	-28.4%
Project-Generated VMT - Proposed General Plan Alternative D Scenario	78.9	-24.0%	61.7	-21.5%

Source: City of Manteca Travel Demand Model - Fehr & Peers, 2022

As displayed, under Existing Conditions, the proposed Project would generate an estimated average of 106.6 VMT per single-family dwelling unit (2.7% above the baseline city-wide average) and 83.3 VMT per multi-family dwelling unit (5.9% above the baseline city-wide average).

Under Cumulative Current General Plan Buildout conditions, the Project would generate an estimated average of 72.0 VMT per single-family dwelling unit (30.6% below the baseline city-wide average) and 56.3 VMT per multi-family dwelling unit (28.4% below the baseline city-wide average). Under Cumulative Proposed General Plan (Alternative D) Buildout conditions, the Project would generate an estimated average of 78.9 VMT per single-family dwelling unit (24.0% below the baseline city-wide average) and 61.7 VMT per multi-family dwelling unit (21.5% below the baseline city-wide average).

Both the Current General Plan and Proposed General Plan (Alternative D) identify substantial increase in employment and commercial land uses, which would allow residents to travel shorter distances to access jobs and services. Conversely, the proposed residential project would complement the employment and commercial land uses by supplying workers and patrons to businesses. The improved jobs-housing balance under either cumulative scenario is consistent with the City's vision for future development.

Because the development would generate VMT per dwelling unit that is less than 85 percent of the established baseline city-wide average VMT under cumulative conditions, the impact would be less-than-significant**.**

Analysis Limitations

This analysis concludes that the Project would have a less-than-significant impact on VMT under cumulative conditions. This conclusion relies on land use and transportation network data reviewed and approved by the City of Manteca. It is important to note that both the Current General Plan and Proposed General Plan (Alternative D) TFM scenarios have limitations in the ability to reasonably forecast cumulative and project-generated VMT as explained below.

Cumulative Inputs and Emerging Trends

Both the Current General Plan and Proposed General Plan (Alternative D) identify long-term land use developments and transportation infrastructure improvements that are planned to occur beyond the 20-year analysis period for cumulative conditions. The land use inputs to both General Plan TFM scenarios do not reflect expected 2040 absorption based on economic development trends and constraints, and the transportation network improvements are included in both scenarios regardless of funding status. The combined influence of these inputs is to create future scenarios that deviate substantially from current conditions in the city. Whether these conditions could be realized is uncertain.

The City of Manteca TFM was developed based on travel behavior survey data collected before the COVID-19 pandemic. While the TFM was calibrated to replicate base year traffic conditions, travel behavior and the transportation systems are changing quickly in response to emerging trends and new technologies, such as on-demand ride-hailing (e.g., Uber and Lyft) and micro-transit services, car-sharing, bicycle/scooter-sharing, and automation of vehicles. These changes combined with the current effects of the COVID-19 pandemic increase uncertainty about how VMT generation rates may change for land use projects over the time.

Historical VMT Trends

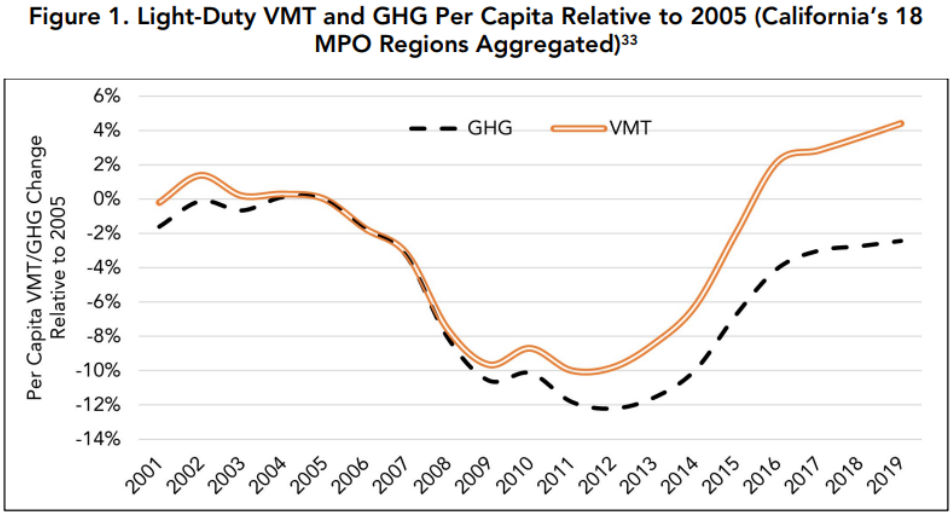
When making a final VMT impact determination, other available evidence related to VMT trends When making a final VMT impact determination, other available evidence related to VMT trends should be considered. This analysis identified the following relevant information.

- 2018 Progress Report, California's Sustainable Communities and Climate Protection Act (2018 Progress Report) (California Air Resources Board 2018).
- Draft 2022 Progress Report, California's Sustainable Communities and Climate Protection Act (2022 Progress Report) (California Air Resources Board 2022).

- California Air Resources Board Improved Program Measurement Would Help California Work More Strategically to Meet Its Climate Change Goals (Audit Report) (Auditor of the State of California 2021).
- Draft 2022 Scoping Plan Update (Scoping Plan) (California Air Resources Board, May 10, 2022).

The 2018 and Draft 2022 Progress Reports measure the effect of SB 375, revealing that VMT and Greenhouse Gas (GHG) per capita increased in California between 2010 and 2019 and are trending upward (Figure 1).

Figure 1. 2022 Progress Report VMT/Capita Trends



Source: California Air Resources Board, 2022

The Scoping Plan reviews California's progress for meeting GHG reduction goals and sets forth strategies to achieve those goals based on past performance. The plan acknowledges that the state is not meeting its VMT reduction objectives and that VMT growth is returning after COVID-19 pandemic effects diminish.

> *After a significant pandemic-induced reduction in VMT during 2020, passenger VMT has steadily climbed back up and is now closing in on pre-pandemic levels. Driving alone with no passengers remains the primary mode of travel in California, amounting to 75 percent of the mode share for daily commute trips. Conversely, transit ridership, which was also heavily*

> *affected during the lockdown months, has not recovered at the same pace as VMT, and roughly averages two-thirds of pre-pandemic levels of ridership.*[1]

This evidence demonstrates the challenge of reducing VMT when background macro-level conditions are contributing to higher VMT generation rates.

The evidence above suggests greater action on the part of the State and local agencies may be needed to achieve the State's VMT and GHG reduction goals and to provide a high level of confidence that the project's VMT impact findings will be realized in the future. The Project contributes to the basic objectives of SB 743 for local land projects such as adding development in a planned mixed-use growth area where shorter trip lengths to destinations allows more multimodal choices. However, the type of project and location alone are not likely to produce much lower VMT generation rates than existing development without additional actions by the State and City. Fully achieving the general plan model forecast levels of VMT generation would require State and local actions that discourage vehicle travel (i.e., increasing the cost of driving or making it less convenient) while reducing the barriers or constraints that prevent more efficient use of vehicles and greater use of transit, walking, and bicycling.

[1] https://ww2.arb.ca.gov/sites/default/files/2022-05/2022-draft-sp.pdf (page 155)

Attachment A - Project Site Plan

SITE PLAN LEGEND

- A PUBLIC OPEN SPACE
- B CLUBHOUSE
- C PEDESTRIAN MEWS
- D DOG PARK
- E POCKET PARK
- F MULTI-USE PATHWAY
- G FENCE
- H MULTI-USE DRIVEWAY

GROUNDWORKS office
1792 5th Street
Berkeley, California
94710

project
LMC MANTECA

drawing
SITE PLAN

date
11.21.22

sheet number
L1

APPENDIX J

Technical Memorandum

HydroScience
Strategic Water Solutions

Sacramento • Berkeley • San Jose

To: Tyler Wood, Vice President, Development
Lennar Multifamily Communities, LLC

From: Rachel Yenney, PE, Project Engineer
Navina Venugopal, PE, Project Engineer

Reviewed By: Angela Singer, PE, Project Manager

Subject: Emblem Manteca Water Supply Assessment

Date: June 26, 2024

Executive Summary

California Senate Bill 610 (SB 610) and Senate Bill 221 (SB 221) amended state law, effective January 1, 2002, to improve the link between information on water supply availability and certain land use decisions made by cities and counties. SB 610 and SB 221, presented in California Water Code (Water Code) Section 10910 through Section 10915, were companion measures that sought to promote more collaborative planning between local water suppliers and cities and counties. The statutes require detailed information regarding water availability be provided to the city and county decision-makers prior to approval of large development projects. The purpose of providing such information is to ensure that prudent water supply planning has been conducted, and that planned water supplies are adequate to meet existing demands, anticipated demands from approved projects, and the demands of proposed projects.

The purpose of this Water Supply Assessment (WSA) is to perform an evaluation based on Water Code Section 10910 through Section 10915 in connection with the proposed development of approximately 60 acres of new single family and multi-family homes, totaling 818 dwelling units (DU) on a currently undeveloped property within the existing City of Manteca (City) limits (Proposed Project). The Proposed Project, if approved, would be constructed by Lennar Multifamily Communities, LLC (Lennar) at the southeast corner of the intersection of State Route (SR) 120 and S Main St in the southern portion of the City. This WSA is not intended to reserve water, or to function as a "will serve" letter or any other form of commitment to supply water (see Water Code Section 10914). The provision of water service will continue to be undertaken in a manner consistent with applicable City policies and procedures, consistent with existing law.

The projected potable, raw, and recycled water demands and supplies documented in this WSA are based on the City's 2020 Urban Water Management Plan (UWMP) in conjunction with updated projections developed as part of the City's 2024 General Plan Amendment/Final Water Master Plan (WMP, February 2024) efforts. The Proposed Project site is included in the updated WMP projections.

Pursuant to Section 10910 of the Water Code and based on the analysis detailed in the 2020 UWMP and this WSA, the projected water supplies documented to be available to the City during a normal year and multiple dry years are sufficient to meet the City's projected water demands inclusive of the Proposed Project, existing, and other planned future uses. Water supplies are otherwise sufficient to meet the City's projected water demands per the analysis presented herein. To remain conservative, this WSA assumes no implementation of the Water Shortage Contingency Plan (WSCP) during dry years which would reduce water demands through water

use restrictions or prohibitions, thereby eliminating the gap between water demand and supply in a single dry year.

The following are the major findings that resulted from this evaluation:

- The estimated water demand of the Proposed Project is approximately 154 acre-feet per year (AFY).
- With the projections detailed herein, no shortages are anticipated during five consecutive dry years through 2045.
- While none are projected, water shortages can be mitigated by the following:
    - A decrease in projected water demands during dry years based on the implementation of the WSCP, and
    - Potential augmentation of City water supply with recycled water.

1.0 Introduction

HydroScience has been contracted by Lennar Multifamily Communities, LLC (Lennar) to review the potential water supply impacts of a new planned development within the City of Manteca (City). The development consists of approximately 60 acres of new single family and multi-family homes, totaling 818 dwelling units (DU) on a currently undeveloped property (Proposed Project). The Proposed Project, if approved, would be constructed by Lennar at the southeast corner of the intersection of State Route (SR) 120 and S Main St in the southern portion of the existing City limits. The purpose of this Water Supply Assessment (WSA) is to perform an evaluation of the Proposed Project in connection with California Water Code (Water Code) Sections 10910 through 10915.

Legal Requirements for the Water Supply Assessment

California Senate Bill (SB) 610 and SB 221 amended state law, effective January 1, 2002, to improve the link between information on water supply availability and certain land use decisions made by cities and counties. SB 610 and SB 221 were companion measures that sought to promote more collaborative planning between local water suppliers and cities and counties. Both statutes require that detailed information regarding water availability be provided by the water provider to the city and county planning and development decision-makers prior to approval of development projects, as defined below. The purpose of providing such information is to ensure that prudent water supply planning has been conducted, and that planned water supplies are adequate to meet existing demands, anticipated demands from approved projects, and the demands of proposed projects.

Water Code Section 10912 defines a “project” as any of the following:

- A proposed residential development of more than 500 dwelling units (DUs).
- A proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space.
- A proposed commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space.
- A proposed hotel or motel, or both, having more than 500 rooms.
- 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.
- A mixed-use project that includes one or more of the projects specified above.
- A project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500-DU project.
- If a public water system has fewer than 5,000 service connections, then ‘‘project’’ means any proposed residential, business, commercial, hotel or motel, or industrial development that would account for an increase of 10% or more in the number of the public water system’s existing service connections, or a mixed-use project that would demand an amount of water equivalent to, or greater than, the amount of water required by residential development that

would represent an increase of 10% or more in the number of the public water system's existing service connections.

The Proposed Project is a residential development consisting of 818 DUs, qualifying it as a "project" defined by Water Code Section 10912 per the first bullet point above.

Preparation of Water Supply Assessment

In accordance with the Water Code, the Proposed Project is subject to both the California Environmental Quality Act (CEQA) and a WSA.

The City's most recent adopted water supply and demand projections are documented in the 2020 Urban Water Management Plan (UWMP), which was approved by City Council and adopted in 2023. The City has subsequently developed updated projections as part of the 2024 General Plan Amendment and City of Manteca Water Master Plan (WMP, February 2024) efforts. The data used to analyze the availability of the City's water supply to serve the Proposed Project is a combination of the 2020 UWMP supply projections and the updated General Plan Amendment/WMP demand projections. It is noted that the water demand projections developed for the WMP are more conservative than those developed for the 2020 UWMP.

The findings of this WSA will be included in the environmental review process. The City's approval, denial, conditional approval, or any act on this WSA does not guarantee that the Proposed Project will be approved and does not obligate the City to approve, deny, conditionally approve, take any action, or make any decision on the Proposed Project application.

Purpose of Water Supply Assessment

The purpose of this WSA is to perform the evaluation, as defined by Water Code Sections 10910 through 10915 (SB 610), in connection with the Proposed Project. This WSA is not intended to reserve water, or to function as a "will serve" letter or any other form of commitment to supply water (see Water Code Section 10914), nor is it intended to meet the requirements of SB 221. The provision of water service will continue to be undertaken in a manner consistent with applicable City policies and procedures, consistent with existing law.

2.0 Description of Proposed Project

A general description of the Proposed Project location, proposed land uses, projected water demand, and proposed water supply is provided below.

Proposed Project Location

The Proposed Project is an approximately 60-acre site located at the southeast corner of the intersection of SR 120 and S Main St in the southeast portion of the City, as shown in **Figure 2**. The site is currently undeveloped land surrounded by residential developments directly to the south and the east.

Proposed Land Uses

The Proposed Project site is currently designated as Commercial Mixed Use (CMU) and Medium Density Residential (MDR) in the City's existing 2024 General Plan Amendment. As presented in **Figure 1**, the Proposed Project involves the development of: 672 multi-family for-rent apartments, 48 for-sale duet homes, and 98 single family for-sale homes.

The Proposed Project is currently requesting a General Plan Amendment to re-designate the northwestern portion of the Project site as High Density Residential (HDR) for the proposed multi-family and duet homes, and the northeastern and southern portions of the Project site as Low Density Residential (LDR) for the single-family uses (see **Figure 3**).

Figure 1: Proposed Project Site Map

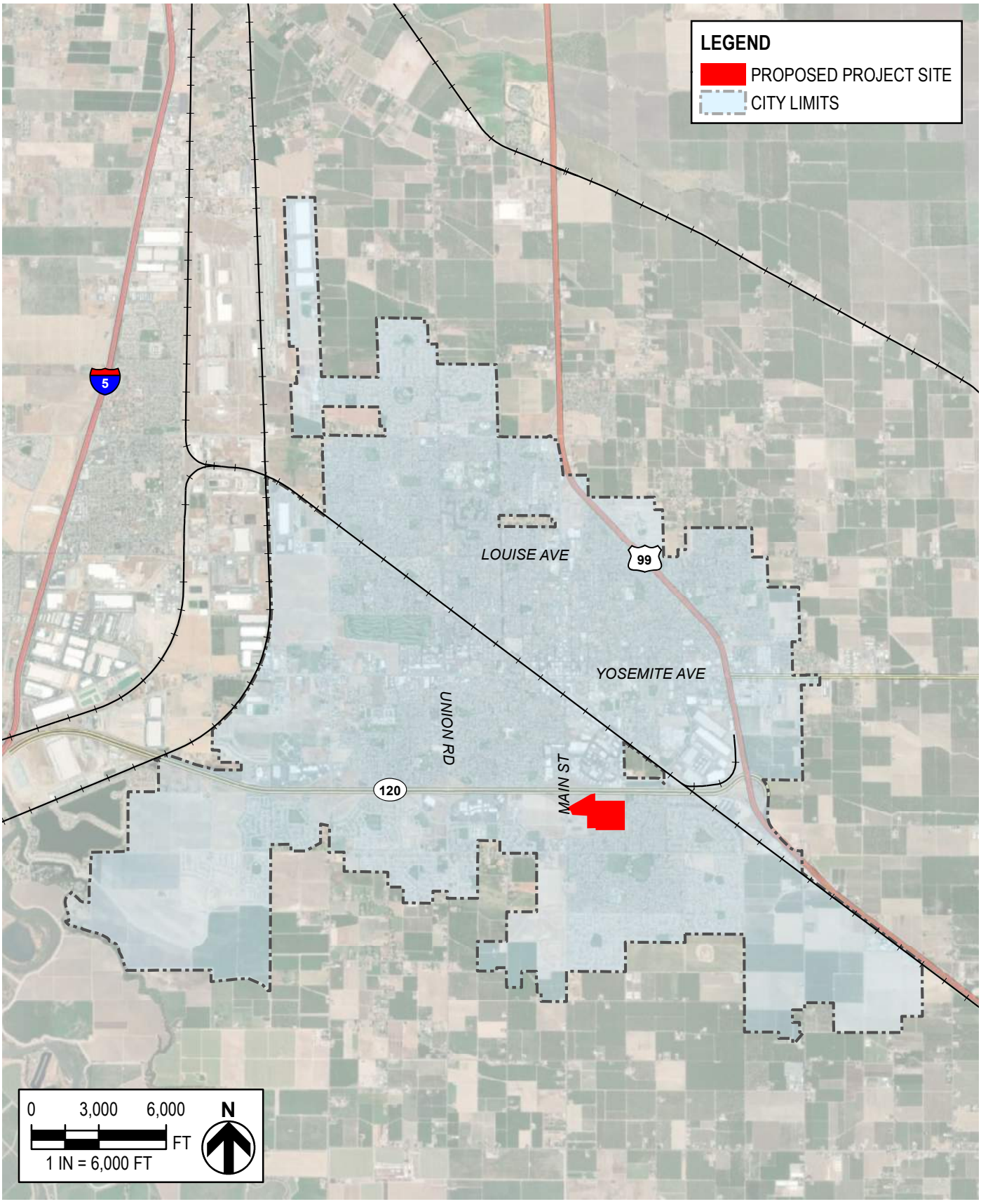
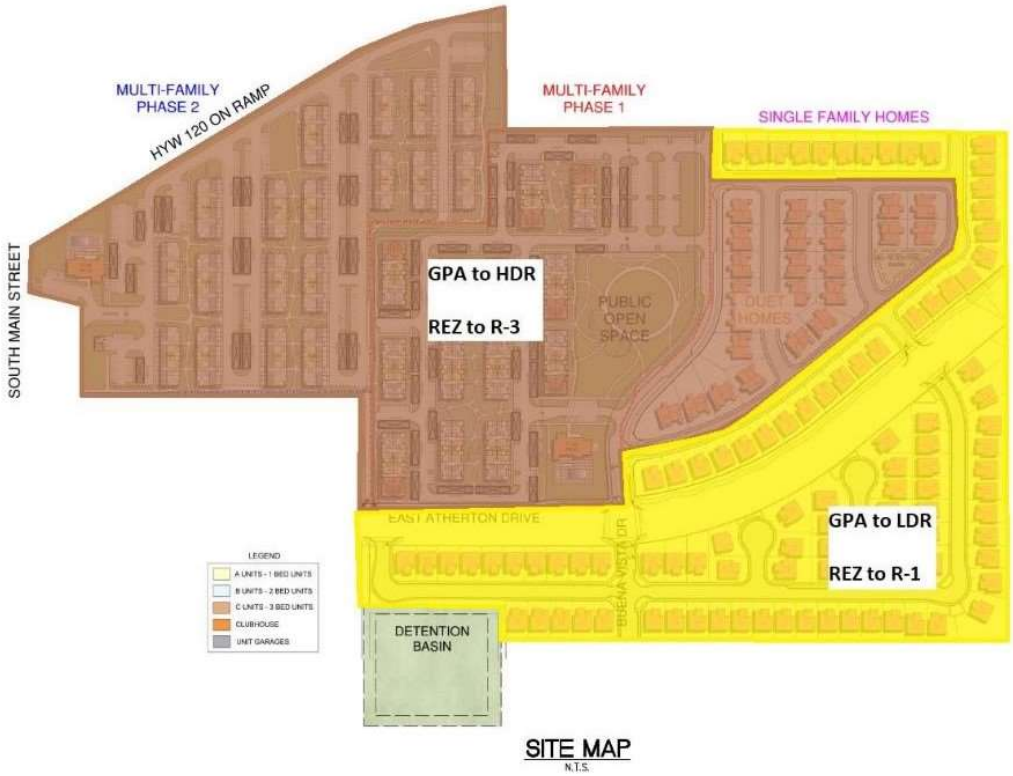


FIGURE 2
LENNAR MULTIFAMILY COMMUNITIES, LLC
EMBLEM MANTECA WATER SUPPLY ASSESSMENT
PROJECT LOCATION MAP

HydroScience

Figure 3: Proposed Project Re-Designations



Note: GPA = General Plan Amendment

The Proposed Project would also include an approximately 2-acre publicly accessible open space located at the center of the residential development as well as other amenities such as a dog park, game lawn, and club house. Additionally, the Proposed Project would include various improvements to adjacent streets, on- and off-site utility infrastructure, parking, driveways, frontage improvements, landscaping, and a detention basin.

Proposed Project Water Demands

As part of the City's WMP, HydroScience developed land use-based demand factors using 2020 and 2021 water meter billing data as well as future water demand factors for new residential development. These factors, along with planned upcoming development (including the Proposed Project) and land uses presented in the General Plan Amendment, formed the basis for estimating City-wide potable water demand projections.

In February 2024, the City finalized the WMP which documented the land-use based demand factors and the updated potable water demand projections which are utilized herein. Factors are presented in terms of gallons per day per acre (gpd/acre) except for LDR which is in units of gpd/DU.

The land use is designated CMU and MDR per the 2024 General Plan Amendment. The estimated water demand for the existing condition is provided in **Table 1**. It is assumed these

demands are included in the water demand projections detailed in the 2020 UWMP as this project is within the existing City limits and is therefore considered "City infill development."

Table 1: Estimated Water Demands based on 2024 General Plan Amendment Land Use

Land Use	Total Area (acres)	Unit Demand Factor	Total Water Use (gpd)	Total Water Use (AFY)
CMU	48	900 gpd/acre	43,200	48
MDR	14	2,420 gpd/acre	33,880	38

The Proposed Project is consistent with the CMU and MDR land use designations in the 2024 General Plan Amendment. The Proposed Project would rezone the northwestern portion of the Project site from CMU to Multiple-Family Dwelling zoning district (R-3) for the multi-family and duet homes. The northeastern and southern portions of the Project site would be rezoned from CMU to One-Family Dwelling zoning district (R-1) for the single-family uses. **Table 2** presents the total estimated water use for the Proposed Project using the land uses presented in **Figure 1** and the demand factors presented in the WMP.

Table 2: Proposed Project –Estimated Water Demands

Proposed Development	Total Units	Total Area (acres)	GP Land Use	Unit Demand Factor	Total Water Use (gpd)	Total Water Use (AFY)
Multi-Family Homes	672	29.9	HDR	2,810 gpd/acre	83,926	94
Duet Homes	48	4.9	HDR	2,810 gpd/acre	13,825	15
Single-Family Homes	98	14.3	LDR	370 gpd/DU	36,260	41
Publicly Accessible Open Space	-	1.9	PARK	2,600 gpd/acre	5,015	6
Total	**818**	**51**	**-**	**-**	**139,333**	**156**

Notes:
1. Detention basin, streets, ROW, etc. not included in calculations as they are not expected to generate any potable water demand.

The total estimated net increase in water demand from the existing 2024 General Plan Amendment (i.e. the difference between **Table 2** and **Table 1**) is 70 AFY.

Recycled Water

The City currently does not have the infrastructure to provide recycled water services to this area of the City and thus, recycled water supplies are not available and are not currently planned for use at the Proposed Project site.

Projected Water Supply for Proposed Project

Water demands for the Proposed Project will be served using the City's existing and future portfolio of water supplies as addressed in **Section 6.0** of this WSA. The inclusion of existing and planned future supplies is specifically allowed by the Water Code.

3.0 Required SB 610 Determinations

The following determinations must be made, pursuant to SB 610.

Does SB 610 Apply to the Proposed Project?

Water Code Section 10910

(a) Any city or county that determines that a project, as defined in Section 10912, is subject to the California Environmental Quality Act Division 13 (commencing with Section 21000) of the Public Resources Code, under Section 21080 of the Public Resources Code shall comply with this part.

Water Code Section 10912

For the purposes of this part, the following terms have the following meanings:

(a) "Project" means any of the following:

(1) A proposed residential development of more than 500 dwelling units.

(2) A proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space.

(3) A proposed commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space.

(4) A proposed hotel or motel, or both, having more than 500 rooms.

(5) A proposed industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area.

(6) A mixed-use project that includes one or more of the projects specified in this subdivision.

(7) A project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500 dwelling unit project.

Based on the following assumptions, SB 610 does apply:

- The Proposed Project is subject to CEQA and an EIR is required; and
- The Proposed Project meets the definition of a "project" as specified Water Code section 10912(a)(1): *A proposed residential development of more than 500 dwelling units* (shown above).

Has an Assessment Already Been Prepared that Includes this Project?

Water Code Section 10910

(h) Notwithstanding any other provision of this part, if a project has been the subject of a water assessment that complies with the requirements of this part, no additional water assessment shall be required for subsequent projects that were part of a larger project for which a water assessment was completed and that has complied with the requirements of this part and for which the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), has concluded that its water supplies are sufficient to meet the projected water demand associated with the proposed project, in addition to the existing and planned future uses, including, but not limited to, agricultural and industrial uses, unless one or more of the following changes occurs:

(1) Changes in the project that result in a substantial increase in water demand for the project.

(2) Changes in the circumstances or conditions substantially affecting the ability of the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), to provide a sufficient supply of water for the project.

(3) Significant new information becomes available which was not known and could not have been known at the time when the assessment was prepared.

The Proposed Project has not been the subject of a previously adopted WSA and has not been included in an adopted WSA for a larger project. Therefore, this WSA is prepared for the Proposed Project.

Does SB 221 Apply to the Proposed Project?

Government Code section 65867.5

(c) A development agreement that includes a subdivision, as defined in section 66473.7, shall not be approved unless the agreement provides that any tentative map prepared for the subdivision will comply with the provisions of section 66473.7.

Government Code section 66473.7

(a) For the purposes of this section, the following definitions apply:

(1) "Subdivision" means a proposed residential development of more than 500 dwelling units, except that for a public water system that has fewer than 5,000 service connections, "subdivision" means any proposed residential development that would account for an increase of 10 percent or more in the number of the public water system's existing service connections.

(b) (1) The legislative body of a city or county or the advisory agency, to the extent that it is authorized by local ordinance to approve, conditionally approve, or disapprove the tentative map, shall include as a condition in any tentative map that includes a subdivision a requirement that a sufficient water supply shall be available. Proof of the availability of a sufficient water supply shall be requested by the subdivision applicant or local agency, at the discretion of the local agency, and shall be based on written verification from the applicable public water system within 90 days of a request.

(i) This section shall not apply to any residential project proposed for a site that is within an urbanized area and has been previously developed for urban uses, or where the immediate contiguous properties surrounding the residential project site are, or previously have been, developed for urban uses, or housing projects that are exclusively for very low and low-income households.

In 2001, SB 221 amended State law to require that approval by a city or county of certain residential subdivisions requires an affirmative written verification of sufficient water supply. Per California Government Code section 66473.7(a)(1), a subdivision means a proposed residential development of more than 500 DUs. The Proposed Project is greater than 500 DUs and thus, is subject to the requirements of SB 221.

Who Will Prepare the SB 610 Assessment for the Proposed Project?

Water Code Section 10910

(b) The city or county, at the time that it determines whether an environmental impact report, a negative declaration, or a mitigated negative declaration is required for any project subject to the California Environmental Quality Act pursuant to Section 21080.1 of the Public Resources Code, shall identify any water system that is, or may become as a result of supplying water to the project identified pursuant to this subdivision, a public water system, as defined in Section 10912, that may supply water for the project.

Water Code Section 10912

(c) "Public water system" means a system for the provision of piped water to the public for human consumption that has 3,000 or more service connections.

The Proposed Project site is located within City limits and the City operates a public water system; thus, Lennar has hired HydroScience Engineers to prepare this WSA on behalf of the City for the Proposed Project.

Does the City Have an Adopted UWMP and Does the UWMP Include the Projected Water Demand for the Proposed Project?

Water Code Section 10910

(c) (1) The city or county, at the time it makes the determination required under Section 21080.1 of the Public Resources Code, shall request each public water system identified pursuant to subdivision (b) to determine whether the projected water demand associated with a proposed project was included as part of the most recently adopted urban water management plan adopted pursuant to Part 2.6 (commencing with Section 10610).

The California Urban Water Management Planning Act (Section 10610 et. seq. of the Water Code) requires urban water suppliers providing over 3,000 acre-feet per year (AFY) of water or having a minimum of 3,000 service connections to prepare UWMPs on a five-year, ongoing basis. An UWMP must demonstrate the continued ability of the provider to serve customers with water supplies that meet current and future expected demands under normal, single dry, and multiple dry year scenarios. These plans must also include the assessment of urban water conservation measures and wastewater recycling. Pursuant to Section 10632 of the Water Code, the plans must also include a Water Shortage Contingency Plan (WSCP) outlining how the water provider will manage water shortages, including shortages of up to 50% of their normal supplies, and catastrophic interruptions of water supply.

The City has historically supplied greater than 3,000 AFY of water and currently serves greater than 23,000 service connections, thus meeting the threshold for UWMP preparation. The City's most recent UWMP (2020 UWMP) was adopted in 2023. The 2020 UWMP includes water supply and demand projections in five-year increments through the year 2045; this WSA summarizes the planning assumptions and supply projections laid out in the 2020 UWMP.

The City's ability to meet the projected water demands for the Proposed Project – as defined by a combination of the City's 2020 UWMP and General Plan Amendment/WMP projections – is described herein.

4.0 City Water Service Area

Water Code Section 10631 *(Urban Water Management Plan requirements)*

(a) Describe the service area of the supplier, including current and projected population, climate, and other demographic factors affecting the supplier's water management planning. The projected population estimates shall be based upon data from the state, regional, or local service agency population projections within the service area of the urban water supplier and shall be in five-year increments to 20 years or as far as data is available.

This section presents the City's water service area including history and growth information. The information provided in this section references and/or is based on the 2020 UWMP.

General Description

The City is located in the flat plain at the northern end of California's San Joaquin Valley in south San Joaquin County, approximately 10 miles south of Stockton and 15 miles north of Modesto. The City provides water to municipal customers through over 23,000 service connections, and the current water distribution service area generally coincides with the current City limits.

City water users are supplied potable surface water sourced from South San Joaquin Irrigation District (SSJID) and local groundwater. Groundwater is pumped from 15 active wells, 14 of which are treated for arsenic, manganese, and/or 1,2,3-trichloropropane (1,2,3-TCP), with two additional wells on standby. There are three storage tanks that store up to 5.7 million gallons (MG) of water primarily from SSJID and Well 24. Two tanks are used to balance the difference between SSJID deliveries and City use, while the third tank balances the differences between City groundwater pumping and customer use. Water is boosted from the storage tanks via pump stations to the distribution system. Users not served by the City (e.g., agriculture, schools) rely on self-supplied groundwater and SSJID surface water for their supply.

Historical, Current, and Projected Population

The 2020 UWMP provided population projections beginning with 2020 through 2045. These projections, taken from Table 3-2 of the 2020 UWMP are presented in **Table 3** below.

As part of the 2024 General Plan Amendment and Water Master Plan efforts, updated projections were developed in conjunction with the City beginning with the City's 2020 population and assuming an annual growth rate of 2.8% through 2045. These updated projections are also presented in **Table 3**.

Table 3: Historical, Current, and Projected Service Area Population

	2020	2025	2030	2035	2040	2045
2020 UWMP Projections[1]	83,470	87,173	91,816	95,901	99,310	102,067
Change	+1,372	+10,231	+20,010	+32,482	+48,082	+67,148
Updated Projections[3]	**84,842[2]**	**97,404**	**111,826**	**128,383**	**147,392**	**169,215**

Notes:
1. Source: City of Manteca 2020 UWMP, Table 3-2: Retail. Population – Current and Projected
2. Actual population based on California DOF estimates for the City of Manteca per the 2020 census.
3. Source: City of Manteca Water Master Plan, Table 4-8

Projected Employment

The City's employment numbers for 2020 and projected employment for 2025 through 2040 are presented in the City's Municipal Services Review, published in July 2022, and are replicated in **Table 4** below. It is noted that these numbers reflect the number of jobs in the City, not the number of employed residents.

Table 4: Current and Projected City Employment

	2020	2025	2030	2035	2040	2045
Number of Jobs	17,592	18,631	19,770	20,968	22,146	N/A

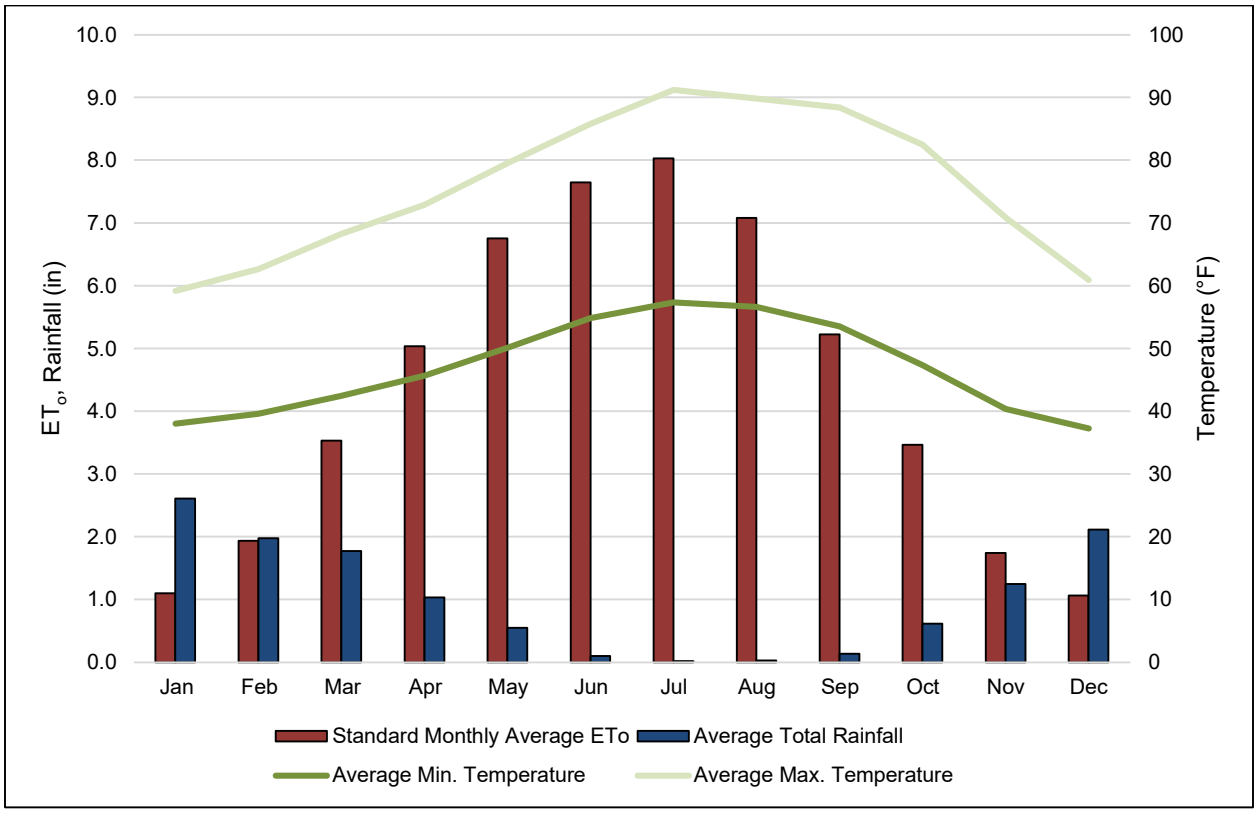
Source: Manteca Municipal Services Review, Table 3-4: Manteca Employment Projections (2020-2040)

Service Area Climate

Located in the San Joaquin Valley, the City experiences hot summer temperatures in the eighties and nineties and many days over 100°F during July and August. Nighttime temperatures during July and August drop into the fifties. The winter temperatures are much colder with daytime highs in the forties and fifties and lows in the thirties and forties, though overnight freezes are infrequent. Spring and fall provide moderate temperature ranges. The average annual precipitation is 13 inches and is generally confined to the wet season from late October to early May.

The California Irrigation Management Information System (CIMIS) website (http://www.cimis.water.ca.gov) tracks and maintains records of evapotranspiration (ET_o) for select cities throughout the state. ET_o statistics provided for the City were obtained from the 70-Manteca CIMIS station in the San Joaquin Region. ET_o is a standard measurement of the environmental parameters that affect water use of plants such as net solar radiation, air temperature, wind speed, and vapor pressure. It is an estimate, reported in inches per day, month, or year, of the evapotranspiration from a large field of well-watered, cool-season grass 4- to 7-inches tall. **Figure 4** presents the average precipitation, ET_o, and minimum and maximum temperatures for each month based on the CIMIS station data. As the figure indicates, a greater quantity of water is evaporated during May through August in correlation to high temperatures and low humidity, which results in higher water demand.

Figure 4: City Monthly Average Climate



Source: http://www.cimis.water.ca.gov

Climate Change Considerations

Global climate change is a result of an increase in greenhouse gases (GHGs) emitted by human activity that are produced faster than they can be absorbed by nature. The Public Policy Institute of California (https://www.ppic.org/publication/priorities-for-californias-water/) has predicted that five main climate pressures will impact the future of California's water management:

1. Warming temperatures,
2. Shrinking snowpack,
3. Shorter and more intense wet seasons,
4. More variable precipitation, and
5. Rising sea levels.

As this relates to water demand, droughts caused by warming temperatures and more variable precipitation are likely to result in increased landscape irrigation demand especially during summer months since higher temperatures are typically associated with higher rates of ET_o. On the other hand, there are other factors that also affect ET_o; for example, increasing humidity and higher CO_2 concentrations both tend to reduce transpiration and counteract the higher temperature effects on ET_o. As CO_2 concentrations increase, leaf stomata partially close in response to maintain the CO_2 concentration inside the stomata. Thus, while climate change is

likely to increase air temperature, the effect of higher humidity and CO_2 concentration could partially offset the temperature effect on ET_o. Due to the abundance of available research and the uncertainty about the future effects of climate change, no adjustments were made to projected water demand in regards to climate change effects.

The dry-year water supply and demand projection analysis addresses the water system reliability for the City to consider the near-term and long-term potential effects of climate change on projected supplies given unconstrained projected demand and to steer planning for the WSCP.

5.0 City Water Demands

Water Code Section 10910

(c) (2) If the projected water demand associated with the proposed project was accounted for in the most recently adopted urban water management plan, the public water system may incorporate the requested information from the urban water management plan in preparing the elements of the assessment required to comply with subdivisions (d), (e), (f), and (g).

(3) If the projected water demand associated with the proposed project was not accounted for in the most recently adopted urban water management plan, or the public water system has no urban water management plan, the water assessment for the project shall include a discussion with regard to whether the public water system's total projected water supplies 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 the public water system's existing and planned future uses, including agricultural and manufacturing uses.

Water Code Section 10631 *(Urban Water Management Plan requirements)*

(d) (1) For an urban retail water supplier, quantify, to the extent records are available, past and current water use, over the same five-year increments described in subdivision (a), and projected water use, based upon information developed pursuant to subdivision (a), identifying the uses among water use sectors including, but not necessarily limited to, all of the following:

(A) Single-family residential.

(B) Multifamily.

(C) Commercial.

(D) Industrial.

(E) Institutional and governmental.

(F) Landscape.

(G) Sales to other agencies.

(H) Saline water intrusion barriers, groundwater recharge, or conjunctive use, or any combination thereof.

(I) Agricultural.

(J) Distribution system water loss.

(2) The water use projections shall be in the same five-year increments described in subdivision (a).

Water demand projections are intended to inform future water supply needs based on historical trends, projected population growth, and future land use and development planning. These projections help water suppliers to forecast whether the City's available water supply sources will be adequate to meet the projected future water demands.

The information provided in this section references the 2020 UWMP as well as the updated water use projections presented in the WMP.

Potable Water

Potable water demand projections for the 2020 UWMP were developed using land use projections from the City's 2022 Revised Draft General Plan Update and the corresponding 2022 Recirculated Draft EIR, which included water use projections up to buildout conditions (2040). Water demands for 2025-2035 were linearly interpolated based on 2020 demands and the 2040 water demand projection. Growth was assumed to continue at a similar rate through 2045. The total projected

demands for potable water from the 2020 UWMP are presented in **Table 5** below. Updated potable water demand projections developed based on the 2024 General Plan Amendment land uses for the WMP are also presented in **Table 5**.

Table 5: Historical, Current, and Projected Potable Water Demand, AFY

	2020	2025	2030	2035	2040	2045
2020 UWMP Projections[1]	15,282	16,428	17,574	18,720	19,866	21,012
Updated Projections[2]	**15,282[3]**	**16,982**	**20,121**	**22,681**	**25,566**	**28,818**

Notes:
1. Source: City of Manteca 2020 UWMP, Table 4-3: Use for Potable and Non-Potable Water – Projected
2. Source: City of Manteca Water Master Plan, Table 4-12, HydroScience Engineers, February 2024. Projections from 2030-2045 were modified to include an additional 4 AFY to reflect the Proposed Project's updated land uses.
3. Actual potable water use, including water losses, based on City meter billing data.

For the purposes of this WSA, the more conservative demand projections developed for the WMP are used.

Recycled Water

Recycled water within the City has historically been used to irrigate fodder crops on City-owned and leased lands. Prior to 2015, this use averaged about 0.87 MGD (1,030 AFY) but was expected be reduced to 0.73 MGD (870 AFY) by 2020 and to 0 AFY by 2040 as the lands are developed.

Beginning in 2015, recycled water has been distributed through fill stations for dust control at construction sites. Per the 2015 UWMP, it was anticipated that by 2020, recycled water demand for construction would be ten million gallons per year (over 30 AFY), increasing about 2.3% every year with City development.

In 2019, the City constructed a pipeline to convey recycled water from the Wastewater Quality Control Facility (WQCF) to the Great Wolf Lodge, and in 2020, the Great Wolf Lodge began utilizing recycled water for landscape irrigation. It is anticipated that recycled water used for landscape irrigation will continue to grow in the coming years.

Projected recycled water demands vary over time based on the timing of implementation of each of these uses. Currently, use is dominated by irrigation of fodder crops. Total projected demand is anticipated to decrease through 2030 as this use is phased out and then increase thereafter with the implementation of additional uses for irrigation and construction dust control.

Actual recycled water demand in 2020 was 718 AFY (2020 UWMP). No adjustments were made to projected recycled water demand for the years 2025 through 2045. It is assumed that recycled water demand equals recycled water supply.

Historical, Current, and Projected Water Demands

Based on the discussions above, total projected water demands are presented in **Table 6**. Demands for 2020 presented in this table are updated to reflect actual 2020 water use.

Table 6: Historical, Current, and Updated Projected Water Demand, AFY

Source	2020[2]	2025	2030	2035	2040	2045
Potable Water[1]	15,282	16,982	**20,121**	**22,681**	**25,566**	**28,818**
Recycled Water[2]	718	718	2,692	2,693	2,694	2,695
Total	**16,000**	**17,700**	**22,813**	**25,374**	**28,260**	**31,513**

Notes:
1. Updated potable water demands taken directly from **Table 5**.
2. Demands reflect projections from the City's 2020 UWMP except 2020 numbers which reflect actual demands.

Dry Year Water Demands

The City's existing published WSCP, presented in Chapter 8 of the 2020 UWMP, includes a six-stage plan describing water conservation measures available to reduce water demand by up to 50% in the event of a water supply shortage or emergency. The water shortage stages, and their respective anticipated reduction in potable water demands, are displayed in **Table 7**.

Table 7: Water Shortage Contingency Plan Projected Demand Reduction

Stage	% Supply Reduction	Shortage Response Actions
1	Up to 10%	Voluntary – 10% reduction in use
2	Up to 20%	Voluntary or mandatory – 20% reduction in use
3	Up to 30%	Mandatory – 30% reduction in use
4	Up to 40%	Mandatory – 40% reduction in use
5	Up to 50%	Mandatory – 50% reduction in use
6	Greater than 50%	Mandatory – more than 50% reduction in use

Source: City of Manteca 2020 UWMP, Appendix G, Table 2: City Water Shortage Contingency Plan Levels

When comparing potable water supply to demand in the City's 2020 UWMP and in this WSA, the dry year water demands are assumed to not include implementation of the City's WSCP. This is a conservative assumption as additional water conservation will occur with the implementation of the WSCP in response to dry years or other water supply shortages. **Table 8** presents the projected future dry year potable and raw water demand assuming no conservation.

Table 8: Projected Total Water Demand in Dry Years, AFY

Year Type	2025	2030	2035	2040	2045
Single Dry	17,700	22,813	25,374	28,260	31,513
Multiple Dry – Year 1	17,700	22,813	25,374	28,260	31,513
Multiple Dry – Year 2	17,700	22,813	25,374	28,260	31,513
Multiple Dry – Year 3	17,700	22,813	25,374	28,260	31,513
Multiple Dry – Year 4	17,700	22,813	25,374	28,260	31,513
Multiple Dry – Year 5	17,700	22,813	25,374	28,260	31,513

Notes:
1. Total demands from **Table 6**.

6.0 City Water Supplies

Water Code Section 10910

(d) (1) The assessment required by this section shall include an identification of any existing water supply entitlements, water rights, or water service contracts relevant to the identified water supply for the proposed project, and a description of the quantities of water received in prior years by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), under the existing water supply entitlements, water rights, or water service contracts.

(2) An identification of existing water supply entitlements, water rights, or water service contracts held by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), shall be demonstrated by providing information related to all of the following:

(A) Written contracts or other proof of entitlement to an identified water supply.

(B) Copies of a capital outlay program for financing the delivery of a water supply that has been adopted by the public water system.

(C) Federal, state, and local permits for construction of necessary infrastructure associated with delivering the water supply.

(D) Any necessary regulatory approvals that are required in order to be able to convey or deliver the water supply.

The City's water supply is currently provided by the following sources, listed here and detailed in this section:

- **Surface Water** – The City signed an agreement in 1995 to receive potable water from SSJID. In 2005, SSJID implemented the South County Water Supply Program (SCWSP) allowing for the delivery of treated surface water from the Stanislaus River. This has enabled the City to significantly reduce its reliance on local groundwater sources and greatly enhance water supply reliability.
- **Groundwater** – Located in the Eastern San Joaquin (ESJ) Subbasin, the City and other users pump groundwater through at least 48 wells within City limits.
- **Recycled Water** – Recycled water infrastructure is limited in the City at this time, but its use has increased in recent years and is available for increased utilization as a potential source of additional or reallocated supply for the City. Recycled water master planning is currently under development.

Generally, the City's goal is to maintain a 53% to 47% potable water annual balance of surface water to groundwater, respectively.

Surface Water

The City has been supplied surface water by SSJID since 2005 when the Nick C. DeGroot Water Treatment Plant (WTP) was commissioned for the SCWSP. The City, along with three other cities/retail water suppliers – Escalon, Lathrop, and Tracy – signed water supply agreements with SSJID and began the planning phases of the SCWSP in the late 1990s. Currently, the WTP operates under Phase I with the capacity to treat a total of 40 MGD of water from the Stanislaus River that is stored in SSJID's Woodward Reservoir. The SCWSP currently delivers potable water to the cities of Manteca, Tracy, and Lathrop, and with the implementation of Phase II, set to take place when additional capacity is needed, the WTP is expected to connect to Escalon and its capacity is set to increase with the addition of a pump station and two tanks.

The City is currently allotted a maximum of 11,500 AFY under Phase I which will increase to 18,500 AFY under Phase II. Historically, the City has not utilized its full allocation of surface water due to system constraints and State and SSJID supply limits in response to the 2013-2015 drought. A new water supply agreement was signed between the City and SSJID in December 2020, and the term of this water supply agreement is through December 2049. In 2050, ownership of the WTP will revert to the cities unless the agreement is renewed.

SSJID has published in its 2020 UWMP that Phase II is estimated to be implemented and online by 2040. The projections for available surface water supply per the 2020 UWMP are presented in **Table 9**.

Table 9: Current and Projected Available Surface Water Supply, AFY

	2020	2025	2030	2035	2040	2045
2020 UWMP Projections	11,500	11,500	11,500	11,500	18,500	18,500

Source: City of Manteca 2020 UWMP, Table 6-11: Water Supplies – Projected

Groundwater

Water Code Section 10910

(f) If a water supply for a proposed project includes groundwater, the following additional information shall be included in the water 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 description of any groundwater basin or basins from which the proposed project will be supplied. For those basins for which a court or the board has adjudicated the rights to pump groundwater, a copy of the order or decree adopted by the court or the board and a description of the amount of groundwater the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), has the legal right to pump under the order or decree. For basins that have not been adjudicated, information as to whether the department has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current bulletin of the department that characterizes the condition of the groundwater basin, and a detailed description by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), of the efforts being undertaken in the basin or basins to eliminate the long-term overdraft condition.

(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.

The total groundwater pumping that occurs within City limits includes City-owned municipal and park irrigation wells with additional domestic and irrigation wells owned and operated by private users and SSJID. This section provides a summary of the estimated groundwater pumping within the current City limits; however, it is noted that groundwater pumping data collection is ongoing and incomplete and there are potentially groundwater wells that are unmetered and unidentified.

On December 14, 2017, the State Water Resources Control Board (SWRCB) adopted a new Maximum Contaminant Level (MCL) for 1,2,3-TCP of 5 parts per trillion (ppt) and required all water suppliers in California to begin testing their sources for the contaminant in the first quarter of 2018. As of the end of 2020, the City had five wells with average 1,2,3-TCP concentrations over the new MCL. While the City worked to address the water quality issue by constructing new water treatment systems at the affected wells, water production was shifted to sources that meet all drinking water standards. Common sources of 1,2,3-TCP in groundwater include solvent-related dischargers. Aside from these violations, historically the City has consistently complied with all water quality standards for groundwater.

Basin Description

The City is located in the ESJ Subbasin – subbasin 5-22.01 of the San Joaquin Valley Groundwater Basin. The groundwater aquifers underlying the City extend to depths of over 600 feet. In increasing depth from the surface, the four identified aquifers are Victor Formation, Laguna Formation, Mehrten Formation, and Valley Springs Formation. The City's wells withdraw water primarily from the Victor and Laguna Formations at depths ranging from 190 to 400 feet. Due to the alluvial generation of these aquifers, there is significant variation in grain size, with lenses and strata of high yield gravel, permeable sandy material, and lower permeability clays. In general, the strata slope from the hills east of the City downward to the west, providing good recharge from hill runoff and the Stanislaus River.

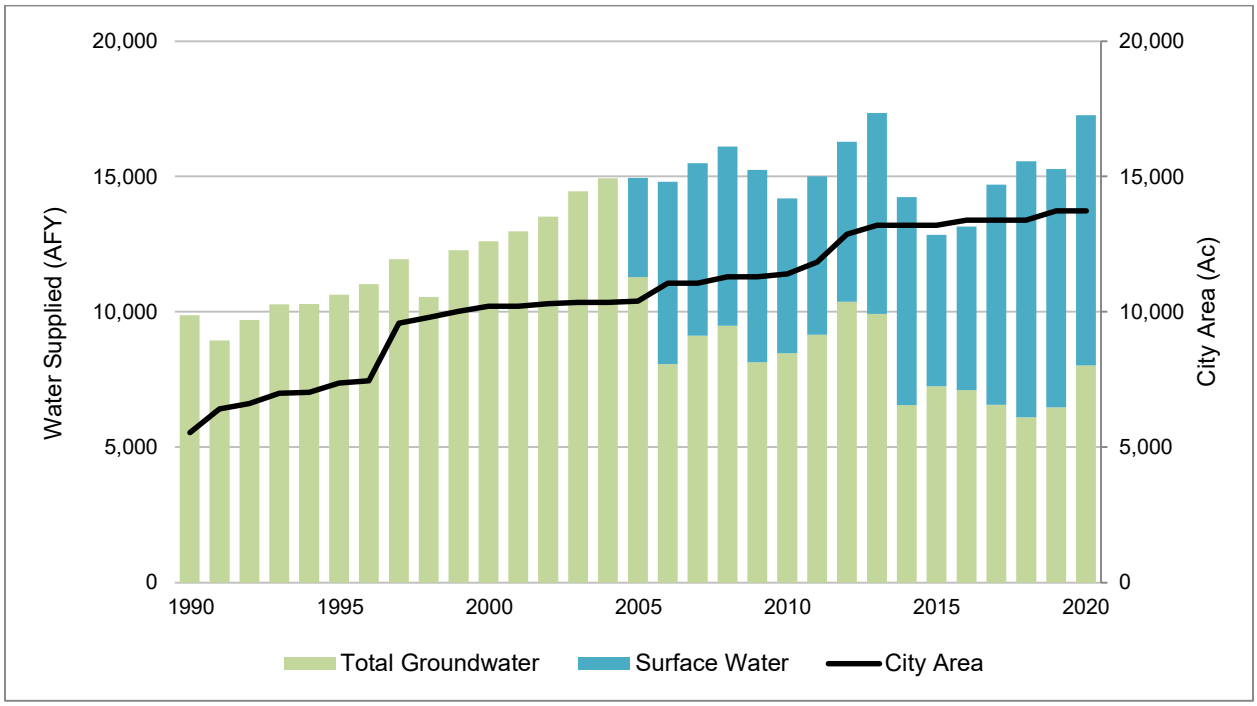
Sustainable groundwater supply is a key element of the City's long term water supply portfolio. The Eastern San Joaquin Groundwater Sustainability Plan (GSP, 2019) estimated the sustainable yield for the ESJ Subbasin to be approximately 0.94 AFY per acre (AFY/Ac). The City's objective is to maintain groundwater pumping at or below the estimated sustainable yield, thus, projected available groundwater supply assumes that 0.94 AFY/Ac of groundwater is available from the City's surface area.

Historical Groundwater Pumping

Historically, the City's annual groundwater production steadily increased reaching a peak pumped quantity of 14,900 AFY in 2004 – based on the approximate City limits, this translates to about 1.4 AFY/Ac – and a peak pumping rate of 1.8 AFY/Ac in 1990. Commissioning of the WTP in 2005 decreased groundwater pumping considerably and surface water from the WTP currently supplies an average of 60% of the City's annual potable water supply. This has allowed the City to reduce local groundwater extraction rates to significantly less than the basin sustainable yield of 0.94 AFY/Ac. **Figure 5** presents a graphical representation of City water supplies versus City area and clearly displays the rapid decrease in reliance on groundwater pumping following the construction of the WTP in 2005.

Since the commissioning of the WTP, the total groundwater pumping for the City has ranged from 6,100 AFY to 10,400 AFY averaging approximately 8,000 AFY. Pumped quantities were generally constant between 2006 and 2013 and decreased more significantly in 2014 and 2015 likely attributable to statewide mandatory demand reduction regulations. Since 2015, pumped quantities have continued a downward trend and have rebounded slightly since 2019. There were no limitations or challenges for obtaining groundwater during the past five years as the City has been operating well within the sustainable yield, and the available groundwater quantity was sufficient.

Figure 5: Historical Water Supplies and City Area



Notes:
1. Includes both potable and non-potable groundwater pumped.
2. Consistent with City of Manteca WMP Figure 2-4.

City-Produced Groundwater

The City owns and operates 17 potable water wells (15 active and 2 standby) – 2 of which began production in 2019 – and 31 irrigation wells. To meet potable drinking water standards, some wells require wellhead treatment for arsenic and other contaminants. The City has also constructed dedicated shallow irrigation wells at many parks in an effort to reduce the demand for treated water. Shallower wells have higher rates of nitrogen contamination than deeper wells and are thus typically used for irrigation.

The annexation of new lands into City limits would result in a corresponding increase in the volume of available groundwater while operating within the sustainable yield. Future annexations would further expand the available volume of water at a rate of 0.94 AFY/Ac.

Pumping by Others

As discussed in the WMP, available groundwater – within the ESJ Subbasin sustainable yield – for the City is affected by City-owned and operated wells in addition to those owned and operated by others pumping groundwater from within City limits. Groundwater pumping within City limits by entities other than the City must be included in groundwater volume accounting for the purposes of this evaluation. Manteca Unified School District (MUSD), SSJID, and others own and operate groundwater wells within the City service area. Below is a list of all known entities that pump groundwater within City limits:

- **MUSD** – It is assumed that MUSD irrigates 25% of its parcels, at 4 AFY/Ac. Given that MUSD has approximately 500 acres of land, total annual water use is estimated at 500 AFY.
- **SSJID** – The best available groundwater pumping data for SSJID is pumping records from 2010-2015 as presented in the City's 2015 UWMP. Based on this data, an average of 4,860 AFY was pumped from SSJID-leased wells, and of this, an average of 2,860 AFY was pumped within the City planning area. For planning purposes, it is assumed that 2,860 AFY is pumped by SSJID through the planning horizon of 2045.
- **Eckert Cold Storage** – The City treated an average of 101 AFY of wastewater produced by Eckert for the period of 2016-2020. Using an estimated return-to-sewer ratio of 85%, groundwater pumping by Eckert is estimated at 120 AFY.
- **Others** – There are likely other industrial and commercial users that pump groundwater within City limits. The City does not have any methods to estimate these additional unknown quantities.

Groundwater Management

The 2014 SGMA enacted groundwater management legislation in California in response to continued overdraft of the State's groundwater resources. It required the formation of Groundwater Sustainability Agencies (GSAs) responsible for developing GSPs with plans to achieve sustainable groundwater use in the basin by 2040. The SGMA defines sustainable groundwater management as "management and use of groundwater in a manner that can be maintained during the planning and implementation horizon without causing undesirable results." These GSPs are intended to foster long-term and coordinated management of high- and medium-priority groundwater basins, which includes the ESJ Subbasin. The City, along with 15 other GSAs formed the Eastern San Joaquin Groundwater Authority (ESJGWA) in 2017 to prepare its first GSP – the ESJ Subbasin GSP – which was completed in 2019. This GSP presents a set of 23 potential projects designed to offset groundwater use by shifting water supply to other sources or to supplement groundwater supplies through groundwater recharge to meet current and future water demands and stay within the ESJ Subbasin's sustainable yield.

No adjudicated areas or areas covered by an alternative to a GSP exist within the ESJ Subbasin.

Overdraft Conditions

According to DWR's 2020 update of the Bulletin 118 Critically Overdrafted Basins Map, ESJ Subbasin remains classified as a basin in critical condition of overdraft. Overdraft occurs when the average annual amount of groundwater extraction exceeds the long-term average annual supply of water to the basin. Effects of overdraft can include saltwater intrusion, land subsidence, groundwater depletion, and/or chronic lowering of groundwater levels (https://water.ca.gov/Programs/Groundwater-Management/Bulletin-118/Critically-Overdrafted-Basins).

As presented in Section 2.2.1.1 of the ESJ Subbasin GSP, groundwater levels in the ESJ Subbasin decreased at an average rate of 0.5 feet/year from 1996-2015. The largest decrease in groundwater elevation has taken place in the center of the Subbasin, east of the City of Stockton, resulting in a pumping depression in this area. There are other localized pumping

depressions, however, the central depression east of the City of Stockton is the most significant consideration in achieving sustainable groundwater use in the ESJ Subbasin as a whole.

As discussed previously, the commissioning of the WTP in 2005 as part of the SCWSP has significantly decreased the City's reliance on groundwater as a supply source and has reduced groundwater pumping rates within City limits to well below the ESJ Subbasin sustainable yield of 0.94 AFY/Ac. This has stabilized groundwater levels within the City and according to the ESJ Integrated Regional Water Management Plan (IRWMP) 2014 Update, long-term groundwater elevations suggest water level recovery in some areas of the Subbasin.

Continued water conservation efforts, increased utilization of recycled water, and the continued balance of surface water and groundwater use will help maintain the City's water supply reliability and help preserve groundwater levels into the future.

Projected Groundwater Supply

Groundwater supply projections developed for the 2020 UWMP used the calculated total safe yield for the ESJ Subbasin minus the City-owned non-potable irrigation wells serving parks and schools, and SSJID-owned non-potable wells within City limits. The projected groundwater supplies for 2025 to 2035 were linearly interpolated between the 2020 total safe yield (12,925 AFY/acre) and estimated 2040 total safe yield. The 2040 total safe yield was developed using the anticipated buildout water service area acreage of 20,400 presented in the 2022 General Plan Update. Projected groundwater supply for 2045 was linearly extrapolated.

As discussed previously, the City's available groundwater supply is affected by pumping within City limits by others. It is assumed that the estimated pumping by MUSD, SSJID, and Eckert Cold Storage have been accounted for in the adjustments made to the projected total safe yield outlined in the 2020 UWMP. The 2020 UWMP total projected available groundwater supply is presented in **Table 10** below.

Table 10: Historical, Current, and Projected Available Groundwater Supply, AFY

	2020	2025	2030	2035	2040	2045
2020 UWMP Projections	8,164	9,727	13,490	15,052	16,615	18,178

Source: City of Manteca 2020 UWMP, Table 6-10: Water Supplies – Actual and Table 6-11: Water Supplies – Projected

Recycled Water

Municipal wastewater is treated at the Manteca WQCF, owned and operated by the City since 1959, which treats municipal sanitary sewage from the City of Manteca, portions of Lathrop, and Raymus Village, just northeast of the City.

The WQCF is an activated sludge tertiary treatment plant. The facility includes an influent pump station and primary, secondary, and tertiary treatment facilities. Discharge of treated wastewater is subject to the waste discharge requirements set forth in the WQCF's National Pollutant Discharge Elimination System (NPDES) Permit (https://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/san_joaquin/r5-2021-0003_npdes.pdf).

Undisinfected secondary effluent is either stored for agricultural use in a 15-MG pond or blended with food processing waste and applied directly on the agricultural fields owned by the City (190 acres) and Dutra Farms, Inc. (70 acres) surrounding the WQCF – primarily during the dry season.

The remaining secondary effluent undergoes tertiary treatment and is either pumped to a truck fill station at the entrance of the WQCF for construction vehicles to receive recycled water for construction purposes or discharged through a 36-inch diameter pipe into the San Joaquin River. As the practice of discharging to agricultural fields is gradually phased out due to land development, effluent will increasingly be diverted for recycled water uses and/or discharged to the San Joaquin River.

The City's Wastewater Master Plan (WWMP) and WMP were updated in 2012 and 2005, respectively, and each include projected recycled water use to aid in the disposal of wastewater and offset potable water demand. The City is also exploring opportunities for recycled water augmentation.

Recycled water supply is limited primarily by the City's capacity (infrastructure and demand) to utilize it. Thus, recycled water supply quantities are assumed to match the recycled water demand quantities presented previously in **Table 6**.

Historical, Current, and Projected Water Supply

Total historical and projected available water supplies are summarized in **Table 11** based on discussions above.

Table 11: Historical, Current, and Updated Projected Water Supply, AFY

Source	2020	2025	2030	2035	2040	2045
Surface Water[1]	11,500	11,500	11,500	11,500	18,500	18,500
Groundwater[2]	8,164	9,727	13,490	15,052	16,615	18,178
Recycled Water[3]	718	718	2,692	2,693	2,694	2,695
Total	**20,382**	**21,945**	**27,682**	**29,245**	**37,809**	**39,373**

Notes:
1. Surface water supply projections from **Table 9**.
2. Groundwater supply projections from **Table 10**.
3. Recycled water supply is equal to the recycled water demand listed in **Table 6**.

7.0 Potable Water Supply Reliability

Water Code Section 10631 *(Urban Water Management Plan requirements)*

(c) (1) Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage, to the extent practicable, and provide data for each of the following:

(A) An average water year. (B) A single-dry water year. (C) Multiple-dry water years.

(2) For any water source that may not be available at a consistent level of use, given specific legal, environmental, water quality, or climatic factors, describe plans to supplement or replace that source with alternative sources or water demand management measures, to the extent practicable.

The information provided in this section references and/or is based on the 2020 UWMP.

Constraints on Water Supply Sources

This section presents a discussion of the potential legal, environmental, and/or climatic factors that may place constraints on each of the City's water supply sources.

Surface Water

Surface water supply reliability is dependent on storage and release from dams along the Stanislaus River upstream of the WTP intake. While SSJID has surface water rights to approximately 600,000 AFY jointly held with the Oakdale Irrigation District (OID), the full allocation to SSJID and OID is subject to runoff from the Stanislaus River and other constraints per the 1988 Stipulation and Agreement with the U.S. Bureau of Reclamation (1988 Agreement) that constructed and operates the New Melones Reservoir on the Stanislaus River.

According to the 1988 Agreement, SSJID is entitled to 300,000 AFY during normal water years, however drought conditions and seasonal variations have the potential to reduce the allocation to SSJID and the contracted cities it delivers water to, including the City, depending on the New Melones Reservoir inflow. The following equation governs water supply availability to SSJID when inflows are less than 600,000 AF:

$$New\ Melones\ Inflow + [(600{,}000 - New\ Melones\ Inflow) \div 3]$$

Currently, SSJID is expected to provide total supplies (including potable water and irrigation) ranging from 225,000 AFY to 300,000 AFY to members of the SCWSP and to agricultural users throughout the county, though the lowest supply on record was 225,000 AFY in both 2014 and 2015 per SSJID's 2020 UWMP. When shortages do occur, SSJID and OID share the deficiencies equally.

SSJID supplies surface water from the New Melones Reservoir to the SCWSP as well as agricultural users across the district. According to the SCWSP agreement, reduced surface water allocation to the City from SSJID will take place in conjunction with a reduction of agricultural irrigation water supply allocation by SSJID.

Groundwater

There are many factors that can affect groundwater supply reliability, including:

- Current storage conditions,
- Water quality issues,
- Seasonal groundwater level variations, and
- Climate change effects.

Reductions in groundwater pumping by the City, combined with seasonal variations such as intense wet seasons, can result in increased groundwater table elevations. On the other hand, City wells draw from the ESJ Subbasin, the same basin that the City of Lathrop, City of Stockton, SSJID, and other private groundwater pumping wells draw from; this can contribute to lower groundwater table elevations.

While seasonal fluctuations do have a noticeable effect on groundwater table elevations over the course of a single year, historical trends showed an overall decline in the groundwater table until the SCWSP was implemented in 2005. This shift in water supply to surface water provided by SSJID has helped groundwater table elevations recover within City limits by reducing pumping in the area. Despite efforts within the City, the ESJ Subbasin remains classified as a basin in critical condition of overdraft according to DWR's 2020 update of the Bulletin 118 Critically Overdrafted Basins Map.

For the purposes of this evaluation, only groundwater pumping estimated to occur within City limits is considered. The projected groundwater supply reliability does not account for groundwater pumping outside the City nor undocumented privately owned domestic or irrigation wells. Total groundwater pumping will likely increase as population increases, and it is possible that groundwater pumping by private well owners (MUSD, Eckert Cold Storage, and others) may also increase in dry years when surface water cutbacks occur. Constant groundwater pumping from MUSD, and Eckert Cold Storage have been assumed for all future hydrologic scenarios.

One of the serious consequences of groundwater overdrafting is the decline in groundwater elevations, which has the potential of allowing saltwater intrusion, among other negative effects. For the ESJ Subbasin, saltwater intrusion is of particular concern along the western boundary of the Subbasin. Saltwater is difficult and expensive to desalinate to potable water standards, and its intrusion into the groundwater basin can compromise the reliability of the groundwater supply by forcing wells to be abandoned or requiring additional treatment to maintain sufficient water quality. The City of Stockton, located to the northwest of the City, has already experienced intrusion of saltwater underlying the Delta region, and the City of Lathrop has also identified saltwater intrusion in the past. If the City pumps groundwater within the sustainable yield, saltwater intrusion is not expected to be an issue in relation to the reliability of groundwater supply.

The City's groundwater supply has historically been highly reliable with respect to seasonal conditions and climatic variations. During peak water demands in the summer, static and pumped water levels at all wells throughout the City remain fairly consistent over the course of the season. Fluctuations in groundwater levels from climatic variations have been documented in monitoring by the San Joaquin County Flood Control and Water Conservation District (Flood Control District), which monitors water quality and groundwater levels at a number of wells throughout San Joaquin County. The Flood Control District groundwater monitoring includes one SSJID well located in

the southeast part of the City. The most notable variations in groundwater from climatic conditions were the steep declines observed at this well during the droughts of 1976-77 and 1987-94.

Recycled Water

As mentioned previously, the City is exploring the expansion and use of recycled water from the WQCF for water supply augmentation. Recycled water is not directly dependent on the climate and thus, this is assumed to be a fully reliable and growing source of water supply for non-potable uses. Additionally, as the recycled water infrastructure is expanded, it is expected that the increased utilization of recycled water for non-potable uses will shift some of the use from groundwater pumping, leaving additional potable supply available from groundwater pumping to accommodate the projected population increases.

Water Service Reliability

This section presents a comparison of the City's projected water supply availability during a normal year, a single dry year, and multiple consecutive dry years in order to assess the reliability of the City's water supplies. As mentioned above, the availabilities of both groundwater and recycled water are assumed to be unaffected by drought conditions and are thus projected to be 100% available during dry years, as listed in **Table 12**. As a retailer that receives a significant portion of water supply from SSJID through the SCWSP, the City has adopted the same basis for its retailer water service reliability assessment as SSJID. Because the drought conditions that affect the New Melones Reservoir are shared equally by SSJID and OID, the percentages of the average supply available under each condition are assumed to be proportional for SSJID's and the City's total supplies.

- **Normal Year** – This condition represents the water supplies available under normal (average) conditions. This is identified as 2010 in the 2020 UWMP.
- **Single Dry Year** – This is the year that represents the lowest historic water supply available. This is identified as 2012 in the 2020 UWMP.
- **Multiple Dry Years** – This condition is the driest five-year historical sequence of water supply. This period is identified as 2012-2016 in the 2020 UWMP.

Table 12: Available Water Supply under Normal and Dry Years, AFY

Year Type	Base Year	% of Average Supply Available		
		Surface Water	Groundwater	Recycled Water
Normal Year	2010	100	100	100
Single Dry Year	2020	84	100	100
Multiple Dry Years – Year 1	2012	100	100	100
Multiple Dry Years – Year 2	2013	100	100	100
Multiple Dry Years – Year 3	2014	84	100	100
Multiple Dry Years – Year 4	2015	84	100	100
Multiple Dry Years – Year 5	2016	100	100	100

Notes:
1. Based on City of Manteca 2020 UWMP, Table 7-3: Water Supply Volume Available.

Using the percentages presented in **Table 12** applied to the updated water supply projections presented in **Table 11**, **Table 13** presents the updated water supply projections during dry years.

Table 13: Updated Projected Water Supply under Normal and Dry Years, AFY

Year Type	2025	2030	2035	2040	2045
Normal[1]	20,105	25,842	27,405	34,849	36,413
Single Dry	21,945	27,682	29,245	37,809	39,373
Multiple Dry – Year 1	21,945	27,682	29,245	37,809	39,373
Multiple Dry – Year 2	20,105	25,842	27,405	34,849	36,413
Multiple Dry – Year 3	20,105	25,842	27,405	34,849	36,413
Multiple Dry – Year 4	21,945	27,682	29,245	37,809	39,373
Multiple Dry – Year 5	20,105	25,842	27,405	34,849	36,413

Notes:
1. Updated total water supply projections taken directly from **Table 11**.

8.0 Determination of Water Supply Sufficiency based on Requirements of SB 610

Water Code Section 10910

(c) (4) If the city or county is required to comply with this part pursuant to subdivision (b), the water assessment for the project shall include a discussion with regard to whether the total projected water supplies, determined to be available by the city or county for the project during normal, single dry, and multiple dry water years during a 20-year projection, will meet the projected water demand associated with the proposed project, in addition to existing and planned future uses, including agricultural and manufacturing uses.

Water Code Section 10911

(c) The city or county may include in any environmental document an evaluation of any information included in that environmental document provided pursuant to subdivision (b). The city or county shall determine, based on the entire record, whether projected water supplies will be sufficient to satisfy the demands of the project, in addition to existing and planned future uses. If the city or county determines that water supplies will not be sufficient, the city or county shall include that determination in its findings for the project.

Summary of Water Demand and Supplies with Proposed Project

A comparison of the City's projected water supplies and demands are presented for a normal year, a single dry year, and multiple dry years in **Table 14**. For purposes of this WSA, no demand reductions are assumed during dry years.

Pursuant to Water Code section 10910(c)(4) and based on the technical analyses described in this WSA, the total projected water supplies determined to be available for the Proposed Project during normal and multiple dry years for a 20-year projection are sufficient to meet the projected water demand of the Proposed Project in addition to existing and planned future uses.

Assuming implementation of the Proposed Project by 2025, total demands, including Proposed Project demands, are 17,700 AFY, which falls within the projected supplies for all normal years. Further development and growth can be accommodated in all dry years through 2045.

Table 14: City Water Supply and Demand Comparisons, AFY

			2025	2030	2035	2040	2045
Normal Year		Total Supply	21,945	27,682	29,245	37,809	39,373
		Total Demand[1]	17,700	22,813	25,374	28,260	31,513
		Surplus/ (Shortfall)	**4,245**	**4,869**	**3,871**	**9,549**	**7,860**
Single Dry Year		Total Supply	20,105	25,842	27,405	34,849	36,413
		Total Demand[2]	17,700	22,813	25,374	28,260	31,513
		Surplus/ (Shortfall)	**2,405**	**3,029**	**2,031**	**6,589**	**4,900**
Multiple Dry Years	Year 1	Total Supply	21,945	27,682	29,245	37,809	39,373
		Total Demand[2]	17,700	22,813	25,374	28,260	31,513
		Surplus/ (Shortfall)	**4,245**	**4,869**	**3,871**	**9,549**	**7,860**
	Year 2	Total Supply	21,945	27,682	29,245	37,809	39,373
		Total Demand[2]	17,700	22,813	25,374	28,260	31,513
		Surplus/ (Shortfall)	**4,245**	**4,869**	**3,871**	**9,549**	**7,860**
	Year 3	Total Supply	20,105	25,842	27,405	34,849	36,413
		Total Demand[2]	17,700	22,813	25,374	28,260	31,513
		Surplus/ (Shortfall)	**2,405**	**3,029**	**2,031**	**6,589**	**4,900**
	Year 4	Total Supply	20,105	25,842	27,405	34,849	36,413
		Total Demand[2]	17,700	22,813	25,374	28,260	31,513
		Surplus/ (Shortfall)	**2,405**	**3,029**	**2,031**	**6,589**	**4,900**
	Year 5	Total Supply	21,945	27,682	29,245	37,809	39,373
		Total Demand[2]	17,700	22,813	25,374	28,260	31,513
		Surplus/ (Shortfall)	**4,245**	**4,869**	**3,871**	**9,549**	**7,860**

Notes:
1. Updated demand projections taken directly from **Table 6**.
2. Updated demand projections for dry years taken directly from **Table 8**.

Strategies and Actions to Address Dry Year Supply Shortfalls

Water Code Section 10911

(a) If, as a result of its assessment, the public water system concludes that its water supplies are, or will be, insufficient, the public water system shall provide to the city or county its plans for acquiring additional water supplies, setting forth the measures that are being undertaken to acquire and develop those water supplies. If the city or county, if either is required to comply with this part pursuant to subdivision (b), concludes as a result of its assessment, that water supplies are, or will be, insufficient, the city or county shall include in its water assessment its plans for acquiring additional water supplies, setting forth the measures that are being undertaken to acquire and develop those water supplies. Those plans may include, but are not limited to, information concerning all of the following:

(1) The estimated total costs, and the proposed method of financing the costs, associated with acquiring the additional water supplies.

(2) All federal, state, and local permits, approvals, or entitlements that are anticipated to be required in order to acquire and develop the additional water supplies.

(3) Based on the considerations set forth in paragraphs (1) and (2), the estimated timeframes within which the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), expects to be able to acquire additional water supplies.

As presented in **Table 14**, no water supply shortages have been identified. However, in the event that there were shortages, provided below are some of the mitigation measures that can be implemented:

- **Implementation of the WSCP** – To remain conservative, City projected dry year water demands were not adjusted for this analysis. In reality, during dry years, the City would implement the WSCP to incentivize residents to reduce their water use by certain amounts depending on the severity of the water shortage. The stages of the City's currently adopted WSCP are presented in **Table 7**. The City has implemented the WSCP and successfully reduced water use during droughts in the past.
- **Supply augmentation with recycled water** – As mentioned previously, the City is currently analyzing options to augment the City's current water supply portfolio with recycled water. This option would increase the available potable water supply by offsetting some of the groundwater use and could potentially mitigate water supply shortfalls as well as generally increase supply reliability.

9.0 WSA Approval Process

Water Code Section 10910

(g) (1) Subject to paragraph (2), the governing body of each public water system shall submit the assessment to the city or county not later than 90 days from the date on which the request was received. The governing body of each public water system, or the city or county if either is required to comply with this act pursuant to subdivision (b), shall approve the assessment prepared pursuant to this section at a regular or special meeting.

Water Code Section 10911

(b) The city or county shall include the water assessment provided pursuant to Section 10910, and any information provided pursuant to subdivision (a), in any environmental document prepared for the project pursuant to Division 3 (commencing with Section 21000) of the Public Resources Code.

As indicated above, this WSA must be included in the Draft EIR being prepared for the Proposed Project. The City will need to adopt this WSA as part of the CEQA environmental review for the Proposed Project, including the findings described in the previous section.

In addition, SB 221 applies to residential subdivisions of over 500 dwelling units and requires that the water supplier provide a written verification that the water supply for the project is sufficient prior to issuance of the final permits. Because the Proposed Project includes 818 residential dwelling units, it is subject to the requirements of SB 221 (Government Code section 66473.7) and a verification of sufficient water supply (SB 221) report will be required prior to final approvals.