



RECIRCULATED DRAFT

ENVIRONMENTAL IMPACT REPORT – VOLUME IV

FOR THE

MANTECA GENERAL PLAN UPDATE
(SCH: 2020019010)

NOVEMBER 2022

VOLUME I: COVER THROUGH SECTION 3.5

VOLUME II: SECTION 3.6 THROUGH CHAPTER 4.0

VOLUME III: CHAPTER 5.0 THROUGH CHAPTER 7.0

VOLUME IV: APPENDICES

Prepared for:

City of Manteca
Development Services
1215 W. Center Street, Suite 201
Manteca, CA 95337
(209) 456-8000

Prepared by:

De Novo Planning Group
1020 Suncastr Lane, Suite 106
El Dorado Hills, CA 95762
(916) 812-7927

D e N o v o P l a n n i n g G r o u p

A Land Use Planning, Design, and Environmental Firm



RECIRCULATED DRAFT
ENVIRONMENTAL IMPACT REPORT – VOLUME IV

FOR THE

MANTECA GENERAL PLAN UPDATE
(SCH: 2020019010)

NOVEMBER 2022

VOLUME I: COVER THROUGH SECTION 3.5

VOLUME II: SECTION 3.6 THROUGH CHAPTER 4.0

VOLUME III: CHAPTER 5.0 THROUGH CHAPTER 7.0

VOLUME IV: APPENDICES

Prepared for:

City of Manteca
Development Services
1215 W. Center Street, Suite 201
Manteca, CA 95337
(209) 456-8000

Prepared by:

De Novo Planning Group
1020 Suncast Lane, Suite 106
El Dorado Hills, CA 95762
(916) 812-7927

Appendix A

Notice of Preparation and NOP Comments

Note: References to the proposed Project within Appendix A pertain to Alternative D. The proposed Project replaced Alternative D and Alternative D replaced the proposed Project in the Recirculated Draft EIR.

DEPARTMENT OF TRANSPORTATION
OFFICE OF THE DISTRICT 10 DIRECTOR
P.O. BOX 2048, STOCKTON, CA 95201
(1976 E. DR. MARTIN LUTHER KING JR. BOULEVARD 95205)
PHONE (209) 948-7943
FAX (209) 948-3670
TTY 711
www.dot.ca.gov



*Making Conservation
a California Way of Life.*

January 27, 2020

**Manteca General Plan NOP
SCH 2020019010
10-SJ-Variou**

Mr. Hightower
City of Manteca
1001 West Center Street
Manteca, CA 95337

Dear Mr. Hightower,

The California Department of Transportation (Department) appreciates the opportunity to review and comment on the Manteca (City) General Plan NOP. The Department encourages the City to consider the following comments during the General Plan process:

- Growth and development can have a significant impact on traffic and congestion on State transportation facilities. In particular, the pattern of land use can affect both total vehicle miles traveled and the number of trips per household. In order to create more efficient and livable communities, the Department encourages the City of Manteca to work towards a safe, functional, interconnected, multi-modal system integrated with “smart growth” type land use planning.
- In lieu of reliance on the automobile for every trip, the Department supports the concept of a local circulation system which is pedestrian-, bicycle-, and transit-friendly in order to enable residents to choose alternative modes of transportation. Also, a mixture of land uses creates opportunities to substitute walking for driving. Improved transit accommodation through the provision of park and ride facilities, signal prioritization, or other enhancements can also improve mobility.

If you have any questions, please contact Joshua Swearingen at (209) 948-7142 (email: Joshua.swearingen@dot.ca.gov) or me at (209) 941-1921. We look forward to continuing to work with you in a cooperative manner.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Tom Dumas'.

TOM DUMAS, Chief
Office of Metropolitan Planning

From: Alan Powers [mailto:qpowers@msn.com]

Sent: Monday, February 03, 2020 4:16 PM

To: Hightower, Jeffrey

Subject: Manteca General Plan Updated Environmental Impact Report

February 3, 2020

Dear Manteca City Council:

I am writing to express my displeasure on the proposed expressway south of Highway 120. I built my home at 21301 Oleander Ave myself in 1979 and raised my family there. My daughter, Leah, and her family still live there. I have seen Manteca grow from a small, family centered community to what it has become today, a bedroom community for the Bay Area. We built our home far out of town to live in the country. Now I see Manteca becoming another San Jose with all the big city problems that come with large cities.

Please do not build an express way here. Use the existing roadways and widen and upgrade them as necessary. Do not impact the people who have lived in this area for many years and never expected the city to sprawl out in their area. Consider limiting growth and the problems that come with it- more expenses for more fire, police, schools, parks, roads, etc. Housing sprawl does not provide long-term, high paying jobs, but it does destroy the quality of life for the people who live here. We are becoming a bedroom community for people who work elsewhere. A bedroom community atmosphere does not lend itself to the type of community that people wish to live in. Please protect our community.

Sincerely,

Curtis "Alan" Powers

Sent from my iPhone



Central Valley Regional Water Quality Control Board

16 January 2020

RECEIVED

JAN 21 2020

J.D. Hightower
City of Manteca
1001 West Center Street
Manteca, CA 95337

**COMMUNITY DEVELOPMENT
DEPARTMENT**

CERTIFIED MAIL
7019 0700 0002 0111 6456

COMMENTS TO REQUEST FOR REVIEW FOR THE NOTICE OF PREPARATION FOR THE DRAFT ENVIRONMENTAL IMPACT REPORT, MANTECA GENERAL PLAN UPDATE PROJECT, SCH#2020019010, SAN JOAQUIN COUNTY

Pursuant to the State Clearinghouse's 6 January 2020 request, the Central Valley Regional Water Quality Control Board (Central Valley Water Board) has reviewed the *Request for Review for the Notice of Preparation for the Draft Environmental Impact Report* for the Manteca General Plan Update Project, located in San Joaquin County.

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

I. Regulatory Setting

Basin Plan

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

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

KARL E. LONGLEY ScD, P.E., CHAIR | PATRICK PULUPA, ESQ., EXECUTIVE OFFICER

of Administrative Law (OAL) and in some cases, the United States Environmental Protection Agency (USEPA). Basin Plan amendments only become effective after they have been approved by the OAL and in some cases, the USEPA. Every three (3) years, a review of the Basin Plan is completed that assesses the appropriateness of existing standards and evaluates and prioritizes Basin Planning issues. For more information on the *Water Quality Control Plan for the Sacramento and San Joaquin River Basins*, please visit our website:

http://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/

Antidegradation Considerations

All wastewater discharges must comply with the Antidegradation Policy (State Water Board Resolution 68-16) and the Antidegradation Implementation Policy contained in the Basin Plan. The Antidegradation Implementation Policy is available on page 74 at:

https://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/sacsjr_201805.pdf

In part it states:

Any discharge of waste to high quality waters must apply best practicable treatment or control not only to prevent a condition of pollution or nuisance from occurring, but also to maintain the highest water quality possible consistent with the maximum benefit to the people of the State.

This information must be presented as an analysis of the impacts and potential impacts of the discharge on water quality, as measured by background concentrations and applicable water quality objectives.

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

II. Permitting Requirements

Construction Storm Water General Permit

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

http://www.waterboards.ca.gov/water_issues/programs/stormwater/constpermits.shtml

Phase I and II Municipal Separate Storm Sewer System (MS4) Permits¹

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

For more information on which Phase I MS4 Permit this project applies to, visit the Central Valley Water Board website at:

http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/municipal_permits/

For more information on the Phase II MS4 permit and who it applies to, visit the State Water Resources Control Board at:

http://www.waterboards.ca.gov/water_issues/programs/stormwater/phase_ii_municipal.shtml

Industrial Storm Water General Permit

Storm water discharges associated with industrial sites must comply with the regulations contained in the Industrial Storm Water General Permit Order No. 2014-0057-DWQ. For more information on the Industrial Storm Water General Permit, visit the Central Valley Water Board website at:

http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/industrial_general_permits/index.shtml

Clean Water Act Section 404 Permit

If the project will involve the discharge of dredged or fill material in navigable waters or wetlands, a permit pursuant to Section 404 of the Clean Water Act may be needed from the United States Army Corps of Engineers (USACE). If a Section 404 permit is required by the USACE, the Central Valley Water Board will review the permit application to ensure that discharge will not violate water quality standards. If the project requires surface water drainage realignment, the applicant is advised to contact the Department of Fish and Game for information on Streambed Alteration Permit requirements. If you have any questions regarding the Clean Water Act Section 404 permits, please contact the Regulatory Division of the Sacramento District of USACE at (916) 557-5250.

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

Clean Water Act Section 401 Permit – Water Quality Certification

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

https://www.waterboards.ca.gov/centralvalley/water_issues/water_quality_certification/

Waste Discharge Requirements – Discharges to Waters of the State

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

https://www.waterboards.ca.gov/centralvalley/water_issues/waste_to_surface_water/

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

https://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2004/wqo/wqo2004-0004.pdf

Dewatering Permit

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

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

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

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

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

Limited Threat General NPDES Permit

If the proposed project includes construction dewatering and it is necessary to discharge the groundwater to waters of the United States, the proposed project will require coverage under a National Pollutant Discharge Elimination System (NPDES) permit. Dewatering discharges are typically considered a low or limited threat to water quality and may be covered under the General Order for *Limited Threat Discharges to Surface Water* (Limited Threat General Order). A complete Notice of Intent must be submitted to the Central Valley Water Board to obtain coverage under the Limited Threat General Order. For more information regarding the Limited Threat General Order and the application process, visit the Central Valley Water Board website at:

https://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/general_orders/r5-2016-0076-01.pdf

NPDES Permit

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

<https://www.waterboards.ca.gov/centralvalley/help/permit/>

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



Nicholas White
Water Resource Control Engineer

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

January 29, 2020

VIA ELECTRONIC MAIL

Mr. J.D. Hightower
Interim Community Development Director/Planning Manager
Community Development Department
Planning Division
1001 West Center Street
Manteca, California 95337
Email: jhightower@ci.manteca.ca.us

Re: City of Manteca
Comprehensive General Plan Update
Comments Regarding Scope and Content of the Environmental Impact Report
(CEQA Guideline Section 15082)

Dear Mr. Hightower:

EXECUTIVE SUMMARY

The environmental impact report should evaluate a range of non-residential land use options for real property abutting or near the Delicato winery property. The environmental impact report should also evaluate whether the width for the non-residential land use designation is sufficient to lessen impacts to less than significant. The environmental impact report must consider on-site development mitigation measures required for land near the Delicato property that is designated for residential development. The environmental impact report must assess General Plan policies to lessen the significance of environmental impacts. Finally, the environmental impact report must carefully evaluate and propose land use options to the direct conflict at one intersection with the Delicato property where inconsistent residential land uses are proposed.

ANALYSIS

This office represents Delicato Vineyards (Delicato). As you are aware Delicato actively participated in all junctures of the City of Manteca General Plan update, including but not limited to the multiple public meetings conducted by the Manteca G-PAC, the Manteca Planning Commission, the Manteca City Council and a joint meeting with the Planning Commission and City Council.

Indeed, Delicato's participation is consistent with CEQA. CEQA announces that:

“Public participation is an essential part of the CEQA process. Each public agency should include provisions in its CEQA procedures for wide public involvement, formal and informal...”

This guiding principle has been endorsed by controlling legal authorities. See, *Bakersfield Citizens for Local Control v. City of Bakersfield* (2004) 124 Cal.App.4th 1184, 1200; *Washoe Meadows Community v. Department of Parks & Recreation* (2017) 17 Cal.App.5th 277, 285 [“Informed public participation is essential to environmental review under the California Environmental Quality Act, Pub. Resources Code, § 21000 *et seq.* When an environmental impact report is required, the lead agency must notify the responsible agencies, which may then do early public consultation, or scoping, to determine the scope and content of the information to be included.”]. Consistent with the guiding principle enunciated by statute, state guideline and controlling decisional law, Delicato offers the following comments to Manteca's Notice of Preparation dated January 6, 2020.

While Delicato has numerous environmental and quality of life concerns related to the General Plan update, to date the majority of Delicato comments presented at the numerous public hearings have focused on potentially significant impacts from adopting incompatible land uses near or adjoining Delicato's agricultural processing operation. In fact, after listening to land use and environmental concerns raised by Delicato and others, the City Council rejected a G-PAC recommendation¹ to designate territory next to the Delicato property as residential and instead replaced these proposed residential uses with non-residential uses. It remains the task of the environmental impact report to analyze, study and assemble data and information about the range of non-residential uses and whether the *type of non-residential uses* and the *width of the non-residential designation* are each sufficient to lessen potentially significant environment impacts to less than significant.

As repeatedly explained to City officials, **Delicato is one of the nation's five largest wineries and employs over 850 people**, many of whom live in or near Manteca. Critical to the public policy consideration and the evaluation of the potential environmental impacts of the General Plan update, its entire real property—and not just the area devoted to winery structures—are an integrated part of the winery operation (the Winery Property). To put a finer point on it, territory near the border of the Delicato real property is devoted to discharging process water from the winery operation. In other words, the land surrounding the winery facility devoted to agricultural operations is an

¹ The G-PAC composition was odd in the extreme. A business partner, the son and employee, and a former consulting engineer of one of the developers proposing housing developments adjacent to the Delicato property were G-PAC members. Each fully participated in the decision about designating land uses next to the Delicato property and actively spoke against Delicato's arguments and evidence that supported designating these territories for non-residential land uses. None of these individuals pointed out the conflict of interest created by their association with the developer.

integrated and critical part of the winery operation and not a buffer area as wrongly stated by G-PAC members possessing conflicting economic interests in constructing residential subdivisions near or next to the winery.

As a consequence Manteca's decision concerning designating adjoining land uses on the Manteca General Plan requires a delicate public policy evaluation and compels a comprehensive analysis of alternative land use designations and CEQA mitigation measures in the companion CEQA review.² Since designating the area around or near the Winery Property constitutes a significant environmental effect in terms of land use incompatibility, different and potentially unsafe traffic circumstances due to the confluence of automobile and substantial truck traffic, air quality impacts (in a nonattainment basin) produced by congestion from the conflict between industrial and residential traffic volumes and patterns, and other relevant environmental issues, the environmental impact report must evaluate in detail and comprehensively review the range of appropriate land use alternatives near and adjoining the Winery Property.³ (This analysis needs to take into account from a cumulative impact perspective other industrial and agricultural processing operations, including but not limited to the nearby George Perry and Sons facility, one of the largest shippers of watermelons, pumpkins and hardshell squash, and San Joaquin Delta College's Manteca Center, a 155-acre active and self-sustaining farming operation.

At a bare minimum this impact compels at least a two prong analysis. First, the analysis should consider a range of alternative non-residential land use designation to property adjoining the Winery Property. This analysis needs to produce information and data⁴ to support a conclusion that these non-residential land use designations substantially lessen the potential environmental effects.

We respectfully note the proposed draft General Plan diagram contains a direct land use conflict as to a portion of the land adjoining the Winery Property: the draft General Plan proposes a residential land use designation contiguous to the Winery Property. This produces a significant environmental impact. This direct land use conflict compels the environmental impact report to evaluate alternative non-residential land use designations and also carefully identify and consider meaningful mitigation measures to

² For instance, CEQA Appendix G Section XI (b) requires evaluation of whether a General Plan could "[c]ause a significant impact due to a conflict with any land use plan, policy, or regulation". Similarly, Section (e) requires an analysis of the proposal's potential to indirectly through a chain of events result in a conversion of agricultural lands.

³ Throughout the public hearing process Delicato has not advocated that adjoining property be designated open space. However, the City of Manteca, possessing elastic and ambulatory police power to assign land use designations to the City's General Plan is legally required to consider as part of a legal sufficient environmental impact report analysis the suitability of open space designation from a planning perspective and the feasibility for open space designations of the property adjoining the Winery Property. Omitting this analysis produces a legally deficient environmental impact report.

⁴ "An EIR is an informational document" CEQA Guideline §15121(a). The analysis presented in an EIR shall be supported by Substantial Evidence which is defined as "facts, reasonable assumptions predicated upon facts, and expert opinion supported by facts." *Id.* at §15385 (italics added).

lessen the land use conflict created by designating land abutting the winery property for residential uses.

Additionally the environmental impact report should contain a comprehensive analysis and a conclusion supported by substantial evidence that the proposed **width** of non-residential designated land is sufficient to lessen the significant environmental effect to less than significant. In this instance a non-residential designation serves as both a planning device to reduce land use conflicts and as a mitigation measure under CEQA.

Simply stated does competent specific substantial evidence support a general conclusion that the width of the area of non-residential land designated between the Winery Property and proposed residential land uses is sufficient to lessen impacts to less than significant? In other words, what constitutes an adequate area of separation between the integrated winery facility/property and residential uses? In a CEQA context is the area of separate large enough so that it "could reasonably be expected to reduce adverse impacts"? CEQA Guideline §15126.4(a)(1)(A).

According to the Great Valley Center, "[w]hen building a new subdivision, the costs of installing a buffer are no different than any other costs the developer pays for rendering the land acceptable for housing...In short a buffer is promoted as another aspect of infrastructure needed to make a site suitable for housing." Great Valley Center, "Can City and Farm Coexist?" at 21. Studies propose different buffer area depending upon topographical or climatic conditions and the type of impact that is being mitigated (for instances agricultural spraying, odors, dust or noise) but generally speaking a recommended area of separation can roughly equal at least 3,281 feet. Other studies combine areas of separate plus additional mitigation measures such as the planting of certain types of mature trees that reduce odor impacts.⁵ Our point is straightforward: the environmental impact report must study whether non-residential designations (the area of separation) are sufficiently wide to lessen potential impacts and must also produce substantial evidence to substantiate a conclusion about the adequacy of the designation's width. It must also consider mitigation located on the proposed residential real property.

Finally, Delicato offers the following proposed revised or new policies as mitigation measures to minimize significant environmental impacts. These policies are revised or newly drafted to assure consistency with CEQA's requirement that mitigation measures for a plan must be "fully enforceable" through incorporation of measures in a plan. CEQA's Guideline subsection §15126.4(a)(2). The revised or new policies are presented as follows:

⁵ Sullivan, Anderson and Lovell, "Agricultural buffers and the rural-urban fringe: an examination of approval by farmers, residents, and academics in the Midwestern United States", Landscape and Urban Planning (2004) vol. 69 at 299-313.

Residential Areas

Draft Manteca General Plan Policy LU-3.2:

Require the design of new residential development to be consistent with any applicable design guidelines, to ensure harmony with Manteca's unique character, and compatible with existing surrounding land uses by reducing potential land use conflicts with existing uses to less than significant.

Draft Manteca General Plan Policy LU-3.8:

Where planned or expanded residential areas and existing residential neighborhoods interface with commercial, industrial, agricultural processing and other non-residential development, require that the proposed development be designed to maximize the compatibility between the uses and reduce to less than significant any potential negative impacts or land use conflicts associated with locating residential uses near the existing non-residential use, including but not limited to aesthetics, noise, safety, odor, and lighting.

Draft Manteca General Plan Policy LU-3.9:

Locate residences away from areas of excessive noise, smoke, dust, odor, and lighting, and ensure that adequate provisions, including buffers or transitional uses, such as less intensive light industrial or commercial designations, are located between the proposed residential uses and more intensive industrial or agricultural processing uses to ensure the health and wellbeing of existing and future residents.

Implementation

Draft Manteca General Plan Implementation LU-3c:

Utilize density transitions, less intense non-residential land use designations and open space buffers in order to protect the integrity of existing land use patterns and minimize the impacts on existing uses and residents. Development projects shall be designed to:

- Locate lower residential densities adjacent to open space, areas of non-processing agricultural use, and existing lower density residential areas;
- Locate higher residential densities in proximity to services, transit, and/or employment activity centers;

- Where new residential uses are proposed adjacent existing industrial uses, the residential development shall incorporate a buffer, such as a roadway, landscaped open space, parking area, detention basin, or similar feature, to separate the residential uses from industrial uses and the project proponent shall provide substantial evidence evidencing that the buffer will reduce the land use conflict to less than significant.

Employment and Revenue Generating Uses

Draft Manteca General Plan Policy LU-5.9 (new policy)

Existing area industrial uses are critical to achieving an acceptable jobs/housing balance; therefore, before approving residential uses near existing industrial, commercial or agricultural processing uses a project proponent must demonstrate that the proposed residential use will not interfere with or increase the cost of operating the existing industrial, commercial or agricultural processing use.

Agricultural Heritage

Draft Manteca General Plan Policy LU-11.5 (new policy)

Designating or approving land for residential purposes next to existing agricultural processing facilities shall be discouraged unless it can be shown that the proposed residential use will not interfere with or increase the cost of operating the agricultural processing facility.

Thank you for this opportunity to comment on the Notice of Preparation. Your attention to these comments is appreciated.

Very truly yours,



STEVEN A. HERUM
Attorney-at-Law

SAH:lac

From: JoAnn & Dan Edward [mailto:usjodan@gmail.com]
Sent: Wednesday, January 22, 2020 10:05 AM
To: Hightower, Jeffrey
Subject: Comprehensive General Plan Update January 2020

Hello JD,

We are sending this email to let you know that we received the Draft Environmental Impact report from Lisa S.

My sister Judith Marek and I came to visit you in October 2019 and you were kind enough to listen to our worries and concerns regarding the property we have between Lathrop and French Camp Roads on the west side frontage road Hwy 99.

Our property is in the general plan and the majority of it is proposed for low density housing, that is what we were hoping for.

Our main concern is what will happen to our homes on the frontage road? Looking at the map, it appears that the proposed Roth Road interchange will take out our existing homes. How will this impact us on selling our homes in the future?

We are not sure if these concerns truly are what the EIR meeting is about, however, we wanted to document with you our concerns.

Do you think we should voice our concerns at the January 27 meeting?

We would like to thank you for your time both in October and today. We look forward to your advice.

Judith Marek 209 986 3178

JoAnn Edward 209 403 1727

Zottarelli Ranch

RECEIVED

FEB 5 2020

COMMUNITY DEVELOPMENT
DEPARTMENT

February 04, 2020

J.D. Hightower
Interim Community Development Director/Planning Manager
for the City of Manteca
1001 West Center Street
Manteca, CA 95337
(jhightower@ci.manteca.ca.us)

Re: Public Comments in response to the January 6, 2020 Notice of
Preparation of the City of Manteca General Plan Updated Environmental
Impact Report

Dear Mr. Hightower:

My name is Marian Rawlins. I am a concerned resident and landowner. I reside at 5880 E. Fig Ave., Manteca, CA. 95337. I have for over 30 years had concerns that I have expressed in letters and in public comments at The Manteca City Council meetings.

Landowners to the south of Peach have consistently requested in letters and also voicing their concerns to City Council members at City Council Meetings. Rural residents have had concerns with the City's intrusion into the rural areas where their homes and business are located. As of this date, February 04, 2020, these concerns and questions remain unanswered and in some instances ignored.

The City of Manteca has been approving a number of projects located in the 200-year flood plain without providing the necessary plan to protect existing homes located in the rural areas south of Peach Avenue, Fig Avenue and Oleander Avenue. It appears the City of Manteca, in their zeal to approve countless projects in the 200 year flood plain, has overlooked the parameters of their own 2023 General Plan. These parameters are still in effect:

Flood Safety – Policy #S-P-11 (page 7-5) Ensure that the impacts of potential flooding are adequately analyzed when considering areas for future urban expansion.

Policy #S-1-8 (page 7-6); New development shall be required to maintain natural stream courses and adjacent habitat and combine flood control, recreation, water quality, and open space functions.

It would seem a good plan for Council Members to make sure guide lines are correctly followed. I would suggest Council check out the October 2010, California Department of Water Resources guide, "A Handbook for Local Communities for

Implementing California Flood Legislation into Local Land Use Planning” (“Land Use Guide”).

1. Water Code section 8307
2. Government Code section 66474.5
3. Government Code section 65860.1
4. Water Code section 9602

Page 12 of The Land Use Guide indicates: “The intent is to improve local planning decisions within flood prone areas by facilitating coordination between land use and flood risk management agencies, ensuring local planning decisions are based on accurate and up to date flood management information and supporting local decisions that are reflective of Statewide and regional flood management plans and objectives.”

Page 36 of The Land Use Guide warns against cities (or counties) taking unreasonable risks associated with Government Code section 65302(G)(2)(B).

Page 37 of The Land Use Guide also warns that identification of a flood hazard zone does not imply that areas outside the flood hazard zones or uses with flood hazard zones will be free from flooding or flood damage.

Page 141 of the Land Use Guide defines State Assembly Bill 70, Water Code section 8307(a) as requiring: “A city or county may be required to contribute its fair and reasonable share of property damage caused by a flood to the extent that the city or county has increased the state’s exposure to liability for property damage by unreasonably approving new development in a previously undeveloped area that is protected by a state flood control project.”

It is reprehensible on the part of The City of Manteca not to provide a competent and complete plan as outlined in the 2023 General Plan. Landowners south of Peach and Fig Avenues must have the assurance that they will not be burdened with additional flooding. City of Manteca has on numerous occasions been forewarned of their foreseeability and accountability for damages that may be incurred due to their dismissal of rural landowners concerns.

Respectfully Submitted


Marian Rawlins

From: marys2go2003@aol.com [mailto:marys2go2003@aol.com]

Sent: Monday, January 27, 2020 3:47 PM

To: Hightower, Jeffrey

Subject: Letter to Advisory Committee and EIR comments

From: marys2go2003 <marys2go2003@aol.com>
Date: Monday, January 27, 2020
Subject: Fwd: Letter to Advisory Committee
To: jdheightower <jdheightower@ci.manteca.ca.us>

Hello JD

As I voiced at the meeting of the City of Manteca General Plan EIR Scoping today I am sending you the letter i submitted to the Advisory Committee of Feb. 2019 to be included in comments of General Plan Update EIR comments.

It is very important that residents are properly noticed by mail prior to approval of changes regarding their street designate. This would include widening, speed zoning, truck routes and STAA truck routes ect.

I am requesting that the revised and updated Genetal Plan Policy precisely states how and when the residents will be notified and a Community Meeting be held prior to any change approval. The current land use change policy that sends notices to residents within 250 feet does not give a voice to the residents directed impacted by the changes of the road use.

I stated at the meeting, the City Wide Truck Study has not be approved as of this date. We had been advise the Study would be presented to the City Council in February 2019. The study must be formally approved prior to the preparation of the EIR. The EIR would be seriously inadequate if the approved STAA Route Map was not included.

Thank you

Mary Meninga

From: mary meninga <grandmamary13@gmail.com>
Date: Monday, January 27, 2020
Subject: Letter to Advisory Committee
To: marys2go2003 <marys2go2003@aol.com>

February 4, 2019

Letter to General Plan Advisory Committee Member

California law defines Environmental Justice as:

"The fair treatment of people of all races, cultures and income with respect to development, adoption, implementation, and enforcement of all environmental laws, regulations and policies."

Thank you for the opportunity to address a subject very dear to my heart. I purchased my property in February of 1973. At that time it was located on a 40 foot country road. A perfect area to start and rise my family surrounded by farm

animals corn fields and grape vineyards.

In a matter of 15 years, I and my neighbors were forced to file a law suit against the City of Manteca related to the lack of Environmental Mitigations for the impacts caused by the proposed development related to traffic concerns in our area. It was a long and very expensive process but we prevailed and won our rights to be protected in the California Court of Appeals.

We attended public meeting at the last General Plan Updated in 2001. We wanted to impress to the City that the General Plan must ensure our homes were deserving the same protections guaranteed to any new home built ie: mitigations for impacts related to increase traffic ie: flooding, noise, vibrations, emissions and safety. Also with proper planning and developers cooperation, these goals could be meet.

So let us jump to 2019. I find myself before you again. My concerns about the safety of my neighbors have not faulted. Yes you may say this is the price of growth and progress but we are entitled to be protected . The properties that you impact with your planning decisions are not just mere houses in the way of progress but where real people and their families live. You must include language in the new update that provide sound walls and separate frontage roads adjacent to arterial streets to protect the long time residents. A perfect example of this type of mitigation can be found at the corner of Louise Ave. and Airport Way. Before the projects were approved across the street the alignment of Louise was changed to protect the residents on the north side.

The language in the General Plan must be clear and precise to address mitigation requirements prior to approval of a new development. Piece mealing to minimize impacts with Negative Declaration is just kicking the can down the road.

Although Circulation Policy #16 in the current General Plan was a start in the right direction, it has been ignored for years.

Proper planning with a strong Circulation Policy in your General Plan will protect the current residents on Lathrop Road, Union Road, Airport Way, Woodward Ave, Austin Road and countless others. If you choose not to include these provisions and only focus on the new developments policies your decisions will not be in the best interest of the residents safety and the Manteca tax payers dollars need to acquire the properties at a later date.

We are requesting that all current properties abutting existing and proposed arterial streets be included in a Disadvantage Area in the General Plan Update.

I would appreciate if you would kept me apprised of the process and to receive all notices.

Thank you

Mary Meninga
915 W. Lathrop Road
Manteca, California 95336



NATIVE AMERICAN HERITAGE COMMISSION

RECEIVED

January 7, 2020

J.D. Hightower
Manteca, City of
1001 West Center Street
Manteca, CA 95337

JAN 13 2020

COMMUNITY DEVELOPMENT
DEPARTMENT

Re: 2020019010, Manteca General Plan Update Project, San Joaquin County

Dear Mr. Hightower:

The Native American Heritage Commission (NAHC) has received the Notice of Preparation (NOP), Draft Environmental Impact Report (DEIR) or Early Consultation for the project referenced above. The California Environmental Quality Act (CEQA) (Pub. Resources Code §21000 et seq.), specifically Public Resources Code §21084.1, states that a project that may cause a substantial adverse change in the significance of a historical resource, is a project that may have a significant effect on the environment. (Pub. Resources Code § 21084.1; Cal. Code Regs., tit.14, § 15064.5 (b) (CEQA Guidelines § 15064.5 (b)). If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an Environmental Impact Report (EIR) shall be prepared. (Pub. Resources Code §21080 (d); Cal. Code Regs., tit. 14, § 5064 subd.(a)(1) (CEQA Guidelines § 15064 (a)(1)). In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources within the area of potential effect (APE).

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

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

Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws.

CHAIRPERSON
Laura Miranda
Luiseño

VICE CHAIRPERSON
Reginald Pagaling
Chumash

SECRETARY
Meri Lopez-Keller
Luiseño

PARLIAMENTARIAN
Russell Attebery
Karuk

COMMISSIONER
Marshall McKay
Wintun

COMMISSIONER
William Mungary
Paiute/White Mountain
Apache

COMMISSIONER
Joseph Myers
Pomo

COMMISSIONER
Julie Tumamait-
Stenslie
Chumash

COMMISSIONER
[Vacant]

EXECUTIVE SECRETARY
Christina Snider
Pomo

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

AB 52

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

- 1. Fourteen Day Period to Provide Notice of Completion of an Application/Decision to Undertake a Project:** Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a lead agency shall provide formal notification to a designated contact of, or tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, to be accomplished by at least one written notice that includes:

 - a. A brief description of the project.
 - b. The lead agency contact information.
 - c. Notification that the California Native American tribe has 30 days to request consultation. (Pub. Resources Code §21080.3.1 (d)).
 - d. A "California Native American tribe" is defined as a Native American tribe located in California that is on the contact list maintained by the NAHC for the purposes of Chapter 905 of Statutes of 2004 (SB 18). (Pub. Resources Code §21073).
- 2. Begin Consultation Within 30 Days of Receiving a Tribe's Request for Consultation and Before Releasing a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report:** A lead agency shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project. (Pub. Resources Code §21080.3.1, subs. (d) and (e)) and prior to the release of a negative declaration, mitigated negative declaration or Environmental Impact Report. (Pub. Resources Code §21080.3.1 (b)).

 - a. For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code §65352.4 (SB 18). (Pub. Resources Code §21080.3.1 (b)).
- 3. Mandatory Topics of Consultation If Requested by a Tribe:** The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:

 - a. Alternatives to the project.
 - b. Recommended mitigation measures.
 - c. Significant effects. (Pub. Resources Code §21080.3.2 (a)).
- 4. Discretionary Topics of Consultation:** The following topics are discretionary topics of consultation:

 - a. Type of environmental review necessary.
 - b. Significance of the tribal cultural resources.
 - c. Significance of the project's impacts on tribal cultural resources.
 - d. If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency. (Pub. Resources Code §21080.3.2 (a)).
- 5. Confidentiality of Information Submitted by a Tribe During the Environmental Review Process:** With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code §6254 (r) and §6254.10. Any information submitted by a California Native American tribe during the consultation or environmental review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public. (Pub. Resources Code §21082.3 (c)(1)).
- 6. Discussion of Impacts to Tribal Cultural Resources in the Environmental Document:** If a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document shall discuss both of the following:

 - a. Whether the proposed project has a significant impact on an identified tribal cultural resource.
 - b. Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code §21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource. (Pub. Resources Code §21082.3 (b)).

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

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

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

10. Examples of Mitigation Measures That, If Feasible, May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:

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

11. Prerequisites for Certifying an Environmental Impact Report or Adopting a Mitigated Negative Declaration or Negative Declaration with a Significant Impact on an Identified Tribal Cultural Resource: An Environmental Impact Report may not be certified, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:

- a. The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code §21080.3.1 and §21080.3.2 and concluded pursuant to Public Resources Code §21080.3.2.
- b. The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.
- c. The lead agency provided notice of the project to the tribe in compliance with Public Resources Code §21080.3.1 (d) and the tribe failed to request consultation within 30 days. (Pub. Resources Code §21082.3 (d)).

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

SB 18

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

Some of SB 18's provisions include:

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

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

NAHC Recommendations for Cultural Resources Assessments

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

1. Contact the appropriate regional California Historical Research Information System (CHRIS) Center (http://ohp.parks.ca.gov/?page_id=1068) for an archaeological records search. The records search will determine:
 - a. If part or all of the APE has been previously surveyed for cultural resources.
 - b. If any known cultural resources have already been recorded on or adjacent to the APE.
 - c. If the probability is low, moderate, or high that cultural resources are located in the APE.
 - d. If a survey is required to determine whether previously unrecorded cultural resources are present.
2. If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
 - a. The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum and not be made available for public disclosure.
 - b. The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

3. Contact the NAHC for:
 - a. A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.
 - b. A Native American Tribal Consultation List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.

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

If you have any questions or need additional information, please contact me at my email address: Nancy.Gonzalez-Lopez@nahc.ca.gov.

Sincerely,



Nancy Gonzalez-Lopez
Staff Services Analyst

cc: State Clearinghouse

From: Tony De Melo [mailto:tdemelo@nseng.net]

Sent: Sunday, February 02, 2020 12:57 PM

To: Hightower, Jeffrey

Cc: Daryll Quaresma; Darian Quaresma (darianquaresma@gmail.com); Brian Jones; John Mensonides

Subject: Quaresma GPA Comment - Request Letter

JD,

Per our meeting Tuesday please find the follow text that will be incorporated into the comments letter regarding the current General Plan update. Please provide comments as needed. Also, attached is the updated General Plan Exhibit (added street names and vicinity map) for your use and reference.

RE: Comments on General Plan Amendment Land Uses for Southeast Manteca.

Please reference the attached proposed "Southeast Manteca Proposed General Plan Land Use Exhibit" included with our formal response to the current General Plan update for the City of Manteca. This area within the current General Plan Amendment was historically reserved for Low Density Residential (LDR) and Commercial Mixed Use (CMU). Recently this area has been changed entirely to Business Industrial Park (BIP). We understand the need for the creation of jobs in the City of Manteca. However, this is a large area to reserve strictly for BIP, especially since this area, for entirety of the General Plan Amendment, was considered LDR and CMU. We are proposing that we construct a portion of this site in BIP along Highway 99. This buffer of BIP will be a minimum of 500' wide and allow for a transition of land uses from the Highway 99 to the LDR portion of this area. This buffer is similar to other land use transitions found in Salida and other communities in the Central Valley. Finally, this buffer of BIP can also be utilized the mitigate potential noise impacts from Highway 99 for the LDR land use.

We respectfully request the consideration of the proposed land use plan that we have proposed for this area. It provides for a logical transition of land uses and meets the goals and needs of the General Plan and the City of Manteca.

Thank You for your assistance,

Tony de Melo, PE 71387

Director of Engineering
NorthStar Engineering Group, Inc

Tel: (209) 524-3525 Cell: (209) 595-4768 Fax: (209) 524-3526
Address: 620 12th Street, Modesto CA 95354

E: tdemelo@nseng.net W: <http://www.nseng.net>

DISCLOSURE:

Receipt, downloading or use of electronic data or files, or electronic data by any other media, from NorthStar Engineering Group, Inc. ("NSEG") shall signify the RECIPIENT'S acceptance of the following terms and conditions:

1. Data contained on these electronic files are part of our instruments of service and shall not be used by you or anyone else receiving this data through or from you for any purpose other than the referenced project, for additions to this project, or completion of this project by others. Any other use or reuse by you or by others will be at your sole risk and without liability or legal exposure to us. In no case shall the transfer of the CAD Files be considered a sale or other transfer of ownership rights.

2. Differences may exist between these electronic files and corresponding hard-copy construction documents. NorthStar makes no representation regarding the accuracy or completeness of the electronic files you receive. In the event that a conflict arises between the signed or sealed hard-copy construction documents prepared by NorthStar and the electronic files, the signed or sealed hard-copy construction documents shall govern. You are responsible for determining if any conflict exists.

3. To the fullest extent allowed by law, NorthStar makes no representation or warranty regarding the accuracy, title, non-infringement, completeness, or permanence of CAD Files. The CAD Files shall not be considered to be Contract Documents.

4. NSEG does not authorize RECIPIENT, or any other party, to change, modify, transmit to another party any electronic data transmitted.

5. RECIPIENT, by the act of receiving the data shall, to the fullest extent permitted by law, indemnify, defend and hold harmless NorthStar and its Consultants from all claims, damages, losses, expenses, penalties, and liabilities of any kind, including attorneys' fees, arising out of or resulting from the use or reuse of the CAD Files by RECIPIENT, or by third party recipients of the CAD Files.

=====

SOUTHEAST MANTECA PROPOSED GENERAL PLAN LAND USE EXHIBIT

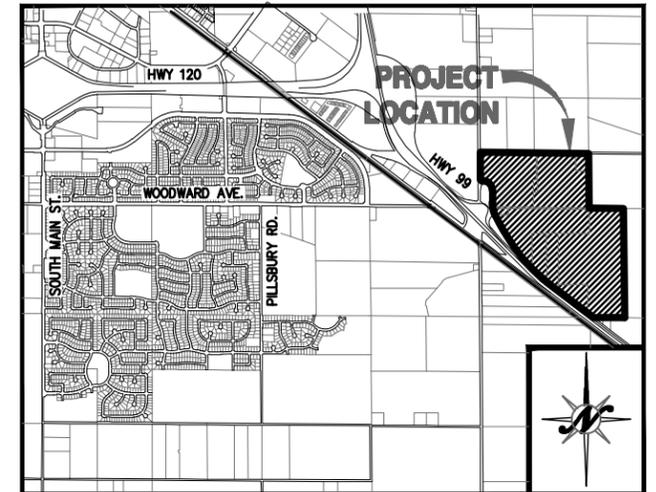
JANUARY 31, 2020



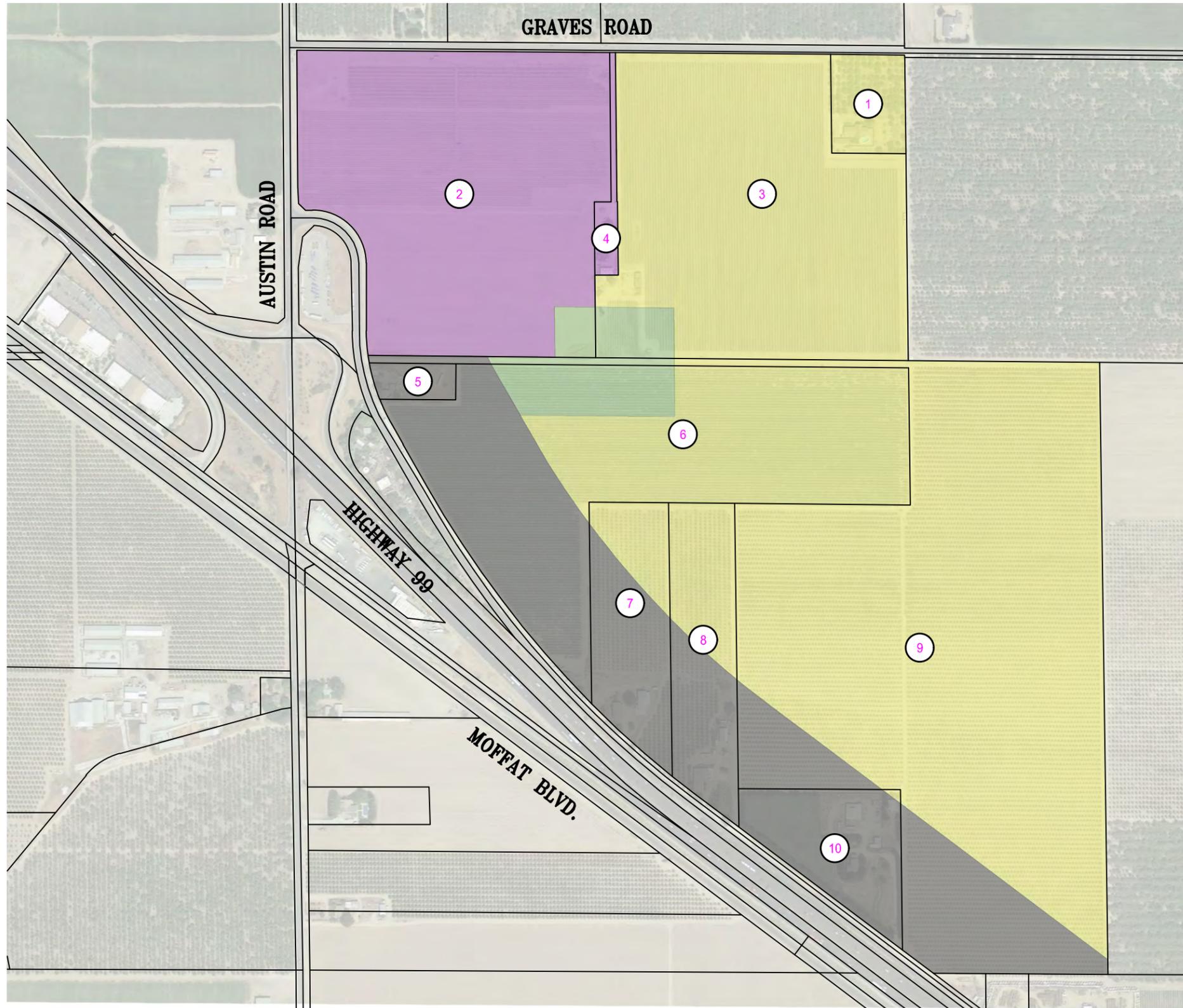
NorthStar
Engineering Group, Inc.

• CIVIL ENGINEERING • SURVEYING • PLANNING •

620 12th Street Modesto, CA 95354
(209) 524-3525 Phone (209) 524-3526 Fax



VICINITY MAP

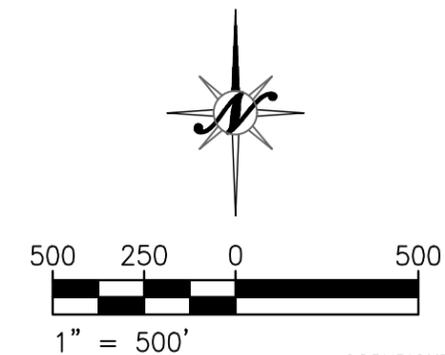


LEGEND

	LAND USE
	SINGLE-FAMILY RESIDENTIAL
	COMMERCIAL, MIXED USE
	BUSINESS INDUSTRIAL PARK
	PARK

APN LIST

- ① 228-060-11
- ② 228-060-08
- ③ 228-060-10
- ④ 228-060-09
- ⑤ 228-060-15
- ⑥ 228-060-18
- ⑦ 228-060-19
- ⑧ 228-060-20
- ⑨ 228-060-21
- ⑩ 228-060-22



January 23, 2020

J.D. Hightower
City of Manteca
1001 W. Center St.
Manteca, CA 95337

Ref: Gas and Electric Transmission and Distribution

Dear Mr. Hightower,

Thank you for submitting Manteca General Plan Amendment - EIR plans for our review. PG&E will review the submitted plans in relationship to any existing Gas and Electric facilities within the project area. If the proposed project is adjacent/or within PG&E owned property and/or easements, we will be working with you to ensure compatible uses and activities near our facilities.

Attached you will find information and requirements as it relates to Gas facilities (Attachment 1) and Electric facilities (Attachment 2). Please review these in detail, as it is critical to ensure your safety and to protect PG&E's facilities and its existing rights.

Below is additional information for your review:

1. This plan review process does not replace the application process for PG&E gas or electric service your project may require. For these requests, please continue to work with PG&E Service Planning: https://www.pge.com/en_US/business/services/building-and-renovation/overview/overview.page.
2. If the project being submitted is part of a larger project, please include the entire scope of your project, and not just a portion of it. PG&E's facilities are to be incorporated within any CEQA document. PG&E needs to verify that the CEQA document will identify any required future PG&E services.
3. An engineering deposit may be required to review plans for a project depending on the size, scope, and location of the project and as it relates to any rearrangement or new installation of PG&E facilities.

Any proposed uses within the PG&E fee strip and/or easement, may include a California Public Utility Commission (CPUC) Section 851 filing. This requires the CPUC to render approval for a conveyance of rights for specific uses on PG&E's fee strip or easement. PG&E will advise if the necessity to incorporate a CPUC Section 851 filing is required.

This letter does not constitute PG&E's consent to use any portion of its easement for any purpose not previously conveyed. PG&E will provide a project specific response as required.

Sincerely,

Plan Review Team
Land Management

Attachment 1 – Gas Facilities

There could be gas transmission pipelines in this area which would be considered critical facilities for PG&E and a high priority subsurface installation under California law. Care must be taken to ensure safety and accessibility. So, please ensure that if PG&E approves work near gas transmission pipelines it is done in adherence with the below stipulations. Additionally, the following link provides additional information regarding legal requirements under California excavation laws: <https://www.usanorth811.org/images/pdfs/CA-LAW-2018.pdf>

1. **Standby Inspection:** A PG&E Gas Transmission Standby Inspector must be present during any demolition or construction activity that comes within 10 feet of the gas pipeline. This includes all grading, trenching, substructure depth verifications (potholes), asphalt or concrete demolition/removal, removal of trees, signs, light poles, etc. This inspection can be coordinated through the Underground Service Alert (USA) service at 811. A minimum notice of 48 hours is required. Ensure the USA markings and notifications are maintained throughout the duration of your work.
2. **Access:** At any time, PG&E may need to access, excavate, and perform work on the gas pipeline. Any construction equipment, materials, or spoils may need to be removed upon notice. Any temporary construction fencing installed within PG&E's easement would also need to be capable of being removed at any time upon notice. Any plans to cut temporary slopes exceeding a 1:4 grade within 10 feet of a gas transmission pipeline need to be approved by PG&E Pipeline Services in writing PRIOR to performing the work.
3. **Wheel Loads:** To prevent damage to the buried gas pipeline, there are weight limits that must be enforced whenever any equipment gets within 10 feet of traversing the pipe.

Ensure a list of the axle weights of all equipment being used is available for PG&E's Standby Inspector. To confirm the depth of cover, the pipeline may need to be potholed by hand in a few areas.

Due to the complex variability of tracked equipment, vibratory compaction equipment, and cranes, PG&E must evaluate those items on a case-by-case basis prior to use over the gas pipeline (provide a list of any proposed equipment of this type noting model numbers and specific attachments).

No equipment may be set up over the gas pipeline while operating. Ensure crane outriggers are at least 10 feet from the centerline of the gas pipeline. Transport trucks must not be parked over the gas pipeline while being loaded or unloaded.

4. **Grading:** PG&E requires a minimum of 36 inches of cover over gas pipelines (or existing grade if less) and a maximum of 7 feet of cover at all locations. The graded surface cannot exceed a cross slope of 1:4.
5. **Excavating:** Any digging within 2 feet of a gas pipeline must be dug by hand. Note that while the minimum clearance is only 12 inches, any excavation work within 24 inches of the edge of a pipeline must be done with hand tools. So to avoid having to dig a trench entirely with hand tools, the edge of the trench must be over 24 inches away. (Doing the math for a 24 inch

wide trench being dug along a 36 inch pipeline, the centerline of the trench would need to be at least 54 inches [$24/2 + 24 + 36/2 = 54$] away, or be entirely dug by hand.)

Water jetting to assist vacuum excavating must be limited to 1000 psig and directed at a 40° angle to the pipe. All pile driving must be kept a minimum of 3 feet away.

Any plans to expose and support a PG&E gas transmission pipeline across an open excavation need to be approved by PG&E Pipeline Services in writing PRIOR to performing the work.

6. Boring/Trenchless Installations: PG&E Pipeline Services must review and approve all plans to bore across or parallel to (within 10 feet) a gas transmission pipeline. There are stringent criteria to pothole the gas transmission facility at regular intervals for all parallel bore installations.

For bore paths that cross gas transmission pipelines perpendicularly, the pipeline must be potholed a minimum of 2 feet in the horizontal direction of the bore path and a minimum of 12 inches in the vertical direction from the bottom of the pipe with minimum clearances measured from the edge of the pipe in both directions. Standby personnel must watch the locator trace (and every ream pass) the path of the bore as it approaches the pipeline and visually monitor the pothole (with the exposed transmission pipe) as the bore traverses the pipeline to ensure adequate clearance with the pipeline. The pothole width must account for the inaccuracy of the locating equipment.

7. Substructures: All utility crossings of a gas pipeline should be made as close to perpendicular as feasible ($90^\circ \pm 15^\circ$). All utility lines crossing the gas pipeline must have a minimum of 12 inches of separation from the gas pipeline. Parallel utilities, pole bases, water line 'kicker blocks', storm drain inlets, water meters, valves, back pressure devices or other utility substructures are not allowed in the PG&E gas pipeline easement.

If previously retired PG&E facilities are in conflict with proposed substructures, PG&E must verify they are safe prior to removal. This includes verification testing of the contents of the facilities, as well as environmental testing of the coating and internal surfaces. Timelines for PG&E completion of this verification will vary depending on the type and location of facilities in conflict.

8. Structures: No structures are to be built within the PG&E gas pipeline easement. This includes buildings, retaining walls, fences, decks, patios, carports, septic tanks, storage sheds, tanks, loading ramps, or any structure that could limit PG&E's ability to access its facilities.

9. Fencing: Permanent fencing is not allowed within PG&E easements except for perpendicular crossings which must include a 16 foot wide gate for vehicular access. Gates will be secured with PG&E corporation locks.

10. Landscaping: Landscaping must be designed to allow PG&E to access the pipeline for maintenance and not interfere with pipeline coatings or other cathodic protection systems. No trees, shrubs, brush, vines, and other vegetation may be planted within the easement area. Only those plants, ground covers, grasses, flowers, and low-growing plants that grow unsupported to a maximum of four feet (4') in height at maturity may be planted within the easement area.



11. Cathodic Protection: PG&E pipelines are protected from corrosion with an “Impressed Current” cathodic protection system. Any proposed facilities, such as metal conduit, pipes, service lines, ground rods, anodes, wires, etc. that might affect the pipeline cathodic protection system must be reviewed and approved by PG&E Corrosion Engineering.

12. Pipeline Marker Signs: PG&E needs to maintain pipeline marker signs for gas transmission pipelines in order to ensure public awareness of the presence of the pipelines. With prior written approval from PG&E Pipeline Services, an existing PG&E pipeline marker sign that is in direct conflict with proposed developments may be temporarily relocated to accommodate construction work. The pipeline marker must be moved back once construction is complete.

13. PG&E is also the provider of distribution facilities throughout many of the areas within the state of California. Therefore, any plans that impact PG&E’s facilities must be reviewed and approved by PG&E to ensure that no impact occurs which may endanger the safe operation of its facilities.

Attachment 2 – Electric Facilities

It is PG&E's policy to permit certain uses on a case by case basis within its electric transmission fee strip(s) and/or easement(s) provided such uses and manner in which they are exercised, will not interfere with PG&E's rights or endanger its facilities. Some examples/restrictions are as follows:

1. Buildings and Other Structures: No buildings or other structures including the foot print and eave of any buildings, swimming pools, wells or similar structures will be permitted within fee strip(s) and/or easement(s) areas. PG&E's transmission easement shall be designated on subdivision/parcel maps as **"RESTRICTED USE AREA – NO BUILDING."**
2. Grading: Cuts, trenches or excavations may not be made within 25 feet of our towers. Developers must submit grading plans and site development plans (including geotechnical reports if applicable), signed and dated, for PG&E's review. PG&E engineers must review grade changes in the vicinity of our towers. No fills will be allowed which would impair ground-to-conductor clearances. Towers shall not be left on mounds without adequate road access to base of tower or structure.
3. Fences: Walls, fences, and other structures must be installed at locations that do not affect the safe operation of PG&E's facilities. Heavy equipment access to our facilities must be maintained at all times. Metal fences are to be grounded to PG&E specifications. No wall, fence or other like structure is to be installed within 10 feet of tower footings and unrestricted access must be maintained from a tower structure to the nearest street. Walls, fences and other structures proposed along or within the fee strip(s) and/or easement(s) will require PG&E review; submit plans to PG&E Centralized Review Team for review and comment.
4. Landscaping: Vegetation may be allowed; subject to review of plans. On overhead electric transmission fee strip(s) and/or easement(s), trees and shrubs are limited to those varieties that do not exceed 15 feet in height at maturity. PG&E must have access to its facilities at all times, including access by heavy equipment. No planting is to occur within the footprint of the tower legs. Greenbelts are encouraged.
5. Reservoirs, Sumps, Drainage Basins, and Ponds: Prohibited within PG&E's fee strip(s) and/or easement(s) for electric transmission lines.
6. Automobile Parking: Short term parking of movable passenger vehicles and light trucks (pickups, vans, etc.) is allowed. The lighting within these parking areas will need to be reviewed by PG&E; approval will be on a case by case basis. Heavy equipment access to PG&E facilities is to be maintained at all times. Parking is to clear PG&E structures by at least 10 feet. Protection of PG&E facilities from vehicular traffic is to be provided at developer's expense AND to PG&E specifications. Blocked-up vehicles are not allowed. Carports, canopies, or awnings are not allowed.
7. Storage of Flammable, Explosive or Corrosive Materials: There shall be no storage of fuel or combustibles and no fueling of vehicles within PG&E's easement. No trash bins or incinerators are allowed.



8. Streets and Roads: Access to facilities must be maintained at all times. Street lights may be allowed in the fee strip(s) and/or easement(s) but in all cases must be reviewed by PG&E for proper clearance. Roads and utilities should cross the transmission easement as nearly at right angles as possible. Road intersections will not be allowed within the transmission easement.

9. Pipelines: Pipelines may be allowed provided crossings are held to a minimum and to be as nearly perpendicular as possible. Pipelines within 25 feet of PG&E structures require review by PG&E. Sprinklers systems may be allowed; subject to review. Leach fields and septic tanks are not allowed. Construction plans must be submitted to PG&E for review and approval prior to the commencement of any construction.

10. Signs: Signs are not allowed except in rare cases subject to individual review by PG&E.

11. Recreation Areas: Playgrounds, parks, tennis courts, basketball courts, barbecue and light trucks (pickups, vans, etc.) may be allowed; subject to review of plans. Heavy equipment access to PG&E facilities is to be maintained at all times. Parking is to clear PG&E structures by at least 10 feet. Protection of PG&E facilities from vehicular traffic is to be provided at developer's expense AND to PG&E specifications.

12. Construction Activity: Since construction activity will take place near PG&E's overhead electric lines, please be advised it is the contractor's responsibility to be aware of, and observe the minimum clearances for both workers and equipment operating near high voltage electric lines set out in the High-Voltage Electrical Safety Orders of the California Division of Industrial Safety (<https://www.dir.ca.gov/Title8/sb5g2.html>), as well as any other safety regulations. Contractors shall comply with California Public Utilities Commission General Order 95 (http://www.cpuc.ca.gov/gos/GO95/go_95_startup_page.html) and all other safety rules. No construction may occur within 25 feet of PG&E's towers. All excavation activities may only commence after 811 protocols has been followed.

Contractor shall ensure the protection of PG&E's towers and poles from vehicular damage by (installing protective barriers) Plans for protection barriers must be approved by PG&E prior to construction.

13. PG&E is also the owner of distribution facilities throughout many of the areas within the state of California. Therefore, any plans that impact PG&E's facilities must be reviewed and approved by PG&E to ensure that no impact occurs that may endanger the safe and reliable operation of its facilities.

TERRA LAND GROUP, LLC

February 3, 2020

VIA EMAIL & HAND-DELIVERY

J.D. Hightower
Interim Community Development Director/Planning Manager
for the City of Manteca
1001 West Center Street
Manteca, CA 95337
(jhightower@ci.manteca.ca.us)

LETTER #2 Re: Public Comments in response to the January 6, 2020 Notice of Preparation of the City of Manteca General Plan Updated Environmental Impact Report.

Dear Mr. Hightower,

My name is Martin Harris and I am an authorized representative for Terra Land Group, LLC ("TLG").

On January 29, 2020, TLG submitted a letter to you with public comments in response to the January 6, 2020 Notice of Preparation of the City of Manteca General Plan Updated Environmental Impact Report. Since that date, TLG has received the agenda for the February 4, 2020 Manteca City Council meeting. Certain agenda items on that meeting appear to outline significant upcoming changes which could have a large impact on the new Manteca General Plan.

Therefore, TLG would like to submit the attached letter which we wrote to the Manteca City Council regarding their February 4, 2020 meeting. We ask you to consider the concerns presented within that letter as they apply to the forthcoming Manteca General Plan EIR.

Thank you for your attention to these very important matters.

Respectfully,



Martin Harris
for Terra Land Group, LLC.

MH/cm

Enclosure:

This Enclosure can also be downloaded via Dropbox.

1. 2020-02-03 letter from TLG to the Manteca City Council
(<https://www.dropbox.com/s/t3f4usxw1awfg10/2020-02-03 LTR MCC MtgAgItsC6.pdf?dl=0>)

TERRA LAND GROUP, LLC

February 3, 2020

VIA EMAIL

Manteca City Council
1001 West Center Street
Manteca, CA 95337
% Cassandra Tilton, Acting City Clerk
(ccandini@ci.manteca.ca.us)

Re: February 4, 2020 Manteca City Council (“MCC”) Meeting Agenda Items C.6 (20-045), C.7 (20-040), C.8 (20-060), C.9 (20-061), D.1 (20-031), E.4 (20-047), E.5 (19-686), E.6 (20-018) and E.7 (20-019).

Dear Council Members,

My name is Martin Harris and I am an authorized representative for Terra Land Group, LLC (“TLG”). TLG owns several properties in Manteca and Lathrop, and as an organization, dedicates a significant amount of its efforts to ensure the safety of our communities by soliciting local, state, and federal agencies to protect our area from the effects of flooding.

Terra Land Group asks the Manteca City Council to consider our concerns in association with the following agenda items for the February 4, 2020 meeting. Please also note Terra Land Group’s public comments in response to each item listed below:

- **Item D.1 (20-031):** 1) Adopt a resolution approving the Initial Study/Mitigated Negative Declaration for the Wackerly Annexation ANX-19-14, Tentative Subdivision Map SDJ-19-13, Initial Study IS-19-16 and Pre-Zone PRZ-19-15; and 2) Adopt a resolution authorizing the City Manager to file annexation application to San Joaquin County Local Agency Formation Commission (LAFCO).

COMMENT: This project appears to be situated in an area that flooded in 1997. (See Enclosure 19)

QUESTION: What cumulative impacts and associated changes in drainage patterns are expected to occur as a result of Wackerly Subdivision project in conjunction with the continuing high level of urban expansion in and around the City of Manteca? (See Enclosures 1-27)

- **Item C.6 (20-045):** Adopt a resolution approving grading and construction of improvements, prior to filing of the Final Map, for the work included in the Cerri Subdivision Backbone Grading and Improvement Plans.

COMMENT: On September 16, 2016, TLG wrote a letter to Rochelle Hensen in the City of Manteca Community Development Department to express concerns related to the Oakwood Landing Project (Cerri & Denali). The comment letter was specifically written to express concerns and provide public input relating to a Notice of Preparation of a Draft Environmental Impact Report. (See Enclosure 24)

TERRA LAND GROUP, LLC

In addition, on September 6, 2017, TLG wrote a letter to express public comments and concerns related to the Draft Environmental Impact Report for the Oakwood Landing-Cerri & Denali Subdivision(s) Project. (See Enclosure 25)

The purpose of the letter was to express concerns related to flood water, storm water, waste water, potable water delivery and road access concerns relating to a TLG 230-acre property south of the Cerri & Denali subdivision project(s) as well as to support and align with the concerns of many other South Manteca rural residents, business, and property owners that may be affected.

QUESTION: What increased flood water, storm water, waste water, irrigation water, potable water delivery, traffic circulation, emergency vehicle services response and private property road access impacts will the Oakwood Landing Cerri & Denali Subdivision projects create to any and all areas to be affected?

- **Item C.7 (20-040):** Adopt a resolution accepting and entering into a new Freeway Agreement for the State Route 99/120 Project that replaces the previous agreement between the City of Manteca and the State of California Department of Transportation (“DoT”).

COMMENT: Attachment 1 of the staff report for the February 4, 2020 Manteca City Council meeting agenda item C.7 contains a proposed resolution which states: *“Whereas, the State of California Department of Transportation is making improvements to several streets, State Highway 99, and State Route 120 as part of the State Route 99/120 Project; and Whereas, the new Freeway Agreement requires the closing of City Streets, relocation of City Streets, construction of frontage roads and other local roads, and other construction affecting City Streets.”*

As the City of Manteca moves forward with working with the DoT to change the local infrastructure, TLG remains concerned for public safety as may be affected by the upcoming construction and traffic alterations. Please reconsider the concerns presented in an April 22, 2014 letter from Michael Babitzke to the San Joaquin Council of Governments in response to the proposed construction of various regionally-significant roadway projects (including the Raymus Expressway) as included in the 2014 Sustainable Communities Strategy Draft EIR and 2015 FTIP conformity document. (See Enclosure 20) (Also see roadway closure and realignment concerns addressed in Enclosures 22 & 27)

- **Item C.8 (20-060):** Waive the final reading and substitution of the title and adopt an ordinance approving a Development Agreement with Raymus Resources, LLC; Koetsier Farms, L.P.; Richard and Sarah Quaresma and Daryll and Diane Quaresma; Jm2, LLC; And Marylou Moore Collins relating to the development known as Griffin Park.

COMMENT: What increased flood water, storm water, wastewater, and other hydrology related impacts will the Griffin Park project create for Nile Garden Elementary School as well as other residents, businesses, and property owners located in the areas both inside and outside the City of Manteca?

- **Item C.9 (20-061):** Waive the final reading and substitution of the title and adopt an ordinance creating Chapter 8.37 of the Manteca Municipal Code entitled Inclement Weather Centers.

TERRA LAND GROUP, LLC

COMMENT: What total flood water drainage impacts may be created from any and all access and service roads deemed necessary to provide direct access to any inclement weather center located in a floodway? (See Enclosures 20 & 22)

QUESTION: Shouldn't existing grade levels for any and all access and service roads (as currently positioned) be carefully evaluated before making any improvements or changes that could necessitate the mandatory construction of new flood protection infrastructure affecting drainage flows and/or patterns in a floodway? (See Enclosures 20 & 22)

QUESTION: What chaos and disruptions to long-standing property boundary lines, fence lines, power lines, irrigation lines and drainage canals could improvements to existing access and service roads potentially create? (See Enclosures 16, 20, 22, 23 & 27)

- **Item E.4 (20-047):** Receive information and provide direction on updating the City's Standards and Specifications for public improvements.

QUESTION: Will any changes to the City of Manteca's Standards and Specifications for public improvements affect grade elevations and/or alter drainage discharge patterns in and along the San Joaquin River System? (See Enclosures 13, 16, 20-27)

- **Item E.5 (19-686):** Receive update regarding the Milo Candini Road extension project, Airport Widening Project, and the Public Facilities Implementation Plan (PFIP).

QUESTION: What effect will the Milo Candini Road extension project, Airport Way Widening Project, and the Public Facilities Implementation Plan have on handling total stormwater drainage volumes to be created from storm water drainage zones 34, 36, and 39? (See Enclosures 1-27)

- **Item E.6 (20-018):** Provide direction to staff regarding selection of City's priority projects to be submitted for San Joaquin One Voice 2020.

QUESTION: Have total cumulative flood water drainage and back water effects been properly considered? (See Enclosures 1-27)

- **Item E.7 (20-019):** Receive update on the January 8, 2020, Public Meeting for the SR120/Union Road Interchange Project; and provide direction on the value engineering associated with ramp closures and cost-saving.

QUESTION: Will any risks to public safety, including any and all drainage impacts and back water effects, be included in any value engineering and ramp closure cost-saving plan to be created?

QUESTION: What additional traffic circulation issues and related impacts will be created as a result of a Union Road/Highway 120 ramp closure, in conjunction with other road closures and highway construction called for in the new Freeway Agreement for the State Route 99/120 project, as called for in the February 4, 2020 MCC agenda item C.7?

TERRA LAND GROUP, LLC

TLG believes that as more and more people move into Manteca and as more land is being developed or converted to salt-sensitive farming crops, there needs to be more potable and irrigation water delivery capacity, water storage, and reuse opportunities to accommodate those increased needs. However, there also needs to be safe ways of storing, delivering, conveying, draining, and discharging the increasing amounts (and various forms) of surface water involved to avoid flood impacts for the people who live or work in the areas that may be affected.

TLG is writing this letter to express its belief that the City of Manteca is not following the goals and policies called for in its current 2023 General Plan document. Most important, TLG believes that the City of Manteca has placed a significant number of South Manteca urban and rural residents and businesses at significant risk for flooding due to the high volume of development projects (and associated elevation changes) that have been approved and allowed to move forward without a safe and sustainable means of exactly how and where flood water, storm water, and effluent waste water will be drained, discharged, or diverted to. (See Enclosures 1-26)

Most concerning, Manteca city staff have continually ignored the efforts of many South Manteca residents and business owners in calling attention to what appears to be very significant and potentially catastrophic flood impacts to the rural areas affected.

With this in mind, TLG presents various environmental factors that TLG believes must be considered prior to approving any of the February 4, 2020 MCC agenda items detailed in this letter.

Environmental Setting and Potential Impacts to Consider

To better understand the potential for flood risks involved, TLG believes a delicate balance exists between a previously-established U.S. Army Corps of Engineers baseline and what appears to be increasing flood risks to South Delta residents and businesses that continue to be affected by the high level of City of Manteca urban expansion. (See Enclosure 1)

TLG believes that no City of Manteca development project can be properly presented and mitigated without fully considering what appears to be very significant drainage impacts affecting the South Delta-Lower San Joaquin River drainage system. With this in mind, TLG believes that storing, delivering, reusing, and draining water in and along the South Delta becomes complicated when it is considered that the January 2018 San Joaquin River Basin Lower San Joaquin River, CA Final Integrated Interim Feasibility Report/EIR/EIS: (LSJRFS") includes the following:

1. Page ES-1 of the LSJRFS states: *The study area also includes the distributary channels of the San Joaquin River in the southernmost reaches of the Delta; Paradise Cut and Old River as far north as Tracy Boulevard, and Middle River as far north as Victoria Canal.*
2. Page 3-31 of the LSJRFS states: *Currently, the levee safety program has defined the levee system that incorporates RD 17 as bounded on the north by Walker Slough, west by the San Joaquin River and south by the Stanislaus River. This includes RD 17, RD 2096, RD 2094, RD 2075 and RD 2064.*
3. Page 5-17 of the LSJRFS states: **Stanislaus River to Paradise Cut.** *The confluence of the San Joaquin and Stanislaus Rivers defines the upstream extent of the hydraulic model used for this study.*

TERRA LAND GROUP, LLC

4. Page ES-2 of the LSJRF states:
Analysis of the study area is challenged by the presence of three sources of flooding, the Delta Front, Calaveras River and San Joaquin River. This results in commingled floodplains for the North and Central Stockton areas. The distributary nature of the Delta also affects Delta water levels, because high flows from the Sacramento River may “fill” the Delta prior to a peak inflow on the San Joaquin River as occurred in 1997, raising water levels on the Delta front levees.
5. Page 5-27 of the LSJRF states: 2.1.1 FLOODING Problem: **There is significant risk to public health, safety and property in the study area associated with flooding.** *The study area is located in the Central Valley of California which has very little topographic relief, resulting in potential flooding of areas far from water courses... (See Enclosure 1)*

TLG believes the potential for flood modeling deficiencies (as affected by a growing list of environmental conditions and concerns) does not appear to have been fully considered. TLG also believes that all Mossdale Tract flood modeling and adequate progress reports (including those for Paradise Cut) that have been publicly released to date have failed to fully consider and provide mitigation measures for:

- (i) Unresolved and continuing sedimentation issues that continue to reduce channel flow capacity in and along the South Delta Lower San Joaquin River System;
- (ii) Climate change and its effect on increasing the total potential volumes of channel flows to be expected in and along the South Delta Lower San Joaquin River System; and
- (iii) A Stanislaus River right bank levee breach in the areas west of the City of Ripon; and
- (iv) Limited topographic relief to ground surface areas in and along the South Delta; and
- (v) Various Manteca and Lathrop area highway projects as presented in the 2014 San Joaquin Council of Governments Sustainable Communities Strategy, Draft EIR and 2015 FTIP Conformity Document. (See Enclosure 20)

QUESTION: Has any flood modeling been conducted to determine flood drainage flow volumes and drainage patterns resulting from a Stanislaus River right bank levee breach?

QUESTION: What drainage flow improvement actions can the public count on to offset limited topographic relief ground surface grade conditions that are known to exist in and along the South Delta?

QUESTION: Have the total anticipated volumes (and potential changes to drainage patterns) related to flood water, storm water, waste water, and other forms of surface water been accurately determined on a local and regional basis to ensure compatibility with statewide projects anticipated to be constructed in association with the (i) California Water Plan, (ii) Delta Conveyance Project, and (iii) the State of California 2020 Water Resilience Portfolio?

QUESTION: What changes to drainage patterns and back-water effects may be created in relation to the May 21, 2019 San Joaquin County Board of Supervisors approval of Morning Hearing Item #1: Development Title Text Amendment No. PA1900067 allowing revisions to the Definition of Structure? (See Enclosure 22)

TLG believes that this becomes especially important when considering the following points:

TERRA LAND GROUP, LLC

1. Backwater effects and changes to drainage patterns, in conjunction with anticipated 200-year flood protection improvements as affected by a San Joaquin River and/or Stanislaus River right bank levee breach, could have a devastating effect on the urbanizing and non-urbanizing areas in and along the South Delta/Lower San Joaquin River Basin. (See Enclosures 1-26)
2. The City of Manteca has been experiencing exponential development growth and urban expansion. Many of the involved projects appear to have been approved with no apparent meaningful consideration for their individual contribution to total cumulative drainage impacts. The accompanying changes to grade, land elevations, and drainage patterns may be creating irreversible impacts to the surrounding community, and could increase flood risk to those affected. (See Enclosures 4, 6, 8, 13, 16, 21 & 23)
3. TLG believes that these continued project approvals (and associated impacts) directly conflict with the goals and policies stated in the Manteca General Plan 2023 (enacted on October 6, 2003) and fail to adequately address public risk due to recently-discovered San Joaquin River channel flow deficiencies in conjunction with unresolved sedimentation and climate change issues affecting the areas in and along the South Delta.
4. The Paradise Cut Expansion project, in the form presented in the “Conceptual Design Technical Memo/Paradise Cut Expansion Project/April 9, 2019,” may or may not prove adequate in offsetting the full range of development and other hydrology-related impacts that may be created. Also, TLG believes that the Paradise Cut Expansion Stage reductions called for between the Paradise Weir and the Airport Way (Vernalis Bridge) may not fully address the potential for additional drainage impacts to be created. (See Enclosures 1-26)

This is especially concerning when considering pages 4 and 5 of the Mossdale Tract Program: 2019 Annual Adequate Progress Report Update for Urban Level of Protection-Final Report (included as Attachment 2 to the 8/20/2019 MCC Meeting Agenda Item B.3), which states that, “the Urban Flood Risk Reduction Study remains incomplete and the Climate Adoption Policy is underway. As such, a new determination that the project meets the appropriate Standard of Protection will need to be made in conjunction with the 2020 Annual Report.”

QUESTION: How will what appears to be a very real potential for unresolved and continuing sedimentation and climate change issues in and along the South Delta be considered and allowed for in the final Mossdale Tract Drainage Plan? (See Enclosures 1-26)

5. The San Joaquin River may be unable to handle any and all potential combinations of storm water or waste water flows that may be drained into or along the river channel.
6. With all of the various development and infrastructure projects being approved and considered by the different agencies in and around Manteca and the South Delta region, TLG is concerned that there is a lack of integration and cohesion between the agencies related to the projects. Without a single oversight agency in charge of the “big picture,” or all the hydraulic decisions being made, there may be a potential for the various projects to cause conflicting hydraulic effects and impacts to the upstream and downstream communities that may be affected. A list of forty-one such currently ongoing and planned projects can be found in Enclosure 1. (Also See Enclosures 2-26)

TERRA LAND GROUP, LLC

QUESTION: How can local, regional, state, and federal authorities work closer together to create an updated water plan that provides water deliveries at the local, regional, and state level while protecting the urban and rural areas along the South Delta from any increases to flood water, storm water, waste water, and other hydrology-related impacts that may be created?

7. Projects appear to continue to be approved by various agencies without the agencies fully understanding the total potential for flood water, storm water, and waste water impacts involved. Agencies, city councils, and districts appear to be more interested in supporting development and in avoiding liability than they are in safeguarding the residents and businesses that may be affected.

QUESTION: What effect will the Daniels Street extension have on stormwater drainage flows currently being drained in and along the French Camp Outlet Canal? (See the July 16, 2019 Manteca City Council meeting agenda item B.4. Also **See Enclosures 1-26**)

QUESTION: What effect will the proposed formation of the San Joaquin County Flood Control & Water Conservation District (“SJFCWCD”) Zone 9 Flood Conveyance and Levee Maintenance Benefit Assessment District (and related projects) have on changing drainage patterns and associated outfall locations currently existing and relied upon by the South San Joaquin Irrigation District and its members? (See July 18, 2019 SJAFCA meeting agenda item 5.1. Also **See Enclosure 7**)

8. The Manteca General Plan 2023 states several goals and policies which appear to indicate that Manteca is committed to protecting the community from flooding related to existing and projected development. (**See Enclosure 4**) It appears that both the cities of Manteca and Lathrop plan on redirecting storm water drainage and/or effluent wastewater flows along and through the urbanizing and non-urbanizing areas in and along the South Delta-Lower San Joaquin River Basin. However, no meaningful solution has been clearly presented to identify City of Manteca effluent waste water spray field discharge facilities to replace those to be abandoned due to planned construction of several new development projects.

QUESTION: What effect will filing and/or extending an Exclusive Negotiating Agreement for the Recycled Water Project have on sustaining total potable and irrigation water (ie. groundwater and surface water) volumes available to the urban and rural areas in and around Lathrop and Manteca? (See the July 16, 2019 Manteca City Council meeting agenda item B.8.) (**See Enclosures 6-11**)

9. Further, TLG believes that the San Joaquin County (and other local community) general plan(s) have failed to meet the public safety and environmental impact disclosure and mitigation requirements as called for in California Senate Bill No. 1000 (“SB 1000”) (environmental justice) and CEQA. San Joaquin County, as well as the various other non-federal sponsors involved, should be acting in a good-faith manner to fully identify and mitigate the potential for flood and other hydrology related impacts and health risks to the disadvantaged communities that may be affected.
10. The City of Manteca General Plan 2023 indicates that the French Camp Outlet Channel “*is the limiting factor that sets the flow rates for drainage systems in the City of Manteca.*” TLG believes that due to SB5 200-year flood protection requirements, various flood drainage impacts and back-water effects may be created affecting the hydraulic capacity of the system. TLG also believes this may be

TERRA LAND GROUP, LLC

particularly true for certain outfall locations that may be proposed in areas not currently protected by a 200-year flood protection levee. (See Enclosure 4)

11. The effect of 200-year flood protection and related potential for underestimating drainage and back water effects associated with the location of the Raymus Expressway as depicted in the proposed Land Use Map Alternatives "A" and "B" to be considered by the Manteca City Council in association with the Manteca City Council 7/30/2019 meeting agenda item C.1. (Within Enclosure 9, see its own Enclosures 10 & 11. Also See Enclosures 10, 11, 17, and 20-26 as included in this letter.)

QUESTION: What short term and/or long range changes to flood water, storm water, waste water, potable and irrigation water delivery, and other hydrology related drainage and conveyance patterns may be irreversibly altered due to approval of the proposed Raymus Expressway roadway alignment as detailed in the 5/22/19 Manteca General Plan Land Use Alternative Maps "A" or "B"? (See 7/30/2019 Manteca City Council meeting agenda item C.1 (19-360) Attachments 1 and 2) (See Enclosures 20-27)

12. Undetermined back water and other potential drainage effects associated with the Upper Jones Tract (RD 2029) and Lower Jones Tract (RD 2038) consolidation. (Within Enclosure 9, see its own Enclosures 12 & 13)

QUESTION: Will drainage impacts in and along the South Delta be reduced or adversely affected due to any future improvements to be considered in association with the Upper Jones Tract (RD 2039)/Lower Jones Tract (RD 2038) consolidation?

13. What appears to be a potential for system-wide Eastern San Joaquin Groundwater Authority drainage modeling deficiencies and unmitigated impacts due to apparent ground surface grade and elevation level variations associated with the growing number of collaborative watershed and agricultural landscape easements being acquired on properties located in and along the South Delta. (Within Enclosure 9, see its own Enclosure 19)
14. Changing climate and increasing flood risks across the country. Levees are only one solution to flood control; they have their limits. (Within Enclosure 9, see its own Enclosure 5)
15. On August 5, 2019, the City of Manteca issued a Request for Proposal for Storm Drain Zones 36 & 39 Engineering, Environmental and Permitting (CIP 20004). ("Request for Proposal")

(i) Section 2.1 of the Request for Proposal states: *"With the exception of Drain #11 near the southern boundary of Zone 39, there are no regional drainage facilities in the study area."*

However, TLG believes that it is important to mention that a second drain (South San Joaquin Irrigation District drain #10) exists with a location beginning at a point situated adjacent to Airport Way (just north of the Airport Way/Fig Avenue public roadway intersection); and extending in a direction approximately west to the City of Manteca Storm Drainage Zone 39 eastern boundary; and thence turning and continuing in a generally southern direction along the Zone 39 eastern boundary until meeting and connecting with South San Joaquin Irrigation District ("SSJID") Drain #11 near the southern boundary of the current City of Manteca city limits. (See Enclosure 8)

TERRA LAND GROUP, LLC

In addition, a growing number of South Manteca land owners and residents are starting to consider the potential for various changes in drainage patterns, flow volumes and other environmental effects that may significantly impact SSJID drains #10 and #11 as those drains merge together and continue through Drain #11 along the southern boundary of the City of Manteca and into Walthall Slough.

QUESTION: Are local authorities aware that SSJID Drain #11, in its present form, has deviated from a course that appears to be called for and included within **Enclosure 9**? (See its own Enclosure 16)

QUESTION: Will any and all flow impedances and back water effects be considered as part of any drainage analysis to be performed? (**Within Enclosure 9**, see its own Enclosures 14 & 15. Also **See Enclosure 8** as included in this letter.)

QUESTION: For what purpose are San Joaquin County land use and/or zoning reclassifications in and along the South Delta being considered? (**Within Enclosure 9**, see its own Enclosure 17)

(ii) In addition, the Request for Proposal does not appear to consider City of Manteca storm drainage Zone 34.

QUESTION: If the French Camp Outlet Canal ("FCOC") is abandoned or no longer able to accept drainage flows from the developing areas of Zone 34, where will Zone 34 storm water be drained to? (**Within Enclosure 9**, see its own Enclosures 14 & 15. Also **See Enclosures 8-11** as included in this letter.)

QUESTION: What effect will any public facility/infrastructure rehabilitation or improvement projects in and along Little Johns Creek have on the continued operation of the FCOC as well as other upstream and downstream areas to be affected?

(iii) The Request for Proposal further states:

4.1 Drainage

Planning and design of storm water collection, conveyance, and storage systems are predicated on the following assumptions:

1. *Runoff is attenuated through detention basins prior to discharge to regional Facilities. Detention basins will be sized to store a 10-yr, 48-hr event. Detention basins will empty by gravity or pumps, over a 96-hr period. The bottom elevation of the detention basin will be a minimum of 2 ft above the groundwater elevation.*
2. *The high-water level in the storage system will be a minimum of 1 ft below the lowest grade elevation of the property served.*
3. *Minimum pipe diameter of storm drains will be 12-inches. Pipe velocities will range from 2.5 to 10.0 ft per second (ft/sec). Storm drains will have a minimum cover of 30-inches.*
4. *Manholes will be located at junction points, changes in alignment, and changes in pipe size. Manholes will be spaced every 300 ft for pipe diameters less than 21-inches and 500 ft for pipe diameters greater than 21-inches.*

TERRA LAND GROUP, LLC

5. *Detention basin pump stations will be designed to discharge the 10-yr, 48-hr storm volume from the basin during a period of not less than 96 hours. Pump stations will be equipped with a minimum of one standby unit. Pump stations will be designed with trash racks sediment dams.*
6. *Drainage channels will be designed to confine the peak 100-yr discharge with 2 ft of freeboard.*
7. *Water surface elevation (WSEL) in the San Joaquin River at the railroad bridge crossing near the OLWD storm drain outfall is: (a) 20.6 ft for 10-yr event; (b) 28.0 ft for 100-yr event; and (c) 29.0 ft for 200-yr event. All elevations reference NAVD88 datum.*

QUESTION: Are the effects of climate change and unresolved sedimentation issues along the South Delta being fully considered while making the assumption that the water surface elevation in the San Joaquin River at the railroad bridge crossing near the Oakwood Lake Water District storm drain outfall is: (a) 20.6 feet for a 10-year event; (b) 28.0 feet for a 100-year event; (c) 29.0 feet for a 200-year event. (See Enclosures 1-26)

QUESTION: In the event of a right bank San Joaquin River or Stanislaus River levee breach, how will flood waters be drained from the urbanizing and non-urbanizing areas south of Manteca?

QUESTION: When considering the magnitude of 100-year, 200-year, or other periodic levels of flood events that are expected to occur, isn't it likely that water elevations (NAV D88 datum) on the land side (east of the San Joaquin River in the areas south of Manteca) could exceed the 29'-0" elevation as forecasted in the Request for Proposal?

QUESTION: What facilities and other actions are planned to safeguard and protect our local urban and rural communities against the unplanned release of right bank San Joaquin River levee breach flood waters that historically accumulate and rise in height against the South Manteca portion of the RD 17 dryland cross levee?

Selected General Plan 2023 Goals and Policies that TLG Believes are Important to Follow:

TLG believes that any development agreement and associated conditions of approval as mandated by the City of Manteca needs to carefully consider and follow the current General Plan goals and policies to ensure that all potential for flood water, storm water, waste water, and other hydrology-related impacts are fully identified and mitigated.

Most important, TLG believes that the following Manteca General Plan 2023 goals and policies are still valid and continue to apply:

Manteca General Plan 2023 goals and policies to consider:

A. Major Drainage

Goal #PF-9 (page 6-11); Maintain an adequate level of service in the City's drainage system to accommodate runoff from existing and projected development and to prevent damage due to flooding.

Policy #PF-I-13 (page 6-11); The City shall update the Storm Drainage Master Plan and Public Facilities Implementation Plan, regarding water supply and distribution, every five years. The update shall be reviewed annually for adequacy and consistency with the General Plan.

TERRA LAND GROUP, LLC

Policy #PF-P-27 (page 6-11); The City shall require the dedication and improvement of drainage detention basins as a condition of development approval according to the standards of the Drainage Master Plan. The responsibility for the dedication and improvement of detention basins shall be based on the prorated share of storm water runoff resulting from each development.

B. Flood Safety

Policy #S-P-11 (page 7-5); Ensure that the impacts of potential flooding are adequately analyzed when considering areas for future urban expansion.

Policy #S-I-8 (page 7-6); New development shall be required to maintain natural stream courses and adjacent habitat and combine flood control, recreation, water quality, and open space functions.

C. Water Conservation

Goal #RC-2 (page 8-2); Maximize the beneficial uses of water by recycling water for irrigation and other non-potable uses.

Policy #RC-P-2 (page 8-2); The City shall explore potential uses of treated wastewater when such opportunities become available.

Policy #RC-P-3 (page 8-2); The City shall protect the quantity of Manteca's groundwater.

Policy #RC-P-4 (page 8-2); The City shall require water conservation in both City operations and private development to minimize the need for the development of new water sources.

Policy #RC-I-3 (page 8-3); Require large commercial and industrial water users to submit a use and conservation plan as part of the project entitlement review and approval process, and develop a program to monitor compliance with and effectiveness of that plan.

With this in mind, TLG believes that the currently-existing Manteca General Plan 2023 goals and policies listed above gain added importance when it is considered that in October 2010, the California Department of Water Resources issued a guide in the form of "A Handbook for Local Communities for Implementing California Flood Legislation into Local Land Use Planning" ("Land Use Guide").

The Land Use Guide lists various Government Code and Water Code sections that any new development shall be subjected to:

- (i) Water Code section 8307
- (ii) Government Code section 66474.5
- (iii) Government Code section 65860.1
- (iv) Water Code section 9602

In addition, Page 12 of the Land Use Guide indicates: "*The intent is to improve local planning decisions within flood prone areas by facilitating coordination between land use and flood risk management agencies, ensuring local planning decisions are based on accurate and up to date flood management information, and supporting local decisions that are reflective of Statewide and regional flood management plans and objectives.*" (See Enclosures 1-27)

Page 36 of the Land Use Guide warns against cities (or counties) taking unreasonable risks associated with Government Code section 65302(g)(2)(B).

TERRA LAND GROUP, LLC

Page 37 of the Land Use Guide also warns that identification of a flood hazard zone does not imply that areas outside the flood hazard zones or uses within flood hazard zones will be free from flooding or flood damage.

Page 141 of the Land Use Guide defines State Assembly Bill 70, Water Code section 8307(a) as requiring: *“A city or county may be required to contribute its fair and reasonable share of property damage caused by a flood to the extent that the city or county has increased the state’s exposure to liability for property damage by unreasonably approving new development in a previously undeveloped area that is protected by a state flood control project.”*

As a result, TLG believes that the Manteca General Plan 2023 goals and policies listed above continue to apply while offering significant protections to public health and safety for those located both inside and outside the City of Manteca sphere of influence.

Finally, Terra Land Group urges the Manteca City Council to take immediate action to ensure that all currently existing Manteca General Plan 2023 goals and policies are fully considered prior to approving any of the February 4, 2020 Manteca City Council meeting agenda items detailed in this letter.

Thank you for your attention to this very important matter.

Respectfully,



Martin Harris
for Terra Land Group, LLC.

MH/cm

Enclosures:

These Enclosures can be downloaded as needed via Dropbox through the provided hyperlinks.

1. 2018-02-26 letter from TLG to the San Joaquin Area Flood Control Agency
(https://www.dropbox.com/s/8scnhemfwexbkr9/2018-02-26_LTR_SJAFCA_LSJR%20EIR_PublicComm_wEncl.pdf?dl=0)
2. 2018-03-05 letter from TLG to the San Joaquin County Local Agency Formation Commission
(https://www.dropbox.com/s/vrxhht508075ro8/2018-03-05_LTR_LAFCo_AgIt3.pdf?dl=0)
3. 2019-03-18 letter from TLG to the City of Lathrop Public Works Department
(https://www.dropbox.com/s/musf61jnz7azjvy/2019-03-18_LTR_LPW_EIRWaterResPlan.pdf?dl=0)
4. 2019-07-08 letter from TLG to the Manteca Planning Commission
(https://www.dropbox.com/s/3zn3ca6lx1zkaej/2019-07-08_LTR_MPC_AgIts6.1.pdf?dl=0)
5. 2019-07-10 letter from TLG to the Tri-Valley San Joaquin Valley Regional Rail Authority
(https://www.dropbox.com/s/av5zp60u1f2pyw7/2019-07-10_LTR_TVSVRRRA_ValleyLink.pdf?dl=0)

TERRA LAND GROUP, LLC

6. 2019-07-15 letter from TLG to the Manteca City Council
(<https://www.dropbox.com/s/6suvyxweqb8wo0i/2019-07-15 LTR MCC AgltsB.4.pdf?dl=0>)
7. 2019-07-16 letter from TLG to the San Joaquin Area Flood Control Agency
(<https://www.dropbox.com/s/rwumj9hlh8qfyws/2019-07-16 LTR SJAFCA Aglts5.1.pdf?dl=0>)
8. 2019-08-07 letter from TLG to Greg Showerman
(<https://www.dropbox.com/s/r0dnkxkq9muv6ms/2019-08-07 LTR GShowerman SDZones.pdf?dl=0>)
9. 2019-08-21 letter from TLG to the Eastern San Joaquin Groundwater Authority
(<https://www.dropbox.com/s/srnfonfc2rbj1j1/2019-08-21 LTR ESJGA GSP.pdf?dl=0>)
10. 2019-09-09 letter from TLG to the South San Joaquin Irrigation District
(<https://www.dropbox.com/s/s2whus9jfs27053/2019-09-09 LTR SSJID Aglt8.pdf?dl=0>)
11. 2019-10-07 letter from TLG to the San Joaquin County Local Agency Formation Commission
(<https://www.dropbox.com/s/snkctx3dvn8obbz/2019-10-07 LTR LAFCo Aglts4.pdf?dl=0>)
12. 2019-11-20 letter from TLG to the Delta Conveyance Design and Construction Authority
(<https://www.dropbox.com/s/tlnfyrr1524q6gq/2019-11-20 LTR DCDCA Aglt7b.pdf?dl=0>)
13. 2019-12-02 letter from TLG to the Manteca City Council
(<https://www.dropbox.com/s/pzwlppnbkt8zyby/2019-12-02 LTR MCC AgltsB9.pdf?dl=0>)
14. 2019-12-09 letter from TLG to the Lathrop City Council
(<https://www.dropbox.com/s/qkk2an4jzivbh29/2019-12-09 LTR LCC Aglts5.1.pdf?dl=0>)
15. 2019-12-09 letter from TLG to the San Joaquin County Board of Supervisors
(<https://www.dropbox.com/s/6p3tm8gcjg57lxi/2019-12-09 LTR SJCBOs Aglt1.pdf?dl=0>)
16. 2020-01-20 letter from TLG to the Manteca City Council
(<https://www.dropbox.com/s/muiwj1q8351ps97/2020-01-20 LTR MCC AgltsD1.pdf?dl=0>)
17. 2019-07-29 letter from TLG to the Manteca City Council
(<https://www.dropbox.com/s/w7cu83tzs7io9ll/2019-07-29 LTR MCC AgltC.1.pdf?dl=0>)
18. 2020-01-29 letter from TLG to the State of California
(<https://www.dropbox.com/s/gt61vuwc7ju21mh/2020-01-29 LTR WRP PubComm.pdf?dl=0>)
19. August 14, 2019 letter from TLG to the City of Manteca-City Hall
(<https://www.dropbox.com/s/3kn25phvd1tusn4/2019-08-14 LTR MCC Wackerly.pdf?dl=0>)
20. 2014-04-22 letter from Michael Babitzke to the San Joaquin Council of Governments
(<https://www.dropbox.com/sh/pmyrdrirddvs05u/AABhgN5re7iAu3TZ1jWHpGPWa?dl=0>)
21. 2019-12-16 letter from TLG to the Manteca City Council
(<https://www.dropbox.com/s/3e579nybrhmk96z/2019-12-16 LTR MCC AgltD2.pdf?dl=0>)
22. 2019-05-20 letter from TLG to the San Joaquin County Board of Supervisors
(<https://www.dropbox.com/s/3kp0rxtir4s1vth/2019-05-20 LTR SJCBOs Aglt1.pdf?dl=0>)
23. 2020-01-29 letter from TLG to J.D. Hightower, Interim Community Development Director/Planning Manager for the City of Manteca
(<https://www.dropbox.com/s/ljlrkxqsol7p5dc/2020-01-29 LTR Hightower GeneralPlan.pdf?dl=0>)
24. 2016-09-16 letter from Martin Harris, representative of TLG, to the City of Manteca Community Development Department
(<https://www.dropbox.com/s/u4jud1veljhy686/2016-09-16 LTR TLG-MH MCCD ReDEIROakwoodLanding MHjs.pdf?dl=0>)

TERRA LAND GROUP, LLC

25. 2017-09-06 letter from TLG to the City of Manteca Community Development Department (https://www.dropbox.com/s/i7caj91itppw0lh/2017-09-06_LTR_MCDD_CerriDenaliProj_MHcm_S_TAMPED.pdf?dl=0)
26. 2016-09-16 letter from Lucille Harris, representing TLG, to the City of Manteca Community Development Department (https://www.dropbox.com/s/xyo4smtmzuborw4/2016-09-16_LTR_TLG-LH_MCDD_ReDEIROakwoodLanding.pdf?dl=0)
27. 2018-03-28 letter from TLG to the San Joaquin County Assessor and the San Joaquin County Surveyor (https://www.dropbox.com/s/5k1a6ntqcobldvr/2018-03-28_LTR_SJCAssessor-Surveyor_BoundaryAlignment.pdf?dl=0)

cc:

San Joaquin Flood Control and Water Conservation District, % Fritz Buchman
San Joaquin County Local Agency Formation Commission, Attn: James Glaser
American Rivers, Attn: Aysha Massell, Associate Director
Central Valley Flood Protection Board, Attn: Ryan Jones
Central Valley Flood Protection Board, Attn: Leslie Gallagher, Executive Officer
San Joaquin Area Flood Control Agency, Attn: Marlo Duncan, Project Manager
San Joaquin Council of Governments, % Diane Nguyen
South San Joaquin Groundwater Sustainability Agency, % Danielle Barney
Tri-Dam Project Board of Directors
South San Joaquin Irrigation District Board of Directors, % Danielle Barney
Lathrop City Council, % Teresa Vargas, City Clerk
Michael Mierzwa, Lead Flood Management Planner, California Department of Water Resources
Jon Ericson, Hydrology and Flood Operations Officer, California Department of Water Resources
California Department of Water Resources, Attn: Mary Jimenez
Reclamation District No. 17, % Nomellini, Grilli & McDaniel PLC
Reclamation District No. 2075, Attn: Pam Forbus
Reclamation District No. 2094, Attn: Pam Forbus
San Joaquin County Board of Supervisors, Attn: Rachél DeBord, Chief Deputy Clerk of the Board
San Joaquin County Planning Commission, Attn: Stephanie Stowers, Senior Planner
Tanis Toland, U.S. Army Corps of Engineers, Sacramento District
Elizabeth Salyers, Chief, Civil Works Project Management Branch, U.S. Army Corps of Engineers
Delta Conveyance Design And Construction Authority Board of Directors
WMD, Attn: Lee DeIDon, Jennifer Cozart and Bob Williams
Tracy City Council
City of Manteca General Plan Advisory Committee, % De Novo Planning Group, Attn: Beth Thompson & Lisa Schimmelfennig
California Department of Transportation, District 10, Attn: Jes Padda, Acting Deputy District Director
San Joaquin County Surveyor, Attn: James Hart jhart@sjgov.org

TERRA LAND GROUP, LLC

San Joaquin County Assessor, Attn: Jose Molina

5151 E. ALMONDWOOD DRIVE MANTECA, CA 95337

TERRA LAND GROUP, LLC

January 29, 2020

VIA EMAIL

J.D. Hightower
Interim Community Development Director/Planning Manager
for the City of Manteca
1001 West Center Street
Manteca, CA 95337
(jhightower@ci.manteca.ca.us)

Re: Public Comments in response to the January 6, 2020 Notice of Preparation of the City of Manteca General Plan Updated Environmental Impact Report.

Dear Mr. Hightower,

My name is Martin Harris and I am an authorized representative for Terra Land Group, LLC ("TLG"). TLG owns several properties in Manteca and Lathrop, and as an organization, dedicates a significant amount of its efforts to ensure the safety of our communities by soliciting local, state, and federal agencies to protect our area from the effects of flooding.

TLG believes that as more and more people move into Manteca and as more land is being developed or converted to salt-sensitive farming crops, there needs to be more potable and irrigation water delivery capacity, water storage, and reuse opportunities to accommodate those increased needs. However, there also needs to be safe ways of storing, delivering, conveying, draining, and discharging the increasing amounts (and various forms) of surface water involved to avoid flood impacts for the people who live or work in the areas that may be affected.

TLG is writing this letter in response to the January 6, 2020 Notice of Preparation for the City of Manteca General Plan Update Environmental Review Document. Most important, TLG believes that the City of Manteca has placed a significant number of South Manteca urban and rural residents and businesses at significant risk for flooding due to the high volume of development projects (and associated elevation changes) that have been approved and allowed to move forward without a safe and sustainable means of exactly how and where flood water, storm water, and effluent waste water will be drained, discharged, or diverted to. **(See Enclosures 1-17)**

Most concerning, Manteca city staff have continually ignored the efforts of many South Manteca residents and business owners in calling attention to what appears to be very significant and potentially catastrophic flood impacts to the rural areas affected.

As a result, TLG is writing this letter to provide key information that TLG believes will need to be included and mitigated in any Draft City of Manteca General Plan Update Environmental Impact Review document that may ultimately be released and circulated for public review and comment.

TERRA LAND GROUP, LLC

Environmental Setting and Baseline

To begin, TLG believes that it is important for you to understand that a delicate balance exists between a previously-established U.S. Army Corps of Engineers baseline and what appears to be increasing flood risks to South Delta residents and businesses that continue to be affected by the high level of City of Manteca urban expansion. (See Enclosure 1)

TLG believes that no City of Manteca General Plan Update Environmental Impact Review can be properly presented and mitigated without fully considering what appears to be very significant drainage impacts affecting the South Delta-Lower San Joaquin River drainage system. With this in mind, TLG believes that storing, delivering, reusing, and draining water in and along the South Delta becomes complicated when it is considered that the January 2018 San Joaquin River Basin Lower San Joaquin River, CA Final Integrated Interim Feasibility Report/EIR/EIS: (LSJRFS”) includes the following:

1. Page ES-1 of the LSJRFS states: *The study area also includes the distributary channels of the San Joaquin River in the southernmost reaches of the Delta; Paradise Cut and Old River as far north as Tracy Boulevard, and Middle River as far north as Victoria Canal.*
2. Page 3-31 of the LSJRFS states: *Currently, the levee safety program has defined the levee system that incorporates RD 17 as bounded on the north by Walker Slough, west by the San Joaquin River and south by the Stanislaus River. This includes RD 17, RD 2096, RD 2094, RD 2075 and RD 2064.*
3. Page 5-17 of the LSJRFS states: **Stanislaus River to Paradise Cut.** *The confluence of the San Joaquin and Stanislaus Rivers defines the upstream extent of the hydraulic model used for this study.*
4. Page ES-2 of the LSJRFS states:
Analysis of the study area is challenged by the presence of three sources of flooding, the Delta Front, Calaveras River and San Joaquin River. This results in commingled floodplains for the North and Central Stockton areas. The distributary nature of the Delta also affects Delta water levels, because high flows from the Sacramento River may “fill” the Delta prior to a peak inflow on the San Joaquin River as occurred in 1997, raising water levels on the Delta front levees.
5. Page 5-27 of the LSJRFS states: **2.1.1 FLOODING Problem: There is significant risk to public health, safety and property in the study area associated with flooding.** *The study area is located in the Central Valley of California which has very little topographic relief, resulting in potential flooding of areas far from water courses... (See Enclosure _)*

TLG believes the potential for flood modeling deficiencies (as affected by a growing list of environmental conditions and concerns) does not appear to have been fully considered. TLG also believes that all Mossdale Tract flood modeling and adequate progress reports (including those for Paradise Cut) that have been publicly released to date have failed to fully consider and provide mitigation measures for:

- (i) Unresolved and continuing sedimentation issues that continue to reduce channel flow capacity in and along the South Delta Lower San Joaquin River System;
- (ii) Climate change and its effect on increasing the total potential volumes of channel flows to be expected in and along the South Delta Lower San Joaquin River System; and

TERRA LAND GROUP, LLC

- (iii) A Stanislaus River right bank levee breach in the areas west of the City of Ripon; and
- (iv) Limited topographic relief to ground surface areas in and along the South Delta.

QUESTION: Has any flood modeling been conducted to determine flood drainage flow volumes and drainage patterns resulting from a Stanislaus River right bank levee breach?

QUESTION: What drainage flow improvement actions can the public count on to offset limited topographic relief ground surface grade conditions that are known to exist in and along the South Delta?

QUESTION: Have the total anticipated volumes (and potential changes to drainage patterns) related to flood water, storm water, waste water, and other forms of surface water been accurately determined on a local and regional basis to ensure compatibility with statewide projects anticipated to be constructed in association with the (i) California Water Plan, (ii) Delta Conveyance Project, and (iii) the State of California 2020 Water Resilience Portfolio?

TLG believes that this becomes especially important when considering the following points:

1. Backwater effects and changes to drainage patterns, in conjunction with anticipated 200-year flood protection improvements as affected by a San Joaquin River and/or Stanislaus River right bank levee breach, could have a devastating effect on the urbanizing and non-urbanizing areas in and along the South Delta/Lower San Joaquin River Basin. (**See Enclosures 1-16**)
2. The City of Manteca has been experiencing exponential development growth and urban expansion. Many of the involved projects appear to have been approved with no apparent meaningful consideration for their individual contribution to total cumulative drainage impacts. The accompanying changes to grade, land elevations, and drainage patterns may be creating irreversible impacts to the surrounding community, and could increase flood risk to those affected. (**See Enclosures 4, 6, 8, 13 and 16**)
3. TLG believes that these continued project approvals (and associated impacts) directly conflict with the goals and policies stated in the Manteca General Plan 2023 (enacted on October 6, 2003) and fail to adequately address public risk due to recently-discovered San Joaquin River channel flow deficiencies in conjunction with unresolved sedimentation and climate change issues affecting the areas in and along the South Delta.
4. The Paradise Cut Expansion project, in the form presented in the “Conceptual Design Technical Memo/Paradise Cut Expansion Project/April 9, 2019,” may or may not prove adequate in offsetting the full range of development and other hydrology-related impacts that may be created. Also, TLG believes that the Paradise Cut Expansion Stage reductions called for between the Paradise Weir and the Airport Way (Vernalis Bridge) may not fully address the potential for additional drainage impacts to be created. (**See Enclosures 1-16**)

This is especially concerning when considering pages 4 and 5 of the Mossdale Tract Program: 2019 Annual Adequate Progress Report Update for Urban Level of Protection-Final Report (included as Attachment 2 to the 8/20/2019 MCC Meeting Agenda Item B.3), which states that, “the Urban Flood Risk Reduction Study remains incomplete and the Climate Adoption Policy is underway. As

TERRA LAND GROUP, LLC

such, a new determination that the project meets the appropriate Standard of Protection will need to be made in conjunction with the 2020 Annual Report.”

QUESTION: How will what appears to be a very real potential for unresolved and continuing sedimentation and climate change issues in and along the South Delta be considered and allowed for in the final Mossdale Tract Drainage Plan? (See Enclosures 1-16)

5. The San Joaquin River may be unable to handle any and all potential combinations of storm water or waste water flows that may be drained into or along the river channel.
6. With all of the various development and infrastructure projects being approved and considered by the different agencies in and around Manteca and the South Delta region, TLG is concerned that there is a lack of integration and cohesion between the agencies related to the projects. Without a single oversight agency in charge of the “big picture,” or all the hydraulic decisions being made, there may be a potential for the various projects to cause conflicting hydraulic effects and impacts to the upstream and downstream communities that may be affected. A list of forty-one such currently ongoing and planned projects can be found in **Enclosure 1**. (Also See Enclosures 2-16)

QUESTION: How can local, regional, state, and federal authorities work closer together to create an updated water plan that provides water deliveries at the local, regional, and state level while protecting the urban and rural areas along the South Delta from any increases to flood water, storm water, waste water, and other hydrology-related impacts that may be created?

7. Projects appear to continue to be approved by various agencies without the agencies fully understanding the total potential for flood water, storm water, and waste water impacts involved. Agencies, city councils, and districts appear to be more interested in supporting development and in avoiding liability than they are in safeguarding the residents and businesses that may be affected.

QUESTION: What effect will the Daniels Street extension have on stormwater drainage flows currently being drained in and along the French Camp Outlet Canal? (See the July 16, 2019 Manteca City Council meeting agenda item B.4. Also See Enclosures 1-16)

QUESTION: What effect will the proposed formation of the San Joaquin County Flood Control & Water Conservation District (“SJFCWCD”) Zone 9 Flood Conveyance and Levee Maintenance Benefit Assessment District (and related projects) have on changing drainage patterns and associated outfall locations currently existing and relied upon by the South San Joaquin Irrigation District and its members? (See July 18, 2019 SJAFCA meeting agenda item 5.1. Also See Enclosure 7)

8. The Manteca General Plan 2023 states several goals and policies which appear to indicate that Manteca is committed to protecting the community from flooding related to existing and projected development. (See Enclosure 4) It appears that both the cities of Manteca and Lathrop plan on redirecting storm water drainage and/or effluent wastewater flows along and through the urbanizing and non-urbanizing areas in and along the South Delta-Lower San Joaquin River Basin. However, no meaningful solution has been clearly presented to identify City of Manteca effluent waste water spray field discharge facilities to replace those to be abandoned due to planned construction of several new development projects.

TERRA LAND GROUP, LLC

QUESTION: What effect will filing and/or extending an Exclusive Negotiating Agreement for the Recycled Water Project have on sustaining total potable and irrigation water (ie. groundwater and surface water) volumes available to the urban and rural areas in and around Lathrop and Manteca? (See the July 16, 2019 Manteca City Council meeting agenda item B.8.) (See Enclosures 6-11)

9. Further, TLG believes that the San Joaquin County (and other local community) general plan(s) have failed to meet the public safety and environmental impact disclosure and mitigation requirements as called for in California Senate Bill No. 1000 ("SB 1000") (environmental justice) and CEQA. San Joaquin County, as well as the various other non-federal sponsors involved, should be acting in a good-faith manner to fully identify and mitigate the potential for flood and other hydrology related impacts and health risks to the disadvantaged communities that may be affected.
10. The City of Manteca General Plan 2023 indicates that the French Camp Outlet Channel "*is the limiting factor that sets the flow rates for drainage systems in the City of Manteca.*" TLG believes that due to SB5 200-year flood protection requirements, various flood drainage impacts and back-water effects may be created affecting the hydraulic capacity of the system. TLG also believes this may be particularly true for certain outfall locations that may be proposed in areas not currently protected by a 200-year flood protection levee. (See Enclosure 4)
11. The effect of 200-year flood protection and related potential for underestimating drainage and back water effects associated with the location of the Raymus Expressway as depicted in the proposed Land Use Map Alternatives "A" and "B" to be considered by the Manteca City Council in association with the Manteca City Council 7/30/2019 meeting agenda item C.1. (Within Enclosure 9, see its own Enclosures 10 & 11. Also See Enclosures 10, 11 & 17 as included in this letter.)

QUESTION: What short term and/or long range changes to flood water, storm water, waste water, potable and irrigation water delivery, and other hydrology related drainage and conveyance patterns may be irreversibly altered due to approval of the proposed Raymus Expressway roadway alignment as detailed in the 5/22/19 Manteca General Plan Land Use Alternative Maps "A" or "B"? (See 7/30/2019 Manteca City Council meeting agenda item C.1 (19-360) Attachments 1 and 2)

12. Undetermined back water and other potential drainage effects associated with the Upper Jones Tract (RD 2029) and Lower Jones Tract (RD 2038) consolidation. (Within Enclosure 9, see its own Enclosures 12 & 13)

QUESTION: Will drainage impacts in and along the South Delta be reduced or adversely affected due to any future improvements to be considered in association with the Upper Jones Tract (RD 2039)/Lower Jones Tract (RD 2038) consolidation?

13. What appears to be a potential for system-wide Eastern San Joaquin Groundwater Authority drainage modeling deficiencies and unmitigated impacts due to apparent ground surface grade and elevation level variations associated with the growing number of collaborative watershed and agricultural landscape easements being acquired on properties located in and along the South Delta. (Within Enclosure 9, see its own Enclosure 19)

TERRA LAND GROUP, LLC

14. Changing climate and increasing flood risks across the country. Levees are only one solution to flood control; they have their limits. (**Within Enclosure 9**, see its own Enclosure 5)
15. On August 5, 2019, the City of Manteca issued a Request for Proposal for Storm Drain Zones 36 & 39 Engineering, Environmental and Permitting (CIP 20004). ("Request for Proposal")

(i) Section 2.1 of the Request for Proposal states: "*With the exception of Drain #11 near the southern boundary of Zone 39, there are no regional drainage facilities in the study area.*"

However, TLG believes that it is important to mention that a second drain (South San Joaquin Irrigation District drain #10) exists with a location beginning at a point situated adjacent to Airport Way (just north of the Airport Way/Fig Avenue public roadway intersection); and extending in a direction approximately west to the City of Manteca Storm Drainage Zone 39 eastern boundary; and thence turning and continuing in a generally southern direction along the Zone 39 eastern boundary until meeting and connecting with South San Joaquin Irrigation District ("SSJID") Drain #11 near the southern boundary of the current City of Manteca city limits. (**See Enclosure 8**)

In addition, a growing number of South Manteca land owners and residents are starting to consider the potential for various changes in drainage patterns, flow volumes and other environmental effects that may significantly impact SSJID drains #10 and #11 as those drains merge together and continue through Drain #11 along the southern boundary of the City of Manteca and into Walthall Slough.

QUESTION: Are local authorities aware that SSJID Drain #11, in its present form, has deviated from a course that appears to be called for and included within **Enclosure 9**? (See its own Enclosure 16)

QUESTION: Will any and all flow impedances and back water effects be considered as part of any drainage analysis to be performed? (**Within Enclosure 9**, see its own Enclosures 14 & 15. Also **See Enclosure 8** as included in this letter.)

QUESTION: For what purpose are San Joaquin County land use and/or zoning reclassifications in and along the South Delta being considered? (**Within Enclosure 9**, see its own Enclosure 17)

(ii) In addition, the Request for Proposal does not appear to consider City of Manteca storm drainage Zone 34.

QUESTION: If the French Camp Outlet Canal ("FCOC") is abandoned or no longer able to accept drainage flows from the developing areas of Zone 34, where will Zone 34 storm water be drained to? (**Within Enclosure 9**, see its own Enclosures 14 & 15. Also **See Enclosures 8-11** as included in this letter.)

QUESTION: What effect will any public facility/infrastructure rehabilitation or improvement projects in and along Little Johns Creek have on the continued operation of the FCOC as well as other upstream and downstream areas to be affected?

(iii) The Request for Proposal further states:

4.1 Drainage

Planning and design of storm water collection, conveyance, and storage systems are predicated on the following assumptions:

1. *Runoff is attenuated through detention basins prior to discharge to regional Facilities. Detention basins will be sized to store a 10-yr, 48-hr event. Detention basins will empty by gravity or pumps, over a 96-hr period. The bottom elevation of the detention basin will be a minimum of 2 ft above the groundwater elevation.*
2. *The high-water level in the storage system will be a minimum of 1 ft below the lowest grade elevation of the property served.*
3. *Minimum pipe diameter of storm drains will be 12-inches. Pipe velocities will range from 2.5 to 10.0 ft per second (ft/sec). Storm drains will have a minimum cover of 30-inches.*
4. *Manholes will be located at junction points, changes in alignment, and changes in pipe size. Manholes will be spaced every 300 ft for pipe diameters less than 21-inches and 500 ft for pipe diameters greater than 21-inches.*
5. *Detention basin pump stations will be designed to discharge the 10-yr, 48-hr storm volume from the basin during a period of not less than 96 hours. Pump stations will be equipped with a minimum of one standby unit. Pump stations will be designed with trash racks sediment dams.*
6. *Drainage channels will be designed to confine the peak 100-yr discharge with 2 ft of freeboard.*
7. *Water surface elevation (WSEL) in the San Joaquin River at the railroad bridge crossing near the OLWD storm drain outfall is: (a) 20.6 ft for 10-yr event; (b) 28.0 ft for 100-yr event; and (c) 29.0 ft for 200-yr event. All elevations reference NAVD88 datum.*

QUESTION: Are the effects of climate change and unresolved sedimentation issues along the South Delta being fully considered while making the assumption that the water surface elevation in the San Joaquin River at the railroad bridge crossing near the Oakwood Lake Water District storm drain outfall is: (a) 20.6 feet for a 10-year event; (b) 28.0 feet for a 100-year event; (c) 29.0 feet for a 200-year event. (See Enclosures 1-16)

QUESTION: In the event of a right bank San Joaquin River or Stanislaus River levee breach, how will flood waters be drained from the urbanizing and non-urbanizing areas south of Manteca?

QUESTION: When considering the magnitude of 100-year, 200-year, or other periodic levels of flood events that are expected to occur, isn't it likely that water elevations (NAV D88 datum) on the land side (east of the San Joaquin River in the areas south of Manteca) could exceed the 29'-0" elevation as forecasted in the Request for Proposal?

QUESTION: What facilities and other actions are planned to safeguard and protect our local urban and rural communities against the unplanned release of right bank San Joaquin River levee breach flood waters that historically accumulate and rise in height against the South Manteca portion of the RD 17 dryland cross levee?

Existing General Plan 2023 Goals and Policies to Consider:

TERRA LAND GROUP, LLC

TLG believes that the Draft EIR currently being prepared needs to include a list of local goals and policies to ensure that all potential for flood water, storm water, waste water, and other hydrology-related impacts are fully considered.

Most important, TLG believes that the following Manteca General Plan 2023 goals and policies are still valid and continue to apply:

Manteca General Plan 2023 goals and policies to consider:

A. Major Drainage

Goal #PF-9 (page 6-11); Maintain an adequate level of service in the City's drainage system to accommodate runoff from existing and projected development and to prevent damage due to flooding.

Policy #PF-I-13 (page 6-11); The City shall update the Storm Drainage Master Plan and Public Facilities Implementation Plan, regarding water supply and distribution, every five years. The update shall be reviewed annually for adequacy and consistency with the General Plan.

Policy #PF-P-27 (page 6-11); The City shall require the dedication and improvement of drainage detention basins as a condition of development approval according to the standards of the Drainage Master Plan. The responsibility for the dedication and improvement of detention basins shall be based on the prorated share of storm water runoff resulting from each development.

B. Flood Safety

Policy #S-P-11 (page 7-5); Ensure that the impacts of potential flooding are adequately analyzed when considering areas for future urban expansion.

Policy #S-I-8 (page 7-6); New development shall be required to maintain natural stream courses and adjacent habitat and combine flood control, recreation, water quality, and open space functions.

C. Water Conservation

Goal #RC-2 (page 8-2); Maximize the beneficial uses of water by recycling water for irrigation and other non-potable uses.

Policy #RC-P-2 (page 8-2); The City shall explore potential uses of treated wastewater when such opportunities become available.

Policy #RC-P-3 (page 8-2); The City shall protect the quantity of Manteca's groundwater.

Policy #RC-P-4 (page 8-2); The City shall require water conservation in both City operations and private development to minimize the need for the development of new water sources.

Policy #RC-I-3 (page 8-3); Require large commercial and industrial water users to submit a use and conservation plan as part of the project entitlement review and approval process, and develop a program to monitor compliance with and effectiveness of that plan.

With this in mind, TLG believes that the Manteca General Plan 2023 goals and policies listed above gain added importance when it is considered that in October 2010, the California Department of Water Resources issued a guide in the form of "A Handbook for Local Communities for Implementing California Flood Legislation into Local Land Use Planning" ("Land Use Guide").

TERRA LAND GROUP, LLC

The Land Use Guide lists various Government Code and Water Code sections that any new development shall be subjected to:

- (i) Water Code section 8307
- (ii) Government Code section 66474.5
- (iii) Government Code section 65860.1
- (iv) Water Code section 9602

In addition, Page 12 of the Land Use Guide indicates: *“The intent is to improve local planning decisions within flood prone areas by facilitating coordination between land use and flood risk management agencies, ensuring local planning decisions are based on accurate and up to date flood management information, and supporting local decisions that are reflective of Statewide and regional flood management plans and objectives.”* (See Enclosures 1-18)

Page 36 of the Land Use Guide warns against cities (or counties) taking unreasonable risks associated with Government Code section 65302(g)(2)(B).

Page 37 of the Land Use Guide also warns that identification of a flood hazard zone does not imply that areas outside the flood hazard zones or uses within flood hazard zones will be free from flooding or flood damage.

Page 141 of the Land Use Guide defines State Assembly Bill 70, Water Code section 8307(a) as requiring: *“A city or county may be required to contribute its fair and reasonable share of property damage caused by a flood to the extent that the city or county has increased the state’s exposure to liability for property damage by unreasonably approving new development in a previously undeveloped area that is protected by a state flood control project.”*

As a result, TLG believes that the Manteca General Plan 2023 goals and policies listed above continue to apply while offering significant protections to public health and safety for those located both inside and outside the City of Manteca sphere of influence.

For this reason, TLG requests that the Manteca General Plan 2023 goals and policies listed above be incorporated into any Draft Manteca General Plan environmental impact report prior to its release for public review and comment.

Thank you for your attention to this very important matter.

Respectfully,



Martin Harris
for Terra Land Group, LLC.

MH/cm

TERRA LAND GROUP, LLC

Enclosures:

These Enclosures can be downloaded as needed via Dropbox through the provided hyperlinks.

1. 2018-02-26 letter from TLG to the San Joaquin Area Flood Control Agency
(https://www.dropbox.com/s/8scnhemfwexbkr9/2018-02-26_LTR_SJAFCA_LSJR%20EIR_PublicComm_wEncl.pdf?dl=0)
2. 2018-03-05 letter from TLG to the San Joaquin County Local Agency Formation Commission
(https://www.dropbox.com/s/vrxhht508075ro8/2018-03-05_LTR_LAFCo_Aglt3.pdf?dl=0)
3. 2019-03-18 letter from TLG to the City of Lathrop Public Works Department
(https://www.dropbox.com/s/musf61jnz7azjvy/2019-03-18_LTR_LPW_EIRWaterResPlan.pdf?dl=0)
4. 2019-07-08 letter from TLG to the Manteca Planning Commission
(https://www.dropbox.com/s/3zn3ca6lx1zkaej/2019-07-08_LTR_MPC_AgIts6.1.pdf?dl=0)
5. 2019-07-10 letter from TLG to the Tri-Valley San Joaquin Valley Regional Rail Authority
(https://www.dropbox.com/s/av5zp60u1f2pyw7/2019-07-10_LTR_TVSVJRRR_ValleyLink.pdf?dl=0)
6. 2019-07-15 letter from TLG to the Manteca City Council
(https://www.dropbox.com/s/6suvyxweqb8wo0i/2019-07-15_LTR_MCC_AgItsB.4.pdf?dl=0)
7. 2019-07-16 letter from TLG to the San Joaquin Area Flood Control Agency
(https://www.dropbox.com/s/rwumj9hlh8qfyws/2019-07-16_LTR_SJAFCA_AgIts5.1.pdf?dl=0)
8. 2019-08-07 letter from TLG to Greg Showerman
(https://www.dropbox.com/s/r0dnkxkq9muv6ms/2019-08-07_LTR_GShowerman_SDZones.pdf?dl=0)
9. 2019-08-21 letter from TLG to the Eastern San Joaquin Groundwater Authority
(https://www.dropbox.com/s/srnfonfc2rbj1j1/2019-08-21_LTR_ESJGA_GSP.pdf?dl=0)
10. 2019-09-09 letter from TLG to the South San Joaquin Irrigation District
(https://www.dropbox.com/s/s2whus9jfs27053/2019-09-09_LTR_SSJID_Aglt8.pdf?dl=0)
11. 2019-10-07 letter from TLG to the San Joaquin County Local Agency Formation Commission
(https://www.dropbox.com/s/snkctx3dvn8obbz/2019-10-07_LTR_LAFCo_AgIts4.pdf?dl=0)
12. 2019-11-20 letter from TLG to the Delta Conveyance Design and Construction Authority
(https://www.dropbox.com/s/tlnfyrrl524q6gq/2019-11-20_LTR_DCDCA_Aglt7b.pdf?dl=0)
13. 2019-12-02 letter from TLG to the Manteca City Council
(https://www.dropbox.com/s/pzwlppnbkt8zyby/2019-12-02_LTR_MCC_AgItsB9.pdf?dl=0)
14. 2019-12-09 letter from TLG to the Lathrop City Council
(https://www.dropbox.com/s/qkk2an4jzivbh29/2019-12-09_LTR_LCC_AgIts5.1.pdf?dl=0)
15. 2019-12-09 letter from TLG to the San Joaquin County Board of Supervisors
(https://www.dropbox.com/s/6p3tm8gcjg57xi/2019-12-09_LTR_SJCBOS_Aglt1.pdf?dl=0)
16. 2020-01-20 letter from TLG to the Manteca City Council
(https://www.dropbox.com/s/muiwjlq8351ps97/2020-01-20_LTR_MCC_AgItsD1.pdf?dl=0)
17. 2019-07-29 letter from TLG to the Manteca City Council
(https://www.dropbox.com/s/w7cu83tzs7io9ll/2019-07-29_LTR_MCC_AgltC.1.pdf?dl=0)

TERRA LAND GROUP, LLC

18. 2020-01-29 letter from TLG to the State of California

(https://www.dropbox.com/s/gt61vuwc7ju21mh/2020-01-29_LTR_WRP_PubComm.pdf?dl=0)

cc:

San Joaquin Flood Control and Water Conservation District, % Fritz Buchman
San Joaquin County Local Agency Formation Commission, Attn: James Glaser
American Rivers, Attn: Aysha Massell, Associate Director
Central Valley Flood Protection Board, Attn: Ryan Jones
Central Valley Flood Protection Board, Attn: Leslie Gallagher, Executive Officer
San Joaquin Area Flood Control Agency, Attn: Marlo Duncan, Project Manager
San Joaquin Council of Governments, % Diane Nguyen
South San Joaquin Groundwater Sustainability Agency, % Danielle Barney
Tri-Dam Project Board of Directors
South San Joaquin Irrigation District Board of Directors, % Danielle Barney
Lathrop City Council, % Teresa Vargas, City Clerk
Michael Mierzwa, Lead Flood Management Planner, California Department of Water Resources
Jon Ericson, Hydrology and Flood Operations Officer, California Department of Water Resources
California Department of Water Resources, Attn: Mary Jimenez
Reclamation District No. 17, % Nomellini, Grilli & McDaniel PLC
Reclamation District No. 2075, Attn: Pam Forbus
Reclamation District No. 2094, Attn: Pam Forbus
San Joaquin County Board of Supervisors, Attn: Rachél DeBord, Chief Deputy Clerk of the Board
San Joaquin County Planning Commission, Attn: Stephanie Stowers, Senior Planner
Tanis Toland, U.S. Army Corps of Engineers, Sacramento District
Elizabeth Salyers, Chief, Civil Works Project Management Branch, U.S. Army Corps of Engineers
Manteca City Council, % Assistant City Clerk Cassandra Tilton
Delta Conveyance Design And Construction Authority Board of Directors
WMD, Attn: Lee DeDon, Jennifer Cozart and Bob Williams
Tracy City Council
City of Manteca General Plan Advisory Committee, % De Novo Planning Group, Attn: Beth
Thompson & Lisa Schimmelfennig

Appendix B

Analysis of Public Health Risks and Energy Calculations

ANALYSIS OF PUBLIC HEALTH RISKS

FOR THE

MANTECA GENERAL PLAN UPDATE

MANTECA CALIFORNIA

SEPTEMBER 13, 2022

PROJECT TITLE

Manteca General Plan Update

PREPARED BY:

De Novo Planning Group
 1020 Suncast Lane Suite 106
 El Dorado Hills, CA 95762

CONTACT PERSON AND PHONE NUMBER

Beth Thompson – Principal Planner
 De Novo Planning Group
 1020 Suncast Lane, #106
 El Dorado Hills, CA
 bthompson@denovoplanning.com
 916-812-7927

CONTENTS

INTRODUCTION.....	2
PROJECT DESCRIPTION	2
SCOPE OF RISK ASSESMENT	3
SIGNIFICANCE CRITERIA	4
EMISSION SOURCES AND EXPOSURE.....	5
DAILY TRUCK TRIPS	5
EMISSION RATES.....	5
EXPOSURE ASSESSMENT	6
RISK ASSESSMENT	6
RISK ASSESSMENT RESULTS	7
REPORT PREPARERS & REFERENCES.....	9

FIGURES:

FIGURE-1: WIND PATTERNS (GENERAL WILLIAM J. FOX AIRFIELD - 2013-2017)	10
---	----

APPENDICES:

APPENDIX 1 EMISSIONS CALCULATIONS	
APPENDIX 2 AERMOD OUTPUT FILE	
APPENDIX 3 HARP-2 PROJECT SUMMARY REPORT	

INTRODUCTION

This Health Risk Assessment (HRA) was prepared to assess potential public health risks associated with the road segments within the city that were identified as having the most potential for impacting sensitive receptors. This report analyzes the emissions of toxic air pollutants generated by the proposed increase in truck trips and their impacts on public health.

PROJECT DESCRIPTION

PROJECT LOCATION

The City of Manteca is located in the southern portion of San Joaquin County, approximately 10 miles south of Stockton and approximately 14 miles northwest of the City of Modesto. The City is accessed by Highway 99 from the north and south and State Route (SR) 120 from the east and west. The City is bordered by the City of Lathrop to the west and unincorporated San Joaquin County to the north, south, and east.

ENVIRONMENTAL IMPACT REPORT STUDY AREA

There are three key boundary lines addressed by the General Plan, which make up the study area for the General Plan EIR. These include the City Limits, the Sphere of Influence (SOI), and the Planning Area, as shown on Figure 2.0-2 and described below.

City Limits: Includes the area within the City's corporate boundary, over which the City exercises land use authority and provides public services.

Sphere of Influence (SOI): The probable physical boundary and service area of the City, as adopted by the Local Agency Formation Commission (LAFCO). An SOI may include both incorporated and unincorporated areas within which a city or special district will have primary responsibility for the provision of public facilities and services

Planning Area: For the purposes of the General Plan, the Planning Area is the geographic area for which the General Plan provides a framework for long-term plans for growth, resource conservation, and continued agricultural activity. State law requires the General Plan to include all territory within Manteca's incorporated area as well as "any land outside its boundaries which in the planning agency's judgment bears relation to its planning" (California Government Code Section 65300). The Planning Area for the Manteca General Plan includes the entire City Limits and the City's SOI.

DESCRIPTION OF PROPOSED GENERAL PLAN PROJECT

The City of Manteca is preparing a comprehensive update to its existing General Plan, which was prepared in 2003 (with partial updates to the Circulation Element in 2011, updates to the Safety Element to address Senate Bill 5 [i.e., 200-year flood protection] in 2016). The Housing Element was adopted in 2016 and is not anticipated to be significantly revised by the General Plan Update. The General Plan Update is expected to be complete in Spring 2021 and will guide the City's development and conservation of its resources. The Plan is intended to be an expression of the community's vision for the City and Planning Area and constitutes the policy and regulatory

framework by which future development projects will be reviewed and public improvements will be implemented. The City will implement the Plan by requiring development, infrastructure improvements, and other projects to be consistent with its policies and by implementing the actions included in the Plan. The key components of the General Plan will include broad goals for the future of Manteca, and specific policies and actions that will help implement the stated goals.

State law requires the City to adopt a comprehensive, long-term general plan for the physical development of its planning area. The Plan must include land use, circulation, housing, conservation, open space, noise, and safety elements, as specified in Government Code Section 65302, to the extent that the issues identified by State law exist in the City's planning area. Additional elements that relate to the physical development of the City may also be addressed in the Plan. The degree of specificity and level of detail of the discussion of each Plan element need only reflect local conditions and circumstances. The Plan has been prepared to address the requirements of State law and the relevant items addressed in Government Code Section 65300 et seq.

This EIR analyzes potential impacts to the environment associated with implementation and buildout of the proposed General Plan, which includes future development projects, infrastructure improvements, and the implementation of policies and actions included in the proposed General Plan. These proposed General Plan components are described in greater detail below.

SCOPE OF RISK ASSESSMENT

Preparation of risk assessments is a three-step process. The first step is to identify potential contaminants that may lead to public health risks. The second step is to assess the magnitude of contaminants that may reach the public (exposure assessment). The last step is to calculate the magnitude of the health risk as a result of exposure to harmful contaminants on the basis of the toxicology of the contaminants.

The Office of Environmental Health Hazard Assessment, and the San Joaquin Air Pollution Control District (SJVAPCD) provide guidance on the procedures that should be used, including, toxicological data for individual contaminants. This risk assessment is based on the guidance provided within these guidance documents. It should be noted that while this risk assessment uses certain procedures and data from these Guidelines, this assessment is not intended to satisfy the reporting requirements under AB-2588 "Air Toxics" Hot Spots program.

The health risks that are evaluated in this study include:

- Residential Cancer Risk (70-year exposure; start at third trimester); and
- Acute and Chronic Hazard Indices.

The 70-year risk applies to residential areas where exposure may potentially occur 24 hours/day, 365 days/year. Non-cancer risks can be described as acute (short-term, exposure) or chronic health impacts.

In order to analyze the worst-case scenario, segments with the highest increases in daily truck trips combined with the nearest sensitive receptors were selected to model potential health risks associated exposure to TACs associated with the road segments. Based on these criteria, the following road segments, were selected for further analysis:

- Lovelace Road (west of SR 99 and east of Union Road);¹
- SR 99 total north of Yosemite Avenue;
- SR 120 total between McKinley Avenue and Airport Way;
- Roth Road west of Airport Way; and
- SR 99 north of Lovelace Road

The analysis also addressed interacting road segments that intersect with the primary segments identified above to ensure that the cumulative, or combined effect, is addressed.

SIGNIFICANCE CRITERIA

The following significance criteria shown in Table 1, based on guidance from the SJVAPCD, are used in this report to assess the significance of public health risks.

TABLE 1: THRESHOLDS OF SIGNIFICANCE FOR PUBLIC HEALTH RISKS

<i>Risk Metric</i>	<i>Significance Threshold</i>
Residential Cancer Risk	20 per million
Chronic and Acute non-cancer hazard Indices	non-cancer health hazard exposure index of 1.0

SOURCE: SJVAPCD, 2015.

As shown in Table 1, a project that contributes a cancer risk in excess of 20 new cases in a population of one million persons at identified receptors, or a non-cancer hazard index of greater than or equal to 1.0 would be considered to have a significant project-level impact.

These thresholds are typically applied to new industrial projects. However, for purposes of this analysis, these thresholds are used to determine whether implementation of the General Plan Circulation Element would result in significant health risk impacts from DPM emissions.

EMISSION SOURCES AND EXPOSURE

The source toxic air pollutants (TACs) generated by the proposed increase in truck trips associated with the General Plan is diesel particulate matter (DPM) from truck mobile emissions. Based on numerous studies by the California Air Resources Board (ARB), DPM represents the largest single contributor to public health risks. Additionally, in its comprehensive assessment of diesel exhaust, OEHHA analyzed more than 30 studies of people who worked around diesel equipment, including truck drivers, railroad workers, and equipment operators. The studies showed these workers were more likely to develop lung cancer than workers who were not

¹ Note: The segments ‘Lovelace Road west of SR 99’ and ‘Lovelace east of Union Road’ were combined for the purposes of the health risk analysis. The most conservative truck trip generation values provided by Fehr & Peers for these segments were used for the purposes of the analysis, to provide for a conservative analysis.

exposed to diesel emissions. These studies provide strong evidence that long-term occupational exposure to diesel exhaust increases the risk of lung cancer. Exposure to diesel exhaust can 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. Emissions from truck mobile emissions were analyzed and are shown in Table 2.

TABLE 2: EMISSION SOURCE ASSUMPTIONS

Source Type / Emission	Configuration	Assumptions
Mobile Diesel Truck Circulation (DPM)	<p><i>Modeled as line-volume sources</i></p> <p>Release Height = 6 ft</p> <p>Plume Height = 12 ft</p> <p>Plume Width = 12 ft (width of a truck)</p> <p>Line Lengths = based on path of travel</p>	<ul style="list-style-type: none"> On-site travel of trucks per day per each analyzed truck route segment, as provided by Fehr & Peers. Traveling distance based on proposed truck route segment. PM₁₀ mobile emissions factor provided by EMFAC 2021 (Parameters: San Joaquin County, Annual, Year 2021, speed bin based on truck route segment; emission factor for T7 Tractor Class 8) Truck route segments that intersect with the primary segments identified above to ensure that the cumulative, or combined effect, is addressed.

DAILY TRUCK TRIPS

The total diesel truck trips generated by the proposed project is based on the Supporting Transportation Data and Analysis for the proposed project prepared by Fehr & Peers in December 2020. Additional data was provided by Fehr & Peers in September 2022.

EMISSION RATES

Table 3 provides emissions rates by source and emissions factors. For calculations, data outputs, and reference documents please see Appendix 1.

TABLE 3: EMISSION RATES BY SOURCE

Source	Pollutant	Volume/Size	Emission Factor	Emissions Pounds/Year
Diesel Truck (Mobile) Circulation – Lovelace Road (west of SR 99)	Diesel Particulate Matter (DPM)	1,770 truck trips per day traveling 2.47 miles	0.005733 g/mile	20.17
Diesel Truck (Mobile) Circulation – SR 99 total north of Yosemite Avenue (NB)	Diesel Particulate Matter (DPM)	1,900 truck trips per day traveling 1.12 miles	0.010893 g/mile	18.65
Diesel Truck (Mobile) Circulation – SR 99 total north of Yosemite Avenue (SB)	Diesel Particulate Matter (DPM)	1,900 truck trips per day traveling 1.12 miles	0.010893 g/mile	18.65
Diesel Truck (Mobile) Circulation – SR 120 total between McKinley Avenue and Airport Way (WB)	Diesel Particulate Matter (DPM)	1,890 truck trips per day traveling 1.01 miles	0.010893 g/mile	16.73
Diesel Truck (Mobile) Circulation – SR 120 total between McKinley Avenue and Airport Way (EB)	Diesel Particulate Matter (DPM)	1,780 truck trips per day traveling 1.01 miles	0.010893 g/mile	15.76
Diesel Truck (Mobile) Circulation – Roth Road West of Airport Way	Diesel Particulate Matter (DPM)	2,810 truck trips per day traveling 0.25 miles	0.005733 g/mile	3.24
Diesel Truck (Mobile) Circulation – SR 99 total north of Lovelace Road (NB)	Diesel Particulate Matter (DPM)	1,290 truck trips per day traveling 1.19 miles	0.010893 g/mile	13.43
Diesel Truck (Mobile) Circulation – SR 99 total north of Lovelace Road (SB)	Diesel Particulate Matter (DPM)	1,270 truck trips per day traveling 1.19 miles	0.010893 g/mile	13.22

SOURCES: EMFAC 2021 (ON-SITE DIESEL TRUCK CIRCULATION). SEE TABLE 2 OF THIS DOCUMENT AND APPENDIX 1 FOR FURTHER DETAIL.

EXPOSURE ASSESSMENT

Exposure assessment involves translating the emission rate (e.g., lbs/hr, g/hr) of individual toxic air contaminants into the concentration (e.g., grams/cubic meter g /sec m² or parts per million) of each toxic air contaminant. The key step in performing an exposure assessment is the application of an air dispersion model. The dispersion model incorporates the local meteorological data (wind speed, wind direction, local temperature, inversions, etc.), stack height, and exhaust flow characteristics, into the dispersion of individual air contaminant. The

Lakes Environmental AERMOD Version 10.2.1 (AERMOD Version 19191) dispersion model was employed for this assessment.

Modeling Receptors: Receptors were placed at locations of nearby sensitive receptors, including residential and workplace locations. This allows for an analysis of the receptors that have the potential be most affected by the TACs generated by the proposed project.

Meteorological Data: Five years of meteorological data was used in the exposure assessment. The meteorological (“Met”) data (wind speed, wind direction, temperature, etc.) were recorded at the Stockton Airport location for the years 2013 through 2017.

RISK ASSESSMENT

Once the emissions rates of individual air contaminants have been calculated, and an air dispersion model has been run through AERMOD, the next step in determining health risks is to determine the cancer risk, and acute and chronic incident rates. Period and 1-hour dispersion files we used in combination with HARP-2 risk modelling software to calculate risk scenarios for residential, and workplace cancer rates, as well as acute and chronic incidences. The Hotspots Analysis and Reporting Program (HARP) is a software suite used to assist with the programmatic requirements of the Air Toxics “Hot Spots” Program [Assembly Bill (AB) 2588]. HARP combines the tools needed to implement the requirements of AB 2588, such as reporting a facilities emissions inventory, determining a facilities prioritization score, conducting air dispersion modeling, and performing a facility health risk assessment. This study utilized the HARP2 Air Dispersion and Risk Tool with dispersion plot files created in AERMOD. After the risk assessment was complete HARP-2, plot files were then imported back into AREMOD for spatial and visual representation, and analysis of impact areas.

The Intake Rate Percentile sets the intake rate at which a person is exposed to the air pollutant. This study utilized the high-end intake rate to assess risk at the 95th percentile exposure rate for risk scenarios (see Appendix 3 HARP-2 project summary report). Additionally, residential cancer risk is assessed using a 70-year exposure duration starting at the third trimester.

RISK ASSESSMENT RESULTS

The results of the risk analysis indicate that cancer and non-cancer risks vary depending on the exposure scenario and location. As would be expected, sensitive receptors nearest the road segments that have the greatest exposure and the associated risks are considerably lower as distance from the road segments increases.

It should be noted that the cancer risks were determined for residential receptors, which produce higher calculated cancer risks compared to other receptor types. For instance, the cancer risk calculations for day cares and schools produce lower risks compared to residential receptors due to shorter exposure durations (5 to 13 years for day cares and schools) and lower exposure frequencies (typically 180 to 250 days per year, 8 hours per day, Monday through Friday) compared to residential receptors (350 days per year, 24 hours per day). Therefore, results only for residential receptors were included in this analysis.

Table 4 displays the residential cancer risk, and acute and chronic incidence rate results at nearest receptors. Figure 1 provides wind patterns at the Stockton Airport location where meteorological data was used for the modeling.

TABLE 4: SUMMARY OF MAXIMUM HEALTH RISKS ASSOCIATED WITH THE NEW TRUCK TRIPS

<i>RISK METRIC</i>	<i>MAXIMUM RISK (PER MILLION PERSONS)</i>	<i>SIGNIFICANCE THRESHOLD</i>	<i>IS THRESHOLD EXCEEDED?</i>
Road Segment 1: Lovelace Road (west of SR 99 and east of Union Road)			
Residential Cancer Risk (70-year exposure beginning in 3rd trimester)	12.61	20 per million	No
Chronic (non-cancer)	<0.01	Hazard Index ≥ 1	No
Acute (non-cancer)	<0.01	Hazard Index ≥ 1	No
Road Segment 2: SR 99 total north of Yosemite Avenue			
Residential Cancer Risk (70-year exposure beginning in 3rd trimester)	14.32	20 per million	No
Chronic (non-cancer)	<0.01	Hazard Index ≥ 1	No
Acute (non-cancer)	<0.01	Hazard Index ≥ 1	No
Road Segment 3: SR 120 total between McKinley Avenue and Airport Way			
Residential Cancer Risk (70-year exposure beginning in 3rd trimester)	9.86	20 per million	No
Chronic (non-cancer)	<0.01	Hazard Index ≥ 1	No
Acute (non-cancer)	<0.01	Hazard Index ≥ 1	No
Road Segment 4: Roth Road west of Airport Way			
Residential Cancer Risk (70-year exposure beginning in 3rd trimester)	1.57	20 per million	No
Chronic (non-cancer)	<0.01	Hazard Index ≥ 1	No
Acute (non-cancer)	<0.01	Hazard Index ≥ 1	No
Road Segment 5: SR 99 North of Lovelace Road			
Residential Cancer Risk (70-year exposure beginning in 3rd trimester)	11.28	20 per million	No
Chronic (non-cancer)	<0.01	Hazard Index ≥ 1	No
Acute (non-cancer)	<0.01	Hazard Index ≥ 1	No

SOURCES: AERMOD (LAKES ENVIRONMENTAL SOFTWARE, 2022); AND HARP-2 AIR DISPERSION AND RISK TOOL.

Overall, the results show that residential 70-year cancer risk would remain below the threshold of 20 in a million at areas near the analyzed road segments that contain residential receptors. However, it is very unlikely any individual would remain at the same location for 70 years; therefore, this result represents a conservative estimate.

Chronic or long-term exposures and Acute exposure to DPM can result in non-cancer health effects. Chronic and Acute Non-Cancer Hazards results show that the acute and chronic risk on and near the project site would remain below the hazard index of ≥ 1 .

REPORT PREPARERS

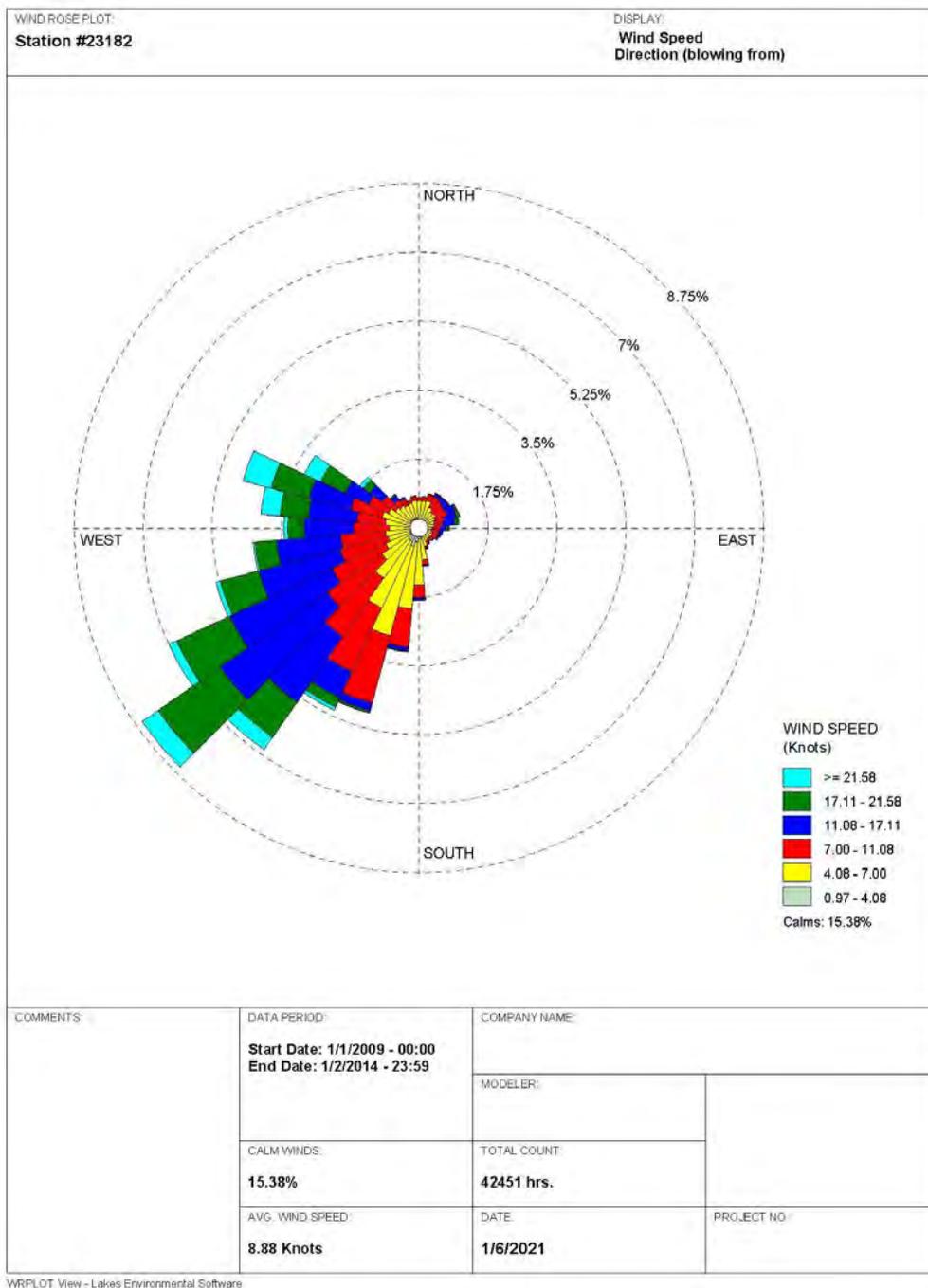
This document was prepared by De Novo Planning Group, Inc. of El Dorado Hills under the direction of the City of Manteca. De Novo Planning Group staff participating in document preparation included the following:

- Beth Thompson, Principal Planner
- Josh Smith, Senior Planner

REFERENCES

- California Air Resources Board. 2015. HARP, and AERMOD Course 296 *User's Guide for Health Risk Assessment and Dispersion Modeling*.
- California Air Resources Board. 2020. EMFAC2021 Technical Document and Model (v1.01).
- California Environmental Protection Agency. 2013. Air Resources Board (ARB) Monitoring and Laboratory Division *Revised Emission Factors for Phase II Vehicle Fueling at California Gasoline Dispensing Facilities December 23, 2013*.
- Fehr & Peers. 2021. Vehicle Miles Travelled (VMTA) and Transportation Impact Assessment (TIA). February, 2021.
- Kyle Melching. 2016. San Joaquin Valley Air Pollution Control District (SJVAPCD). (Email Communications on 3/25/2016).
- Leland Vilalvazo, and David Garner. 2015 and 2016. San Joaquin Valley Air Pollution Control District (SJVAPCD). [Discussion of methods and impacts for project HRA] (Personal communications, 9/1/15, 9/21/15, 11/30/15, 1/4/16, 12/13/15, 1/6/15, 1/11/16).
- SJVAPCD. 2002. San Joaquin Valley Air Pollution Control District. 2002. *Guide for Assessing and Mitigating Air Quality Impacts*.
- SJVAPCD. 2010. San Joaquin Valley Air Pollution Control District, *Guidance for Air Dispersion Modeling*.
- SJVAPCD. 2015. San Joaquin Valley Air Pollution Control District. APR – 1906. Framework for Performing Health Risk Assessments.
- Yu Vu. 2020. San Joaquin Valley Air Pollution Control District (SJVAPCD). (Email Communications on 8/27/2020, 8/31/2020, 10/7/2020, 10/8/2020, 10/27/2020; Phone Communications on 11/18/2020, 12/24/2020, and 2/14/2021).

FIGURE-1: WIND PATTERNS (GENERAL WILLIAM J. FOX AIRFIELD - 2013-2017) AIRPORT LOCATION



Sources: Prepared by De Novo Planning group (2021); Lakes Environmental AERMOD View 9.9.5

This page left intentionally blank.

Appendix 1 Emissions Calculations:

Mobile Truck Emissions - Truck Route Segment 1: Roth Road west of Airport Way

meters per mile: 1609.34 pounds per gram: 0.002205

Assumptions:

1. Distance travelled (line segment): 0.25 miles
2. # of trucks trips per day: 2810 trucks
3. PM EF (San Joaquin County, Weighted 30 MPH, T7 Tractor Class 8):
0.00573296 g/mile

Source:

AERMOD
Fehr & Peers
EMFAC2021

Therefore:

Total daily PM10 On-site Mobile Emissions Generated by the project:

4.02740318 g/day-all trucks
0.00887889 lbs/day-all trucks
3.24079617 lbs/year-all trucks

Max Hr Emissions

Two times the average trip generation over the course of 1 hour, based on the given 24-hour daily totals (conservative estimate)

0.000740 lbs/hour-all trucks

Mobile Truck Emissions - Truck Route Segment 2 - Lovelace Road (west of SR 99 and east of Union Road)

Note: This segment includes both the West of SR 99 and east of Union Road segments.

meters per mile: 1609.34 pounds per gram: 0.002205

Assumptions:

1. Distance travelled (line segment): 2.47 miles
2. # of trucks trips per day: 1770 truck trips
3. PM EF (San Joaquin County, Weighted 30 MPH, T7 Tractor Class 8):
0.00573296 g/mile

Source:

AERMOD
Fehr & Peers
EMFAC2021

Therefore:

Total daily PM10 On-site Mobile Emissions Generated:

25.0639203 g/day-all trucks
0.05525642 lbs/day-all trucks
20.1685933 lbs/year-all trucks

Max Hr Emissions

Two times the average trip generation over the course of 1 hour, based on the given 24-hour daily totals (conservative estimate)

0.004605 lbs/hour-all trucks

Mobile Truck Emissions - Truck Route Segment 3 - SR 99 total north of Yosemite Avenue (NB)

meters per mile: 1609.34 pounds per gram: 0.002205

Assumptions:

- 1. Distance travelled (line segment): 1.12 miles
- 2. # of trucks trips per day: 1900 trucks
- 3. PM EF (San Joaquin County, Weighted 45 MPH, T7 Tractor Class 8):
0.01089355 g/mile

Source:

AERMOD
Fehr & Peers
EMFAC2021

Therefore:

Total daily PM10 On-site Mobile Emissions Generated by the project:

23.1814664 g/day-all trucks
0.05110632 lbs/day-all trucks
18.6538085 lbs/year-all trucks

Max Hr Emissions

Two times the average trip generation over the course of 1 hour, based on the given 24-hour daily totals (conservative estimate)

0.004259 lbs/hour-all trucks

Mobile Truck Emissions - Truck Route Segment 4 - SR 99 total north of Yosemite Avenue (SB)

meters per mile: 1609.34 pounds per gram: 0.002205

Assumptions:

- 1. Distance travelled (line segment): 1.12 miles
- 2. # of trucks trips per day: 1900 trucks
- 3. PM EF (San Joaquin County, Weighted 45 MPH, T7 Tractor Class 8):
0.01089355 g/mile

Source:

AERMOD
Fehr & Peers
EMFAC2021

Therefore:

Total daily PM10 On-site Mobile Emissions Generated by the project:

23.1814664 g/day-all trucks
0.05110632 lbs/day-all trucks
18.6538085 lbs/year-all trucks

Max Hr Emissions

Two times the average trip generation over the course of 1 hour, based on the given 24-hour daily totals (conservative estimate)

0.004259 lbs/hour-all trucks

Mobile Truck Emissions - Truck Route Segment 5: SR 120 total between McKinley Avenue and Airport Way (WB)

meters per mile: 1609.34 pounds per gram: 0.002205

Assumptions:

- 1. Distance travelled (line segment): 1.01 miles
- 2. # of trucks trips per day: 1890 trucks
- 3. PM EF (San Joaquin County, Weighted 45 MPH, T7 Tractor Class 8): **0.01089355 g/mile**

Source:

AERMOD
Fehr & Peers
EMFAC2021

Therefore:

Total daily PM10 On-site Mobile Emissions Generated by the project:

20.7946905 g/day-all trucks
0.04584439 lbs/day-all trucks
16.7332025 lbs/year-all trucks

Max Hr Emissions

Two times the average trip generation over the course of 1 hour, based on the given 24-hour daily totals (conservative estimate)

0.003820 lbs/hour-all trucks

Mobile Truck Emissions - Truck Route Segment 6: SR 120 total between McKinley Avenue and Airport Way (EB)

meters per mile: 1609.34 pounds per gram: 0.002205

Assumptions:

- 1. Distance travelled (line segment): 1.01 miles
- 2. # of trucks trips per day: 1780 trucks
- 3. PM EF (San Joaquin County, Weighted 45 MPH, T7 Tractor Class 8): **0.01089355 g/mile**

Source:

AERMOD
Fehr & Peers
EMFAC2021

Therefore:

Total daily PM10 On-site Mobile Emissions Generated by the project:

19.5844175 g/day-all trucks
0.0431762 lbs/day-all trucks
15.7593124 lbs/year-all trucks

Max Hr Emissions

Two times the average trip generation over the course of 1 hour, based on the given 24-hour daily totals (conservative estimate)

0.003598 lbs/hour-all trucks

Mobile Truck Emissions - Truck Route Segment 3 - SR 99 total north of Lovelace Road (NB)

meters per mile: 1609.34 pounds per gram: 0.002205

Assumptions:

- 1. Distance travelled (line segment): 1.19 miles
- 2. # of trucks trips per day: 1290 trucks
- 3. PM EF (San Joaquin County, Weighted 45 MPH, T7 Tractor Class 8): **0.01089355 g/mile**

Source:

AERMOD
Fehr & Peers
EMFAC2021

Therefore:

Total daily PM10 On-site Mobile Emissions Generated by the project:

16.6954488 g/day-all trucks
0.03680712 lbs/day-all trucks
13.4345989 lbs/year-all trucks

Max Hr Emissions

Two times the average trip generation over the course of 1 hour, based on the given 24-hour daily totals (conservative estimate)

0.003067 lbs/hour-all trucks

Mobile Truck Emissions - Truck Route Segment 4 - SR 99 total north of Lovelace Road (SB)

meters per mile: 1609.34 pounds per gram: 0.002205

Assumptions:

- 1. Distance travelled (line segment): 1.19 miles
- 2. # of trucks trips per day: 1270 trucks
- 3. PM EF (San Joaquin County, Weighted 45 MPH, T7 Tractor Class 8): **0.01089355 g/mile**

Source:

AERMOD
Fehr & Peers
EMFAC2021

Therefore:

Total daily PM10 On-site Mobile Emissions Generated by the project:

16.4366046 g/day-all trucks
0.03623647 lbs/day-all trucks
13.2263106 lbs/year-all trucks

Max Hr Emissions

Two times the average trip generation over the course of 1 hour, based on the given 24-hour daily totals (conservative estimate)

0.003020 lbs/hour-all trucks

Calculation of Weighted Emission Factor for T7 Tractor Class 8 - 45 MPH

Sources: OEHHA, Air Toxics Hot Spots Program Assessment (February 2015), page 8-4 & 8-5; EMFAC2021 (v1.01).

Note: Year 2050 emission factor also used for years after 2050.

Age Sensitivity Factors by Age Group for Cancer Risk Assessment

Age Group	Age Sensitivity Factor (Unitless)
3rd Trimester	10
0<2 years	10
2<9 years	3
2<16 years	3
16<30 years	1
16<70 years	1

Source: OEHHA, February 2015.

Calculation of Weighted Emission Factor (based on OEHHA Guidance and EMFAC 2021 Emission Factors)

Age	Year	Emission Factor (g/mile)	
		T7 Tractor Class 8	Weighting
3rd Trimester	2021	0.021563122	10
	2022	0.014397427	10
	2023	0.012072359	10
	2024	0.011891928	3
	2025	0.011672775	3
	2026	0.011525326	3
	2027	0.011353357	3
	2028	0.011165647	3
	2029	0.010974024	3
	2030	0.010771152	3
	2031	0.010553786	3
	2032	0.010328119	3
	2033	0.010108579	3
	2034	0.009908906	3
	2035	0.00972279	3
	2036	0.009543128	3
	2037	0.00937553	3
	2038	0.00922014	1
	2039	0.009078196	1
	2040	0.008945911	1
	2041	0.008822959	1
	2042	0.008711013	1
	2043	0.008611262	1
	2044	0.008522241	1
	2045	0.008444465	1
	2046	0.00837796	1
	2047	0.008322037	1
	2048	0.00827606	1
	2049	0.008238141	1
	2050	0.008206878	1
	2051	0.008206878	1
	2052	0.008206878	1
	2053	0.008206878	1
	2054	0.008206878	1
	2055	0.008206878	1
	2056	0.008206878	1
	2057	0.008206878	1
	2058	0.008206878	1
	2059	0.008206878	1
	2060	0.008206878	1
	2061	0.008206878	1
	2062	0.008206878	1
	2063	0.008206878	1
	2064	0.008206878	1
	2065	0.008206878	1
	2066	0.008206878	1
	2067	0.008206878	1
	2068	0.008206878	1
	2069	0.008206878	1
	2070	0.008206878	1
	2071	0.008206878	1
	2072	0.008206878	1
	2073	0.008206878	1
	2074	0.008206878	1
	2075	0.008206878	1
	2076	0.008206878	1
	2077	0.008206878	1
	2078	0.008206878	1
	2079	0.008206878	1
	2080	0.008206878	1
	2081	0.008206878	1
	2082	0.008206878	1
	2083	0.008206878	1
	2084	0.008206878	1
	2085	0.008206878	1
	2086	0.008206878	1
	2087	0.008206878	1
	2088	0.008206878	1
	2089	0.008206878	1
	2090	0.008206878	1
	2091	0.008206878	1
	2092	0.008206878	1

Weighted Emission Factor (g/mile)

0.010893546

Calculation of Weighted Emission Factor for T7 Tractor Class 8 - 30 MPH

Sources: OEHHA, Air Toxics Hot Spots Program Assessment (February 2015), page 8-4 & 8-5; EMFAC2021 (v1.01).

Note: Year 2050 emission factor also used for years after 2050.

Age Sensitivity Factors by Age Group for Cancer Risk Assessment

Age Group	Age Sensitivity Factor (Unitless)
3rd Trimester	10
0<2 years	10
2<9 years	3
2<16 years	3
16<30 years	1
16<70 years	1

Source: OEHHA, February 2015.

Calculation of Weighted Emission Factor (based on OEHHA Guidance and EMFAC 2021 Emission Factors)

Age	Year	Emission Factor (g/mile)		Weighting
		T7 Tractor Class 8		
3rd Trimester	2021	0.015886998		10
	0 2022	0.009449764		10
	1 2023	0.00603132		10
	2 2024	0.00588321		3
	3 2025	0.005719438		3
	4 2026	0.005594387		3
	5 2027	0.005462332		3
	6 2028	0.005327672		3
	7 2029	0.005196464		3
	8 2030	0.005063452		3
	9 2031	0.004926693		3
	10 2032	0.004790078		3
	11 2033	0.004661139		3
	12 2034	0.004546596		3
	13 2035	0.004441891		3
	14 2036	0.004342283		3
	15 2037	0.004250671		3
	16 2038	0.004167113		1
	17 2039	0.004092573		1
	18 2040	0.004024456		1
	19 2041	0.003962266		1
	20 2042	0.003906359		1
	21 2043	0.003857114		1
	22 2044	0.003813379		1
	23 2045	0.003775329		1
	24 2046	0.003742875		1
	25 2047	0.00371564		1
	26 2048	0.003693282		1
	27 2049	0.003674812		1
	28 2050	0.003659553		1
	29 2051	0.003659553		1
	30 2052	0.003659553		1
	31 2053	0.003659553		1
	32 2054	0.003659553		1
	33 2055	0.003659553		1
	34 2056	0.003659553		1
	35 2057	0.003659553		1
	36 2058	0.003659553		1
	37 2059	0.003659553		1
	38 2060	0.003659553		1
	39 2061	0.003659553		1
	40 2062	0.003659553		1
	41 2063	0.003659553		1
	42 2064	0.003659553		1
	43 2065	0.003659553		1
	44 2066	0.003659553		1
	45 2067	0.003659553		1
	46 2068	0.003659553		1
	47 2069	0.003659553		1
	48 2070	0.003659553		1
	49 2071	0.003659553		1
	50 2072	0.003659553		1
	51 2073	0.003659553		1
	52 2074	0.003659553		1
	53 2075	0.003659553		1
	54 2076	0.003659553		1
	55 2077	0.003659553		1
	56 2078	0.003659553		1
	57 2079	0.003659553		1
	58 2080	0.003659553		1
	59 2081	0.003659553		1
	60 2082	0.003659553		1
	61 2083	0.003659553		1
	62 2084	0.003659553		1
	63 2085	0.003659553		1
	64 2086	0.003659553		1
	65 2087	0.003659553		1
	66 2088	0.003659553		1
	67 2089	0.003659553		1
	68 2090	0.003659553		1
	69 2091	0.003659553		1
	70 2092	0.003659553		1
		Weighted Emission Factor (g/mile)		
		0.005732958		

calendar_year	season_month	sub_area	vehicle_class	temperature	relative_humidity	process	speed_time	pollutant	emission_rate
2050	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		30 PM	0.128057422
2050	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2050	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.009339778
2050	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		30 PM	0.003659553
2049	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		30 PM	0.128076265
2049	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2049	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.009360046
2049	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		30 PM	0.003674812
2048	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		30 PM	0.128096837
2048	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2048	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.009384063
2048	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		30 PM	0.003693282
2047	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		30 PM	0.128119072
2047	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2047	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.00941242
2047	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		30 PM	0.00371564
2046	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		30 PM	0.128140658
2046	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2046	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.009445772
2046	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		30 PM	0.003742875
2045	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		30 PM	0.128166943
2045	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2045	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.009484625
2045	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		30 PM	0.003775329
2044	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		30 PM	0.128198496
2044	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2044	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.009529412
2044	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		30 PM	0.003813379
2043	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		30 PM	0.128238394
2043	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2043	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.009579627
2043	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		30 PM	0.003857114
2042	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		30 PM	0.128276804
2042	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2042	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.009634935
2042	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		30 PM	0.003906359
2041	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		30 PM	0.128299909
2041	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2041	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.009695397
2041	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		30 PM	0.003962266
2040	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		30 PM	0.128299713
2040	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2040	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.009760158
2040	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		30 PM	0.004024456
2039	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		30 PM	0.128277758
2039	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2039	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.009828207
2039	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		30 PM	0.004092573
2038	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		30 PM	0.128231586
2038	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2038	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.00989835
2038	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		30 PM	0.004167113
2037	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		30 PM	0.128172362
2037	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2037	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.009971651
2037	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		30 PM	0.004250671
2036	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		30 PM	0.128101709
2036	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2036	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.010049314
2036	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		30 PM	0.004342283
2035	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		30 PM	0.128035956
2035	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2035	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.010134182
2035	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		30 PM	0.004441891
2034	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		30 PM	0.127983968
2034	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2034	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.010229391
2034	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		30 PM	0.004546596
2033	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		30 PM	0.127970395
2033	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2033	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.010333746
2033	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		30 PM	0.004661139
2032	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		30 PM	0.128008256
2032	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2032	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.010450703
2032	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		30 PM	0.004790078
2031	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		30 PM	0.128054645
2031	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2031	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.010577838
2031	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		30 PM	0.004926693
2030	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		30 PM	0.128049971
2030	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2030	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.010716402
2030	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		30 PM	0.005063452
2029	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		30 PM	0.127969437
2029	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036

2029 Annual	San Joaquin (SJV)	T7 Tractor Class 8		IDLEX	PM	0.010863993
2029 Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60 RUNEX	30 PM	0.005196464
2028 Annual	San Joaquin (SJV)	T7 Tractor Class 8		PMBW	30 PM	0.127879364
2028 Annual	San Joaquin (SJV)	T7 Tractor Class 8		PMTW	PM	0.036
2028 Annual	San Joaquin (SJV)	T7 Tractor Class 8		IDLEX	PM	0.011022894
2028 Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60 RUNEX	30 PM	0.005327672
2027 Annual	San Joaquin (SJV)	T7 Tractor Class 8		PMBW	30 PM	0.127762457
2027 Annual	San Joaquin (SJV)	T7 Tractor Class 8		PMTW	PM	0.036
2027 Annual	San Joaquin (SJV)	T7 Tractor Class 8		IDLEX	PM	0.011192921
2027 Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60 RUNEX	30 PM	0.005462332
2026 Annual	San Joaquin (SJV)	T7 Tractor Class 8		PMBW	30 PM	0.127518572
2026 Annual	San Joaquin (SJV)	T7 Tractor Class 8		PMTW	PM	0.036
2026 Annual	San Joaquin (SJV)	T7 Tractor Class 8		IDLEX	PM	0.011389938
2026 Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60 RUNEX	30 PM	0.005594387
2025 Annual	San Joaquin (SJV)	T7 Tractor Class 8		PMBW	30 PM	0.127307086
2025 Annual	San Joaquin (SJV)	T7 Tractor Class 8		PMTW	PM	0.036
2025 Annual	San Joaquin (SJV)	T7 Tractor Class 8		IDLEX	PM	0.011637331
2025 Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60 RUNEX	30 PM	0.005719438
2024 Annual	San Joaquin (SJV)	T7 Tractor Class 8		PMBW	30 PM	0.127421887
2024 Annual	San Joaquin (SJV)	T7 Tractor Class 8		PMTW	PM	0.036
2024 Annual	San Joaquin (SJV)	T7 Tractor Class 8		IDLEX	PM	0.011950321
2024 Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60 RUNEX	30 PM	0.00588321
2023 Annual	San Joaquin (SJV)	T7 Tractor Class 8		PMBW	30 PM	0.127553976
2023 Annual	San Joaquin (SJV)	T7 Tractor Class 8		PMTW	PM	0.036
2023 Annual	San Joaquin (SJV)	T7 Tractor Class 8		IDLEX	PM	0.012344881
2023 Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60 RUNEX	30 PM	0.00603132
2022 Annual	San Joaquin (SJV)	T7 Tractor Class 8		PMBW	30 PM	0.130474272
2022 Annual	San Joaquin (SJV)	T7 Tractor Class 8		PMTW	PM	0.036
2022 Annual	San Joaquin (SJV)	T7 Tractor Class 8		IDLEX	PM	0.013764921
2022 Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60 RUNEX	30 PM	0.009449764
2021 Annual	San Joaquin (SJV)	T7 Tractor Class 8		PMBW	30 PM	0.131972054
2021 Annual	San Joaquin (SJV)	T7 Tractor Class 8		PMTW	PM	0.036
2021 Annual	San Joaquin (SJV)	T7 Tractor Class 8		IDLEX	PM	0.01749219
2021 Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60 RUNEX	30 PM	0.015886998

calendar_year	season_month	sub_area	vehicle_class	temperature	relative_humidity	process	speed_time	pollutant	emission_rate
2050	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		45 PM	0.0799832
2050	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2050	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.009339778
2050	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		45 PM	0.008206878
2049	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		45 PM	0.079994072
2049	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2049	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.009360046
2049	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		45 PM	0.008238141
2048	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		45 PM	0.080005828
2048	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2048	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.009384063
2048	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		45 PM	0.00827606
2047	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		45 PM	0.080018383
2047	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2047	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.00941242
2047	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		45 PM	0.008322037
2046	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		45 PM	0.080030212
2046	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2046	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.009445772
2046	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		45 PM	0.00837796
2045	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		45 PM	0.080044667
2045	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2045	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.009484625
2045	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		45 PM	0.008444465
2044	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		45 PM	0.080062069
2044	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2044	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.009529412
2044	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		45 PM	0.008522241
2043	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		45 PM	0.080084361
2043	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2043	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.009579627
2043	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		45 PM	0.008611262
2042	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		45 PM	0.080105303
2042	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2042	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.009634935
2042	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		45 PM	0.008711013
2041	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		45 PM	0.080116131
2041	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2041	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.009695397
2041	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		45 PM	0.008822959
2040	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		45 PM	0.080111804
2040	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2040	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.009760158
2040	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		45 PM	0.008945911
2039	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		45 PM	0.080093373
2039	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2039	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.009828207
2039	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		45 PM	0.009078196
2038	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		45 PM	0.080059307
2038	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2038	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.00989835
2038	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		45 PM	0.00922014
2037	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		45 PM	0.080016638
2037	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2037	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.009971651
2037	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		45 PM	0.00937553
2036	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		45 PM	0.079966296
2036	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2036	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.010049314
2036	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		45 PM	0.009543128
2035	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		45 PM	0.07991848
2035	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2035	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.010134182
2035	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		45 PM	0.00972279
2034	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		45 PM	0.079878749
2034	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2034	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.010229391
2034	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		45 PM	0.009908906
2033	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		45 PM	0.079862693
2033	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2033	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.010333746
2033	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		45 PM	0.010108579
2032	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		45 PM	0.079878508
2032	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2032	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.010450703
2032	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		45 PM	0.010328119
2031	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		45 PM	0.07989938
2031	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2031	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.010577838
2031	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		45 PM	0.010553786
2030	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		45 PM	0.079888446
2030	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2030	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.010716402
2030	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		45 PM	0.010771152
2029	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		45 PM	0.079830198
2029	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2029	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.010863993
2029	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		45 PM	0.010974024
2028	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		45 PM	0.079766768
2028	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036

2028 Annual	San Joaquin (SJV)	T7 Tractor Class 8		IDLEX		PM	0.011022894
2028 Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60 RUNEX		45 PM	0.011165647
2027 Annual	San Joaquin (SJV)	T7 Tractor Class 8		PMBW		45 PM	0.079687259
2027 Annual	San Joaquin (SJV)	T7 Tractor Class 8		PMTW		PM	0.036
2027 Annual	San Joaquin (SJV)	T7 Tractor Class 8		IDLEX		PM	0.011192921
2027 Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60 RUNEX		45 PM	0.011353357
2026 Annual	San Joaquin (SJV)	T7 Tractor Class 8		PMBW		45 PM	0.079528387
2026 Annual	San Joaquin (SJV)	T7 Tractor Class 8		PMTW		PM	0.036
2026 Annual	San Joaquin (SJV)	T7 Tractor Class 8		IDLEX		PM	0.011389938
2026 Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60 RUNEX		45 PM	0.011525326
2025 Annual	San Joaquin (SJV)	T7 Tractor Class 8		PMBW		45 PM	0.079391241
2025 Annual	San Joaquin (SJV)	T7 Tractor Class 8		PMTW		PM	0.036
2025 Annual	San Joaquin (SJV)	T7 Tractor Class 8		IDLEX		PM	0.011637331
2025 Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60 RUNEX		45 PM	0.011672775
2024 Annual	San Joaquin (SJV)	T7 Tractor Class 8		PMBW		45 PM	0.079461801
2024 Annual	San Joaquin (SJV)	T7 Tractor Class 8		PMTW		PM	0.036
2024 Annual	San Joaquin (SJV)	T7 Tractor Class 8		IDLEX		PM	0.011950321
2024 Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60 RUNEX		45 PM	0.011891928
2023 Annual	San Joaquin (SJV)	T7 Tractor Class 8		PMBW		45 PM	0.07954417
2023 Annual	San Joaquin (SJV)	T7 Tractor Class 8		PMTW		PM	0.036
2023 Annual	San Joaquin (SJV)	T7 Tractor Class 8		IDLEX		PM	0.012344881
2023 Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60 RUNEX		45 PM	0.012072359
2022 Annual	San Joaquin (SJV)	T7 Tractor Class 8		PMBW		45 PM	0.081358716
2022 Annual	San Joaquin (SJV)	T7 Tractor Class 8		PMTW		PM	0.036
2022 Annual	San Joaquin (SJV)	T7 Tractor Class 8		IDLEX		PM	0.013764921
2022 Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60 RUNEX		45 PM	0.014397427
2021 Annual	San Joaquin (SJV)	T7 Tractor Class 8		PMBW		45 PM	0.082289345
2021 Annual	San Joaquin (SJV)	T7 Tractor Class 8		PMTW		PM	0.036
2021 Annual	San Joaquin (SJV)	T7 Tractor Class 8		IDLEX		PM	0.01749219
2021 Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60 RUNEX		45 PM	0.021563122

This page left intentionally blank.

Appendix 2: AERMOD Output File

*** MODELOPTs: NonDEFAULT CONC FLAT Urb&Rur 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 URBAN Dispersion Algorithm for the SBL for 3343 Source(s),
for Total of 1 Urban Area(s):

Urban Population = 79129.0 ; Urban Roughness Length = 1.000 m

**Model Allows User-Specified Options:

1. Stack-tip Downwash.
2. Model Assumes Receptors on FLAT Terrain.
3. Use Calms Processing Routine.
4. Use Missing Data Processing Routine.
5. No Exponential Decay.
6. Urban Roughness Length of 1.0 Meter Used.

**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: OTHER

**Model Calculates 1 Short Term Average(s) of: 1-HR
and Calculates PERIOD Averages

**This Run Includes: 4389 Source(s); 8 Source Group(s); and 185 Receptor(s)

with: 0 POINT(s), including
0 POINTCAP(s) and 0 POINTHOR(s)
and: 4389 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 0 line(s)

*** MODELOPTs: NonDEFAULT CONC FLAT Urb&Rur ADJ_U*

*** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

Surface file: AERMET\Stockton_2013-2017.SFC

Met Version: 18081

Profile file: AERMET\Stockton_2013-2017.PFL

Surface format: FREE

Profile format: FREE

Surface station no.: 23237

Upper air station no.: 23230

Name: STOCKTON_AIRPORT

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

Table with 18 columns: YR, MO, DY, JDY, HR, H0, U*, W*, DT/DZ, ZICNV, ZIMCH, M-O, LEN, Z0, BOWEN, ALBEDO, REF, WS. Contains 24 rows of meteorological data for 13/01/01.

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 19191 *** ** C:\Users\Smith\Dropbox\My PC (DESKTOP-977GSBU)\Documents\HRA\Manteca *** 09/12/22

*** MODELOPTs: NonDEFAULT CONC FLAT Urb&Rur ADJ_U*

*** THE SUMMARY OF MAXIMUM PERIOD (43824 HRS) RESULTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

GROUP ID AVERAGE CONC NETWORK
 GRID-ID RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG) OF TYPE

 SLINE1 1ST HIGHEST VALUE IS 10.66393 AT (653602.82, 4190948.23, 7.90, 7.90, 0.00) DC
 2ND HIGHEST VALUE IS 8.23130 AT (653556.60, 4191372.22, 7.90, 7.90, 0.00) DC
 3RD HIGHEST VALUE IS 1.83738 AT (654415.11, 4190831.32, 7.90, 7.90, 0.00) DC
 4TH HIGHEST VALUE IS 1.61430 AT (654502.79, 4190798.44, 7.90, 7.90, 0.00) DC
 5TH HIGHEST VALUE IS 1.45382 AT (654586.82, 4190808.18, 7.90, 7.90, 0.00) DC
 6TH HIGHEST VALUE IS 1.27482 AT (654695.21, 4190799.66, 7.90, 7.90, 0.00) DC
 7TH HIGHEST VALUE IS 1.14487 AT (654611.18, 4190342.97, 7.90, 7.90, 0.00) DC
 8TH HIGHEST VALUE IS 1.07075 AT (654730.52, 4190402.65, 7.90, 7.90, 0.00) DC
 9TH HIGHEST VALUE IS 1.02601 AT (654759.75, 4190368.55, 7.90, 7.90, 0.00) DC
 10TH HIGHEST VALUE IS 0.99315 AT (654855.96, 4190492.77, 7.90, 7.90, 0.00) DC

SLINE2 1ST HIGHEST VALUE IS 11.86272 AT (654730.52, 4190402.65, 7.90, 7.90, 0.00) DC
 2ND HIGHEST VALUE IS 11.39101 AT (654855.96, 4190492.77, 7.90, 7.90, 0.00) DC
 3RD HIGHEST VALUE IS 9.50743 AT (654941.21, 4190358.81, 7.90, 7.90, 0.00) DC
 4TH HIGHEST VALUE IS 8.60336 AT (654759.75, 4190368.55, 7.90, 7.90, 0.00) DC
 5TH HIGHEST VALUE IS 7.51465 AT (655127.53, 4190521.99, 7.90, 7.90, 0.00) DC
 6TH HIGHEST VALUE IS 6.11199 AT (656746.51, 4190013.81, 7.90, 7.90, 0.00) DC
 7TH HIGHEST VALUE IS 5.16155 AT (656839.22, 4189934.59, 7.90, 7.90, 0.00) DC
 8TH HIGHEST VALUE IS 4.59977 AT (654415.11, 4190831.32, 7.90, 7.90, 0.00) DC
 9TH HIGHEST VALUE IS 4.43140 AT (655123.88, 4190597.50, 7.90, 7.90, 0.00) DC
 10TH HIGHEST VALUE IS 4.33084 AT (654611.18, 4190342.97, 7.90, 7.90, 0.00) DC

SLINE3 1ST HIGHEST VALUE IS 30.82667 AT (656904.17, 4188611.09, 7.90, 7.90, 0.00) DC
 2ND HIGHEST VALUE IS 30.15063 AT (656908.14, 4188549.62, 7.90, 7.90, 0.00) DC
 3RD HIGHEST VALUE IS 29.95104 AT (656839.22, 4189934.59, 7.90, 7.90, 0.00) DC
 4TH HIGHEST VALUE IS 29.67527 AT (656835.85, 4190007.07, 7.90, 7.90, 0.00) DC
 5TH HIGHEST VALUE IS 29.46606 AT (656908.14, 4188571.43, 7.90, 7.90, 0.00) DC
 6TH HIGHEST VALUE IS 28.97061 AT (656906.15, 4188628.94, 7.90, 7.90, 0.00) DC
 7TH HIGHEST VALUE IS 28.56431 AT (656906.15, 4188642.82, 7.90, 7.90, 0.00) DC
 8TH HIGHEST VALUE IS 28.00364 AT (656906.15, 4188662.65, 7.90, 7.90, 0.00) DC
 9TH HIGHEST VALUE IS 27.85779 AT (656854.59, 4189701.78, 7.90, 7.90, 0.00) DC
 10TH HIGHEST VALUE IS 27.60834 AT (656910.12, 4188595.23, 7.90, 7.90, 0.00) DC

SLINE4 1ST HIGHEST VALUE IS 26.49521 AT (656746.51, 4190013.81, 7.90, 7.90, 0.00) DC
 2ND HIGHEST VALUE IS 24.50661 AT (656741.46, 4190066.07, 7.90, 7.90, 0.00) DC
 3RD HIGHEST VALUE IS 23.17414 AT (656736.40, 4190133.49, 7.90, 7.90, 0.00) DC
 4TH HIGHEST VALUE IS 21.62390 AT (656780.24, 4189175.74, 7.90, 7.90, 0.00) DC
 5TH HIGHEST VALUE IS 20.24511 AT (656724.60, 4190436.90, 7.90, 7.90, 0.00) DC
 6TH HIGHEST VALUE IS 17.86490 AT (656722.92, 4190204.29, 7.90, 7.90, 0.00) DC
 7TH HIGHEST VALUE IS 17.30122 AT (656904.17, 4188611.09, 7.90, 7.90, 0.00) DC
 8TH HIGHEST VALUE IS 17.05898 AT (656908.14, 4188549.62, 7.90, 7.90, 0.00) DC
 9TH HIGHEST VALUE IS 16.86312 AT (656908.14, 4188571.43, 7.90, 7.90, 0.00) DC
 10TH HIGHEST VALUE IS 16.82071 AT (656839.22, 4189934.59, 7.90, 7.90, 0.00) DC

*** MODELOPTs: NonDEFAULT CONC FLAT Urb&Rur ADJ_U*

*** THE SUMMARY OF MAXIMUM PERIOD (43824 HRS) RESULTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

NETWORK

GROUP ID AVERAGE CONC RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG) OF TYPE GRID-ID

SLINE5 1ST HIGHEST VALUE IS 16.56505 AT (653069.37, 4183111.98, 7.90, 7.90, 0.00) DC
2ND HIGHEST VALUE IS 16.31678 AT (653054.85, 4183110.53, 7.90, 7.90, 0.00) DC
3RD HIGHEST VALUE IS 16.27058 AT (653043.23, 4183110.53, 7.90, 7.90, 0.00) DC
4TH HIGHEST VALUE IS 15.96738 AT (653027.26, 4183109.08, 7.90, 7.90, 0.00) DC
5TH HIGHEST VALUE IS 15.94025 AT (653001.12, 4183110.53, 7.90, 7.90, 0.00) DC
6TH HIGHEST VALUE IS 15.86287 AT (653014.19, 4183109.08, 7.90, 7.90, 0.00) DC
7TH HIGHEST VALUE IS 15.75938 AT (652986.59, 4183110.53, 7.90, 7.90, 0.00) DC
8TH HIGHEST VALUE IS 15.54592 AT (652972.07, 4183110.53, 7.90, 7.90, 0.00) DC
9TH HIGHEST VALUE IS 15.13091 AT (652959.00, 4183109.08, 7.90, 7.90, 0.00) DC
10TH HIGHEST VALUE IS 14.55047 AT (652937.22, 4183107.62, 7.90, 7.90, 0.00) DC

SLINE6 1ST HIGHEST VALUE IS 26.31196 AT (653069.37, 4183111.98, 7.90, 7.90, 0.00) DC
2ND HIGHEST VALUE IS 25.69691 AT (653054.85, 4183110.53, 7.90, 7.90, 0.00) DC
3RD HIGHEST VALUE IS 25.57122 AT (653043.23, 4183110.53, 7.90, 7.90, 0.00) DC
4TH HIGHEST VALUE IS 24.79433 AT (653027.26, 4183109.08, 7.90, 7.90, 0.00) DC
5TH HIGHEST VALUE IS 24.61895 AT (653001.12, 4183110.53, 7.90, 7.90, 0.00) DC
6TH HIGHEST VALUE IS 24.49493 AT (653014.19, 4183109.08, 7.90, 7.90, 0.00) DC
7TH HIGHEST VALUE IS 24.15306 AT (652986.59, 4183110.53, 7.90, 7.90, 0.00) DC
8TH HIGHEST VALUE IS 23.65469 AT (652972.07, 4183110.53, 7.90, 7.90, 0.00) DC
9TH HIGHEST VALUE IS 22.76403 AT (652959.00, 4183109.08, 7.90, 7.90, 0.00) DC
10TH HIGHEST VALUE IS 21.62771 AT (652937.22, 4183107.62, 7.90, 7.90, 0.00) DC

SLINE7 1ST HIGHEST VALUE IS 22.01261 AT (656787.90, 4191601.31, 7.90, 7.90, 0.00) DC
2ND HIGHEST VALUE IS 20.03207 AT (656699.84, 4190727.12, 7.90, 7.90, 0.00) DC
3RD HIGHEST VALUE IS 19.91633 AT (656695.92, 4190771.45, 7.90, 7.90, 0.00) DC
4TH HIGHEST VALUE IS 19.89495 AT (656690.76, 4190841.72, 7.90, 7.90, 0.00) DC
5TH HIGHEST VALUE IS 18.76567 AT (656803.40, 4191628.18, 7.90, 7.90, 0.00) DC
6TH HIGHEST VALUE IS 18.27666 AT (656805.47, 4191659.19, 7.90, 7.90, 0.00) DC
7TH HIGHEST VALUE IS 17.04839 AT (656629.78, 4191678.82, 7.90, 7.90, 0.00) DC
8TH HIGHEST VALUE IS 15.79055 AT (656671.12, 4190811.75, 7.90, 7.90, 0.00) DC
9TH HIGHEST VALUE IS 7.79756 AT (656724.60, 4190436.90, 7.90, 7.90, 0.00) DC
10TH HIGHEST VALUE IS 7.66727 AT (656501.68, 4191790.30, 7.90, 7.90, 0.00) DC

SLINE8 1ST HIGHEST VALUE IS 30.82342 AT (656699.84, 4190727.12, 7.90, 7.90, 0.00) DC
2ND HIGHEST VALUE IS 29.97376 AT (656695.92, 4190771.45, 7.90, 7.90, 0.00) DC
3RD HIGHEST VALUE IS 29.21733 AT (656690.76, 4190841.72, 7.90, 7.90, 0.00) DC
4TH HIGHEST VALUE IS 21.59870 AT (656629.78, 4191678.82, 7.90, 7.90, 0.00) DC
5TH HIGHEST VALUE IS 21.14166 AT (656671.12, 4190811.75, 7.90, 7.90, 0.00) DC

6TH HIGHEST VALUE IS 18.24003 AT (656787.90, 4191601.31, 7.90, 7.90, 0.00) DC
 7TH HIGHEST VALUE IS 15.86999 AT (656803.40, 4191628.18, 7.90, 7.90, 0.00) DC
 8TH HIGHEST VALUE IS 15.41046 AT (656805.47, 4191659.19, 7.90, 7.90, 0.00) DC
 9TH HIGHEST VALUE IS 9.77073 AT (656724.60, 4190436.90, 7.90, 7.90, 0.00) DC
 10TH HIGHEST VALUE IS 8.55598 AT (656501.68, 4191790.30, 7.90, 7.90, 0.00) DC

*** RECEPTOR TYPES: GC = GRIDCART

GP = GRIDPOLR

DC = DISCCART

DP = DISCPOLR

*** AERMOD - VERSION 19191 *** ** C:\Users\Smith\Dropbox\My PC (DESKTOP-977GSBU)\Documents\HRA\Manteca *** 09/12/22

*** AERMET - VERSION 18081 *** **

*** 14:20:27

PAGE 6

*** MODELOPTs: NonDEFAULT CONC FLAT Urb&Rur ADJ_U*

*** THE SUMMARY OF HIGHEST 1-HR RESULTS ***

** CONC OF OTHER IN MICROGRAMS/M**3

**

GROUP ID	DATE	AVERAGE CONC	RECEPTOR	CONC	CONC
ZFLAG) OF TYPE GRID-ID	(YYMMDDHH)	(XR, YR, ZELEV, ZHILL,			
SLINE1 HIGH 1ST HIGH VALUE IS	147.50233 ON 17011109:	AT (653556.60, 4191372.22,	7.90,	7.90,	0.00) DC
SLINE2 HIGH 1ST HIGH VALUE IS	64.10440 ON 17122509:	AT (654855.96, 4190492.77,	7.90,	7.90,	0.00) DC
SLINE3 HIGH 1ST HIGH VALUE IS	121.68442 ON 17020504:	AT (656904.17, 4188611.09,	7.90,	7.90,	0.00) DC
SLINE4 HIGH 1ST HIGH VALUE IS	140.35417 ON 17012817:	AT (656746.51, 4190013.81,	7.90,	7.90,	0.00) DC
SLINE5 HIGH 1ST HIGH VALUE IS	75.82312 ON 17121518:	AT (653069.37, 4183111.98,	7.90,	7.90,	0.00) DC
SLINE6 HIGH 1ST HIGH VALUE IS	101.38973 ON 17122508:	AT (653069.37, 4183111.98,	7.90,	7.90,	0.00) DC
SLINE7 HIGH 1ST HIGH VALUE IS	327.24830 ON 17011609:	AT (656699.84, 4190727.12,	7.90,	7.90,	0.00) DC
SLINE8 HIGH 1ST HIGH VALUE IS	569.62679 ON 17123009:	AT (656724.60, 4190436.90,	7.90,	7.90,	0.00) DC

*** RECEPTOR TYPES: GC = GRIDCART

GP = GRIDPOLR

DC = DISCCART

DP = DISCPOLR

*** AERMOD - VERSION 19191 *** *** C:\Users\Smith\Dropbox\My PC (DESKTOP-977GSBU)\Documents\HRA\Manteca *** 09/12/22

*** AERMET - VERSION 18081 *** ***

*** 14:20:27

PAGE 7

*** MODELOPTs: NonDEFAULT CONC FLAT Urb&Rur 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	13246	MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used	0.50
ME W187	13246	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

This page left intentionally blank.

Appendix 3: HARP-2 Project Summary Report

GLCs loaded successfully
Pollutants loaded successfully
Pathway receptors loaded successfully

RISK SCENARIO SETTINGS

Receptor Type: Resident
Scenario: NCAcute
Calculation Method: Derived

EXPOSURE DURATION PARAMETERS FOR CANCER
Exposure duration are only adjusted for cancer assessments

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
NOTE: Exposure duration (i.e., start age, end age, ED, & FAH) are only adjusted for cancer assessments.

TIER 2 SETTINGS

Tier2 adjustments were used in this assessment. Please see the input file for details.
Tier2 - What was changed: ED or start age changed|
Calculating acute risk
Acute risk breakdown by pollutant and receptor saved to: C:\Users\Smith\Dropbox\My PC (DESKTOP-

977GSBU)\Documents\HRA\Manteca GP - Current PP\Manteca GP - Modeling Files\HARP\MANTECA GP
(CURRENT PP - FORMER ALT D)\hra\AcuteNCAcuteRisk.csv

Acute risk total by receptor saved to: C:\Users\Smith\Dropbox\My PC (DESKTOP-

977GSBU)\Documents\HRA\Manteca GP - Current PP\Manteca GP - Modeling Files\HARP\MANTECA GP
(CURRENT PP - FORMER ALT D)\hra\AcuteNCAcuteRiskSumByRec.csv

HRA ran successfully

GLCs loaded successfully
Pollutants loaded successfully
Pathway receptors loaded successfully

RISK SCENARIO SETTINGS

Receptor Type: Resident
Scenario: NCChronic
Calculation Method: Derived

EXPOSURE DURATION PARAMETERS FOR CANCER
Exposure duration are only adjusted for cancer assessments

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: True
Dermal: True
Mother's milk: True
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
NOTE: Exposure duration (i.e., start age, end age, ED, & FAH) are only adjusted for cancer assessments.

SOIL & DERMAL PATHWAY SETTINGS

Deposition rate (m/s): 0.05
Soil mixing depth (m): 0.01
Dermal climate: Mixed

TIER 2 SETTINGS

Tier2 adjustments were used in this assessment. Please see the input file for details.

Tier2 - What was changed: ED or start age changed|

Calculating chronic risk

Chronic risk breakdown by pollutant and receptor saved to: C:\Users\Smith\Dropbox\My PC (DESKTOP-977GSBU)\Documents\HRA\Manteca GP - Current PP\Manteca GP - Modeling Files\HARP\MANTECA GP (CURRENT PP - FORMER ALT D)\hra\ChronicNCChronicRisk.csv

Chronic risk total by receptor saved to: C:\Users\Smith\Dropbox\My PC (DESKTOP-977GSBU)\Documents\HRA\Manteca GP - Current PP\Manteca GP - Modeling Files\HARP\MANTECA GP (CURRENT PP - FORMER ALT D)\hra\ChronicNCChronicRiskSumByRec.csv

HRA ran successfully

GLCs loaded successfully
Pollutants loaded successfully
Pathway receptors loaded successfully

RISK SCENARIO SETTINGS

Receptor Type: Resident
Scenario: Cancer
Calculation Method: HighEnd

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: True
Dermal: True
Mother's milk: True
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: OFF
16 years to 70 years: ON

SOIL & DERMAL PATHWAY SETTINGS

Deposition rate (m/s): 0.05
Soil mixing depth (m): 0.01
Dermal climate: Mixed

TIER 2 SETTINGS

Tier2 adjustments were used in this assessment. Please see the input file for details.

Tier2 - What was changed: ED or start age changed|

Calculating cancer risk

Cancer risk breakdown by pollutant and receptor saved to: C:\Users\Smith\Dropbox\My PC (DESKTOP-977GSBU)\Documents\HRA\Manteca GP - Current PP\Manteca GP - Modeling Files\HARP\MANTECA GP (CURRENT PP - FORMER ALT D)\hra\Residential CancerCancerRisk.csv

Cancer risk total by receptor saved to: C:\Users\Smith\Dropbox\My PC (DESKTOP-977GSBU)\Documents\HRA\Manteca GP - Current PP\Manteca GP - Modeling Files\HARP\MANTECA GP (CURRENT PP - FORMER ALT D)\hra\Residential CancerCancerRiskSumByRec.csv

HRA ran successfully

This page left intentionally blank.

ANALYSIS OF PUBLIC HEALTH RISKS

FOR THE

MANTECA GENERAL PLAN UPDATE

ALTERNATIVE D ANALYSIS

MANTECA CALIFORNIA

SEPTEMBER 13, 2022

PROJECT TITLE

Manteca General Plan Update

PREPARED BY:

De Novo Planning Group
 1020 Suncast Lane Suite 106
 El Dorado Hills, CA 95762

CONTACT PERSON AND PHONE NUMBER

Beth Thompson – Principal Planner
 De Novo Planning Group
 1020 Suncast Lane, #106
 El Dorado Hills, CA
 bthompson@denovoplanning.com
 916-812-7927

CONTENTS

INTRODUCTION.....	2
PROJECT DESCRIPTION	2
SCOPE OF RISK ASSESMENT	3
SIGNIFICANCE CRITERIA	4
EMISSION SOURCES AND EXPOSURE.....	5
DAILY TRUCK TRIPS	5
EMISSION RATES.....	5
EXPOSURE ASSESSMENT	6
RISK ASSESSMENT	6
RISK ASSESSMENT RESULTS	7
REPORT PREPARERS & REFERENCES.....	9

FIGURES:

FIGURE-1: WIND PATTERNS (GENERAL WILLIAM J. FOX AIRFIELD - 2013-2017)	10
---	----

APPENDICES:

APPENDIX 1 EMISSIONS CALCULATIONS
APPENDIX 2 AERMOD OUTPUT FILE
APPENDIX 3 HARP-2 PROJECT SUMMARY REPORT

INTRODUCTION

The Circulation Element of the Alternative D for the Manteca General Plan Update plans for a full multi-modal system, including proposed truck routes. This Health Risk Assessment (HRA) was prepared to assess potential public health risks of the portions of the existing and proposed truck routes within the city that were identified as having the most potential for impacting sensitive receptors. This report analyzes the emissions of toxic air pollutants generated by the proposed truck routes and their impacts on public health.

PROJECT DESCRIPTION

PROJECT LOCATION

The City of Manteca is located in the southern portion of San Joaquin County, approximately 10 miles south of Stockton and approximately 14 miles northwest of the City of Modesto. The City is accessed by Highway 99 from the north and south and State Route (SR) 120 from the east and west. The City is bordered by the City of Lathrop to the west and unincorporated San Joaquin County to the north, south, and east.

ENVIRONMENTAL IMPACT REPORT STUDY AREA

There are three key boundary lines addressed by the General Plan, which make up the study area for the General Plan EIR. These include the City Limits, the Sphere of Influence (SOI), and the Planning Area, as shown on Figure 2.0-2 and described below.

City Limits: Includes the area within the City's corporate boundary, over which the City exercises land use authority and provides public services.

Sphere of Influence (SOI): The probable physical boundary and service area of the City, as adopted by the Local Agency Formation Commission (LAFCO). An SOI may include both incorporated and unincorporated areas within which a city or special district will have primary responsibility for the provision of public facilities and services

Planning Area: For the purposes of the General Plan, the Planning Area is the geographic area for which the General Plan provides a framework for long-term plans for growth, resource conservation, and continued agricultural activity. State law requires the General Plan to include all territory within Manteca's incorporated area as well as "any land outside its boundaries which in the planning agency's judgment bears relation to its planning" (California Government Code Section 65300). The Planning Area for the Manteca General Plan includes the entire City Limits and the City's SOI.

DESCRIPTION OF PROPOSED GENERAL PLAN PROJECT

The City of Manteca is preparing a comprehensive update to its existing General Plan, which was prepared in 2003 (with partial updates to the Circulation Element in 2011, updates to the Safety Element to address Senate Bill 5 [i.e., 200-year flood protection] in 2016). The Housing Element was adopted in 2016 and is not anticipated to be significantly revised by the General Plan Update. The General Plan Update is expected to be complete in Spring 2021 and will guide the City's

development and conservation of its resources. The Plan is intended to be an expression of the community's vision for the City and Planning Area and constitutes the policy and regulatory framework by which future development projects will be reviewed and public improvements will be implemented. The City will implement the Plan by requiring development, infrastructure improvements, and other projects to be consistent with its policies and by implementing the actions included in the Plan. The key components of the General Plan will include broad goals for the future of Manteca, and specific policies and actions that will help implement the stated goals.

State law requires the City to adopt a comprehensive, long-term general plan for the physical development of its planning area. The Plan must include land use, circulation, housing, conservation, open space, noise, and safety elements, as specified in Government Code Section 65302, to the extent that the issues identified by State law exist in the City's planning area. Additional elements that relate to the physical development of the City may also be addressed in the Plan. The degree of specificity and level of detail of the discussion of each Plan element need only reflect local conditions and circumstances. The Plan has been prepared to address the requirements of State law and the relevant items addressed in Government Code Section 65300 et seq.

This EIR analyzes potential impacts to the environment associated with implementation and buildout of the proposed General Plan, which includes future development projects, infrastructure improvements, and the implementation of policies and actions included in the proposed General Plan. These proposed General Plan components are described in greater detail below.

SCOPE OF RISK ASSESSMENT

Preparation of risk assessments is a three-step process. The first step is to identify potential contaminants that may lead to public health risks. The second step is to assess the magnitude of contaminants that may reach the public (exposure assessment). The last step is to calculate the magnitude of the health risk as a result of exposure to harmful contaminants on the basis of the toxicology of the contaminants.

The Office of Environmental Health Hazard Assessment, and the San Joaquin Air Pollution Control District (SJVAPCD) provide guidance on the procedures that should be used, including, toxicological data for individual contaminants. This risk assessment is based on the guidance provided within these guidance documents. It should be noted that while this risk assessment uses certain procedures and data from these Guidelines, this assessment is not intended to satisfy the reporting requirements under AB-2588 "Air Toxics" Hot Spots program.

The health risks that are evaluated in this study include:

- Residential Cancer Risk (70-year exposure; start at third trimester); and
- Acute and Chronic Hazard Indices.

The 70-year risk applies to residential areas where exposure may potentially occur 24 hours/day, 365 days/year. Non-cancer risks can be described as acute (short-term, exposure) or chronic health impacts.

In order to analyze the worst-case scenario, segments with the highest number of total daily truck trips under General Plan buildout conditions or the highest increases in daily truck trips were selected to model potential health risks associated exposure to TACs associated with the truck routes. Based on these criteria, the following truck routes, were selected for further analysis:

- Lovelace Road (west of SR 99 and east of Union Road);¹
- SR 99 total north of Yosemite Avenue;
- SR 120 total between McKinley Avenue and Airport Way; and
- Roth Road west of Airport Way.

The analysis also addressed interacting truck route segments that intersect with the primary segments identified above to ensure that the cumulative, or combined effect, is addressed.

SIGNIFICANCE CRITERIA

The following significance criteria shown in Table 1, based on guidance from the SJVAPCD, are used in this report to assess the significance of public health risks.

TABLE 1: THRESHOLDS OF SIGNIFICANCE FOR PUBLIC HEALTH RISKS

<i>Risk Metric</i>	<i>Significance Threshold</i>
Residential Cancer Risk	20 per million
Chronic and Acute non-cancer hazard Indices	non-cancer health hazard exposure index of 1.0

SOURCE: SJVAPCD, 2015.

As shown in Table 1, a project that contributes a cancer risk in excess of 20 new cases in a population of one million persons at identified receptors, or a non-cancer hazard index of greater than or equal to 1.0 would be considered to have a significant project-level impact.

These thresholds are typically applied to new industrial projects. However, for purposes of this analysis, these thresholds are used to determine whether implementation of the General Plan Circulation Element, which includes proposed truck routes, would result in significant health risk impacts from DPM emissions.

EMISSION SOURCES AND EXPOSURE

The source toxic air pollutants (TACs) generated by the proposed new truck routes are diesel particulate matter (DPM) from truck mobile emissions. Based on numerous studies by the California Air Resources Board (ARB), DPM represents the largest single contributor to public

¹ Note: The segments 'Lovelace Road west of SR 99' and 'Lovelace east of Union Road' were combined for the purposes of the health risk analysis. The most conservative truck trip generation values provided by Fehr & Peers for these segments were used for the purposes of the analysis, to provide for a conservative analysis.

health risks. Additionally, in its comprehensive assessment of diesel exhaust, OEHHA analyzed more than 30 studies of people who worked around diesel equipment, including truck drivers, railroad workers, and equipment operators. The studies showed these workers were more likely to develop lung cancer than workers who were not exposed to diesel emissions. These studies provide strong evidence that long-term occupational exposure to diesel exhaust increases the risk of lung cancer. Exposure to diesel exhaust can 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. Emissions from truck mobile emissions were analyzed and are shown in Table 2.

TABLE 2: EMISSION SOURCE ASSUMPTIONS

Source Type / Emission	Configuration	Assumptions
Mobile Diesel Truck Circulation (DPM)	<p><i>Modeled as line-volume sources</i></p> <p>Release Height = 6 ft</p> <p>Plume Height = 12 ft</p> <p>Plume Width = 12 ft (width of a truck)</p> <p>Line Lengths = based on path of travel</p>	<ul style="list-style-type: none"> On-site travel of trucks per day per each analyzed truck route segment, as provided by Fehr & Peers. Traveling distance based on proposed truck route segment. PM₁₀ mobile emissions factor provided by EMFAC 2021 (Parameters: San Joaquin County, Annual, Year 2021, speed bin based on truck route segment; emission factor for T7 Tractor Class 8) Truck route segments that intersect with the primary segments identified above to ensure that the cumulative, or combined effect, is addressed.

DAILY TRUCK TRIPS

The total diesel truck trips generated by the Alternative D project is based on the Supporting Transportation Data and Analysis for the Alternative D project prepared by Fehr & Peers in December 2020.

EMISSION RATES

Table 3 provides emissions rates by source and emissions factors. For calculations, data outputs, and reference documents please see Appendix 1.

TABLE 3: EMISSION RATES BY SOURCE

Source	Pollutant	Volume/Size	Emission Factor	Emissions Pounds/Year
Diesel Truck (Mobile) Circulation – Lovelace Road (west of SR 99)	Diesel Particulate Matter (DPM)	4,200 truck trips per day traveling 2.47 miles	0.005733 g/mile	47.86
Diesel Truck (Mobile) Circulation – SR 99 total north of Yosemite Avenue (NB)	Diesel Particulate Matter (DPM)	690 truck trips per day traveling 1.12 miles	0.010893 g/mile	6.77
Diesel Truck (Mobile) Circulation – SR 99 total north of Yosemite Avenue (SB)	Diesel Particulate Matter (DPM)	780 truck trips per day traveling 1.12 miles	0.010893 g/mile	7.66
Diesel Truck (Mobile) Circulation – SR 120 total between McKinley Avenue and Airport Way (WB)	Diesel Particulate Matter (DPM)	2,410 truck trips per day traveling 1.01 miles	0.010893 g/mile	21.34
Diesel Truck (Mobile) Circulation – SR 120 total between McKinley Avenue and Airport Way (EB)	Diesel Particulate Matter (DPM)	2,040 truck trips per day traveling 1.01 miles	0.010893 g/mile	18.06
Diesel Truck (Mobile) Circulation – Roth Road West of Airport Way	Diesel Particulate Matter (DPM)	3,190 truck trips per day traveling 0.25 miles	0.005733 g/mile	3.68

SOURCES: EMFAC 2021 (ON-SITE DIESEL TRUCK CIRCULATION). SEE TABLE 2 OF THIS DOCUMENT AND APPENDIX 1 FOR FURTHER DETAIL.

EXPOSURE ASSESSMENT

Exposure assessment involves translating the emission rate (e.g., lbs/hr, g/hr) of individual toxic air contaminants into the concentration (e.g., grams/cubic meter g /sec m² or parts per million) of each toxic air contaminant. The key step in performing an exposure assessment is the application of an air dispersion model. The dispersion model incorporates the local meteorological data (wind speed, wind direction, local temperature, inversions, etc.), stack height, and exhaust flow characteristics, into the dispersion of individual air contaminant. The Lakes Environmental AERMOD Version 9.9.5 (AERMOD Version 19191) dispersion model was employed for this assessment.

Modeling Receptors: Receptors were placed at locations of nearby sensitive receptors, including residential and workplace locations. This allows for an analysis of the receptors that have the potential be most affected by the TACs generated by the Alternative D project.

Meteorological Data: Five years of meteorological data was used in the exposure assessment. The meteorological (“Met”) data (wind speed, wind direction, temperature, etc.) were recorded at the Stockton Airport location for the years 2013 through 2017.

RISK ASSESSMENT

Once the emissions rates of individual air contaminants have been calculated, and an air dispersion model has been run through AERMOD, the next step in determining health risks is to determine the cancer risk, and acute and chronic incident rates. Period and 1-hour dispersion files we used in combination with HARP-2 risk modelling software to calculate risk scenarios for residential, and workplace cancer rates, as well as acute and chronic incidences. The Hotspots Analysis and Reporting Program (HARP) is a software suite used to assist with the programmatic requirements of the Air Toxics “Hot Spots” Program [Assembly Bill (AB) 2588]. HARP combines the tools needed to implement the requirements of AB 2588, such as reporting a facilities emissions inventory, determining a facilities prioritization score, conducting air dispersion modeling, and performing a facility health risk assessment. This study utilized the HARP2 Air Dispersion and Risk Tool with dispersion plot files created in AERMOD. After the risk assessment was complete HARP-2, plot files were then imported back into AREMOD for spatial and visual representation, and analysis of impact areas.

The Intake Rate Percentile sets the intake rate at which a person is exposed to the air pollutant. This study utilized the high-end intake rate to assess risk at the 95th percentile exposure rate for risk scenarios (see Appendix 3 HARP-2 project summary report). Additionally, residential cancer risk is assessed using a 70-year exposure duration starting at the third trimester.

RISK ASSESSMENT RESULTS

The results of the risk analysis indicate that cancer and non-cancer risks vary depending on the exposure scenario and location. As would be expected, sensitive receptors nearest the truck routes have the greatest exposure and the associated risks are considerably lower as distance from the truck route increases.

It should be noted that the cancer risks were determined for residential receptors, which produce higher calculated cancer risks compared to other receptor types. For instance, the cancer risk calculations for day cares and schools produce lower risks compared to residential receptors due to shorter exposure durations (5 to 13 years for day cares and schools) and lower exposure frequencies (typically 180 to 250 days per year, 8 hours per day, Monday through Friday) compared to residential receptors (350 days per year, 24 hours per day). Therefore, results only for residential receptors were included in this analysis.

Table 4 displays the residential cancer risk, and acute and chronic incidence rate results at nearest receptors. Figure 1 provides wind patterns at the Stockton Airport location where meteorological data was used for the modeling.

TABLE 4: SUMMARY OF MAXIMUM HEALTH RISKS ASSOCIATED WITH THE NEW TRUCK ROUTE

<i>RISK METRIC</i>	<i>MAXIMUM RISK (PER MILLION PERSONS)</i>	<i>SIGNIFICANCE THRESHOLD</i>	<i>IS THRESHOLD EXCEEDED?</i>
Truck Route Segment 1: Lovelace Road (west of SR 99 and east of Union Road)			
Residential Cancer Risk (70-year exposure beginning in 3rd trimester)	8.19	20 per million	No
Chronic (non-cancer)	<0.01	Hazard Index ≥ 1	No
Acute (non-cancer)	<0.01	Hazard Index ≥ 1	No
Truck Route Segment 2: SR 99 total north of Yosemite Avenue			
Residential Cancer Risk (70-year exposure)	8.26	20 per million	No
Chronic (non-cancer)	<0.01	Hazard Index ≥ 1	No
Acute (non-cancer)	<0.01	Hazard Index ≥ 1	No
Truck Route Segment 3: SR 120 total between McKinley Avenue and Airport Way			
Residential Cancer Risk (70-year exposure)	11.79	20 per million	No
Chronic (non-cancer)	<0.01	Hazard Index ≥ 1	No
Acute (non-cancer)	<0.01	Hazard Index ≥ 1	No
Truck Route Segment 4: Roth Road west of Airport Way			
Residential Cancer Risk (70-year exposure)	2.69	20 per million	No
Chronic (non-cancer)	<0.01	Hazard Index ≥ 1	No
Acute (non-cancer)	<0.01	Hazard Index ≥ 1	No

SOURCES: AERMOD (LAKES ENVIRONMENTAL SOFTWARE, 2021); AND HARP-2 AIR DISPERSION AND RISK TOOL.

Overall, the results show that residential 70-year cancer risk would remain below the threshold of 20 in a million at areas near the proposed truck routes that contain residential receptors. However, it is very unlikely any individual would remain at the same location for 70 years; therefore, this result represents a conservative estimate.

Chronic or long-term exposures and Acute exposure to DPM can result in non-cancer health effects. Chronic and Acute Non-Cancer Hazards results show that the acute and chronic risk on and near the project site would remain below the hazard index of ≥ 1 .

REPORT PREPARERS

This document was prepared by De Novo Planning Group, Inc. of El Dorado Hills under the direction of the City of Manteca. De Novo Planning Group staff participating in document preparation included the following:

- Beth Thompson, Principal Planner
- Josh Smith, Senior Planner

REFERENCES

California Air Resources Board. 2015. HARP, and AERMOD Course 296 *User's Guide for Health Risk Assessment and Dispersion Modeling*.

California Air Resources Board. 2020. EMFAC2021 Technical Document and Model (v1.01).

California Environmental Protection Agency. 2013. Air Resources Board (ARB) Monitoring and Laboratory Division *Revised Emission Factors for Phase II Vehicle Fueling at California Gasoline Dispensing Facilities December 23, 2013*.

Fehr & Peers. 2021. Vehicle Miles Travelled (VMTA) and Transportation Impact Assessment (TIA). February, 2021.

Kyle Melching. 2016. San Joaquin Valley Air Pollution Control District (SJVAPCD). (Email Communications on 3/25/2016).

Leland Vilalvazo, and David Garner. 2015 and 2016. San Joaquin Valley Air Pollution Control District (SJVAPCD). [Discussion of methods and impacts for project HRA] (Personal communications, 9/1/15, 9/21/15, 11/30/15, 1/4/16, 12/13/15, 1/6/15, 1/11/16).

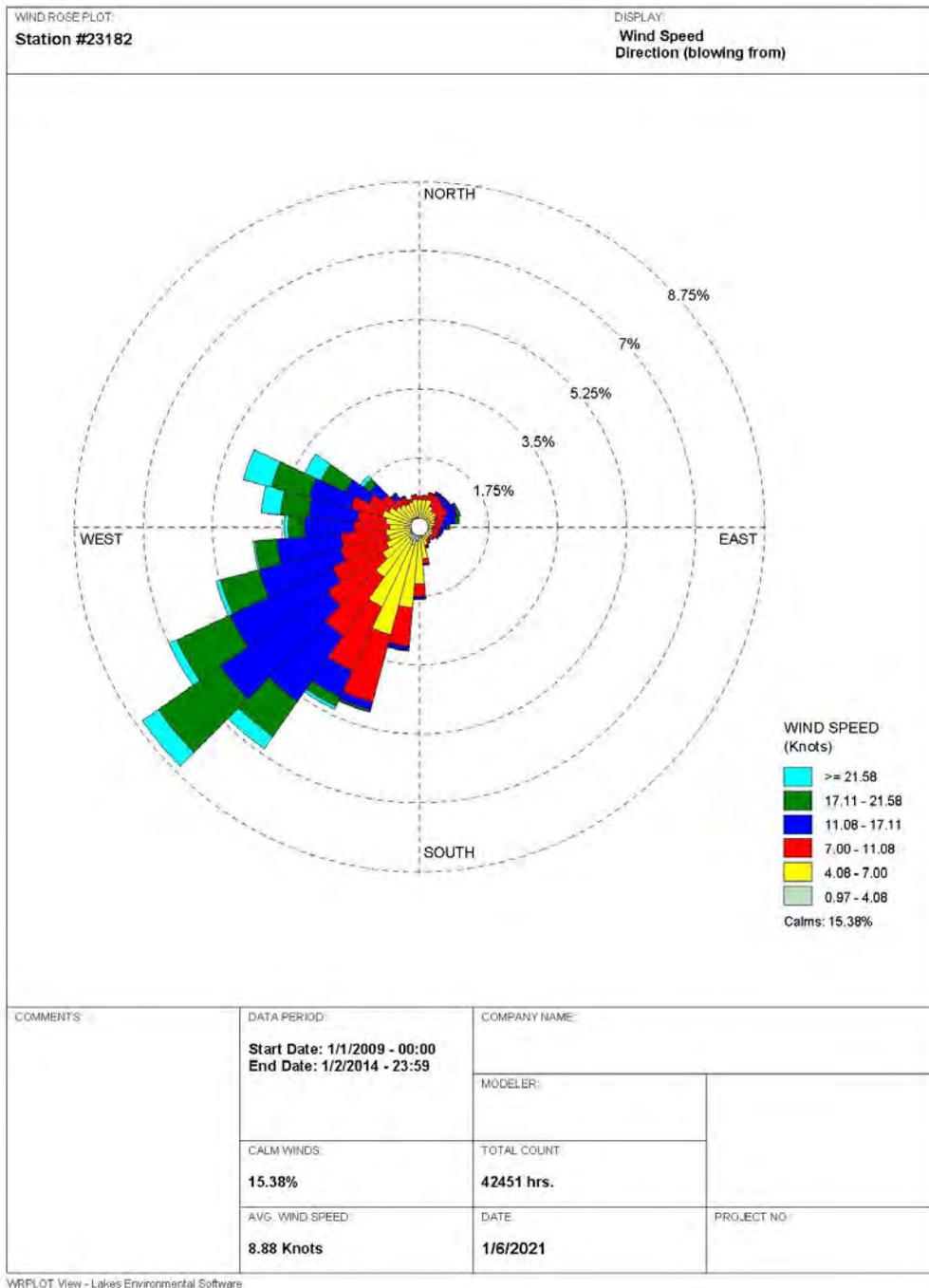
SJVAPCD. 2002. San Joaquin Valley Air Pollution Control District. 2002. *Guide for Assessing and Mitigating Air Quality Impacts*.

SJVAPCD. 2010. San Joaquin Valley Air Pollution Control District, *Guidance for Air Dispersion Modeling*.

SJVAPCD. 2015. San Joaquin Valley Air Pollution Control District. APR – 1906. Framework for Performing Health Risk Assessments.

Yu Vu. 2020. San Joaquin Valley Air Pollution Control District (SJVAPCD). (Email Communications on 8/27/2020, 8/31/2020, 10/7/2020, 10/8/2020, 10/27/2020; Phone Communications on 11/18/2020, 12/24/2020, and 2/14/2021).

FIGURE-1: WIND PATTERNS (GENERAL WILLIAM J. FOX AIRFIELD - 2013-2017) AIRPORT LOCATION



Sources: Prepared by De Novo Planning group (2021); Lakes Environmental AERMOD View 9.9.5

This page left intentionally blank.

Appendix 1 Emissions Calculations:

Mobile Truck Emissions - Truck Route Segment 1: Roth Road west of Airport Way

meters per mile: 1609.34 pounds per gram: 0.002205

Assumptions:

1. Distance travelled (line segment): 0.25 miles
2. # of trucks trips per day: 3190 trucks
3. PM EF (San Joaquin County, Weighted 30 MPH, T7 Tractor Class 8):
0.00573296 g/mile

Source:

AERMOD
Fehr & Peers
EMFAC2021

Therefore:

Total daily PM10 On-site Mobile Emissions Generated by the project:

4.57203422 g/day-all trucks
0.0100796 lbs/day-all trucks
3.6790533 lbs/year-all trucks

Max Hr Emissions

Two times the average trip generation over the course of 1 hour, based on the given 24-hour daily totals (conservative estimate)

0.000840 lbs/hour-all trucks

Mobile Truck Emissions - Truck Route Segment 2 - Lovelace Road (west of SR 99 and east of Union Road)

meters per mile: 1609.34 pounds per gram: 0.002205

Assumptions:

1. Distance travelled (line segment): 2.47 miles
2. # of trucks trips per day: 4200 truck trips
3. PM EF (San Joaquin County, Weighted 30 MPH, T7 Tractor Class 8):
0.00573296 g/mile

Source:

AERMOD
Fehr & Peers
EMFAC2021

Therefore:

Total daily PM10 On-site Mobile Emissions Generated:

59.4737091 g/day-all trucks

0.13111693 lbs/day-all trucks

47.8576789 lbs/year-all trucks

Max Hr Emissions

Two times the average trip generation over the course of 1 hour, based on the given 24-hour daily totals (conservative estimate)

0.010926 lbs/hour-all trucks

Mobile Truck Emissions - Truck Route Segment 3 - SR 99 total north of Yosemite Avenue (NB)

meters per mile: 1609.34 pounds per gram: 0.002205

Assumptions:

- 1. Distance travelled (line segment): 1.12 miles
- 2. # of trucks trips per day: 690 trucks
- 3. PM EF (San Joaquin County, Weighted 45 MPH, T7 Tractor Class 8):

Source:

AERMOD
Fehr & Peers
EMFAC2021

0.01089355 g/mile

Therefore:

Total daily PM10 On-site Mobile Emissions Generated by the project:

8.41853255 g/day-all trucks

0.01855967 lbs/day-all trucks

6.77427781 lbs/year-all trucks

Max Hr Emissions

Two times the average trip generation over the course of 1 hour, based on the given 24-hour daily totals (conservative estimate)

0.001547 lbs/hour-all trucks

Mobile Truck Emissions - Truck Route Segment 4 - SR 99 total north of Yosemite Avenue (SB)

meters per mile: 1609.34 pounds per gram: 0.002205

Assumptions:

1. Distance travelled (line segment): 1.12 miles
2. # of trucks trips per day: 780 trucks
3. PM EF (San Joaquin County, Weighted 45 MPH, T7 Tractor Class 8):

Source:

AERMOD
Fehr & Peers
EMFAC2021

0.01089355 g/mile

Therefore:

Total daily PM10 On-site Mobile Emissions Generated by the project:

9.51660201 g/day-all trucks

0.02098049 lbs/day-all trucks

7.65787926 lbs/year-all trucks

Max Hr Emissions

Two times the average trip generation over the course of 1 hour, based on the given 24-hour daily totals (conservative estimate)

0.001748 lbs/hour-all trucks

Mobile Truck Emissions - Truck Route Segment 5: SR 120 total between McKinley Avenue and Airport Way (WB)

meters per mile: 1609.34 pounds per gram: 0.002205

Assumptions:

- 1. Distance travelled (line segment): 1.01 miles
- 2. # of trucks trips per day: 2410 trucks
- 3. PM EF (San Joaquin County, Weighted 45 MPH, T7 Tractor Class 8): **0.01089355** g/mile

Source:

AERMOD
Fehr & Peers
EMFAC2021

Therefore:

Total daily PM10 On-site Mobile Emissions Generated by the project:

26.515981 g/day-all trucks

0.05845766 lbs/day-all trucks

21.3370466 lbs/year-all trucks

Max Hr Emissions

Two times the average trip generation over the course of 1 hour, based on the given 24-hour daily totals (conservative estimate)

0.004871 lbs/hour-all trucks

Mobile Truck Emissions - Truck Route Segment 6: SR 120 total between McKinley Avenue and Airport Way (EB)

meters per mile: 1609.34 pounds per gram: 0.002205

Assumptions:

1. Distance travelled (line segment): 1.01 miles
2. # of trucks trips per day: 2040 trucks
3. PM EF (San Joaquin County, Weighted 45 MPH, T7 Tractor Class 8):

Source:

AERMOD
Fehr & Peers
EMFAC2021

0.01089355 g/mile

Therefore:

Total daily PM10 On-site Mobile Emissions Generated by the project:

22.4450627 g/day-all trucks

0.04948283 lbs/day-all trucks

18.0612345 lbs/year-all trucks

Max Hr Emissions

Two times the average trip generation over the course of 1 hour, based on the given 24-hour daily totals (conservative estimate)

0.004124 lbs/hour-all trucks

Calculation of Weighted Emission Factor for T7 Tractor Class 8 - 45 MPH

Sources: OEHA, Air Toxics Hot Spots Program Assessment (February 2015), page 8-4 & 8-5; EMFAC2021 (v1.01).

Note: Year 2050 emission factor also used for years after 2050.

Age Sensitivity Factors by Age Group for Cancer Risk Assessment

Age Group	Age Sensitivity Factor (Unitless)
3rd Trimester	10
0<2 years	10
2<9 years	3
2<16 years	3
16<30 years	1
16<70 years	1

Source: OEHA, February 2015.

Calculation of Weighted Emission Factor (based on OEHA Guidance and EMFAC 2021 Emission Factors)

Age	Year	Emission Factor (g/mile)	
		T7 Tractor Class 8	Weighting
3rd Trimester	2021	0.021563122	10
0	2022	0.014397427	10
1	2023	0.012072359	10
2	2024	0.011891928	3
3	2025	0.011672775	3
4	2026	0.011525326	3
5	2027	0.011353357	3
6	2028	0.011165647	3
7	2029	0.010974024	3
8	2030	0.010771152	3
9	2031	0.010553786	3
10	2032	0.010328119	3
11	2033	0.010108579	3
12	2034	0.009908906	3
13	2035	0.00972279	3
14	2036	0.009543128	3
15	2037	0.00937553	3
16	2038	0.00922014	1
17	2039	0.009078196	1
18	2040	0.008945911	1
19	2041	0.008822959	1
20	2042	0.008711013	1
21	2043	0.008611262	1
22	2044	0.008522241	1
23	2045	0.008444465	1
24	2046	0.00837796	1
25	2047	0.008322037	1
26	2048	0.00827606	1
27	2049	0.008238141	1
28	2050	0.008206878	1
29	2051	0.008206878	1
30	2052	0.008206878	1
31	2053	0.008206878	1
32	2054	0.008206878	1
33	2055	0.008206878	1
34	2056	0.008206878	1
35	2057	0.008206878	1
36	2058	0.008206878	1
37	2059	0.008206878	1
38	2060	0.008206878	1
39	2061	0.008206878	1
40	2062	0.008206878	1
41	2063	0.008206878	1
42	2064	0.008206878	1
43	2065	0.008206878	1
44	2066	0.008206878	1
45	2067	0.008206878	1
46	2068	0.008206878	1
47	2069	0.008206878	1
48	2070	0.008206878	1
49	2071	0.008206878	1
50	2072	0.008206878	1
51	2073	0.008206878	1
52	2074	0.008206878	1
53	2075	0.008206878	1
54	2076	0.008206878	1
55	2077	0.008206878	1
56	2078	0.008206878	1
57	2079	0.008206878	1
58	2080	0.008206878	1
59	2081	0.008206878	1
60	2082	0.008206878	1
61	2083	0.008206878	1
62	2084	0.008206878	1
63	2085	0.008206878	1
64	2086	0.008206878	1
65	2087	0.008206878	1
66	2088	0.008206878	1
67	2089	0.008206878	1
68	2090	0.008206878	1
69	2091	0.008206878	1
70	2092	0.008206878	1

Weighted Emission Factor (g/mile)
0.010893546

Calculation of Weighted Emission Factor for T7 Tractor Class 8 - 30 MPH

Sources: OEHA, Air Toxics Hot Spots Program Assessment (February 2015), page 8-4 & 8-5; EMFAC2021 (v1.01).

Note: Year 2050 emission factor also used for years after 2050.

Age Sensitivity Factors by Age Group for Cancer Risk Assessment

Age Group	Age Sensitivity Factor (Unitless)
3rd Trimester	10
0<2 years	10
2<9 years	3
2<16 years	3
16<30 years	1
16<70 years	1

Source: OEHA, February 2015.

Calculation of Weighted Emission Factor (based on OEHA Guidance and EMFAC 2021 Emission Factors)

		Emission Factor (g/mile)		
Age	Year	T7 Tractor Class 8	Weighting	
3rd Trimester	2021	0.015886998		10
	0 2022	0.009449764		10
	1 2023	0.00603132		10
	2 2024	0.00588321		3
	3 2025	0.005719438		3
	4 2026	0.005594387		3
	5 2027	0.005462332		3
	6 2028	0.005327672		3
	7 2029	0.005196464		3
	8 2030	0.005063452		3
	9 2031	0.004926693		3
	10 2032	0.004790078		3
	11 2033	0.004661139		3
	12 2034	0.004546596		3
	13 2035	0.004441891		3
	14 2036	0.004342283		3
	15 2037	0.004250671		3
	16 2038	0.004167113		1
	17 2039	0.004092573		1
	18 2040	0.004024456		1
	19 2041	0.003962266		1
	20 2042	0.003906359		1
	21 2043	0.003857114		1
	22 2044	0.003813379		1
	23 2045	0.003775329		1
	24 2046	0.003742875		1
	25 2047	0.00371564		1
	26 2048	0.003693282		1
	27 2049	0.003674812		1
	28 2050	0.003659553		1
	29 2051	0.003659553		1
	30 2052	0.003659553		1
	31 2053	0.003659553		1
	32 2054	0.003659553		1
	33 2055	0.003659553		1
	34 2056	0.003659553		1
	35 2057	0.003659553		1
	36 2058	0.003659553		1
	37 2059	0.003659553		1
	38 2060	0.003659553		1
	39 2061	0.003659553		1
	40 2062	0.003659553		1
	41 2063	0.003659553		1
	42 2064	0.003659553		1
	43 2065	0.003659553		1
	44 2066	0.003659553		1
	45 2067	0.003659553		1
	46 2068	0.003659553		1
	47 2069	0.003659553		1
	48 2070	0.003659553		1
	49 2071	0.003659553		1
	50 2072	0.003659553		1
	51 2073	0.003659553		1
	52 2074	0.003659553		1
	53 2075	0.003659553		1
	54 2076	0.003659553		1
	55 2077	0.003659553		1
	56 2078	0.003659553		1
	57 2079	0.003659553		1
	58 2080	0.003659553		1
	59 2081	0.003659553		1
	60 2082	0.003659553		1
	61 2083	0.003659553		1
	62 2084	0.003659553		1
	63 2085	0.003659553		1
	64 2086	0.003659553		1
	65 2087	0.003659553		1
	66 2088	0.003659553		1
	67 2089	0.003659553		1
	68 2090	0.003659553		1
	69 2091	0.003659553		1
	70 2092	0.003659553		1

Weighted Emission Factor (g/mile)
0.005732958

calendar_year	season_month	sub_area	vehicle_class	temperature	relative_humidity	process	speed_time	pollutant	emission_rate
2050	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		45 PM	0.0799832
2050	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2050	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.009339778
2050	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		45 PM	0.008206878
2049	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		45 PM	0.079994072
2049	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2049	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.009360046
2049	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		45 PM	0.008238141
2048	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		45 PM	0.080005828
2048	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2048	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.009384063
2048	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		45 PM	0.00827606
2047	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		45 PM	0.080018383
2047	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2047	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.00941242
2047	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		45 PM	0.008322037
2046	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		45 PM	0.080030212
2046	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2046	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.009445772
2046	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		45 PM	0.00837796
2045	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		45 PM	0.080044667
2045	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2045	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.009484625
2045	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		45 PM	0.008444465
2044	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		45 PM	0.080062069
2044	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2044	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.009529412
2044	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		45 PM	0.008522241
2043	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		45 PM	0.080084361
2043	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2043	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.009579627
2043	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		45 PM	0.008611262
2042	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		45 PM	0.080105303
2042	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2042	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.009634935
2042	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		45 PM	0.008711013
2041	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		45 PM	0.080116131
2041	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2041	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.009695397
2041	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		45 PM	0.008822959
2040	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		45 PM	0.080111804
2040	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2040	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.009760158
2040	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		45 PM	0.008945911
2039	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		45 PM	0.080093373
2039	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2039	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.009828207
2039	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		45 PM	0.009078196
2038	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		45 PM	0.080059307
2038	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2038	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.00989835
2038	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		45 PM	0.00922014
2037	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		45 PM	0.080016638
2037	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2037	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.009971651
2037	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		45 PM	0.00937553
2036	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		45 PM	0.079966296
2036	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2036	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.010049314
2036	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		45 PM	0.009543128
2035	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		45 PM	0.07991848
2035	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2035	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.010134182
2035	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		45 PM	0.00972279
2034	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		45 PM	0.079878749
2034	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2034	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.010229391
2034	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		45 PM	0.009908906
2033	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		45 PM	0.079862693
2033	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2033	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.010333746
2033	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		45 PM	0.010108579
2032	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		45 PM	0.079878508
2032	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2032	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.010450703
2032	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		45 PM	0.010328119
2031	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		45 PM	0.07989938
2031	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2031	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.010577838
2031	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		45 PM	0.010553786
2030	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		45 PM	0.079888446
2030	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2030	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.010716402
2030	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		45 PM	0.010771152
2029	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		45 PM	0.079830198
2029	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2029	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.010863993
2029	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		45 PM	0.010974024
2028	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		45 PM	0.079766768
2028	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036

2028 Annual	San Joaquin (SJV)	T7 Tractor Class 8		IDLEX		PM	0.011022894
2028 Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60 RUNEX		45 PM	0.011165647
2027 Annual	San Joaquin (SJV)	T7 Tractor Class 8		PMBW		45 PM	0.079687259
2027 Annual	San Joaquin (SJV)	T7 Tractor Class 8		PMTW		PM	0.036
2027 Annual	San Joaquin (SJV)	T7 Tractor Class 8		IDLEX		PM	0.011192921
2027 Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60 RUNEX		45 PM	0.011353357
2026 Annual	San Joaquin (SJV)	T7 Tractor Class 8		PMBW		45 PM	0.079528387
2026 Annual	San Joaquin (SJV)	T7 Tractor Class 8		PMTW		PM	0.036
2026 Annual	San Joaquin (SJV)	T7 Tractor Class 8		IDLEX		PM	0.011389938
2026 Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60 RUNEX		45 PM	0.011525326
2025 Annual	San Joaquin (SJV)	T7 Tractor Class 8		PMBW		45 PM	0.079391241
2025 Annual	San Joaquin (SJV)	T7 Tractor Class 8		PMTW		PM	0.036
2025 Annual	San Joaquin (SJV)	T7 Tractor Class 8		IDLEX		PM	0.011637331
2025 Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60 RUNEX		45 PM	0.011672775
2024 Annual	San Joaquin (SJV)	T7 Tractor Class 8		PMBW		45 PM	0.079461801
2024 Annual	San Joaquin (SJV)	T7 Tractor Class 8		PMTW		PM	0.036
2024 Annual	San Joaquin (SJV)	T7 Tractor Class 8		IDLEX		PM	0.011950321
2024 Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60 RUNEX		45 PM	0.011891928
2023 Annual	San Joaquin (SJV)	T7 Tractor Class 8		PMBW		45 PM	0.07954417
2023 Annual	San Joaquin (SJV)	T7 Tractor Class 8		PMTW		PM	0.036
2023 Annual	San Joaquin (SJV)	T7 Tractor Class 8		IDLEX		PM	0.012344881
2023 Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60 RUNEX		45 PM	0.012072359
2022 Annual	San Joaquin (SJV)	T7 Tractor Class 8		PMBW		45 PM	0.081358716
2022 Annual	San Joaquin (SJV)	T7 Tractor Class 8		PMTW		PM	0.036
2022 Annual	San Joaquin (SJV)	T7 Tractor Class 8		IDLEX		PM	0.013764921
2022 Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60 RUNEX		45 PM	0.014397427
2021 Annual	San Joaquin (SJV)	T7 Tractor Class 8		PMBW		45 PM	0.082289345
2021 Annual	San Joaquin (SJV)	T7 Tractor Class 8		PMTW		PM	0.036
2021 Annual	San Joaquin (SJV)	T7 Tractor Class 8		IDLEX		PM	0.01749219
2021 Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60 RUNEX		45 PM	0.021563122

calendar_year	season_month	sub_area	vehicle_class	temperature	relative_humidity	process	speed_time	pollutant	emission_rate
2050	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		30 PM	0.128057422
2050	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2050	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.009339778
2050	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		30 PM	0.003659553
2049	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		30 PM	0.128076265
2049	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2049	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.009360046
2049	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		30 PM	0.003674812
2048	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		30 PM	0.128096837
2048	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2048	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.009384063
2048	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		30 PM	0.003693282
2047	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		30 PM	0.128119072
2047	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2047	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.00941242
2047	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		30 PM	0.00371564
2046	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		30 PM	0.128140658
2046	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2046	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.009445772
2046	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		30 PM	0.003742875
2045	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		30 PM	0.128166943
2045	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2045	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.009484625
2045	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		30 PM	0.003775329
2044	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		30 PM	0.128198496
2044	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2044	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.009529412
2044	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		30 PM	0.003813379
2043	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		30 PM	0.128238394
2043	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2043	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.009579627
2043	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		30 PM	0.003857114
2042	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		30 PM	0.128276804
2042	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2042	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.009634935
2042	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		30 PM	0.003906359
2041	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		30 PM	0.128299909
2041	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2041	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.009695397
2041	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		30 PM	0.003962266
2040	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		30 PM	0.128299713
2040	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2040	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.009760158
2040	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		30 PM	0.004024456
2039	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		30 PM	0.128277758
2039	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2039	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.009828207
2039	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		30 PM	0.004092573
2038	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		30 PM	0.128231586
2038	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2038	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.00989835
2038	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		30 PM	0.004167113
2037	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		30 PM	0.128172362
2037	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2037	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.009971651
2037	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		30 PM	0.004250671
2036	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		30 PM	0.128101709
2036	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2036	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.010049314
2036	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		30 PM	0.004342283
2035	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		30 PM	0.128035956
2035	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2035	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.010134182
2035	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		30 PM	0.004441891
2034	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		30 PM	0.127983968
2034	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2034	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.010229391
2034	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		30 PM	0.004546596
2033	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		30 PM	0.127970395
2033	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2033	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.010333746
2033	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		30 PM	0.004661139
2032	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		30 PM	0.128008256
2032	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2032	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.010450703
2032	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		30 PM	0.004790078
2031	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		30 PM	0.128054645
2031	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2031	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.010577838
2031	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		30 PM	0.004926693
2030	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		30 PM	0.128049971
2030	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036
2030	Annual	San Joaquin (SJV)	T7 Tractor Class 8			IDLEX		PM	0.010716402
2030	Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60	RUNEX		30 PM	0.005063452
2029	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMBW		30 PM	0.127969437
2029	Annual	San Joaquin (SJV)	T7 Tractor Class 8			PMTW		PM	0.036

2029 Annual	San Joaquin (SJV)	T7 Tractor Class 8		IDLEX	PM	0.010863993
2029 Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60 RUNEX	30 PM	0.005196464
2028 Annual	San Joaquin (SJV)	T7 Tractor Class 8		PMBW	30 PM	0.127879364
2028 Annual	San Joaquin (SJV)	T7 Tractor Class 8		PMTW	PM	0.036
2028 Annual	San Joaquin (SJV)	T7 Tractor Class 8		IDLEX	PM	0.011022894
2028 Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60 RUNEX	30 PM	0.005327672
2027 Annual	San Joaquin (SJV)	T7 Tractor Class 8		PMBW	30 PM	0.127762457
2027 Annual	San Joaquin (SJV)	T7 Tractor Class 8		PMTW	PM	0.036
2027 Annual	San Joaquin (SJV)	T7 Tractor Class 8		IDLEX	PM	0.011192921
2027 Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60 RUNEX	30 PM	0.005462332
2026 Annual	San Joaquin (SJV)	T7 Tractor Class 8		PMBW	30 PM	0.127518572
2026 Annual	San Joaquin (SJV)	T7 Tractor Class 8		PMTW	PM	0.036
2026 Annual	San Joaquin (SJV)	T7 Tractor Class 8		IDLEX	PM	0.011389938
2026 Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60 RUNEX	30 PM	0.005594387
2025 Annual	San Joaquin (SJV)	T7 Tractor Class 8		PMBW	30 PM	0.127307086
2025 Annual	San Joaquin (SJV)	T7 Tractor Class 8		PMTW	PM	0.036
2025 Annual	San Joaquin (SJV)	T7 Tractor Class 8		IDLEX	PM	0.011637331
2025 Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60 RUNEX	30 PM	0.005719438
2024 Annual	San Joaquin (SJV)	T7 Tractor Class 8		PMBW	30 PM	0.127421887
2024 Annual	San Joaquin (SJV)	T7 Tractor Class 8		PMTW	PM	0.036
2024 Annual	San Joaquin (SJV)	T7 Tractor Class 8		IDLEX	PM	0.011950321
2024 Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60 RUNEX	30 PM	0.00588321
2023 Annual	San Joaquin (SJV)	T7 Tractor Class 8		PMBW	30 PM	0.127553976
2023 Annual	San Joaquin (SJV)	T7 Tractor Class 8		PMTW	PM	0.036
2023 Annual	San Joaquin (SJV)	T7 Tractor Class 8		IDLEX	PM	0.012344881
2023 Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60 RUNEX	30 PM	0.00603132
2022 Annual	San Joaquin (SJV)	T7 Tractor Class 8		PMBW	30 PM	0.130474272
2022 Annual	San Joaquin (SJV)	T7 Tractor Class 8		PMTW	PM	0.036
2022 Annual	San Joaquin (SJV)	T7 Tractor Class 8		IDLEX	PM	0.013764921
2022 Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60 RUNEX	30 PM	0.009449764
2021 Annual	San Joaquin (SJV)	T7 Tractor Class 8		PMBW	30 PM	0.131972054
2021 Annual	San Joaquin (SJV)	T7 Tractor Class 8		PMTW	PM	0.036
2021 Annual	San Joaquin (SJV)	T7 Tractor Class 8		IDLEX	PM	0.01749219
2021 Annual	San Joaquin (SJV)	T7 Tractor Class 8	60	60 RUNEX	30 PM	0.015886998

This page left intentionally blank.

Appendix 2: AERMOD Output File

*** MODELOPTs: NonDEFAULT CONC FLAT URBAN 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 URBAN Dispersion Algorithm for the SBL for 3343 Source(s),
for Total of 1 Urban Area(s):

Urban Population = 79129.0 ; Urban Roughness Length = 1.000 m

**Model Allows User-Specified Options:

1. Stack-tip Downwash.
2. Model Assumes Receptors on FLAT Terrain.
3. Use Calms Processing Routine.
4. Use Missing Data Processing Routine.
5. No Exponential Decay.
6. Urban Roughness Length of 1.0 Meter Used.

**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: OTHER

**Model Calculates 1 Short Term Average(s) of: 1-HR
and Calculates PERIOD Averages

**This Run Includes: 3343 Source(s); 6 Source Group(s); and 173 Receptor(s)

with: 0 POINT(s), including
0 POINTCAP(s) and 0 POINTHOR(s)
and: 3343 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 0 line(s)

*** MODELOPTs: NonDEFAULT CONC FLAT URBAN ADJ_U*

*** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

Surface file: AERMET\Stockton_2013-2017.SFC

Met Version: 18081

Profile file: AERMET\Stockton_2013-2017.PFL

Surface format: FREE

Profile format: FREE

Surface station no.: 23237

Upper air station no.: 23230

Name: STOCKTON_AIRPORT

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 19191 *** ** C:\Users\Smith\Dropbox\My PC (DESKTOP-977GSBU)\Documents\HRA\Manteca *** 05/05/21

*** MODELOPTs: NonDEFAULT CONC FLAT URBAN ADJ_U*

*** THE SUMMARY OF MAXIMUM PERIOD (43824 HRS) RESULTS ***

** CONC OF OTHER IN MICROGRAMS/M**3

**

GROUP ID AVERAGE CONC NETWORK
 GRID-ID RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG) OF TYPE

 SLINE1 1ST HIGHEST VALUE IS 10.66393 AT (653602.82, 4190948.23, 7.90, 7.90, 0.00) DC
 2ND HIGHEST VALUE IS 8.23130 AT (653556.60, 4191372.22, 7.90, 7.90, 0.00) DC
 3RD HIGHEST VALUE IS 1.83738 AT (654415.11, 4190831.32, 7.90, 7.90, 0.00) DC
 4TH HIGHEST VALUE IS 1.61430 AT (654502.79, 4190798.44, 7.90, 7.90, 0.00) DC
 5TH HIGHEST VALUE IS 1.45382 AT (654586.82, 4190808.18, 7.90, 7.90, 0.00) DC
 6TH HIGHEST VALUE IS 1.27482 AT (654695.21, 4190799.66, 7.90, 7.90, 0.00) DC
 7TH HIGHEST VALUE IS 1.14487 AT (654611.18, 4190342.97, 7.90, 7.90, 0.00) DC
 8TH HIGHEST VALUE IS 1.07075 AT (654730.52, 4190402.65, 7.90, 7.90, 0.00) DC
 9TH HIGHEST VALUE IS 1.02601 AT (654759.75, 4190368.55, 7.90, 7.90, 0.00) DC
 10TH HIGHEST VALUE IS 0.99315 AT (654855.96, 4190492.77, 7.90, 7.90, 0.00) DC

SLINE2 1ST HIGHEST VALUE IS 11.86272 AT (654730.52, 4190402.65, 7.90, 7.90, 0.00) DC
 2ND HIGHEST VALUE IS 11.39101 AT (654855.96, 4190492.77, 7.90, 7.90, 0.00) DC
 3RD HIGHEST VALUE IS 9.50743 AT (654941.21, 4190358.81, 7.90, 7.90, 0.00) DC
 4TH HIGHEST VALUE IS 8.60336 AT (654759.75, 4190368.55, 7.90, 7.90, 0.00) DC
 5TH HIGHEST VALUE IS 7.51465 AT (655127.53, 4190521.99, 7.90, 7.90, 0.00) DC
 6TH HIGHEST VALUE IS 6.11199 AT (656746.51, 4190013.81, 7.90, 7.90, 0.00) DC
 7TH HIGHEST VALUE IS 5.16155 AT (656839.22, 4189934.59, 7.90, 7.90, 0.00) DC
 8TH HIGHEST VALUE IS 4.59977 AT (654415.11, 4190831.32, 7.90, 7.90, 0.00) DC
 9TH HIGHEST VALUE IS 4.43140 AT (655123.88, 4190597.50, 7.90, 7.90, 0.00) DC
 10TH HIGHEST VALUE IS 4.33084 AT (654611.18, 4190342.97, 7.90, 7.90, 0.00) DC

SLINE3 1ST HIGHEST VALUE IS 30.82667 AT (656904.17, 4188611.09, 7.90, 7.90, 0.00) DC
 2ND HIGHEST VALUE IS 30.15063 AT (656908.14, 4188549.62, 7.90, 7.90, 0.00) DC
 3RD HIGHEST VALUE IS 29.95104 AT (656839.22, 4189934.59, 7.90, 7.90, 0.00) DC
 4TH HIGHEST VALUE IS 29.67527 AT (656835.85, 4190007.07, 7.90, 7.90, 0.00) DC
 5TH HIGHEST VALUE IS 29.46606 AT (656908.14, 4188571.43, 7.90, 7.90, 0.00) DC
 6TH HIGHEST VALUE IS 28.97061 AT (656906.15, 4188628.94, 7.90, 7.90, 0.00) DC
 7TH HIGHEST VALUE IS 28.56431 AT (656906.15, 4188642.82, 7.90, 7.90, 0.00) DC
 8TH HIGHEST VALUE IS 28.00364 AT (656906.15, 4188662.65, 7.90, 7.90, 0.00) DC
 9TH HIGHEST VALUE IS 27.85779 AT (656854.59, 4189701.78, 7.90, 7.90, 0.00) DC
 10TH HIGHEST VALUE IS 27.60834 AT (656910.12, 4188595.23, 7.90, 7.90, 0.00) DC

SLINE4 1ST HIGHEST VALUE IS 26.49521 AT (656746.51, 4190013.81, 7.90, 7.90, 0.00) DC
 2ND HIGHEST VALUE IS 24.50661 AT (656741.46, 4190066.07, 7.90, 7.90, 0.00) DC
 3RD HIGHEST VALUE IS 23.17414 AT (656736.40, 4190133.49, 7.90, 7.90, 0.00) DC
 4TH HIGHEST VALUE IS 21.62390 AT (656780.24, 4189175.74, 7.90, 7.90, 0.00) DC
 5TH HIGHEST VALUE IS 20.24511 AT (656724.60, 4190436.90, 7.90, 7.90, 0.00) DC
 6TH HIGHEST VALUE IS 17.86490 AT (656722.92, 4190204.29, 7.90, 7.90, 0.00) DC
 7TH HIGHEST VALUE IS 17.30122 AT (656904.17, 4188611.09, 7.90, 7.90, 0.00) DC
 8TH HIGHEST VALUE IS 17.05898 AT (656908.14, 4188549.62, 7.90, 7.90, 0.00) DC
 9TH HIGHEST VALUE IS 16.86312 AT (656908.14, 4188571.43, 7.90, 7.90, 0.00) DC
 10TH HIGHEST VALUE IS 16.82071 AT (656839.22, 4189934.59, 7.90, 7.90, 0.00) DC

*** MODELOPTs: NonDEFAULT CONC FLAT URBAN ADJ_U*

*** THE SUMMARY OF MAXIMUM PERIOD (43824 HRS) RESULTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

NETWORK

GROUP ID AVERAGE CONC RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG) OF TYPE GRID-ID

Table with 10 rows (SLINE5) showing highest values at various coordinates and receptor types (DC).

Table with 10 rows (SLINE6) showing highest values at various coordinates and receptor types (DC).

*** RECEPTOR TYPES: GC = GRIDCART GP = GRIDPOLR DC = DISCCART DP = DISCPOLR

*** MODELOPTs: NonDEFAULT CONC FLAT URBAN ADJ_U*

*** THE SUMMARY OF HIGHEST 1-HR RESULTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

GROUP ID	DATE	AVERAGE CONC	(YYMMDDHH)	NETWORK	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	OF TYPE	GRID-ID
SLINE1	HIGH	1ST HIGH VALUE IS	147.50233	ON 17011109:	AT (653556.60, 4191372.22,	7.90,	7.90, 0.00) DC
SLINE2	HIGH	1ST HIGH VALUE IS	64.10440	ON 17122509:	AT (654855.96, 4190492.77,	7.90,	7.90, 0.00) DC
SLINE3	HIGH	1ST HIGH VALUE IS	121.68442	ON 17020504:	AT (656904.17, 4188611.09,	7.90,	7.90, 0.00) DC
SLINE4	HIGH	1ST HIGH VALUE IS	140.35417	ON 17012817:	AT (656746.51, 4190013.81,	7.90,	7.90, 0.00) DC
SLINE5	HIGH	1ST HIGH VALUE IS	75.82312	ON 17121518:	AT (653069.37, 4183111.98,	7.90,	7.90, 0.00) DC
SLINE6	HIGH	1ST HIGH VALUE IS	101.38973	ON 17122508:	AT (653069.37, 4183111.98,	7.90,	7.90, 0.00) DC

*** RECEPTOR TYPES: GC = GRIDCART
 GP = GRIDPOLR
 DC = DISCCART
 DP = DISCPOLR

*** AERMOD - VERSION 19191 *** ** C:\Users\Smith\Dropbox\My PC (DESKTOP-977GSBU)\Documents\HRA\Manteca *** 05/05/21

*** AERMET - VERSION 18081 *** **

*** 06:51:22

PAGE 7

*** MODELOPTs: NonDEFAULT CONC FLAT URBAN 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	10929	MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used	0.50
ME W187	10929	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

This page left intentionally blank.

Appendix 3: HARP-2 Project Summary Report

PROJECT INFORMATION

HARP Version: 21081
 Project Name: MANTECA GP
 Project Output Directory: C:\Users\Smith\Dropbox\My PC (DESKTOP-977GSBU)\Documents\HRA\Manteca GP\Manteca GP - Modeling Files\HARP\MANTECA GP
 HARP Database: NA

FACILITY INFORMATION

Origin
 X (m):0
 Y (m):0
 Zone:1
 No. of Sources:0
 No. of Buildings:0

EMISSION INVENTORY

No. of Pollutants:6
 No. of Background Pollutants:0

Emissions ScrID	StkID	ProID	PolID	PolAbbrev	Multi (lbs/yr)	Annual Ems (lbs/hr)	MaxHr Ems	MWAF
SLINE1	0	0	9901	DieselExhPM	1	3.679053299	0.00084	1
SLINE2	0	0	9901	DieselExhPM	1	47.85767891	0.010926	1
SLINE3	0	0	9901	DieselExhPM	1	6.77427781	0.001547	1
SLINE4	0	0	9901	DieselExhPM	1	7.657879264	0.001748	1
SLINE5	0	0	9901	DieselExhPM	1	21.33704661	0.004871	1
SLINE6	0	0	9901	DieselExhPM	1	18.06123447	0.004124	1

Background PolID	PolAbbrev	Conc (ug/m^3)	MWAF
---------------------	-----------	---------------	------

Ground level concentration files (\glc\)

9901MAXHR.txt
 9901PER.txt

POLLUTANT HEALTH INFORMATION

Health Database: C:\HARP2\Tables\HEALTH17320.mdb
 Health Table Version: HEALTH20276
 Official: True

PolID	PolAbbrev	InhCancer	OralCancer	AcuteREL	InhChronicREL	OralChronicREL
9901	DieselExhPM	1.1		5		

AIR DISPERSION MODELING INFORMATION

Versions used in HARP. All executables were obtained from USEPA's Support Center for Regulatory Atmospheric Modeling website (<http://www.epa.gov/scram001/>)

AERMOD: 18081
AERMAP: 18081
BPIPRM: 04274
AERPLOT: 13329

METEOROLOGICAL INFORMATION

Version:
Surface File:
Profile File:
Surface Station:
Upper Station:
On-Site Station:

LIST OF AIR DISPERSION FILES

AERMOD Input File:
AERMOD Output File:
AERMOD Error File:
Plotfile list

LIST OF RISK ASSESSMENT FILES

Health risk analysis files (\hra\)

AcuteGLCList.csv
AcuteHRAInput.hra
AcuteNCAcuteRisk.csv
AcuteNCAcuteRiskSumByRec.csv
AcuteOutput.txt
AcutePathwayRec.csv
AcutePolDB.csv
ChronicGLCList.csv
ChronicHRAInput.hra
ChronicNCChronicRisk.csv
ChronicNCChronicRiskSumByRec.csv
ChronicOutput.txt
ChronicPathwayRec.csv
ChronicPolDB.csv
Residential CancerCancerRisk.csv
Residential CancerCancerRiskSumByRec.csv
Residential CancerGLCList.csv
Residential CancerHRAInput.hra
Residential CancerOutput.txt
Residential CancerPathwayRec.csv
Residential CancerPolDB.csv

Spatial averaging files (\sa\)

This page left intentionally blank.

Appendix C

Continuous and Short-Term Ambient Noise Measurement Results

Continuous and Short-Term Ambient Noise Measurement Results



Appendix B1: Continuous Noise Monitoring Results

Site: A

Project: City of Manteca General Plan

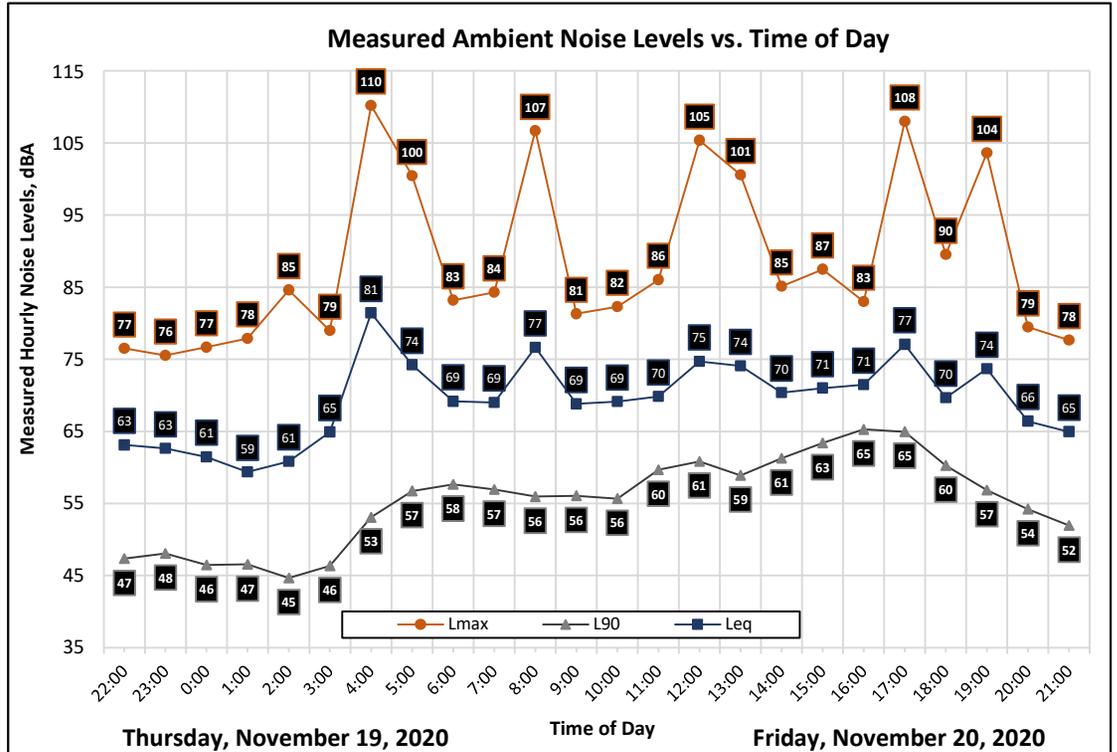
Meter: LDL 820-3

Location: ACE Lathrop/Manteca Station

Calibrator: CAL200

Coordinates: 37.7974984°, -121.2640066°

Date	Time	Measured Level, dBA			
		L _{eq}	L _{max}	L ₅₀	L ₉₀
Thursday, November 19, 2020	22:00	63	77	54	47
Thursday, November 19, 2020	23:00	63	76	55	48
Friday, November 20, 2020	0:00	61	77	53	46
Friday, November 20, 2020	1:00	59	78	50	47
Friday, November 20, 2020	2:00	61	85	48	45
Friday, November 20, 2020	3:00	65	79	56	46
Friday, November 20, 2020	4:00	81	110	64	53
Friday, November 20, 2020	5:00	74	100	66	57
Friday, November 20, 2020	6:00	69	83	67	58
Friday, November 20, 2020	7:00	69	84	66	57
Friday, November 20, 2020	8:00	77	107	67	56
Friday, November 20, 2020	9:00	69	81	67	56
Friday, November 20, 2020	10:00	69	82	67	56
Friday, November 20, 2020	11:00	70	86	68	60
Friday, November 20, 2020	12:00	75	105	69	61
Friday, November 20, 2020	13:00	74	101	68	59
Friday, November 20, 2020	14:00	70	85	69	61
Friday, November 20, 2020	15:00	71	87	70	63
Friday, November 20, 2020	16:00	71	83	71	65
Friday, November 20, 2020	17:00	77	108	70	65
Friday, November 20, 2020	18:00	70	90	68	60
Friday, November 20, 2020	19:00	74	104	66	57
Friday, November 20, 2020	20:00	66	79	63	54
Friday, November 20, 2020	21:00	65	78	60	52



Statistics	Leq	Lmax	L50	L90
Day Average	72	91	67	59
Night Average	73	85	57	50
Day Low	65	78	60	52
Day High	77	108	71	65
Night Low	59	76	48	45
Night High	81	110	67	58
L _{dn}	79	Day %		59
CNEL	79.5	Night %		41

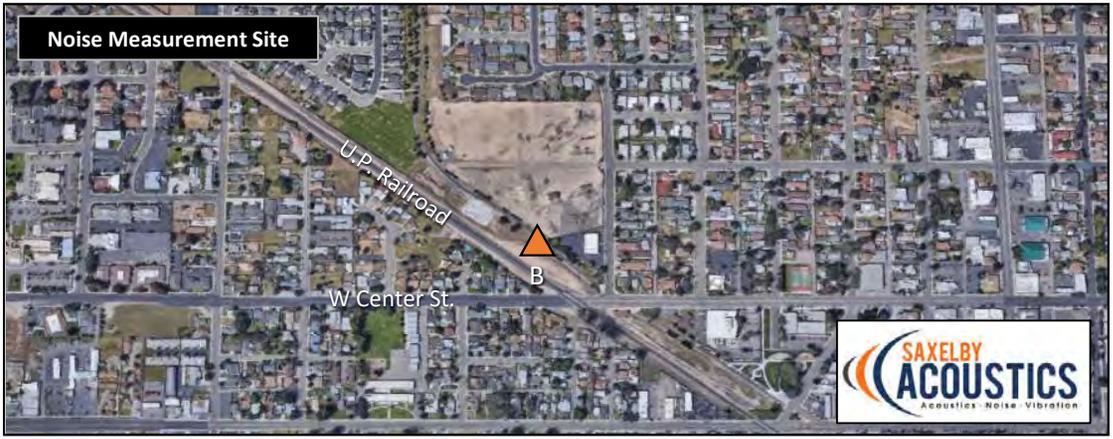
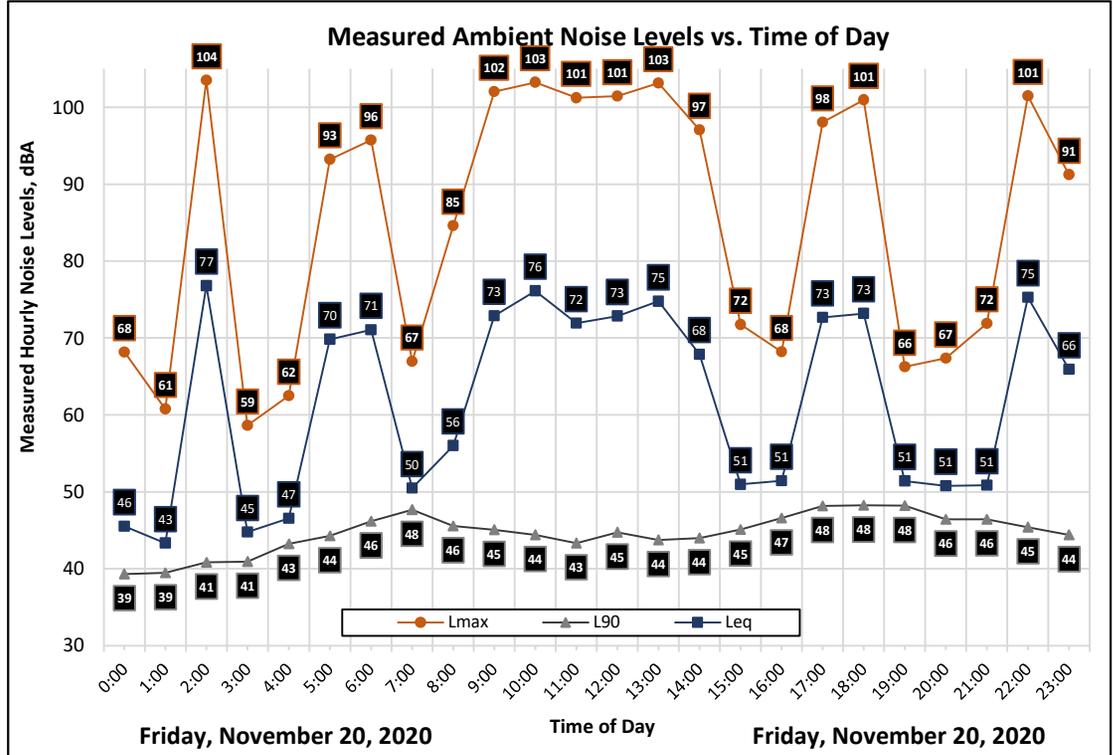


Appendix B2: Continuous Noise Monitoring Results

Date	Time	Measured Level, dBA			
		L _{eq}	L _{max}	L ₅₀	L ₉₀
Friday, November 20, 2020	0:00	46	68	41	39
Friday, November 20, 2020	1:00	43	61	42	39
Friday, November 20, 2020	2:00	77	104	44	41
Friday, November 20, 2020	3:00	45	59	43	41
Friday, November 20, 2020	4:00	47	62	45	43
Friday, November 20, 2020	5:00	70	93	46	44
Friday, November 20, 2020	6:00	71	96	48	46
Friday, November 20, 2020	7:00	50	67	49	48
Friday, November 20, 2020	8:00	56	85	48	46
Friday, November 20, 2020	9:00	73	102	47	45
Friday, November 20, 2020	10:00	76	103	48	44
Friday, November 20, 2020	11:00	72	101	47	43
Friday, November 20, 2020	12:00	73	101	49	45
Friday, November 20, 2020	13:00	75	103	47	44
Friday, November 20, 2020	14:00	68	97	48	44
Friday, November 20, 2020	15:00	51	72	49	45
Friday, November 20, 2020	16:00	51	68	50	47
Friday, November 20, 2020	17:00	73	98	51	48
Friday, November 20, 2020	18:00	73	101	51	48
Friday, November 20, 2020	19:00	51	66	50	48
Friday, November 20, 2020	20:00	51	67	49	46
Friday, November 20, 2020	21:00	51	72	49	46
Friday, November 20, 2020	22:00	75	101	48	45
Friday, November 20, 2020	23:00	66	91	47	44

Statistics	Leq	Lmax	L50	L90
Day Average	71	87	49	46
Night Average	70	82	45	43
Day Low	50	66	47	43
Day High	76	103	51	48
Night Low	43	59	41	39
Night High	77	104	48	46
Ldn	76	Day %	70	
CNEL	75.8	Night %	30	

Site: B
 Project: City of Manteca General Plan
 Location: Skate Park
 Meter: LDL 820-2
 Calibrator: CAL200
 Coordinates: 37.7998527°, -121.2239794°



Appendix B3: Continuous Noise Monitoring Results

Date	Time	Measured Level, dBA			
		L _{eq}	L _{max}	L ₅₀	L ₉₀
Friday, November 20, 2020	0:00	51	69	55	34
Friday, November 20, 2020	1:00	51	69	55	34
Friday, November 20, 2020	2:00	53	71	56	34
Friday, November 20, 2020	3:00	57	78	60	37
Friday, November 20, 2020	4:00	59	74	63	43
Friday, November 20, 2020	5:00	63	81	66	55
Friday, November 20, 2020	6:00	65	85	67	58
Friday, November 20, 2020	7:00	64	82	68	58
Friday, November 20, 2020	8:00	62	85	66	50
Friday, November 20, 2020	9:00	62	84	66	48
Friday, November 20, 2020	10:00	64	89	66	48
Friday, November 20, 2020	11:00	63	87	65	47
Friday, November 20, 2020	12:00	62	85	65	47
Friday, November 20, 2020	13:00	64	89	66	49
Friday, November 20, 2020	14:00	67	95	67	51
Friday, November 20, 2020	15:00	65	88	68	54
Friday, November 20, 2020	16:00	66	90	68	56
Friday, November 20, 2020	17:00	64	83	67	57
Friday, November 20, 2020	18:00	61	83	64	50
Friday, November 20, 2020	19:00	60	77	63	45
Friday, November 20, 2020	20:00	57	76	61	40
Friday, November 20, 2020	21:00	59	79	62	44
Friday, November 20, 2020	22:00	58	84	61	42
Friday, November 20, 2020	23:00	57	81	59	40

Statistics	Leq	Lmax	L50	L90
Day Average	63	85	65	50
Night Average	59	77	60	42
Day Low	57	76	61	40
Day High	67	95	68	58
Night Low	51	69	55	34
Night High	65	85	67	58
Ldn	66	Day %		82
CNEL	66.5	Night %		18

Site: C

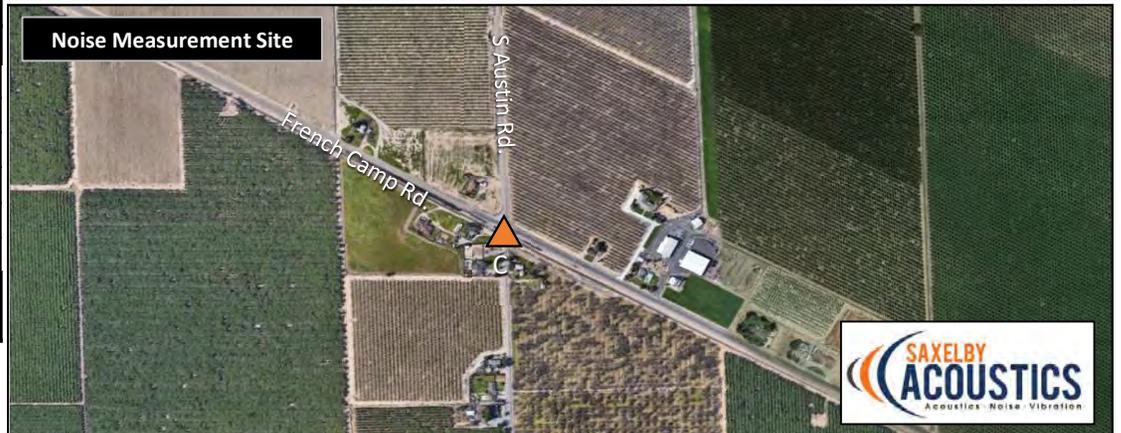
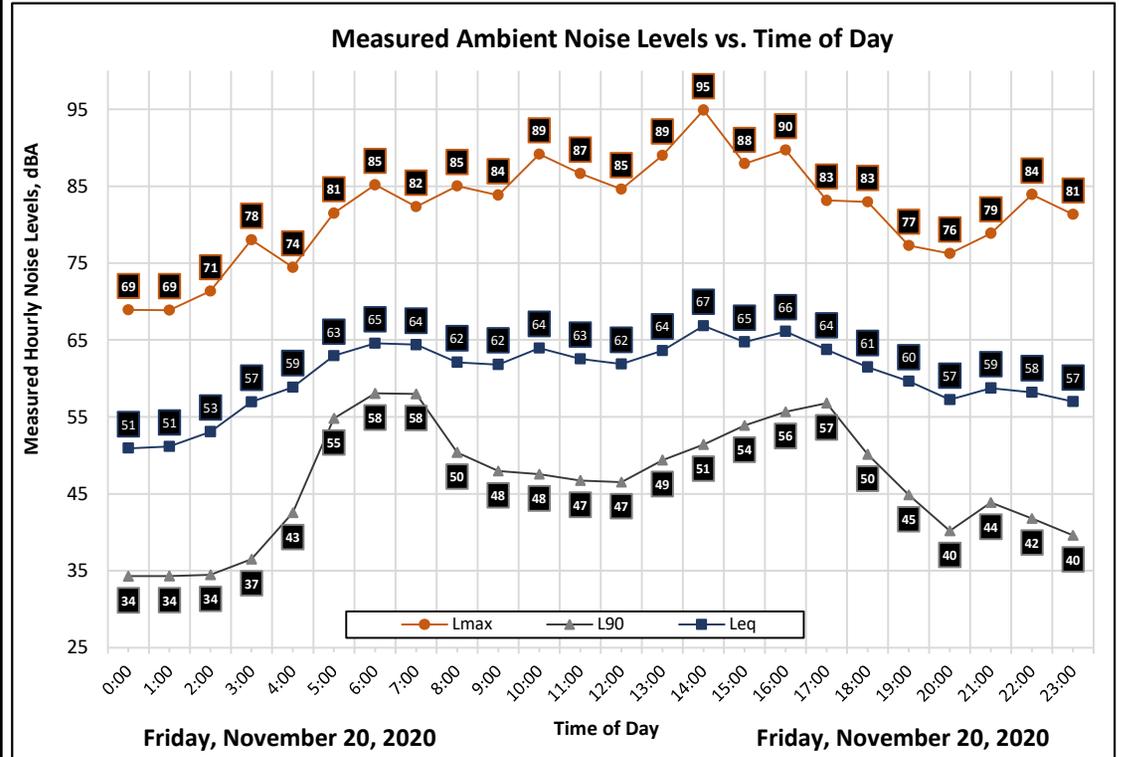
Project: City of Manteca General Plan

Meter: LDL 820-1

Location: French Camp Road

Calibrator: CAL200

Coordinates: 37.8472890°, -121.1864761°



Appendix B4: Continuous Noise Monitoring Results

Date	Time	Measured Level, dBA			
		L _{eq}	L _{max}	L ₅₀	L ₉₀
Friday, November 20, 2020	0:00	73	89	67	57
Friday, November 20, 2020	1:00	73	91	65	54
Friday, November 20, 2020	2:00	73	86	67	57
Friday, November 20, 2020	3:00	75	86	70	61
Friday, November 20, 2020	4:00	77	87	74	66
Friday, November 20, 2020	5:00	78	89	77	72
Friday, November 20, 2020	6:00	79	87	78	73
Friday, November 20, 2020	7:00	79	89	78	73
Friday, November 20, 2020	8:00	79	91	78	73
Friday, November 20, 2020	9:00	78	86	77	71
Friday, November 20, 2020	10:00	78	88	77	72
Friday, November 20, 2020	11:00	78	86	77	72
Friday, November 20, 2020	12:00	78	92	77	73
Friday, November 20, 2020	13:00	79	93	78	73
Friday, November 20, 2020	14:00	78	97	77	73
Friday, November 20, 2020	15:00	79	98	78	74
Friday, November 20, 2020	16:00	78	88	77	73
Friday, November 20, 2020	17:00	77	86	77	72
Friday, November 20, 2020	18:00	77	92	76	71
Friday, November 20, 2020	19:00	77	90	75	68
Friday, November 20, 2020	20:00	75	87	73	65
Friday, November 20, 2020	21:00	74	87	71	62
Friday, November 20, 2020	22:00	74	87	71	62
Friday, November 20, 2020	23:00	74	95	69	61

Statistics	Leq	Lmax	L50	L90
Day Average	78	90	77	71
Night Average	76	89	71	62
Day Low	75	86	73	65
Day High	79	98	78	74
Night Low	73	86	65	54
Night High	79	95	78	73
Ldn	82	Day %		75
CNEL	82.5	Night %		25

Site: D

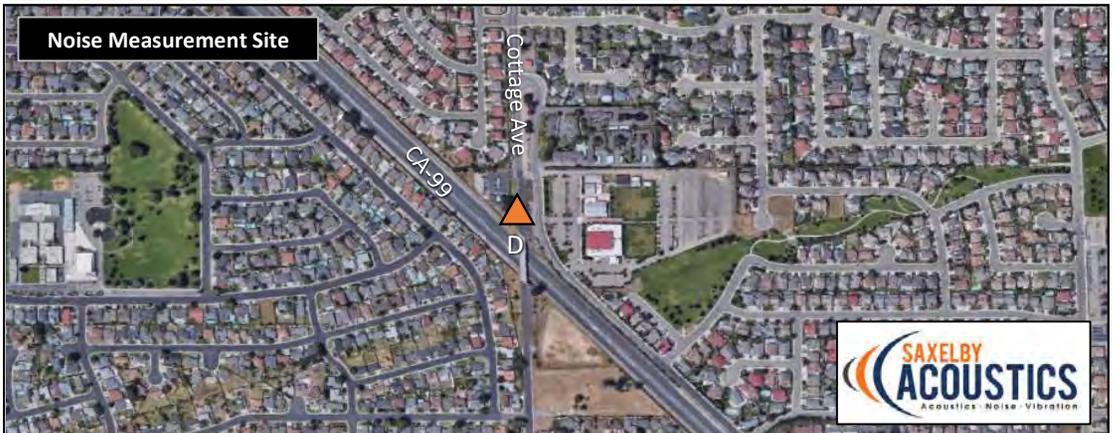
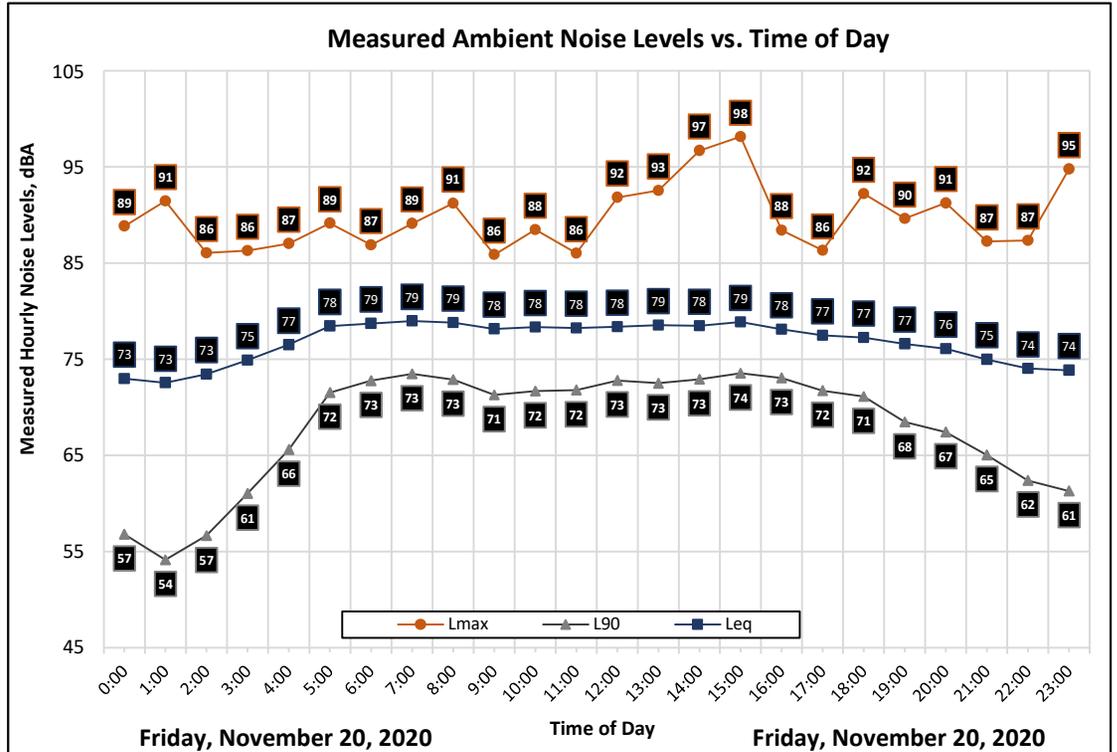
Project: City of Manteca General Plan

Meter: LDL 812-2

Location: CA-99

Calibrator: CAL200

Coordinates: 37.8075279°, -121.1987981°



Appendix B5: Continuous Noise Monitoring Results

Date	Time	Measured Level, dBA			
		L _{eq}	L _{max}	L ₅₀	L ₉₀
Tuesday, November 24, 2020	0:00	62	74	60	53
Tuesday, November 24, 2020	1:00	61	73	58	50
Tuesday, November 24, 2020	2:00	62	80	59	53
Tuesday, November 24, 2020	3:00	64	77	61	57
Tuesday, November 24, 2020	4:00	65	78	63	59
Tuesday, November 24, 2020	5:00	66	83	64	60
Tuesday, November 24, 2020	6:00	67	78	66	62
Tuesday, November 24, 2020	7:00	68	83	67	63
Tuesday, November 24, 2020	8:00	68	78	67	63
Tuesday, November 24, 2020	9:00	67	83	66	61
Tuesday, November 24, 2020	10:00	67	80	66	61
Tuesday, November 24, 2020	11:00	67	76	67	62
Tuesday, November 24, 2020	12:00	67	80	67	62
Tuesday, November 24, 2020	13:00	68	79	67	63
Tuesday, November 24, 2020	14:00	68	86	67	64
Tuesday, November 24, 2020	15:00	68	76	67	60
Tuesday, November 24, 2020	16:00	65	83	66	62
Tuesday, November 24, 2020	17:00	66	80	67	63
Tuesday, November 24, 2020	18:00	67	80	66	62
Tuesday, November 24, 2020	19:00	66	74	66	62
Tuesday, November 24, 2020	20:00	67	81	66	62
Tuesday, November 24, 2020	21:00	65	75	64	59
Tuesday, November 24, 2020	22:00	64	77	62	56
Tuesday, November 24, 2020	23:00	63	73	61	55

Statistics	Leq	Lmax	L50	L90
Day Average	67	80	66	62
Night Average	64	77	61	56
Day Low	65	74	63	59
Day High	68	86	67	64
Night Low	61	73	58	50
Night High	67	83	66	62
Ldn	71	Day %	78	
CNEL	71.2	Night %	22	

Site: E

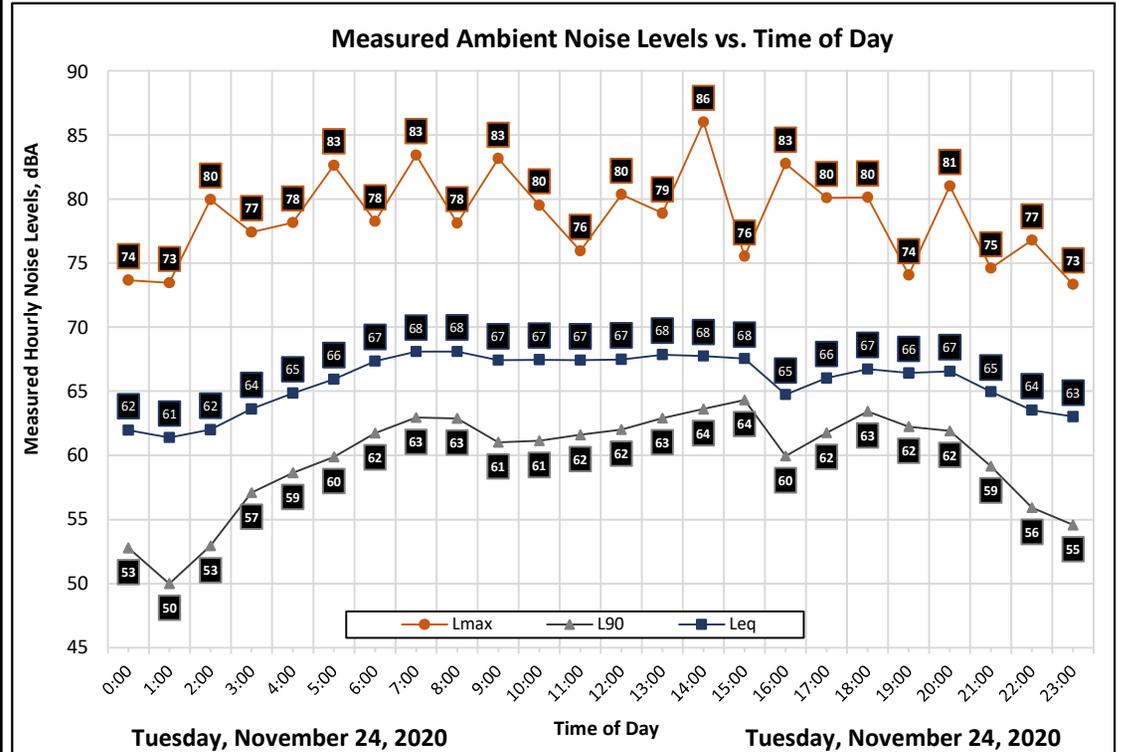
Project: City of Manteca General Plan

Meter: LDL 812-1

Location: South of CA-120

Calibrator: CAL200

Coordinates: 37.7830535°, -121.2650279°



Appendix B6: Continuous Noise Monitoring Results

Date	Time	Measured Level, dBA			
		L _{eq}	L _{max}	L ₅₀	L ₉₀
Tuesday, November 24, 2020	0:00	61	76	53	50
Tuesday, November 24, 2020	1:00	62	77	54	50
Tuesday, November 24, 2020	2:00	62	77	51	48
Tuesday, November 24, 2020	3:00	62	78	52	47
Tuesday, November 24, 2020	4:00	67	93	57	48
Tuesday, November 24, 2020	5:00	68	79	65	57
Tuesday, November 24, 2020	6:00	68	80	64	56
Tuesday, November 24, 2020	7:00	68	78	64	56
Tuesday, November 24, 2020	8:00	67	79	63	55
Tuesday, November 24, 2020	9:00	66	78	60	48
Tuesday, November 24, 2020	10:00	67	85	62	46
Tuesday, November 24, 2020	11:00	66	88	60	44
Tuesday, November 24, 2020	12:00	67	79	62	46
Tuesday, November 24, 2020	13:00	67	78	63	48
Tuesday, November 24, 2020	14:00	68	80	65	50
Tuesday, November 24, 2020	15:00	69	85	68	54
Tuesday, November 24, 2020	16:00	69	80	67	55
Tuesday, November 24, 2020	17:00	69	90	66	56
Tuesday, November 24, 2020	18:00	68	84	64	53
Tuesday, November 24, 2020	19:00	67	77	62	51
Tuesday, November 24, 2020	20:00	65	78	61	51
Tuesday, November 24, 2020	21:00	64	79	55	48
Tuesday, November 24, 2020	22:00	64	77	57	51
Tuesday, November 24, 2020	23:00	64	77	57	51

Statistics	Leq	Lmax	L50	L90
Day Average	67	81	63	51
Night Average	65	79	57	51
Day Low	64	77	55	44
Day High	69	90	68	56
Night Low	61	76	51	47
Night High	68	93	65	57
Ldn	72	Day %		76
CNEL	71.8	Night %		24

Site: F

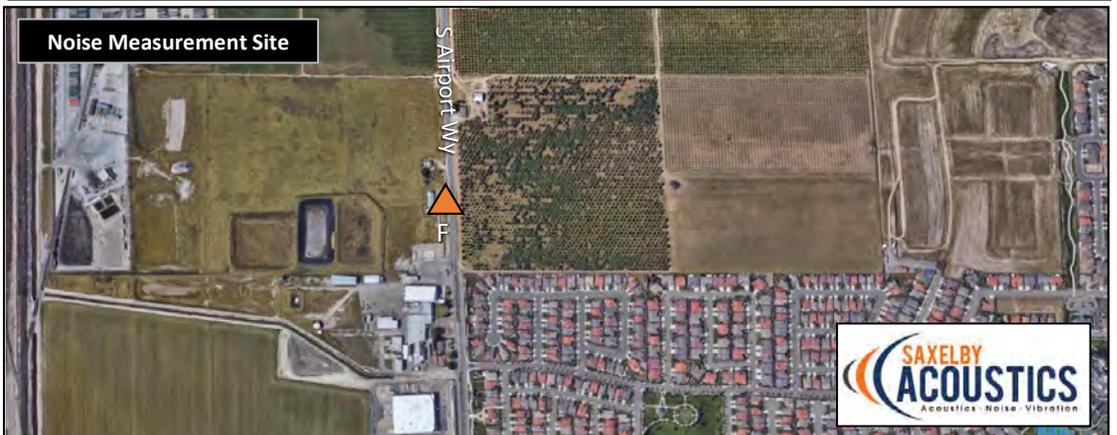
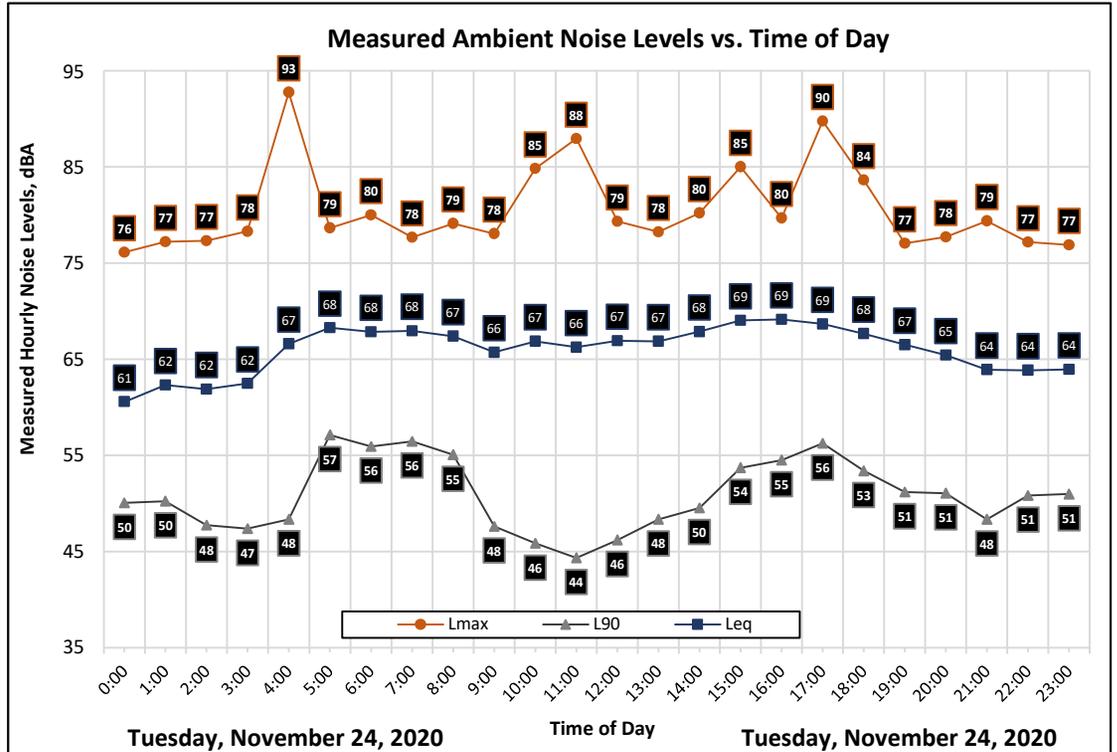
Project: City of Manteca General Plan

Meter: LDL 820-2

Location: S Airport Way Abandoned Buildings

Calibrator: CAL200

Coordinates: 37.8348662°, -121.2545324°



Appendix B7: Continuous Noise Monitoring Results

Date	Time	Measured Level, dBA			
		L _{eq}	L _{max}	L ₅₀	L ₉₀
Tuesday, November 24, 2020	0:00	57	75	48	46
Tuesday, November 24, 2020	1:00	57	74	48	45
Tuesday, November 24, 2020	2:00	58	76	51	47
Tuesday, November 24, 2020	3:00	61	74	55	48
Tuesday, November 24, 2020	4:00	63	80	58	50
Tuesday, November 24, 2020	5:00	64	78	60	53
Tuesday, November 24, 2020	6:00	65	75	63	55
Tuesday, November 24, 2020	7:00	66	84	64	57
Tuesday, November 24, 2020	8:00	66	79	64	54
Tuesday, November 24, 2020	9:00	65	77	63	51
Tuesday, November 24, 2020	10:00	65	77	64	52
Tuesday, November 24, 2020	11:00	66	80	64	52
Tuesday, November 24, 2020	12:00	65	76	63	51
Tuesday, November 24, 2020	13:00	65	80	64	54
Tuesday, November 24, 2020	14:00	67	89	65	54
Tuesday, November 24, 2020	15:00	67	77	66	56
Tuesday, November 24, 2020	16:00	67	86	66	58
Tuesday, November 24, 2020	17:00	67	82	66	58
Tuesday, November 24, 2020	18:00	66	77	65	56
Tuesday, November 24, 2020	19:00	64	79	62	53
Tuesday, November 24, 2020	20:00	63	77	60	51
Tuesday, November 24, 2020	21:00	61	74	56	47
Tuesday, November 24, 2020	22:00	61	77	55	47
Tuesday, November 24, 2020	23:00	61	79	53	47

Statistics	Leq	Lmax	L50	L90
Day Average	66	80	63	54
Night Average	62	76	55	49
Day Low	61	74	56	47
Day High	67	89	66	58
Night Low	57	74	48	45
Night High	65	80	63	55
Ldn	69	Day %		82
CNEL	69.0	Night %		18

Site: G

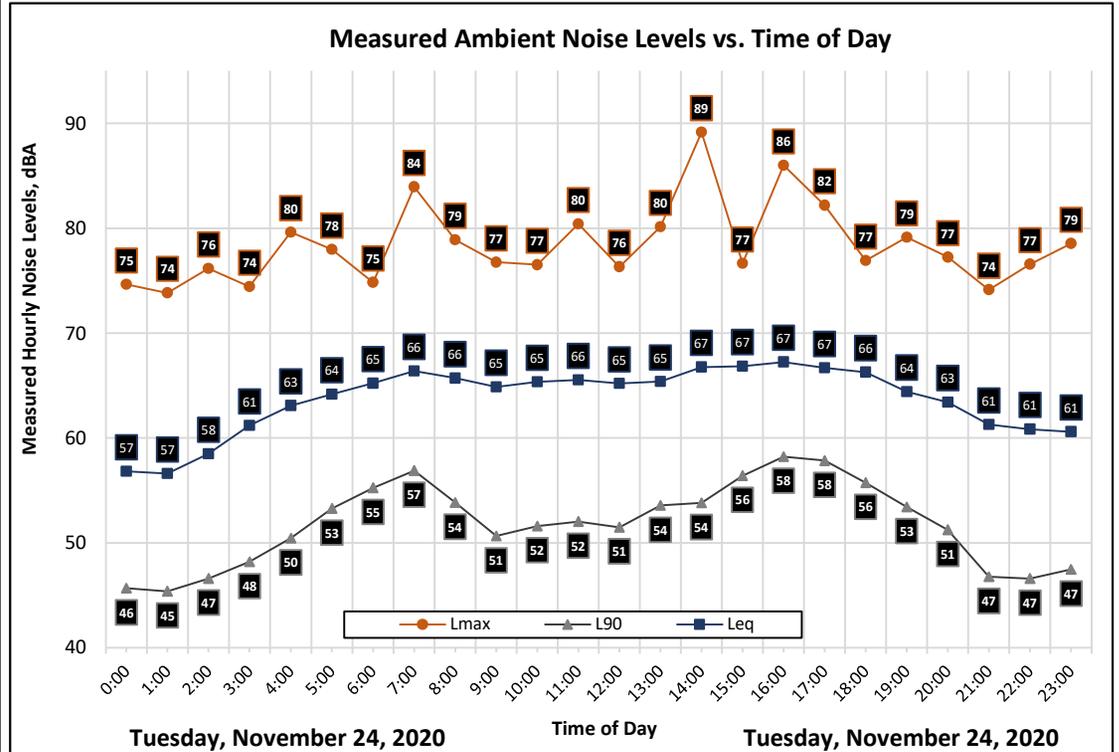
Project: City of Manteca General Plan

Meter: LDL 820-3

Location: S Airport Way

Calibrator: CAL200

Coordinates: 37.8093562°, -121.2531702°



Appendix B8: Continuous Noise Monitoring Results

Site: H

Project: City of Manteca General Plan

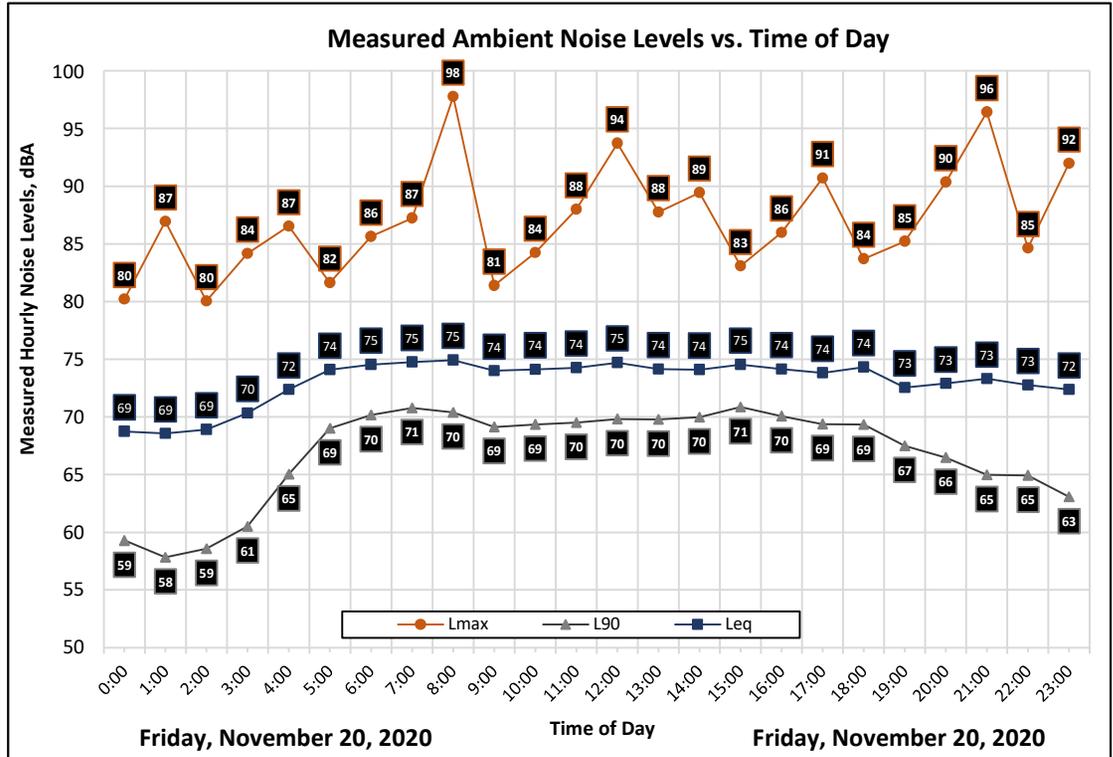
Meter: LDL 812-1

Location: CA-99 Access Road

Calibrator: CAL200

Coordinates: 37.8359015°, -121.2172259°

Date	Time	Measured Level, dBA			
		L _{eq}	L _{max}	L ₅₀	L ₉₀
Friday, November 20, 2020	0:00	69	80	65	59
Friday, November 20, 2020	1:00	69	87	65	58
Friday, November 20, 2020	2:00	69	80	65	59
Friday, November 20, 2020	3:00	70	84	68	61
Friday, November 20, 2020	4:00	72	87	71	65
Friday, November 20, 2020	5:00	74	82	73	69
Friday, November 20, 2020	6:00	75	86	74	70
Friday, November 20, 2020	7:00	75	87	74	71
Friday, November 20, 2020	8:00	75	98	74	70
Friday, November 20, 2020	9:00	74	81	73	69
Friday, November 20, 2020	10:00	74	84	73	69
Friday, November 20, 2020	11:00	74	88	74	70
Friday, November 20, 2020	12:00	75	94	74	70
Friday, November 20, 2020	13:00	74	88	74	70
Friday, November 20, 2020	14:00	74	89	73	70
Friday, November 20, 2020	15:00	75	83	74	71
Friday, November 20, 2020	16:00	74	86	73	70
Friday, November 20, 2020	17:00	74	91	73	69
Friday, November 20, 2020	18:00	74	84	74	69
Friday, November 20, 2020	19:00	73	85	72	67
Friday, November 20, 2020	20:00	73	90	71	66
Friday, November 20, 2020	21:00	73	96	71	65
Friday, November 20, 2020	22:00	73	85	71	65
Friday, November 20, 2020	23:00	72	92	70	63



Statistics	Leq	L _{max}	L ₅₀	L ₉₀
Day Average	74	88	73	69
Night Average	72	85	69	63
Day Low	73	81	71	65
Day High	75	98	74	71
Night Low	69	80	65	58
Night High	75	92	74	70
L _{dn}	78	Day %		76
CNEL	78.6	Night %		24

Appendix B9: Continuous Noise Monitoring Results

Date	Time	Measured Level, dBA			
		L _{eq}	L _{max}	L ₅₀	L ₉₀
Tuesday, November 24, 2020	0:00	56	70	55	51
Tuesday, November 24, 2020	1:00	59	78	57	51
Tuesday, November 24, 2020	2:00	61	75	59	56
Tuesday, November 24, 2020	3:00	61	71	59	56
Tuesday, November 24, 2020	4:00	62	82	60	57
Tuesday, November 24, 2020	5:00	63	81	62	59
Tuesday, November 24, 2020	6:00	67	90	63	61
Tuesday, November 24, 2020	7:00	66	80	64	62
Tuesday, November 24, 2020	8:00	63	80	60	57
Tuesday, November 24, 2020	9:00	61	77	58	55
Tuesday, November 24, 2020	10:00	63	82	59	54
Tuesday, November 24, 2020	11:00	62	81	59	53
Tuesday, November 24, 2020	12:00	63	82	59	55
Tuesday, November 24, 2020	13:00	63	81	60	55
Tuesday, November 24, 2020	14:00	64	85	61	56
Tuesday, November 24, 2020	15:00	65	84	63	60
Tuesday, November 24, 2020	16:00	67	86	65	62
Tuesday, November 24, 2020	17:00	69	92	65	62
Tuesday, November 24, 2020	18:00	65	80	63	61
Tuesday, November 24, 2020	19:00	66	89	64	60
Tuesday, November 24, 2020	20:00	64	82	63	60
Tuesday, November 24, 2020	21:00	63	72	62	59
Tuesday, November 24, 2020	22:00	61	76	59	56
Tuesday, November 24, 2020	23:00	61	77	60	56

Statistics	Leq	Lmax	L50	L90
Day Average	65	82	62	58
Night Average	62	78	59	56
Day Low	61	72	58	53
Day High	69	92	65	62
Night Low	56	70	55	51
Night High	67	90	63	61
Ldn	69	Day %	78	
CNEL	69.1	Night %	22	

Site: I

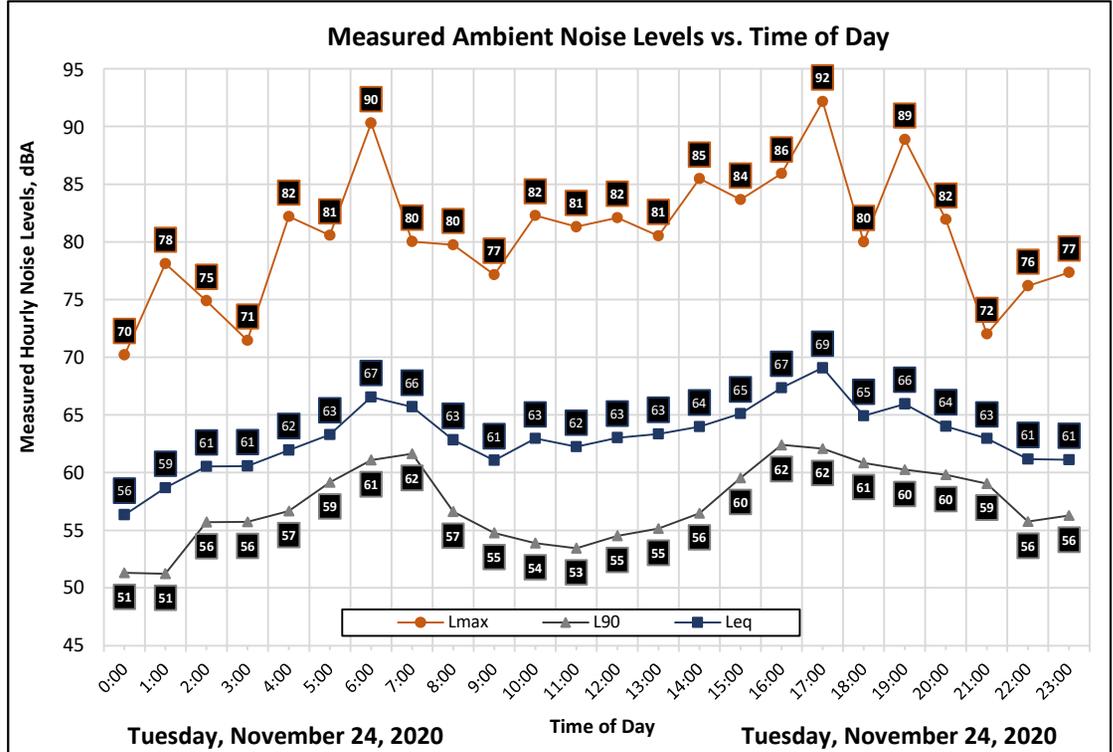
Project: City of Manteca General Plan

Meter: LDL 820-1

Location: Northgate Dr and North Main St

Calibrator: CAL200

Coordinates: 37.8192246°, -121.2169698°



Appendix B10: Continuous Noise Monitoring Results

Date	Time	Measured Level, dBA			
		L _{eq}	L _{max}	L ₅₀	L ₉₀
Tuesday, November 24, 2020	0:00	60	79	47	42
Tuesday, November 24, 2020	1:00	61	85	49	45
Tuesday, November 24, 2020	2:00	61	79	47	44
Tuesday, November 24, 2020	3:00	64	81	56	44
Tuesday, November 24, 2020	4:00	66	79	61	47
Tuesday, November 24, 2020	5:00	67	84	63	52
Tuesday, November 24, 2020	6:00	68	79	66	55
Tuesday, November 24, 2020	7:00	69	90	66	57
Tuesday, November 24, 2020	8:00	69	84	66	55
Tuesday, November 24, 2020	9:00	68	82	65	52
Tuesday, November 24, 2020	10:00	68	84	66	55
Tuesday, November 24, 2020	11:00	69	82	66	54
Tuesday, November 24, 2020	12:00	69	89	66	55
Tuesday, November 24, 2020	13:00	69	86	67	55
Tuesday, November 24, 2020	14:00	69	87	67	54
Tuesday, November 24, 2020	15:00	69	88	67	56
Tuesday, November 24, 2020	16:00	69	82	68	59
Tuesday, November 24, 2020	17:00	69	87	67	58
Tuesday, November 24, 2020	18:00	68	84	66	56
Tuesday, November 24, 2020	19:00	68	88	65	53
Tuesday, November 24, 2020	20:00	66	85	60	49
Tuesday, November 24, 2020	21:00	63	78	55	46
Tuesday, November 24, 2020	22:00	63	85	52	44
Tuesday, November 24, 2020	23:00	61	77	51	45

Statistics	Leq	Lmax	L50	L90
Day Average	68	85	65	54
Night Average	65	81	55	46
Day Low	63	78	55	46
Day High	69	90	68	59
Night Low	60	77	47	42
Night High	68	85	66	55
Ldn	71	Day %		81
CNEL	71.7	Night %		19

Site: J

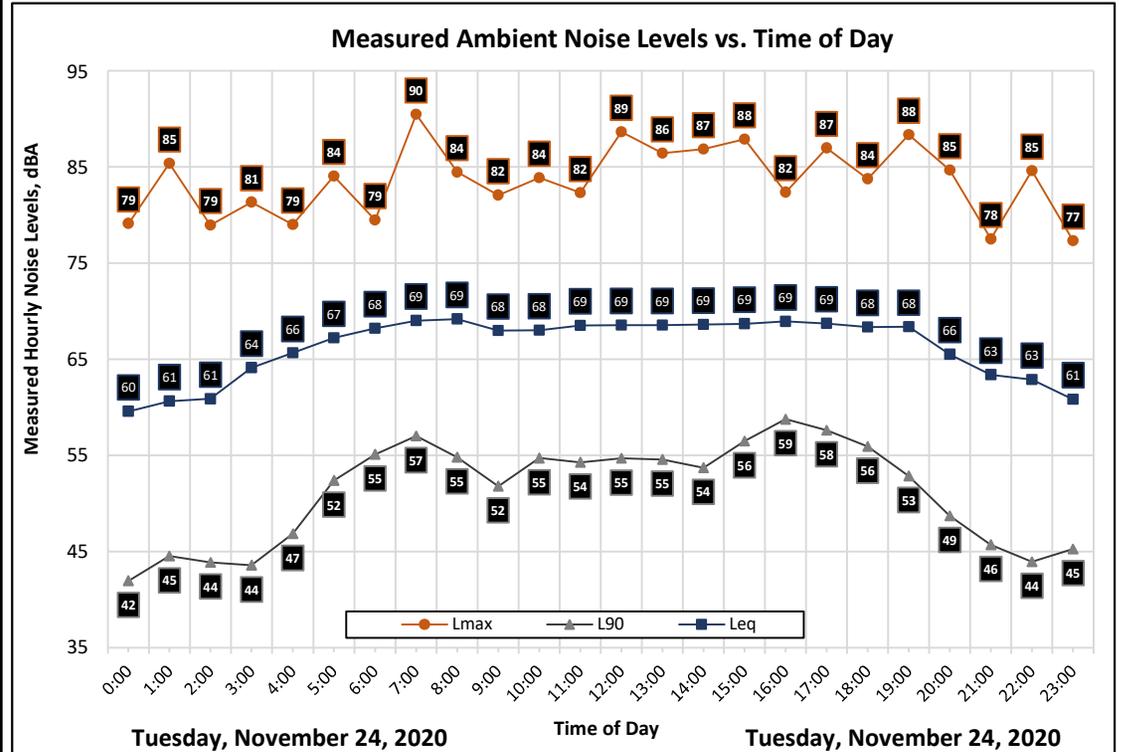
Project: City of Manteca General Plan

Meter: LDL 812-2

Location: CA-120 Global Carrier

Calibrator: CAL200

Coordinates: 37.7973407°, -121.1719831°



Appendix B11 : Short Term Noise Monitoring Results

Site: ST-1

Project: City of Manteca General Plan

Meter: LDL 831-2

Location: Spreckles Ave (Manteca BMX Park)

Calibrator: CAL200

Coordinates: 37.788014°, -121.1988031°

Start: 2020-11-23 13:05:24

Stop: 2020-11-23 13:15:24

SLM: Model 831

Serial: 3141

Measurement Results, dBA

Duration: 0:10

L_{eq}: 64

L_{max}: 77

L_{min}: 52

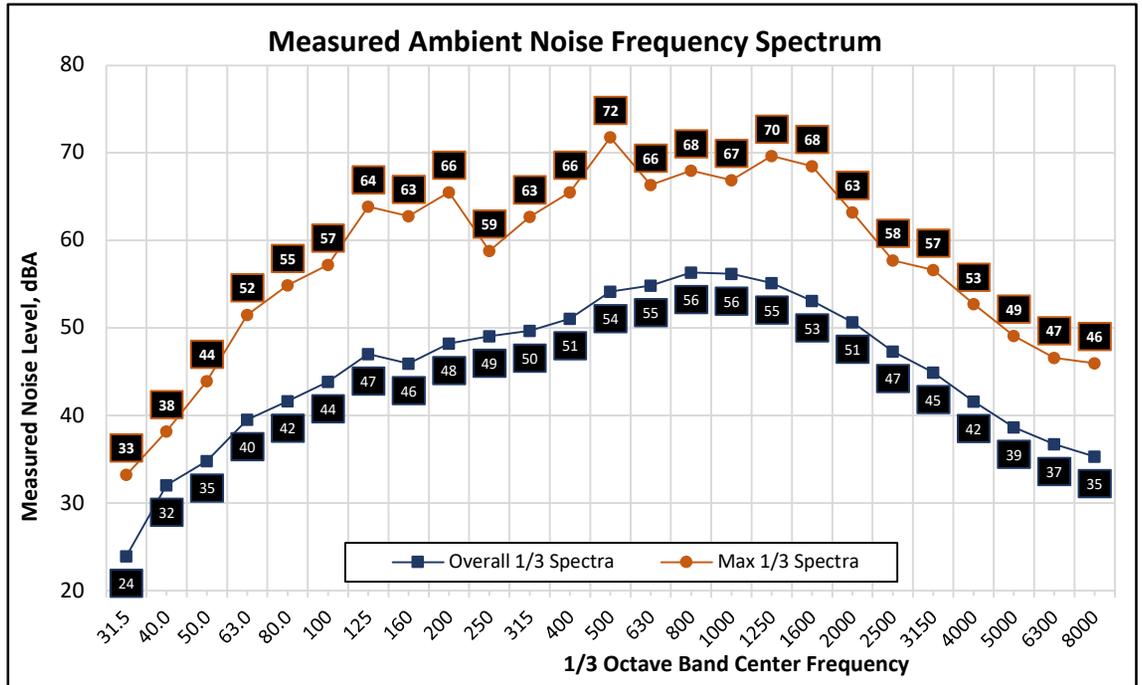
L₅₀: 63

L₉₀: 57

Notes

Main source is Spreckles Ave. Train horn and crossing bells cause

L_{max}



Appendix B12 : Short Term Noise Monitoring Results

Site: ST-2

Project: City of Manteca General Plan

Meter: LDL 831-2

Location: West of CA-99

Calibrator: CAL200

Coordinates: 37.8520586°, -121.2187883°

Start: 2020-11-23 10:53:52

Stop: 2020-11-23 11:03:52

SLM: Model 831

Serial: 3141

Measurement Results, dBA

Duration: 0:10

L_{eq} : 76

L_{max} : 84

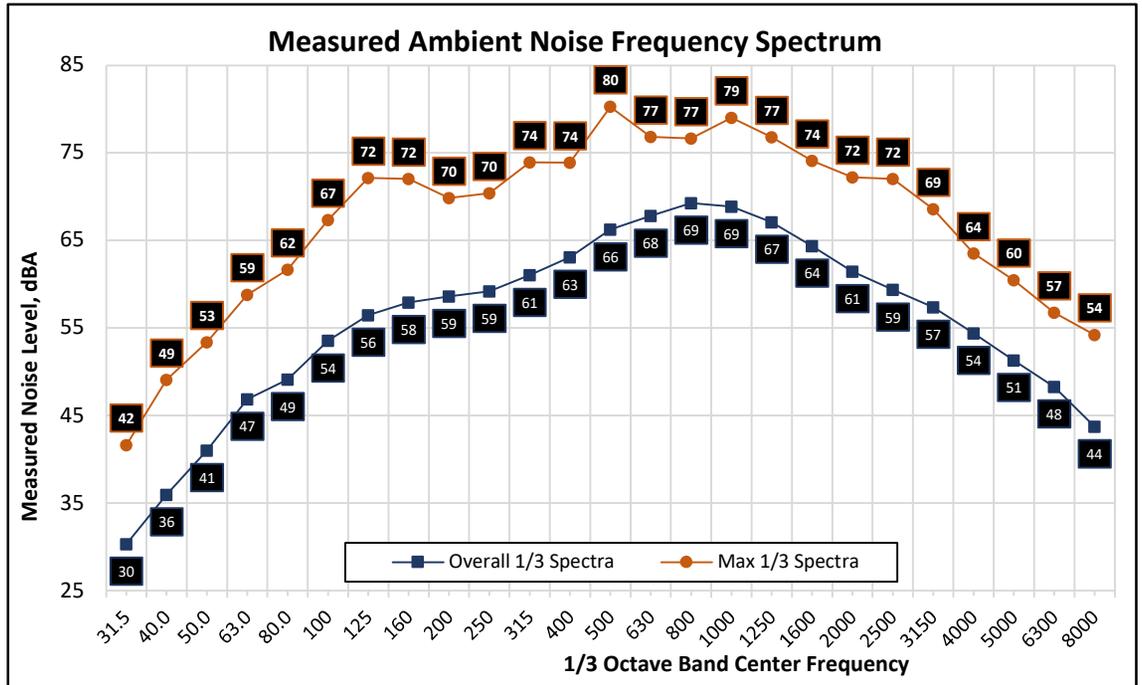
L_{min} : 64

L_{50} : 75

L_{90} : 70

Notes

Main source is 99, some Frontage Rd traffic. L_{max} caused by cars passing on Frontage Rd.



Appendix B13 : Short Term Noise Monitoring Results

Site: ST-3

Project: City of Manteca General Plan

Meter: LDL 831-2

Location: Raymus Village Park

Calibrator: CAL200

Coordinates: 37.8309402°, -121.2147479°

Start: 2020-11-23 11:24:43

Stop: 2020-11-23 11:34:43

SLM: Model 831

Serial: 3141

Measurement Results, dBA

Duration: 0:10

L_{eq} : 57

L_{max} : 63

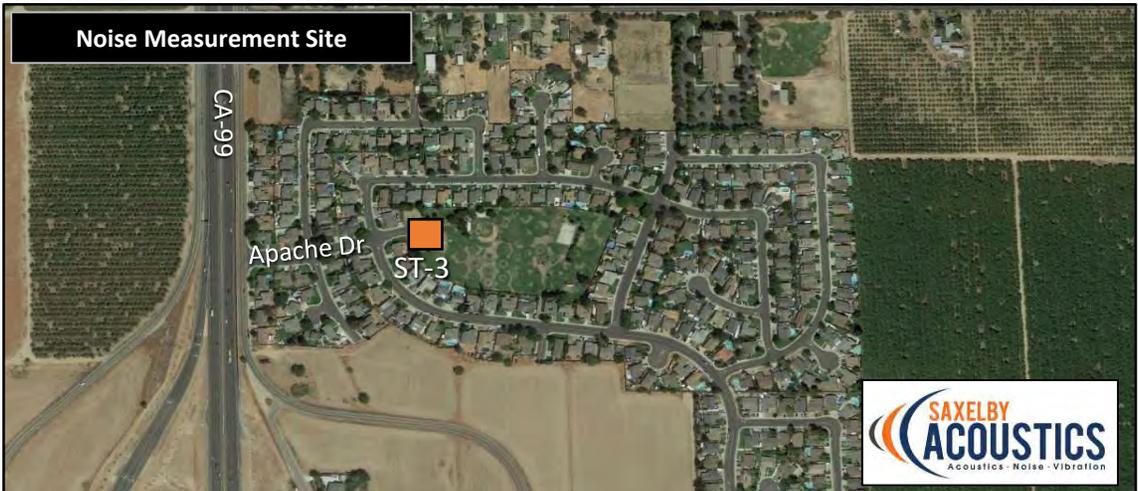
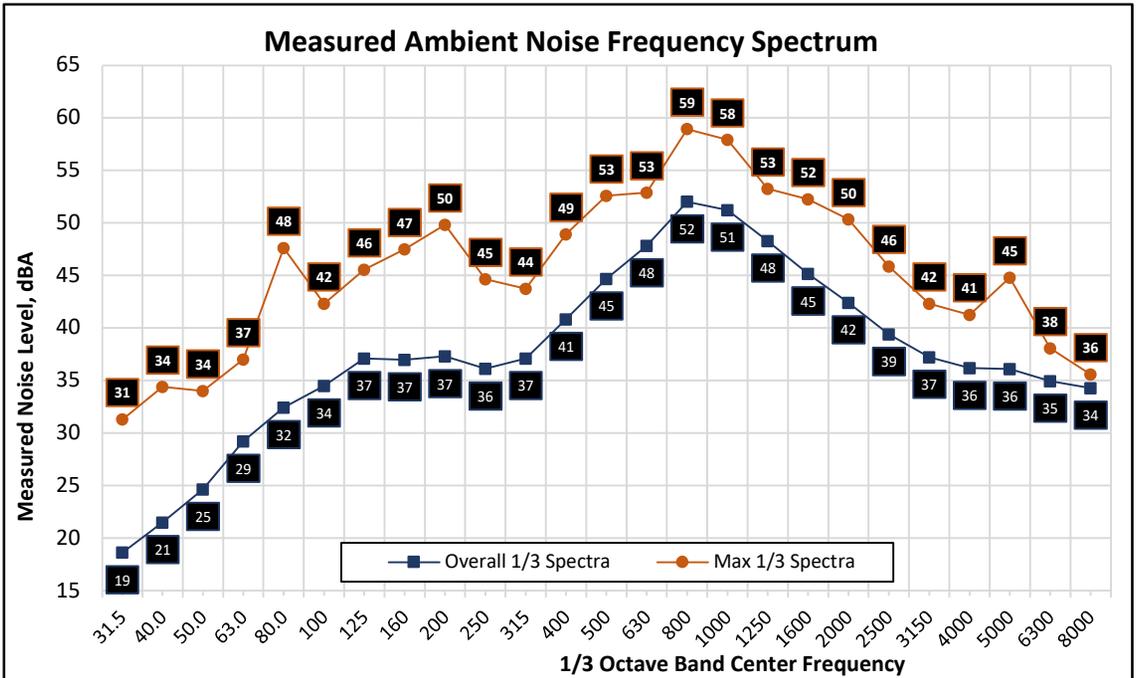
L_{min} : 53

L_{50} : 57

L_{90} : 55

Notes

Primary noise source is Highway 99.



Appendix B14 : Short Term Noise Monitoring Results

Site: ST-4

Project: City of Manteca General Plan

Meter: LDL 831-2

Location: S Airport Wy North

Calibrator: CAL200

Coordinates: 37.842955°, -121.254908°

Start: 2020-11-23 15:32:14

Stop: 2020-11-23 15:42:14

SLM: Model 831

Serial: 3141

Measurement Results, dBA

Duration: 0:10

L_{eq} : 74

L_{max} : 87

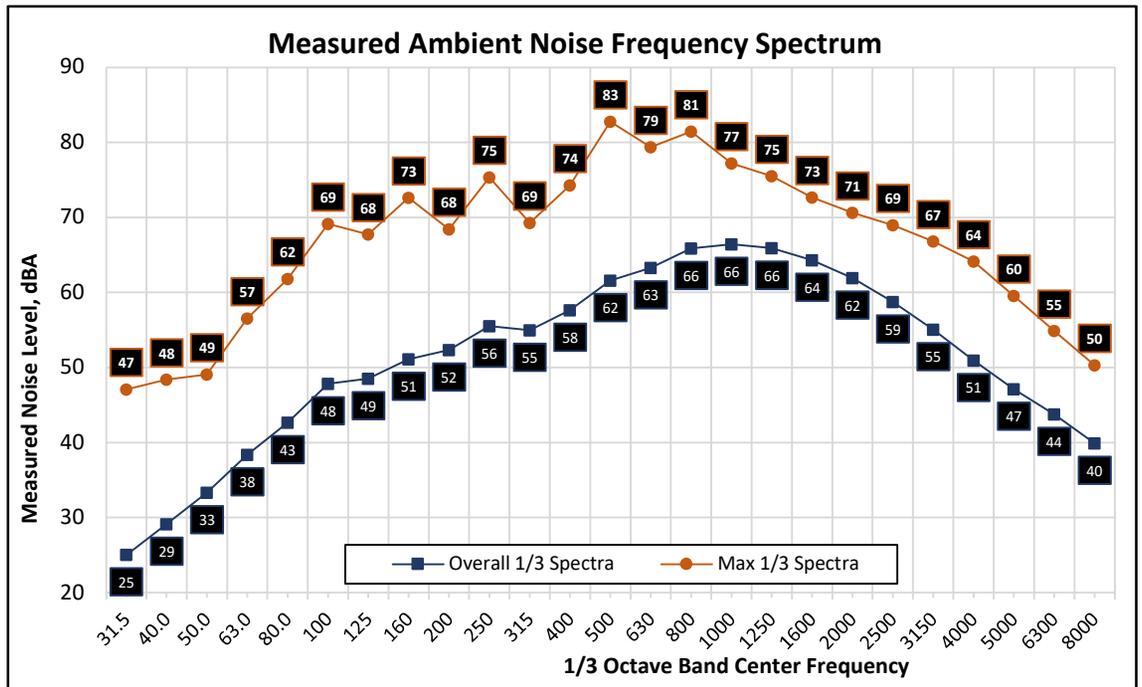
L_{min} : 46

L_{50} : 71

L_{90} : 55

Notes

Primary noise source is South Airport Way. Some noise audible from truck depot to the west.



Appendix B15 : Short Term Noise Monitoring Results

Site: ST-5

Project: City of Manteca General Plan

Meter: LDL 831-2

Location: Airport Wy and Almondwood Dr

Calibrator: CAL200

Coordinates: 37.7467274°, -121.2518582°

Start: 2020-11-23 13:32:24

Stop: 2020-11-23 13:42:24

SLM: Model 831

Serial: 3141

Measurement Results, dBA

Duration: 0:10

L_{eq} : 65

L_{max} : 80

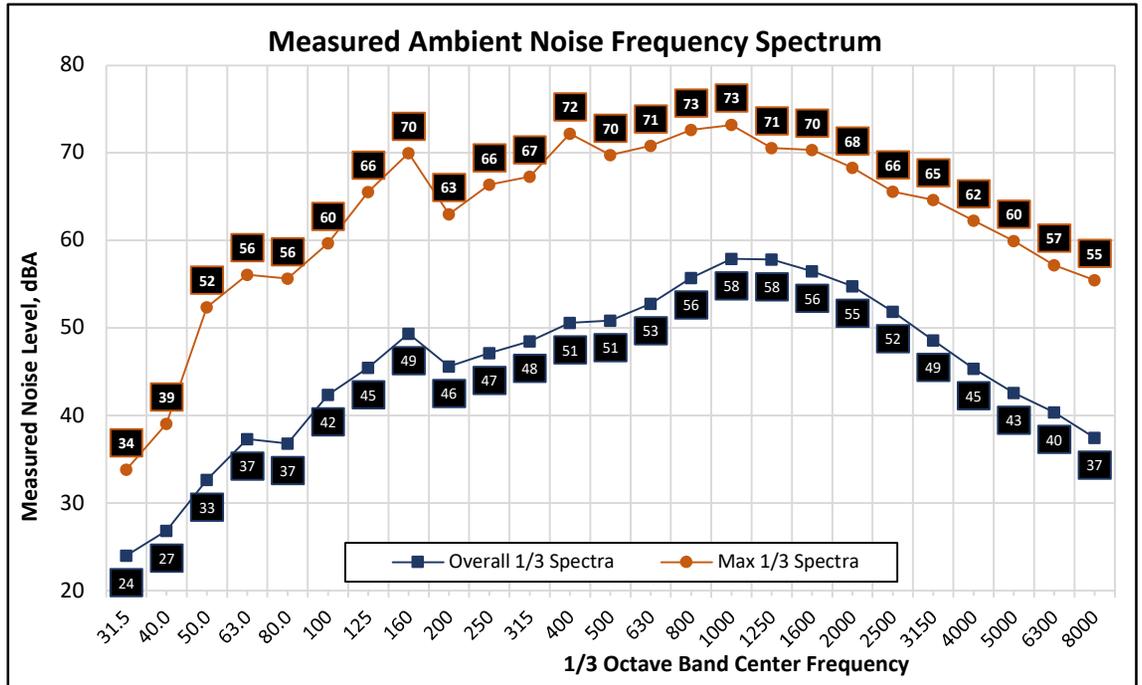
L_{min} : 39

L_{50} : 55

L_{90} : 44

Notes

Primary source is South Airport Way.



Appendix B16 : Short Term Noise Monitoring Results

Site: ST-6

Project: City of Manteca General Plan

Meter: LDL 831-2

Location: Palm Ave and Austin Rd

Calibrator: CAL200

Coordinates: 37.7640822°, -121.1789709°

Start: 2020-11-25 10:05:50

Stop: 2020-11-25 10:15:50

SLM: Model 831

Serial: 3141

Measurement Results, dBA

Duration: 0:10

L_{eq}: 71

L_{max}: 85

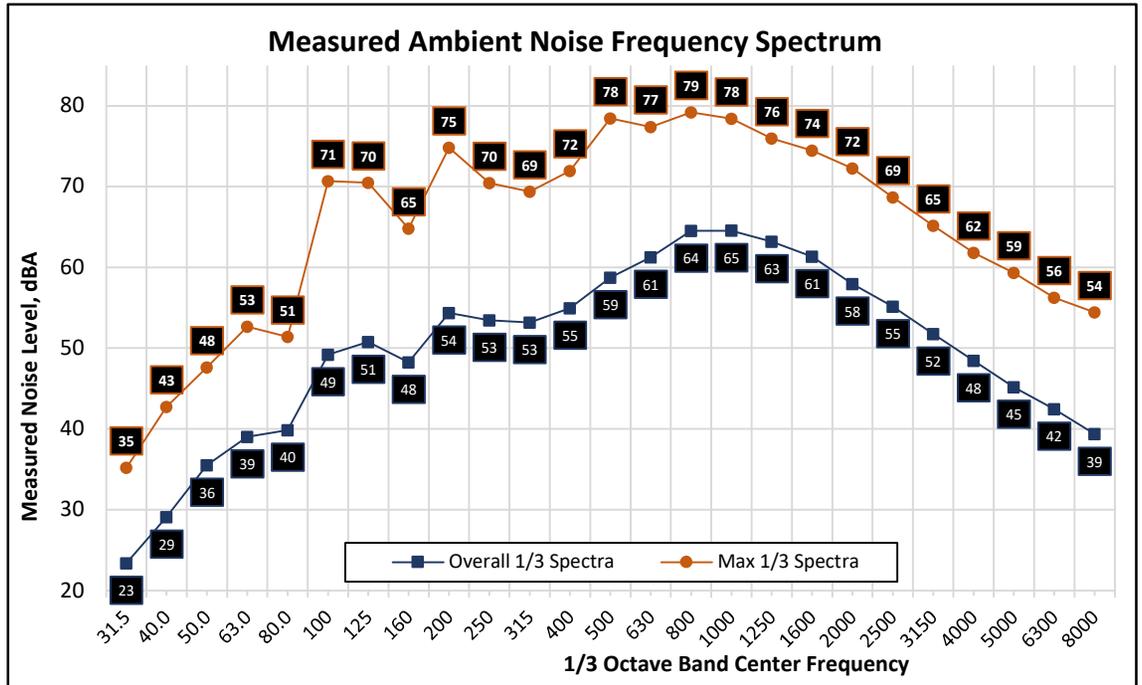
L_{min}: 50

L₅₀: 62

L₉₀: 53

Notes

Primary noise source is traffic on Austin Rd. Secondary noise source is traffic on Palm Ave. Train horn is audible, but not the main source.



Appendix B17 : Short Term Noise Monitoring Results

Site: ST-7

Project: City of Manteca General Plan

Meter: LDL 831-2

Location: South of Yosemite Ave

Calibrator: CAL200

Coordinates: 37.7947317°, -121.1843698°

Start: 2020-11-23 12:24:10

Stop: 2020-11-23 12:34:10

SLM: Model 831

Serial: 3141

Measurement Results, dBA

Duration: 0:10

L_{eq} : 57

L_{max} : 71

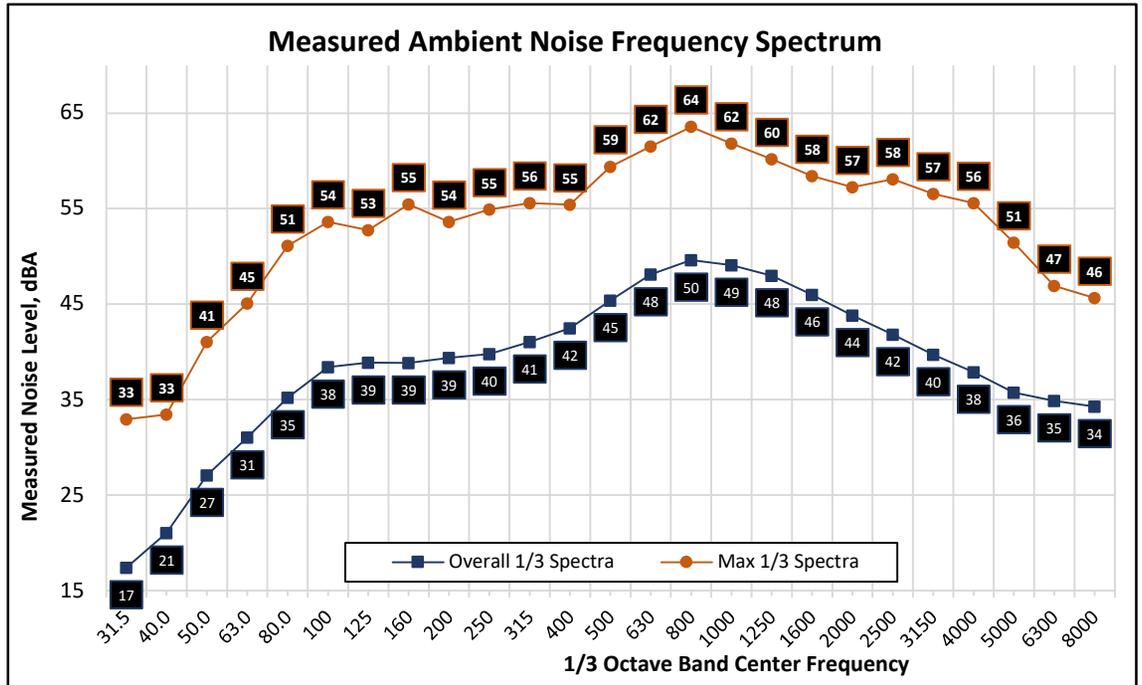
L_{min} : 50

L_{50} : 54

L_{90} : 52

Notes

Primary noise source is Highway 99. Secondary noise source is Highway 120, Yosemite Ave, and activity from adjacent industrial L_{max} caused by passing heavy truck on S Vasconcellos Ave.



Appendix C: Traffic Noise Calculation Inputs and Results



Appendix C-1

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Project #: 200702

Description Manteca General Plan Update - Existing



Segment	Segment	ADT	Day %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)	Contours (ft.) - No			Level, dBA
										Offset			
										60 dBA	65 dBA	70 dBA	
1	Airport Way north of Crom Street	14,290	76	24	2.0%	4.3%	45	80	-5	302	140	65	63.7
2	Airport Way north of Daisywood Drive	10,130	76	24	2.0%	20.6%	45	65	-5	447	208	96	67.6
3	Airport Way north of Daniels Street	17,970	76	24	2.0%	3.5%	45	65	-5	332	154	72	65.6
4	Airport Way south of Northgate Drive	10,800	76	24	2.0%	9.0%	45	55	-5	320	148	69	66.5
5	Airport Way south of SR 120 EB ramps	17,840	76	24	2.0%	0.0%	40	70	-5	199	93	43	61.8
6	Atherton Drive east of Main Street	4,730	78	22	2.0%	0.4%	45	80	-5	102	47	22	56.6
7	Atherton Drive east of Union Road	7,000	78	22	2.0%	0.9%	45	60	-5	138	64	30	60.4
8	Austin Road south of Moffat Boulevard	4,660	80	20	2.0%	8.8%	30	70	0	135	63	29	64.3
9	Austin Road south of Yosemite Avenue	4,180	80	20	2.0%	10.5%	25	50	0	121	56	26	65.8
10	Cottage Avenue south of Aldwina Lane	11,380	78	22	2.0%	0.3%	30	40	0	92	43	20	65.4
11	Daniels Street west of Airport Way	18,340	80	20	2.0%	0.9%	35	100	0	169	78	36	63.4
12	French Camp Rd east of SR 99	6,810	82	18	2.0%	10.9%	55	175	0	277	129	60	63.0
13	French Camp Rd west of SR 99	10,780	82	18	2.0%	15.4%	55	60	0	431	200	93	72.8
14	Lathrop Avenue west of Airport Way	14,720	79	21	2.0%	7.2%	45	50	0	341	158	73	72.5
15	Lathrop Avenue west of Madison Grove Drive	18,020	79	21	2.0%	10.3%	45	55	-5	448	208	97	68.7
16	Lathrop Avenue west of Sherwood Avenue	21,100	79	21	2.0%	8.6%	45	55	-5	462	215	100	68.9
17	Louise Avenue east of Marguerite Avenue	13,410	79	21	2.0%	0.8%	40	45	-5	172	80	37	63.7
18	Louise Avenue east of Tulip Place	13,350	79	21	2.0%	0.2%	40	40	-5	159	74	34	64.0
19	Louise Avenue west of Airport Way	12,730	79	21	2.0%	4.6%	40	50	0	232	108	50	70.0
20	Louise Avenue west of Austin Road	4,090	79	21	2.0%	0.5%	40	60	0	75	35	16	61.4
21	Louise Avenue west of Cottage Avenue	12,400	79	21	2.0%	0.3%	40	60	-5	154	71	33	61.1
22	Louise Avenue west of Yvonne Avenue	17,430	79	21	2.0%	0.7%	40	50	-5	202	94	43	64.1
23	Lovelace Rd east of Union Rd	0	82	18	2.0%	0.0%	45	100	0	0	0	0	-17.4
24	Lovelace Road east of Airport Way	4,080	82	18	2.0%	1.2%	45	55	0	92	43	20	63.3
25	Lovelace Road west of SR 99	0	82	18	2.0%	0.0%	45	100	0	0	0	0	-17.4
26	Main Street (Manteca Rd) north of Sedan Avenue	2,580	78	22	2.0%	15.9%	55	50	0	184	85	40	68.5
27	Main Street north of Northgate Drive	12,100	78	22	2.0%	2.6%	40	70	-5	196	91	42	61.7
28	Main Street north of SR 120 WB ramps	27,580	78	22	2.0%	8.2%	35	65	0	428	199	92	72.3
29	Main Street south of Alameda Street	16,880	80	20	2.0%	2.2%	40	40	0	226	105	49	71.3
30	Main Street south of Quintal Road	18,870	78	22	2.0%	1.5%	35	60	-5	195	91	42	62.7
31	Moffat Boulevard east of Powers Avenue	6,360	80	20	2.0%	2.2%	45	80	0	140	65	30	63.6
32	Moffat Boulevard north of Woodward Avenue	5,960	80	20	2.0%	13.1%	45	230	-5	233	108	50	55.1
33	Raymus Parkway east of Austin Road	0	80	20	2.0%	0.0%	45	100	0	0	0	0	-7.2
34	Raymus Parkway east of Main Street	0	80	20	2.0%	0.0%	45	100	0	0	0	0	-7.2
35	Raymus Parkway east of Union Road	0	80	20	2.0%	0.0%	45	100	0	0	0	0	-7.2
36	Raymus Parkway west of Airport Way	0	80	20	2.0%	0.0%	45	100	0	0	0	0	-7.2

Appendix C-2

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Project #: 200702

Description Manteca General Plan Update - Existing



Segment	Segment	ADT	Day %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)	Contours (ft.) - No			Level, dBA
										Offset			
										60 dBA	65 dBA	70 dBA	
37	Roth Rd east of Airport Way	0	82	18	2.0%	0.0%	45	100	0	0	0	0	-7.4
38	Roth Rd west of Airport Way	8,620	78	22	2.0%	20.0%	40	50	-5	345	160	74	67.6
39	Spreckels Avenue south of Phoenix Drive	16,070	82	18	2.0%	10.7%	40	300	0	352	163	76	61.0
40	SR 120 EB between McKinley Ave and Airport Way	38,870	78	22	2.0%	9.0%	65	190	-5	1109	515	239	66.5
41	SR 120 total between McKinley Ave and Airport Way	82,200	78	22	2.0%	8.6%	65	190	-5	1808	839	390	69.7
42	SR 120 WB between McKinley Ave and Airport Way	43,330	78	22	2.0%	8.3%	65	300	-5	1169	543	252	63.9
43	SR 99 NB north of Lovelace Rd	39,870	76	24	2.0%	10.6%	65	100	0	1230	571	265	76.3
44	SR 99 NB north of Yosemite Ave	38,350	76	24	2.0%	10.4%	65	92	-5	1192	553	257	71.7
45	SR 99 SB north of Lovelace Rd	40,090	76	24	2.0%	10.7%	65	115	0	1240	575	267	75.5
46	SR 99 SB north of Yosemite Ave	40,390	76	24	2.0%	10.3%	65	65	-5	1233	572	266	74.2
47	SR 99 total north of Lovelace Rd	79,960	76	24	2.0%	10.7%	65	100	0	1960	910	422	79.4
48	SR 99 total north of Yosemite Ave	78,740	76	24	2.0%	10.4%	65	65	-5	1924	893	415	77.1
49	Union Rd north of Lovelace Rd	5,090	82	18	2.0%	0.0%	45	55	0	94	44	20	63.5
50	Union Road north of Crom Street	17,920	82	18	2.0%	0.2%	40	50	-5	180	84	39	63.4
51	Union Road north of Del Webb Boulevard	7,360	82	18	2.0%	0.7%	45	55	-5	129	60	28	60.6
52	Union Road south of Mission Ridge Drive	20,430	82	18	2.0%	0.3%	40	75	0	201	93	43	66.4
53	Union Road south of Northgate Drive	15,510	82	18	2.0%	0.2%	40	40	-5	164	76	35	64.2
54	Union Road south of SR 120 EB ramps	15,240	82	18	2.0%	0.7%	40	75	-5	173	80	37	60.5
55	Union Road south of Woodward Avenue	4,810	82	18	2.0%	0.4%	55	75	0	135	63	29	63.8
56	Van Ryn Avenue north of Atherton Drive	9,170	81	19	2.0%	0.2%	35	50	0	94	44	20	64.1
57	Woodward Avenue west of Airport Way	4,250	82	18	2.0%	0.0%	35	70	0	53	25	11	58.2
58	Woodward Avenue west of Laurie Avenue	5,950	82	18	2.0%	0.5%	45	70	0	110	51	24	63.0
59	Woodward Avenue west of Moffat Boulevard	7,890	82	18	2.0%	0.3%	45	50	0	130	60	28	66.2
60	Yosemite Avenue east of Cottage Avenue	26,010	81	19	2.0%	6.0%	45	85	0	449	208	97	70.8
61	Yosemite Avenue west of Airport Way	13,980	81	19	2.0%	7.0%	45	75	0	312	145	67	69.3
62	Yosemite Avenue west of Almond Avenue	14,090	81	19	2.0%	1.4%	25	50	0	104	48	22	64.8
63	Yosemite Avenue west of El Rancho Drive	27,090	81	19	2.0%	7.6%	35	50	-5	384	178	83	68.3
64	Yosemite Avenue west of Pacific Road	20,650	81	19	2.0%	1.5%	45	300	-5	284	132	61	54.7
65	Yosemite Avenue west of Washington Avenue	16,080	81	19	2.0%	0.9%	25	45	0	101	47	22	65.3

Appendix C-3

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Project #: 200702

Description Manteca General Plan Update - Existing + Approved



Segment	Segment	ADT	Day Night		% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)	Contours (ft.) - No Offset			Level, dBA
			%	%						60	65	70	
										dBA	dBA	dBA	
1	Airport Way north of Crom Street	20,300	76	24	2.0%	11.2%	45	80	-5	533	247	115	67.4
2	Airport Way north of Daisywood Drive	16,780	76	24	2.0%	30.1%	45	65	-5	766	355	165	71.1
3	Airport Way north of Daniels Street	33,830	76	24	2.0%	5.2%	45	65	-5	565	262	122	69.1
4	Airport Way south of Northgate Drive	17,810	76	24	2.0%	15.3%	45	55	-5	562	261	121	70.1
5	Airport Way south of SR 120 EB ramps	35,310	76	24	2.0%	0.9%	40	70	-5	352	163	76	65.5
6	Atherton Drive east of Main Street	6,420	78	22	2.0%	0.6%	45	80	-5	128	59	28	58.1
7	Atherton Drive east of Union Road	9,470	78	22	2.0%	1.5%	45	60	-5	179	83	39	62.1
8	Austin Road south of Moffat Boulevard	8,670	80	20	2.0%	4.7%	30	70	0	150	70	32	65.0
9	Austin Road south of Yosemite Avenue	4,480	80	20	2.0%	9.8%	25	50	0	122	57	26	65.8
10	Cottage Avenue south of Aldwina Lane	11,380	78	22	2.0%	0.5%	30	40	0	99	46	21	65.9
11	Daniels Street west of Airport Way	44,340	80	20	2.0%	1.6%	35	100	0	336	156	72	67.9
12	French Camp Rd east of SR 99	6,970	82	18	2.0%	11.2%	55	175	0	285	132	61	63.2
13	French Camp Rd west of SR 99	11,630	82	18	2.0%	14.3%	55	60	0	440	204	95	73.0
14	Lathrop Avenue west of Airport Way	16,660	79	21	2.0%	8.3%	45	50	0	390	181	84	73.4
15	Lathrop Avenue west of Madison Grove Drive	19,860	79	21	2.0%	13.1%	45	55	-5	531	246	114	69.8
16	Lathrop Avenue west of Sherwood Avenue	22,560	79	21	2.0%	10.5%	45	55	-5	524	243	113	69.7
17	Louise Avenue east of Marguerite Avenue	16,610	79	21	2.0%	2.2%	40	45	-5	229	106	49	65.6
18	Louise Avenue east of Tulip Place	13,490	79	21	2.0%	0.4%	40	40	-5	165	77	36	64.2
19	Louise Avenue west of Airport Way	15,220	79	21	2.0%	7.5%	40	50	0	311	144	67	71.9
20	Louise Avenue west of Austin Road	4,230	79	21	2.0%	0.9%	40	60	0	81	37	17	61.9
21	Louise Avenue west of Cottage Avenue	12,400	79	21	2.0%	0.5%	40	60	-5	157	73	34	61.3
22	Louise Avenue west of Yvonne Avenue	20,510	79	21	2.0%	2.0%	40	50	-5	257	119	55	65.7
23	Lovelace Rd east of Union Rd	0	82	18	2.0%	0.0%	45	100	0	0	0	0	-17.4
24	Lovelace Road east of Airport Way	5,110	82	18	2.0%	2.0%	45	55	0	113	53	24	64.7
25	Lovelace Road west of SR 99	0	82	18	2.0%	0.0%	45	100	0	0	0	0	-17.4
26	Main Street (Manteca Rd) north of Sedan Avenue	2,730	78	22	2.0%	15.0%	55	50	0	186	86	40	68.6
27	Main Street north of Northgate Drive	13,810	78	22	2.0%	4.2%	40	70	-5	243	113	52	63.1
28	Main Street north of SR 120 WB ramps	30,090	78	22	2.0%	8.8%	35	65	0	469	218	101	72.9
29	Main Street south of Alameda Street	17,440	80	20	2.0%	2.6%	40	40	0	239	111	51	71.6
30	Main Street south of Quintal Road	27,850	78	22	2.0%	1.0%	35	60	-5	238	110	51	64.0
31	Moffat Boulevard east of Powers Avenue	6,800	80	20	2.0%	2.8%	45	80	0	153	71	33	64.2
32	Moffat Boulevard north of Woodward Avenue	6,540	80	20	2.0%	14.4%	45	230	-5	258	120	56	55.8
33	Raymus Parkway east of Austin Road	0	80	20	2.0%	0.0%	45	100	0	0	0	0	-7.2
34	Raymus Parkway east of Main Street	0	80	20	2.0%	0.0%	45	100	0	0	0	0	-7.2
35	Raymus Parkway east of Union Road	0	80	20	2.0%	0.0%	45	100	0	0	0	0	-7.2
36	Raymus Parkway west of Airport Way	0	80	20	2.0%	0.0%	45	100	0	0	0	0	-7.2

Appendix C-4

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Project #: 200702

Description Manteca General Plan Update - Existing + Approved



Segment	Segment	ADT	Day %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)	Contours (ft.) - No			Level, dBA
										60 dBA	65 dBA	70 dBA	
37	Roth Rd east of Airport Way	0	82	18	2.0%	0.0%	45	100	0	0	0	0	-7.4
38	Roth Rd west of Airport Way	10,000	78	22	2.0%	19.1%	40	50	-5	372	173	80	68.1
39	Spreckels Avenue south of Phoenix Drive	17,980	82	18	2.0%	11.8%	40	300	0	396	184	85	61.8
40	SR 120 EB between McKinley Ave and Airport Way	44,240	78	22	2.0%	8.3%	65	190	-5	1183	549	255	66.9
41	SR 120 total between McKinley Ave and Airport Way	93,060	78	22	2.0%	7.9%	65	190	-5	1923	892	414	70.1
42	SR 120 WB between McKinley Ave and Airport Way	48,820	78	22	2.0%	7.6%	65	300	-5	1239	575	267	64.2
43	SR 99 NB north of Lovelace Rd	43,440	76	24	2.0%	10.3%	65	100	0	1291	599	278	76.7
44	SR 99 NB north of Yosemite Ave	41,260	76	24	2.0%	10.5%	65	92	-5	1256	583	271	72.0
45	SR 99 SB north of Lovelace Rd	43,500	76	24	2.0%	10.4%	65	115	0	1298	603	280	75.8
46	SR 99 SB north of Yosemite Ave	43,520	76	24	2.0%	10.4%	65	65	-5	1299	603	280	74.5
47	SR 99 total north of Lovelace Rd	86,940	76	24	2.0%	10.4%	65	100	0	2055	954	443	79.7
48	SR 99 total north of Yosemite Ave	84,780	76	24	2.0%	10.5%	65	65	-5	2028	941	437	77.4
49	Union Rd north of Lovelace Rd	5,510	82	18	2.0%	0.2%	45	55	0	101	47	22	64.0
50	Union Road north of Crom Street	23,480	82	18	2.0%	0.7%	40	50	-5	230	107	50	64.9
51	Union Road north of Del Webb Boulevard	8,780	82	18	2.0%	1.0%	45	55	-5	150	70	32	61.5
52	Union Road south of Mission Ridge Drive	22,300	82	18	2.0%	0.4%	40	75	0	214	99	46	66.8
53	Union Road south of Northgate Drive	18,120	82	18	2.0%	0.9%	40	40	-5	199	93	43	65.5
54	Union Road south of SR 120 EB ramps	24,720	82	18	2.0%	1.1%	40	75	-5	249	116	54	62.8
55	Union Road south of Woodward Avenue	4,810	82	18	2.0%	0.8%	55	75	0	139	64	30	64.0
56	Van Ryn Avenue north of Atherton Drive	12,450	81	19	2.0%	0.4%	35	50	0	119	55	26	65.6
57	Woodward Avenue west of Airport Way	17,960	82	18	2.0%	0.1%	35	70	0	142	66	31	64.6
58	Woodward Avenue west of Laurie Avenue	11,060	82	18	2.0%	0.4%	45	70	0	164	76	35	65.6
59	Woodward Avenue west of Moffat Boulevard	10,890	82	18	2.0%	0.3%	45	50	0	161	75	35	67.6
60	Yosemite Avenue east of Cottage Avenue	28,850	81	19	2.0%	7.5%	45	85	0	519	241	112	71.8
61	Yosemite Avenue west of Airport Way	26,830	81	19	2.0%	4.4%	45	75	0	416	193	90	71.2
62	Yosemite Avenue west of Almond Avenue	17,070	81	19	2.0%	2.1%	25	50	0	136	63	29	66.5
63	Yosemite Avenue west of El Rancho Drive	31,190	81	19	2.0%	7.3%	35	50	-5	415	193	89	68.8
64	Yosemite Avenue west of Pacific Road	32,280	81	19	2.0%	1.7%	45	300	-5	388	180	84	56.7
65	Yosemite Avenue west of Washington Avenue	16,800	81	19	2.0%	1.1%	25	45	0	108	50	23	65.7

Appendix C-5

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Project #: 200702

Description Manteca General Plan Update - Current General Plan



Segment	Segment	ADT	Day Night		% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)	Contours (ft.) - No			Level, dBA
			%	%						Offset			
										60 dBA	65 dBA	70 dBA	
1	Airport Way north of Crom Street	40,630	76	24	2.0%	3.0%	45	80	-5	554	257	119	67.6
2	Airport Way north of Daisywood Drive	34,570	76	24	2.0%	12.9%	45	65	-5	809	375	174	71.4
3	Airport Way north of Daniels Street	43,960	76	24	2.0%	2.5%	45	65	-5	565	262	122	69.1
4	Airport Way south of Northgate Drive	30,140	76	24	2.0%	10.0%	45	55	-5	661	307	142	71.2
5	Airport Way south of SR 120 EB ramps	49,830	76	24	2.0%	0.3%	40	70	-5	413	192	89	66.6
6	Atherton Drive east of Main Street	9,860	78	22	2.0%	0.6%	45	80	-5	170	79	37	59.9
7	Atherton Drive east of Union Road	22,870	78	22	2.0%	0.3%	45	60	-5	288	134	62	65.2
8	Austin Road south of Moffat Boulevard	13,090	80	20	2.0%	4.0%	30	70	0	184	85	40	66.3
9	Austin Road south of Yosemite Avenue	10,360	80	20	2.0%	4.2%	25	50	0	136	63	29	66.5
10	Cottage Avenue south of Aldwina Lane	11,380	78	22	2.0%	0.3%	30	40	0	92	43	20	65.4
11	Daniels Street west of Airport Way	29,350	80	20	2.0%	1.0%	35	100	0	236	109	51	65.6
12	French Camp Rd east of SR 99	7,510	82	18	2.0%	11.9%	55	175	0	306	142	66	63.6
13	French Camp Rd west of SR 99	22,410	82	18	2.0%	14.5%	55	60	0	686	319	148	75.9
14	Lathrop Avenue west of Airport Way	50,580	79	21	2.0%	4.2%	45	50	0	655	304	141	76.8
15	Lathrop Avenue west of Madison Grove Drive	51,760	79	21	2.0%	5.8%	45	55	-5	730	339	157	71.8
16	Lathrop Avenue west of Sherwood Avenue	53,440	79	21	2.0%	6.5%	45	55	-5	777	361	167	72.3
17	Louise Avenue east of Marguerite Avenue	25,040	79	21	2.0%	1.1%	40	45	-5	269	125	58	66.7
18	Louise Avenue east of Tulip Place	17,290	79	21	2.0%	1.0%	40	40	-5	209	97	45	65.8
19	Louise Avenue west of Airport Way	42,920	79	21	2.0%	5.6%	40	50	0	555	258	120	75.7
20	Louise Avenue west of Austin Road	5,190	79	21	2.0%	3.3%	40	60	0	115	54	25	64.3
21	Louise Avenue west of Cottage Avenue	14,530	79	21	2.0%	1.4%	40	60	-5	193	89	41	62.6
22	Louise Avenue west of Yvonne Avenue	25,050	79	21	2.0%	1.3%	40	50	-5	274	127	59	66.1
23	Lovelace Rd east of Union Rd	0	82	18	2.0%	0.0%	45	100	0	0	0	0	-7.4
24	Lovelace Road east of Airport Way	12,110	82	18	2.0%	15.6%	45	55	0	387	180	83	72.7
25	Lovelace Road west of SR 99	0	82	18	2.0%	0.0%	45	100	0	0	0	0	-7.4
26	Main Street (Manteca Rd) north of Sedan Avenue	4,280	78	22	2.0%	9.6%	55	50	0	212	98	46	69.4
27	Main Street north of Northgate Drive	16,660	78	22	2.0%	2.9%	40	70	-5	248	115	53	63.2
28	Main Street north of SR 120 WB ramps	37,600	78	22	2.0%	6.3%	35	65	0	471	219	102	72.9
29	Main Street south of Alameda Street	22,150	80	20	2.0%	1.7%	40	40	0	259	120	56	72.2
30	Main Street south of Quintal Road	51,570	78	22	2.0%	0.6%	35	60	-5	339	157	73	66.3
31	Moffat Boulevard east of Powers Avenue	9,620	80	20	2.0%	1.5%	45	80	0	173	80	37	65.0
32	Moffat Boulevard north of Woodward Avenue	12,170	80	20	2.0%	6.4%	45	230	-5	282	131	61	56.3
33	Raymus Parkway east of Austin Road	0	80	20	2.0%	0.0%	45	100	0	0	0	0	-7.2
34	Raymus Parkway east of Main Street	0	80	20	2.0%	0.0%	45	100	0	0	0	0	-7.2
35	Raymus Parkway east of Union Road	0	80	20	2.0%	0.0%	45	100	0	0	0	0	-7.2
36	Raymus Parkway west of Airport Way	0	80	20	2.0%	0.0%	45	100	0	0	0	0	-7.2

Appendix C-6

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Project #: 200702

Description Manteca General Plan Update - Current General Plan



Segment	Segment	ADT	Day %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)	Contours (ft.) - No			Level, dBA
										Offset			
										60 dBA	65 dBA	70 dBA	
37	Roth Rd east of Airport Way	0	82	18	2.0%	0.0%	45	100	0	0	0	0	-7.4
38	Roth Rd west of Airport Way	23,080	78	22	2.0%	9.4%	40	50	-5	460	213	99	69.5
39	Spreckels Avenue south of Phoenix Drive	21,230	82	18	2.0%	11.2%	40	300	0	432	200	93	62.4
40	SR 120 EB between McKinley Ave and Airport Way	111,180	78	22	2.0%	7.1%	65	190	-5	2104	976	453	70.7
41	SR 120 total between McKinley Ave and Airport Way	221,660	78	22	2.0%	7.2%	65	190	-5	3348	1554	721	73.7
42	SR 120 WB between McKinley Ave and Airport Way	110,480	78	22	2.0%	7.3%	65	300	-5	2114	981	456	67.7
43	SR 99 NB north of Lovelace Rd	60,670	76	24	2.0%	10.8%	65	100	0	1639	761	353	78.2
44	SR 99 NB north of Yosemite Ave	58,780	76	24	2.0%	11.1%	65	92	-5	1616	750	348	73.7
45	SR 99 SB north of Lovelace Rd	59,850	76	24	2.0%	11.3%	65	115	0	1644	763	354	77.3
46	SR 99 SB north of Yosemite Ave	61,970	76	24	2.0%	11.0%	65	65	-5	1670	775	360	76.1
47	SR 99 total north of Lovelace Rd	120,520	76	24	2.0%	11.1%	65	100	0	2606	1209	561	81.2
48	SR 99 total north of Yosemite Ave	120,750	76	24	2.0%	11.0%	65	65	-5	2609	1211	562	79.1
49	Union Rd north of Lovelace Rd	11,620	82	18	2.0%	13.2%	45	55	0	348	162	75	72.0
50	Union Road north of Crom Street	32,040	82	18	2.0%	1.1%	40	50	-5	298	138	64	66.6
51	Union Road north of Del Webb Boulevard	16,170	82	18	2.0%	2.5%	45	55	-5	256	119	55	65.0
52	Union Road south of Mission Ridge Drive	30,590	82	18	2.0%	0.2%	40	75	0	260	121	56	68.1
53	Union Road south of Northgate Drive	25,880	82	18	2.0%	1.1%	40	40	-5	258	120	56	67.1
54	Union Road south of SR 120 EB ramps	53,630	82	18	2.0%	0.2%	40	75	-5	376	175	81	65.5
55	Union Road south of Woodward Avenue	15,520	82	18	2.0%	0.8%	55	75	0	303	141	65	69.1
56	Van Ryn Avenue north of Atherton Drive	10,910	81	19	2.0%	0.5%	35	50	0	111	52	24	65.2
57	Woodward Avenue west of Airport Way	9,770	82	18	2.0%	0.1%	35	70	0	94	44	20	61.9
58	Woodward Avenue west of Laurie Avenue	18,090	82	18	2.0%	0.2%	45	70	0	224	104	48	67.6
59	Woodward Avenue west of Moffat Boulevard	0	82	18	2.0%	0.0%	45	50	0	0	0	0	-2.9
60	Yosemite Avenue east of Cottage Avenue	34,430	81	19	2.0%	5.8%	45	85	0	533	247	115	72.0
61	Yosemite Avenue west of Airport Way	40,050	81	19	2.0%	2.8%	45	75	0	489	227	105	72.2
62	Yosemite Avenue west of Almond Avenue	19,980	81	19	2.0%	1.0%	25	50	0	119	55	26	65.6
63	Yosemite Avenue west of El Rancho Drive	65,230	81	19	2.0%	6.6%	35	50	-5	650	301	140	71.7
64	Yosemite Avenue west of Pacific Road	44,070	81	19	2.0%	1.1%	45	300	-5	454	211	98	57.7
65	Yosemite Avenue west of Washington Avenue	18,170	81	19	2.0%	0.8%	25	45	0	106	49	23	65.6

Appendix C-7

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Project #: 200702

Description Manteca General Plan Update - New General Plan



Segment	Segment	ADT	Day %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)	Contours (ft.) - No			Level, dBA
										Offset			
										60 dBA	65 dBA	70 dBA	
1	Airport Way north of Crom Street	43,190	76	24	2.0%	4.1%	45	80	-5	624	290	134	68.4
2	Airport Way north of Daisywood Drive	45,440	76	24	2.0%	9.3%	45	65	-5	846	393	182	71.7
3	Airport Way north of Daniels Street	49,200	76	24	2.0%	2.0%	45	65	-5	585	272	126	69.3
4	Airport Way south of Northgate Drive	38,090	76	24	2.0%	10.2%	45	55	-5	781	362	168	72.3
5	Airport Way south of SR 120 EB ramps	49,360	76	24	2.0%	0.4%	40	70	-5	416	193	90	66.6
6	Atherton Drive east of Main Street	11,410	78	22	2.0%	0.7%	45	80	-5	189	88	41	60.6
7	Atherton Drive east of Union Road	23,660	78	22	2.0%	0.3%	45	60	-5	294	136	63	65.4
8	Austin Road south of Moffat Boulevard	17,720	80	20	2.0%	2.3%	30	70	0	180	84	39	66.2
9	Austin Road south of Yosemite Avenue	17,160	80	20	2.0%	2.6%	25	50	0	151	70	33	67.2
10	Cottage Avenue south of Aldwina Lane	16,510	78	22	2.0%	0.2%	30	40	0	115	54	25	66.9
11	Daniels Street west of Airport Way	33,740	80	20	2.0%	0.5%	35	100	0	239	111	51	65.7
12	French Camp Rd east of SR 99	10,290	82	18	2.0%	15.6%	55	175	0	421	195	91	65.7
13	French Camp Rd west of SR 99	21,740	82	18	2.0%	19.7%	55	60	0	766	356	165	76.6
14	Lathrop Avenue west of Airport Way	59,230	79	21	2.0%	3.3%	45	50	0	684	318	147	77.0
15	Lathrop Avenue west of Madison Grove Drive	54,300	79	21	2.0%	3.9%	45	55	-5	673	312	145	71.3
16	Lathrop Avenue west of Sherwood Avenue	57,290	79	21	2.0%	4.0%	45	55	-5	702	326	151	71.6
17	Louise Avenue east of Marguerite Avenue	29,040	79	21	2.0%	1.1%	40	45	-5	296	137	64	67.3
18	Louise Avenue east of Tulip Place	24,430	79	21	2.0%	1.0%	40	40	-5	261	121	56	67.2
19	Louise Avenue west of Airport Way	47,870	79	21	2.0%	5.6%	40	50	0	599	278	129	76.2
20	Louise Avenue west of Austin Road	8,780	79	21	2.0%	3.2%	40	60	0	163	75	35	66.5
21	Louise Avenue west of Cottage Avenue	22,140	79	21	2.0%	1.2%	40	60	-5	250	116	54	64.3
22	Louise Avenue west of Yvonne Avenue	30,040	79	21	2.0%	1.1%	40	50	-5	303	141	65	66.7
23	Lovelace Rd east of Union Rd	36,410	82	18	2.0%	10.9%	45	100	0	687	319	148	72.5
24	Lovelace Road east of Airport Way	22,690	82	18	2.0%	10.9%	45	55	0	501	232	108	74.4
25	Lovelace Road west of SR 99	37,670	82	18	2.0%	11.1%	45	100	0	709	329	153	72.8
26	Main Street (Manteca Rd) north of Sedan Avenue	9,620	78	22	2.0%	4.3%	55	50	0	292	135	63	71.5
27	Main Street north of Northgate Drive	21,660	78	22	2.0%	2.0%	40	70	-5	273	127	59	63.9
28	Main Street north of SR 120 WB ramps	39,090	78	22	2.0%	5.8%	35	65	0	465	216	100	72.8
29	Main Street south of Alameda Street	25,000	80	20	2.0%	1.5%	40	40	0	274	127	59	72.5
30	Main Street south of Quintal Road	54,760	78	22	2.0%	0.5%	35	60	-5	347	161	75	66.4
31	Moffat Boulevard east of Powers Avenue	10,550	80	20	2.0%	1.3%	45	80	0	182	85	39	65.4
32	Moffat Boulevard north of Woodward Avenue	14,540	80	20	2.0%	7.5%	45	230	-5	336	156	72	57.5
33	Raymus Parkway east of Austin Road	18,730	80	20	2.0%	1.4%	45	100	0	270	125	58	66.5
34	Raymus Parkway east of Main Street	14,960	80	20	2.0%	0.5%	45	100	0	212	99	46	64.9
35	Raymus Parkway east of Union Road	12,540	80	20	2.0%	0.2%	45	100	0	183	85	39	63.9
36	Raymus Parkway west of Airport Way	0	80	20	2.0%	0.0%	45	100	0	0	0	0	-17.2

Appendix C-8

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Project #: 200702

Description Manteca General Plan Update - New General Plan



Segment	Segment	ADT	Day %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)	Contours (ft.) - No			Level, dBA
										60 dBA	65 dBA	70 dBA	
37	Roth Rd east of Airport Way	19,230	82	18	2.0%	12.0%	45	100	0	468	217	101	70.0
38	Roth Rd west of Airport Way	32,700	78	22	2.0%	15.0%	40	50	-5	724	336	156	72.4
39	Spreckels Avenue south of Phoenix Drive	23,110	82	18	2.0%	7.8%	40	300	0	391	181	84	61.7
40	SR 120 EB between McKinley Ave and Airport Way	116,230	78	22	2.0%	4.7%	65	190	-5	1998	927	430	70.3
41	SR 120 total between McKinley Ave and Airport Way	232,700	78	22	2.0%	5.0%	65	190	-5	3198	1484	689	73.4
42	SR 120 WB between McKinley Ave and Airport Way	116,470	78	22	2.0%	5.2%	65	300	-5	2031	943	438	67.5
43	SR 99 NB north of Lovelace Rd	65,970	76	24	2.0%	6.4%	65	100	0	1511	701	326	77.7
44	SR 99 NB north of Yosemite Ave	70,210	76	24	2.0%	6.7%	65	92	-5	1589	737	342	73.6
45	SR 99 SB north of Lovelace Rd	66,150	76	24	2.0%	6.5%	65	115	0	1519	705	327	76.8
46	SR 99 SB north of Yosemite Ave	73,250	76	24	2.0%	6.8%	65	65	-5	1641	762	354	76.0
47	SR 99 total north of Lovelace Rd	132,120	76	24	2.0%	6.4%	65	100	0	2405	1116	518	80.7
48	SR 99 total north of Yosemite Ave	143,460	76	24	2.0%	6.7%	65	65	-5	2564	1190	552	78.9
49	Union Rd north of Lovelace Rd	15,770	82	18	2.0%	9.2%	45	55	0	366	170	79	72.4
50	Union Road north of Crom Street	38,190	82	18	2.0%	1.0%	40	50	-5	331	154	71	67.3
51	Union Road north of Del Webb Boulevard	20,810	82	18	2.0%	0.7%	45	55	-5	259	120	56	65.1
52	Union Road south of Mission Ridge Drive	31,710	82	18	2.0%	0.3%	40	75	0	268	124	58	68.3
53	Union Road south of Northgate Drive	31,840	82	18	2.0%	1.0%	40	40	-5	292	136	63	68.0
54	Union Road south of SR 120 EB ramps	51,320	82	18	2.0%	0.2%	40	75	-5	366	170	79	65.3
55	Union Road south of Woodward Avenue	19,210	82	18	2.0%	0.4%	55	75	0	340	158	73	69.8
56	Van Ryn Avenue north of Atherton Drive	13,880	81	19	2.0%	0.6%	35	50	0	133	62	29	66.4
57	Woodward Avenue west of Airport Way	12,630	82	18	2.0%	0.1%	35	70	0	112	52	24	63.0
58	Woodward Avenue west of Laurie Avenue	20,400	82	18	2.0%	0.1%	45	70	0	242	112	52	68.1
59	Woodward Avenue west of Moffat Boulevard	0	82	18	2.0%	0.0%	45	50	0	0	0	0	-12.9
60	Yosemite Avenue east of Cottage Avenue	36,460	81	19	2.0%	4.3%	45	85	0	508	236	110	71.7
61	Yosemite Avenue west of Airport Way	46,330	81	19	2.0%	3.9%	45	75	0	580	269	125	73.3
62	Yosemite Avenue west of Almond Avenue	20,810	81	19	2.0%	1.0%	25	50	0	122	57	26	65.8
63	Yosemite Avenue west of El Rancho Drive	81,490	81	19	2.0%	5.2%	35	50	-5	685	318	148	72.0
64	Yosemite Avenue west of Pacific Road	47,690	81	19	2.0%	1.0%	45	300	-5	472	219	102	57.9
65	Yosemite Avenue west of Washington Avenue	17,940	81	19	2.0%	0.9%	25	45	0	109	51	23	65.8

Appendix D

Supporting Transportation Data and Analysis

Note: References to the proposed Project within Appendix D pertain to Alternative D. The proposed Project replaced Alternative D and Alternative D replaced the proposed Project in the Recirculated Draft EIR.

Appendix D:

Supporting Transportation Data and Analysis

City of Manteca General Plan
Draft Environmental Impact Report

February 18, 2022

RS16-3475

FEHR  PEERS

Level of Service Analysis

The evaluation of traffic volumes on the roadway network provides an understanding of the general nature of travel conditions in the City of Manteca. However, traffic volumes do not indicate the quality of service provided by the street facilities or the ability of the street network to carry additional traffic. To accomplish this, the concept of LOS has been developed. LOS is used to describe traffic operations on various types of facilities based on traffic volumes and roadway capacity using a series of letter designations ranging from A to F. Generally, LOS A represents free flow conditions and LOS F represents forced flow or breakdown conditions. The various levels of service and their corresponding operating descriptions are described in Table 1.

Table 1: Roadway Segment Level of Service Criteria

LOS	Description
A	Primarily free-flow operation. Vehicles are completely unimpeded in their ability to maneuver within the traffic stream. Control delay at the boundary intersections is minimal.
B	Reasonably unimpeded operation. The ability to maneuver within the traffic stream is only slightly restricted and control delay at the boundary intersections is not significant.
C	Stable operation. The ability to maneuver and change lanes at mid-segment locations may be more restricted than at LOS B. Longer queues at the boundary intersections may contribute to lower travel speeds.
D	A less stable condition in which small increases in flow may cause substantial increases in delay and decreases in travel speed. This operation may be due to adverse signal progression, high volume, or inappropriate signal timing at the boundary intersections.
E	Unstable operation and significant delay. Such operations may be due to some combination of adverse progression, high volume, and inappropriate signal timing at the boundary intersections.
F	Flow at extremely low speed. Congestion is likely occurring at the boundary intersections, as indicated by high delay and extensive queuing.

Source: Highway Capacity Manual, Transportation Research Board, 2010

Note that although CEQA no longer includes LOS as a metric to determine significance, City General Plan Policy CP-2 calls for the City to maintain a LOS D standard at all streets and intersections to the extent feasible, except in the Downtown area where right of way is limited. Therefore, an analysis of this policy is included in this EIR for informational purposes only.

Average daily traffic and level of service were estimated for roadway segments within the City of Manteca for each of the following scenarios:

- **2016 Existing Conditions.**
- **2019 Baseline Conditions.** 2016 Existing Conditions plus development completed from 2016 to 2019.
- **Baseline Plus Approved Projects Conditions.** 2019 Baseline plus approved development projects.



- **Previous General Plan Buildout Conditions.** Buildout of the land use development in the previous General Plan.
- **Proposed General Plan Buildout Conditions.** Buildout of the land use development and circulation network in the proposed General Plan update. Includes financially constrained roadway projects from the City PFIP and 2018 SJCOG RTP/SCS.
- **Alternative D Buildout Conditions.** Buildout of the land use development and circulation network in Alternative D. Includes financially constrained roadway projects from the City PFIP and 2018 SJCOG RTP/SCS.

Methodology

ADT Forecasts

The traffic forecasting adjustment procedure known as the difference method was used to develop ADT forecasts for scenarios other than existing conditions. For a given study segment in each scenario, this forecasting procedure is applied as follows:

Scenario Volume Forecast

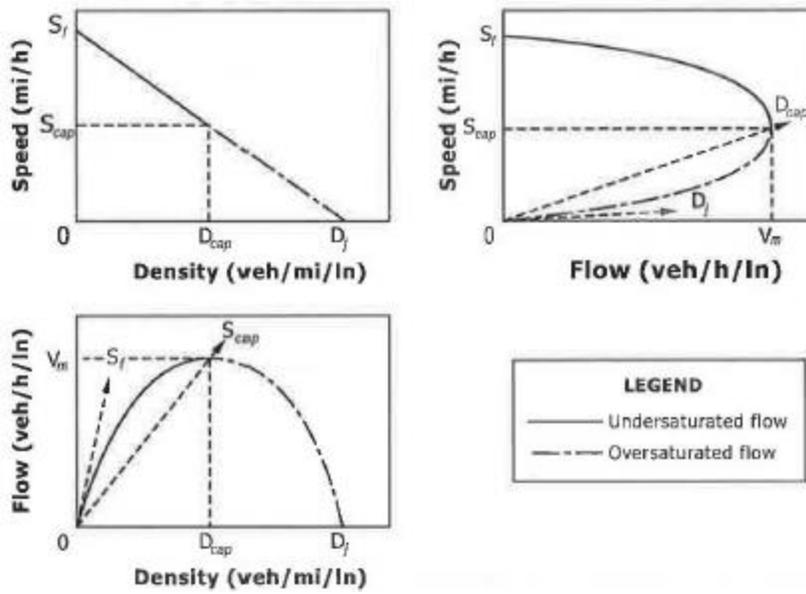
$$= \text{Existing Volume} + (\text{Scenario Model Volume} - \text{Existing Conditions Model Volume})$$

LOS Thresholds

LOS thresholds were developed for each segment based on Highway Capacity Manual (Transportation Research Board, 2010) methodologies and are presented in Table 2. These thresholds considered directionality (D, the share of traffic in the predominate travel direction), peak factor (K, the share of daily traffic during the highest peak hour), speed limit, number of lanes, and presence or absence of a median. Typical assumptions for signal spacing, access points, signal timing, and other factors were made as described on page 16-27 of the Highway Capacity Manual. Presence of either a raised median or two-way left-turn lane (TWLTL) increase capacity (versus undivided streets) based on reduced lane blockages due to turning vehicles.

Table 2 shows that a four-lane arterial with a median and a posted speed limit of 40 mph would operate at LOS C with a maximum volume of 18,000 ADT. Operations would remain at LOS D until the volume exceeds 35,300 ADT. The practical operating capacity of this road would be reached when the volume reaches 37,900 ADT. A similar road with a slightly higher speed would enable slightly greater LOS C and D volumes but would not change the street's capacity. These details are explained by the relationship between traffic volume, speed, and density in traffic flow fundamentals. An exhibit from the Highway Capacity Manual depicting this relationship is shown below. Once the street's traffic volume demand reaches and then exceeds its maximum undersaturated flow condition, speeds dramatically decrease and density increases regardless of the free-flow travel speed. As the chart in the upper right corner indicates, speeds decrease only modestly at low traffic flow regime areas but decrease more rapidly as the traffic flow approaches capacity. This helps explain the differences in the range of ADT between LOS C and D, versus LOS D and E conditions shown in Table 2.





Source: Exhibit 4-3, Highway Capacity Manual, Transportation Research Board, 2010, page 4-8.



Table 2: Segment Level of Service Thresholds

Number of Lanes	Two-Way Left-Turn Lane or Restricted Median Present	Posted Speed Limit (miles per hour)	Maximum ADT at LOS Level		
			C	D	E
2	yes	25	4,400	14,300	19,900
		30	5,900	15,400	19,900
		35	7,400	16,500	19,900
		40	8,800	17,500	19,900
		45	10,300	18,600	19,900
		55	13,200	19,600	19,900
	no	25	4,200	13,600	18,900
		30	5,600	14,600	18,900
		35	7,000	15,700	18,900
		40	8,400	16,600	18,900
		45	9,800	17,700	18,900
		55	12,500	18,600	18,900
4	yes	30	11,300	31,400	37,900
		35	14,700	33,300	37,900
		40	18,000	35,300	37,900
		45	21,400	37,200	37,900
	no	30	10,700	29,800	36,000
		35	14,000	31,600	36,000
		40	17,100	33,500	36,000
		45	20,300	35,300	36,000
6	yes	30	16,300	46,400	54,300
		35	21,500	48,900	54,300
		40	26,700	51,500	54,300
		45	31,900	54,000	54,300

Notes: ADT = Average Daily Traffic; LOS = Level of Service
 Source: Fehr & Peers, 2020

Standards

Previous General Plan

The previous General Plan contains the following policies related to LOS standards.

Policy C-P-2: To the extent feasible, the City shall strive for a vehicular LOS of D or better at all streets and intersections, except in the Downtown area where right-of-way is limited, pedestrian, bicycle, and transit mobility are most important and vehicular LOS is not a consideration....



Policy C-P-3: *At the discretion of City staff, certain locations may be allowed to fall below the City's LOS standard under the following circumstances:*

- a. *Where constructing facilities with enough capacity to provide LOS D is found to be unreasonably expensive....*
- b. *Where it is difficult or impossible to maintain LOS D because surrounding facilities in other jurisdictions operate at LOS E or worse.*
- c. *Where maintaining LOS D will be a disincentive to use of existing alternative modes or to the implementation of new transportation modes that would reduce vehicle travel. Examples include roadway or intersection widening in areas with substantial pedestrian activity or near major transit centers.*
- d. *In the Downtown area the City cannot maintain the vehicular LOS D standard because of the historic nature of development and limited street right-of-way....*

Proposed General Plan Update

The proposed General Plan update contains the following policies related to LOS standards:

Policy C-1.1: *Strive to balance levels of service (LOS) for all modes (vehicle, transit, bicycle, and pedestrian) to maintain a high level of access and mobility, while developing a safe, complete, and efficient circulation system. The impact of new development and land use proposals on LOS and accessibility for all modes should be considered in the review process.*

Policy C-1.2: *To the extent feasible, strive for a vehicular LOS of D or better during weekday AM and PM peak hours at all streets and intersections, except in the Downtown area and on the roadway segments listed below: [List to be finalized after the preferred land use map and circulation system is selected by City Council.]*

Policy C-1.3: *At the discretion of the City Council or Planning Commission, certain locations may be allowed to fall below the City's LOS standard established by C-1.2 under the following circumstances:*

- a. *Where constructing facilities with enough capacity to provide LOS D is found to be unreasonably expensive.*
- b. *Where conditions are worse than LOS D and caused primarily by traffic from adjacent jurisdictions.*
- c. *Where maintaining LOS D will be a disincentive to use transit and active transportation modes (i.e., walking and bicycling) or to the implementation of new transportation modes that would reduce vehicle travel. Examples include roadway or intersection widening in areas with substantial pedestrian activity or near major transit centers.*

2016 Existing Conditions

Under existing conditions, 43 of the 44 study segments met the general plan policy. The two-lane arterial segment with a two-way left-turn median at Lathrop Avenue west of Sherwood Avenue was operating unacceptably at LOS E, with an ADT of 19,300 above the maximum LOS D threshold of 18,600. Some



downtown segments also operate at LOS E, but this is acceptable according to General Plan Policy C-P-2, which allows LOS E in downtown. Table 3 and Figure 1 present ADT and LOS for each study segment.

Table 3: Existing ADT and LOS

ID	Segment	Number of Lanes	ADT	LOS
1	Airport Way north of Daniels Street	2	17,300	D
2	Union Road south of Mission Ridge Drive	4	20,000	D
3	Main Street north of SR 120 WB ramps	4	26,600	D
4	Moffat Boulevard east of Powers Avenue	2	6,100	C
5	Spreckels Avenue south of Phoenix Drive	4	15,300	C
6	Austin Road south of Yosemite Avenue	2	3,900	C
7	Airport Way north of Crom Street	2	14,300	D
8	Union Road north of Crom Street	4	17,500	C
9	Main Street south of Alameda Street	2	16,200	E ¹
10	Cottage Avenue south of Aldwina Lane	2	11,400	D
11	Airport Way south of Northgate Drive	2	10,000	D
12	Union Road south of Northgate Drive	4	14,700	C
13	Main Street north of Northgate Drive	4	11,200	C
14	Airport Way north of Daisywood Drive	2	7,200	C
15	Union Road north of Del Webb Boulevard	4	6,800	C
16	Airport Way south of SR 120 EB ramps	2	15,600	D
17	Union Road south of SR 120 EB ramps	2	13,900	D
18	Main Street south of Quintal Road	2	15,000	D
19	Austin Road south of Moffat Boulevard	2	3,400	C
20	Moffat Boulevard north of Woodward Avenue	2	5,800	C
21	Woodward Avenue west of Laurie Avenue	2	4,400	C
22	Yosemite Avenue west of Airport Way	4	11,600	C
23	Yosemite Avenue west of Pacific Road	4	20,000	C
24	Yosemite Avenue west of Almond Avenue	2	14,100	D
25	Yosemite Avenue west of Washington Avenue	2	15,900	E ¹
26	Yosemite Avenue east of Cottage Avenue	5	25,200	D
27	Yosemite Avenue west of El Rancho Drive	5	25,400	D
28	Louise Avenue west of Airport Way	2	12,700	D
29	Louise Avenue east of Marguerite Avenue	4	13,200	C
30	Louise Avenue west of Yvonne Avenue	4	17,300	C
31	Louise Avenue east of Tulip Place	4	13,300	C
32	Louise Avenue west of Cottage Avenue	4	12,400	C
33	Lathrop Avenue west of Airport Way	2	12,200	D



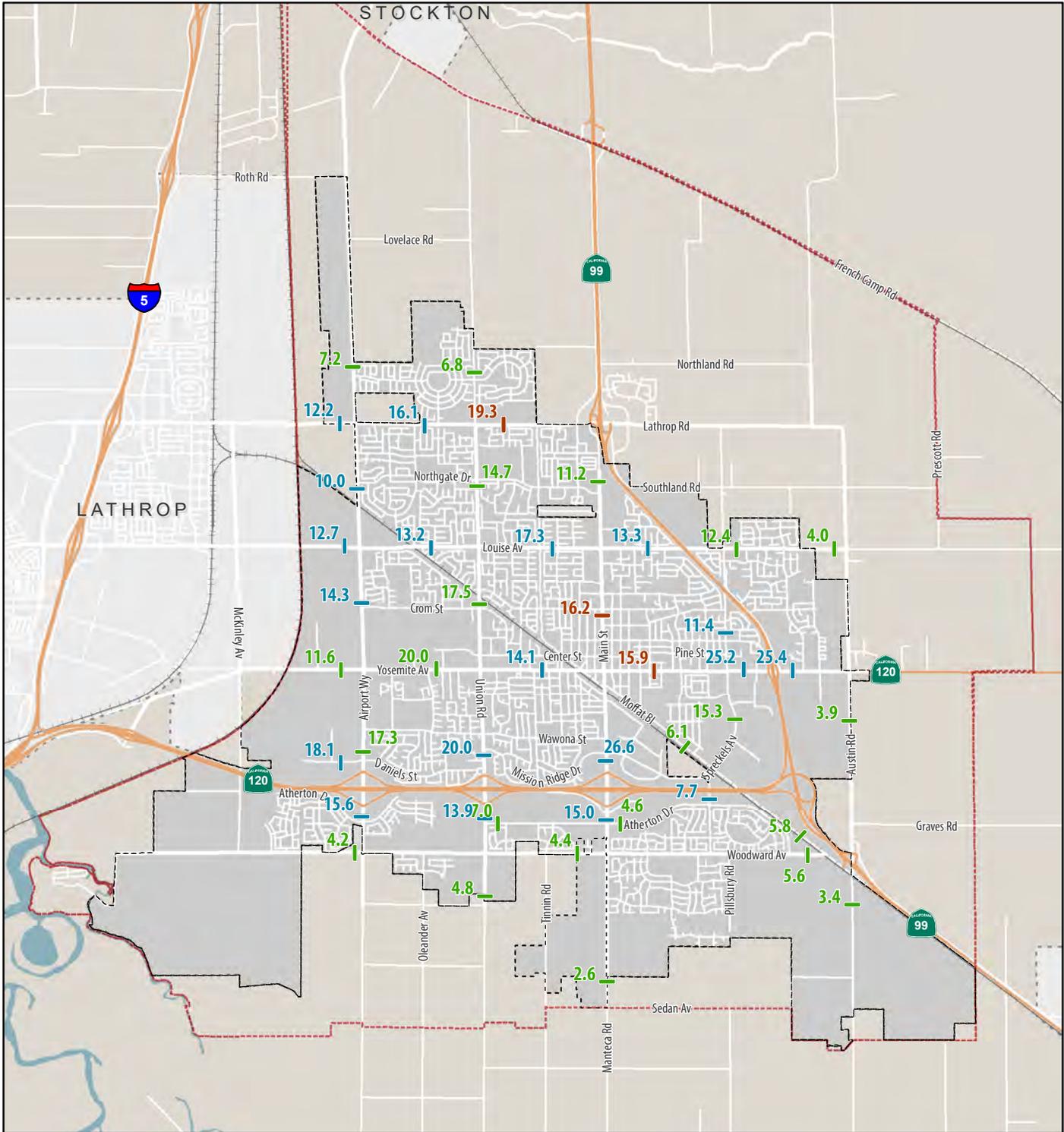
Appendix D: Supporting Transportation Data and Analysis
 February 18, 2022

ID	Segment	Number of Lanes	ADT	LOS
34	Lathrop Avenue west of Madison Grove Drive	4	16,100	C
35	Lathrop Avenue west of Sherwood Avenue	2	19,300	E
36	Daniels Street west of Airport Way	4	18,100	D
37	Woodward Avenue west of Airport Way	2	4,200	C
38	Union Road south of Woodward Avenue	2	4,800	C
39	Atherton Drive east of Union Road	4	7,000	C
40	Main Street (Manteca Rd) north of Sedan Avenue	2	2,600	C
41	Atherton Drive east of Main Street	4	4,600	C
42	Woodward Avenue west of Moffat Boulevard	2	5,600	C
43	Louise Avenue west of Austin Road	4	4,000	C
44	Van Ryn Avenue north of Atherton Drive	2	7,700	D

Notes: ¹LOS E acceptable in downtown according to General Plan Policy C-P-2
Bold = Unacceptable operation according to General Plan Policy C-P-2
 ADT = Average Daily Traffic; LOS = Level of Service

Source: Fehr & Peers, 2020





Level of Service LOS

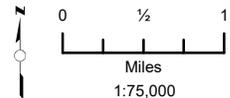
- C
- D
- E

X.X Average Daily Traffic Volume (x 1,000) Rounded to nearest 100

Manteca City Limits

Planning Area

CITY OF MANTECA GENERAL PLAN
Figure 1: Existing Conditions
Average Daily Traffic and
Level of Service



Note: Counts conducted on October 25th and 26th, and November 9th and 10th, 2016.

Sources: City of Manteca; San Joaquin County, Fehr & Peers
 Map date: 11/24/2020

2019 Baseline Conditions

Under 2019 baseline conditions, 40 of the 44 study segments were estimated to be operating acceptably. Table 4 and Figure 2 present ADT and LOS for each study segment.

Table 4: Baseline ADT and LOS

ID	Segment	Number of Lanes	Existing		Baseline	
			ADT	LOS	ADT	LOS
1	Airport Way north of Daniels Street	2	17,300	D	18,000	C
2	Union Road south of Mission Ridge Drive	4	20,000	D	20,400	D
3	Main Street north of SR 120 WB ramps	4	26,600	D	27,600	D
4	Moffat Boulevard east of Powers Avenue	2	6,100	C	6,400	C
5	Spreckels Avenue south of Phoenix Drive	4	15,300	C	16,100	C
6	Austin Road south of Yosemite Avenue	2	3,900	C	4,200	C
7	Airport Way north of Crom Street	2	14,300	D	14,300	D
8	Union Road north of Crom Street	4	17,500	C	17,900	C
9	Main Street south of Alameda Street	2	16,200	E ¹	16,900	E ¹
10	Cottage Avenue south of Aldwina Lane	2	11,400	D	11,400	D
11	Airport Way south of Northgate Drive	2	10,000	D	10,800	D
12	Union Road south of Northgate Drive	4	14,700	C	15,500	C
13	Main Street north of Northgate Drive	4	11,200	C	12,100	C
14	Airport Way north of Daisywood Drive	2	7,200	C	10,100	D
15	Union Road north of Del Webb Boulevard	4	6,800	C	7,400	C
16	Airport Way south of SR 120 EB ramps	2	15,600	D	17,800	E
17	Union Road south of SR 120 EB ramps	2	13,900	D	15,200	D
18	Main Street south of Quintal Road	2	15,000	D	18,900	E
19	Austin Road south of Moffat Boulevard	2	3,400	C	4,700	C
20	Moffat Boulevard north of Woodward Avenue	2	5,800	C	6,000	C
21	Woodward Avenue west of Laurie Avenue	2	4,400	C	6,000	C
22	Yosemite Avenue west of Airport Way	4	11,600	C	14,000	C
23	Yosemite Avenue west of Pacific Road	4	20,000	C	20,600	C
24	Yosemite Avenue west of Almond Avenue	2	14,100	D	14,100	D
25	Yosemite Avenue west of Washington Avenue	2	15,900	E ¹	16,100	E ¹
26	Yosemite Avenue east of Cottage Avenue	5	25,200	D	26,000	D
27	Yosemite Avenue west of El Rancho Drive	5	25,400	D	27,100	D
28	Louise Avenue west of Airport Way	2	12,700	D	12,800	D
29	Louise Avenue east of Marguerite Avenue	4	13,200	C	13,400	D
30	Louise Avenue west of Yvonne Avenue	4	17,300	C	17,400	D



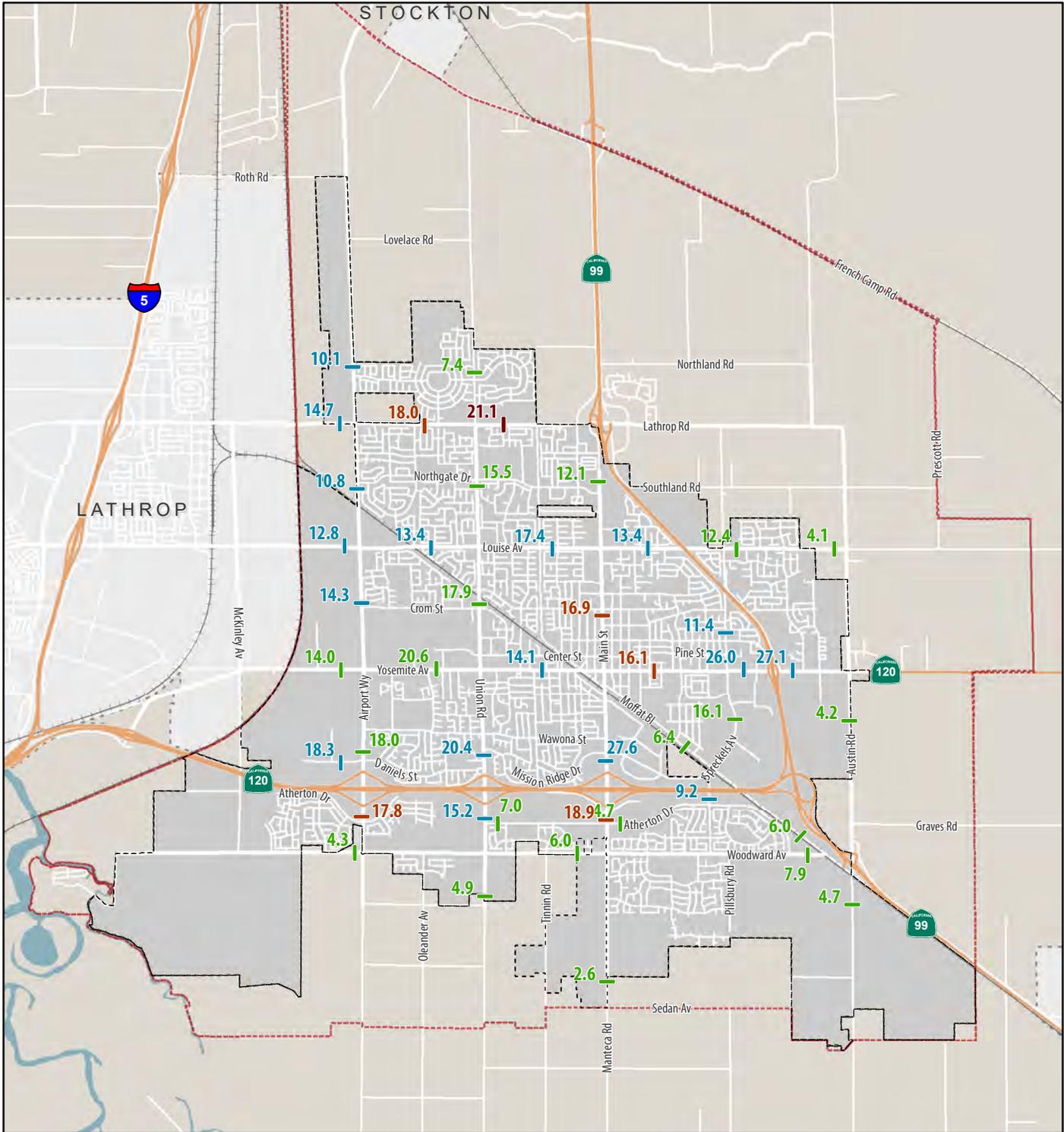
Appendix D: Supporting Transportation Data and Analysis
 February 18, 2022

ID	Segment	Number of Lanes	Existing		Baseline	
			ADT	LOS	ADT	LOS
31	Louise Avenue east of Tulip Place	4	13,300	C	13,400	D
32	Louise Avenue west of Cottage Avenue	4	12,400	C	12,400	C
33	Lathrop Avenue west of Airport Way	2	12,200	D	14,700	D
34	Lathrop Avenue west of Madison Grove Drive	4	16,100	C	18,000	E
35	Lathrop Avenue west of Sherwood Avenue	2	19,300	E	21,100	F
36	Daniels Street west of Airport Way	4	18,100	D	18,300	D
37	Woodward Avenue west of Airport Way	2	4,200	C	4,300	C
38	Union Road south of Woodward Avenue	2	4,800	C	4,900	C
39	Atherton Drive east of Union Road	4	7,000	C	7,000	C
40	Main Street (Manteca Rd) north of Sedan Avenue	2	2,600	C	2,600	C
41	Atherton Drive east of Main Street	4	4,600	C	4,700	C
42	Woodward Avenue west of Moffat Boulevard	2	5,600	C	7,900	C
43	Louise Avenue west of Austin Road	4	4,000	C	4,100	C
44	Van Ryn Avenue north of Atherton Drive	2	7,700	D	9,200	D

Notes: ¹LOS E acceptable in downtown according to General Plan Policy C-P-2
Bold = Unacceptable operation according to General Plan Policy C-P-2
 ADT = Average Daily Traffic; LOS = Level of Service

Source: Fehr & Peers, 2020





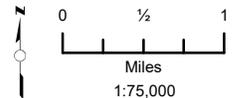
Level of Service LOS

— C
— D
— E
— F

Manteca City Limits
 Planning Area

X.X Average Daily Traffic
Volume (x 1,000)
Rounded to nearest 100

CITY OF MANTECA GENERAL PLAN
Figure 2: Baseline Conditions
Average Daily Traffic and
Level of Service



Note: Counts conducted on October 25th and 26th, and November 9th and 10th, 2016.

Baseline Plus Approved Projects Conditions

Under baseline plus approved projects conditions, 35 of the 44 study segments were estimated to operate acceptably. Table 5 and Figure 3 present ADT and LOS for each study segment.

Table 5: Baseline Plus Approved Projects ADT and LOS

ID	Segment	Number of Lanes	Baseline		Baseline Plus Approved Projects	
			ADT	LOS	ADT	LOS
1	Airport Way north of Daniels Street	2	18,000	C	33,800	D
2	Union Road south of Mission Ridge Drive	4	20,400	D	22,300	D
3	Main Street north of SR 120 WB ramps	4	27,600	D	30,100	D
4	Moffat Boulevard east of Powers Avenue	2	6,400	C	6,800	C
5	Spreckels Avenue south of Phoenix Drive	4	16,100	C	18,000	C
6	Austin Road south of Yosemite Avenue	2	4,200	C	4,500	C
7	Airport Way north of Crom Street	2	14,300	D	20,300	F
8	Union Road north of Crom Street	4	17,900	C	23,500	D
9	Main Street south of Alameda Street	2	16,900	E ¹	17,400	E ¹
10	Cottage Avenue south of Aldwina Lane	2	11,400	D	11,400	D
11	Airport Way south of Northgate Drive	2	10,800	D	17,800	E
12	Union Road south of Northgate Drive	4	15,500	C	18,100	D
13	Main Street north of Northgate Drive	4	12,100	C	13,800	C
14	Airport Way north of Daisywood Drive	2	10,100	D	16,800	D
15	Union Road north of Del Webb Boulevard	4	7,400	C	8,800	C
16	Airport Way south of SR 120 EB ramps	2	17,800	E	35,300	F
17	Union Road south of SR 120 EB ramps	2	15,200	D	24,700	F
18	Main Street south of Quintal Road	2	18,900	E	27,800	F
19	Austin Road south of Moffat Boulevard	2	4,700	C	8,700	C
20	Moffat Boulevard north of Woodward Avenue	2	6,000	C	6,500	C
21	Woodward Avenue west of Laurie Avenue	2	6,000	C	11,100	D
22	Yosemite Avenue west of Airport Way	4	14,000	C	26,800	D
23	Yosemite Avenue west of Pacific Road	4	20,600	C	32,300	D
24	Yosemite Avenue west of Almond Avenue	2	14,100	D	17,100	E ¹
25	Yosemite Avenue west of Washington Avenue	2	16,100	E ¹	16,800	E ¹
26	Yosemite Avenue east of Cottage Avenue	5	26,000	D	28,800	D
27	Yosemite Avenue west of El Rancho Drive	5	27,100	D	31,200	D
28	Louise Avenue west of Airport Way	2	12,800	D	15,200	D
29	Louise Avenue east of Marguerite Avenue	4	13,400	D	16,600	D

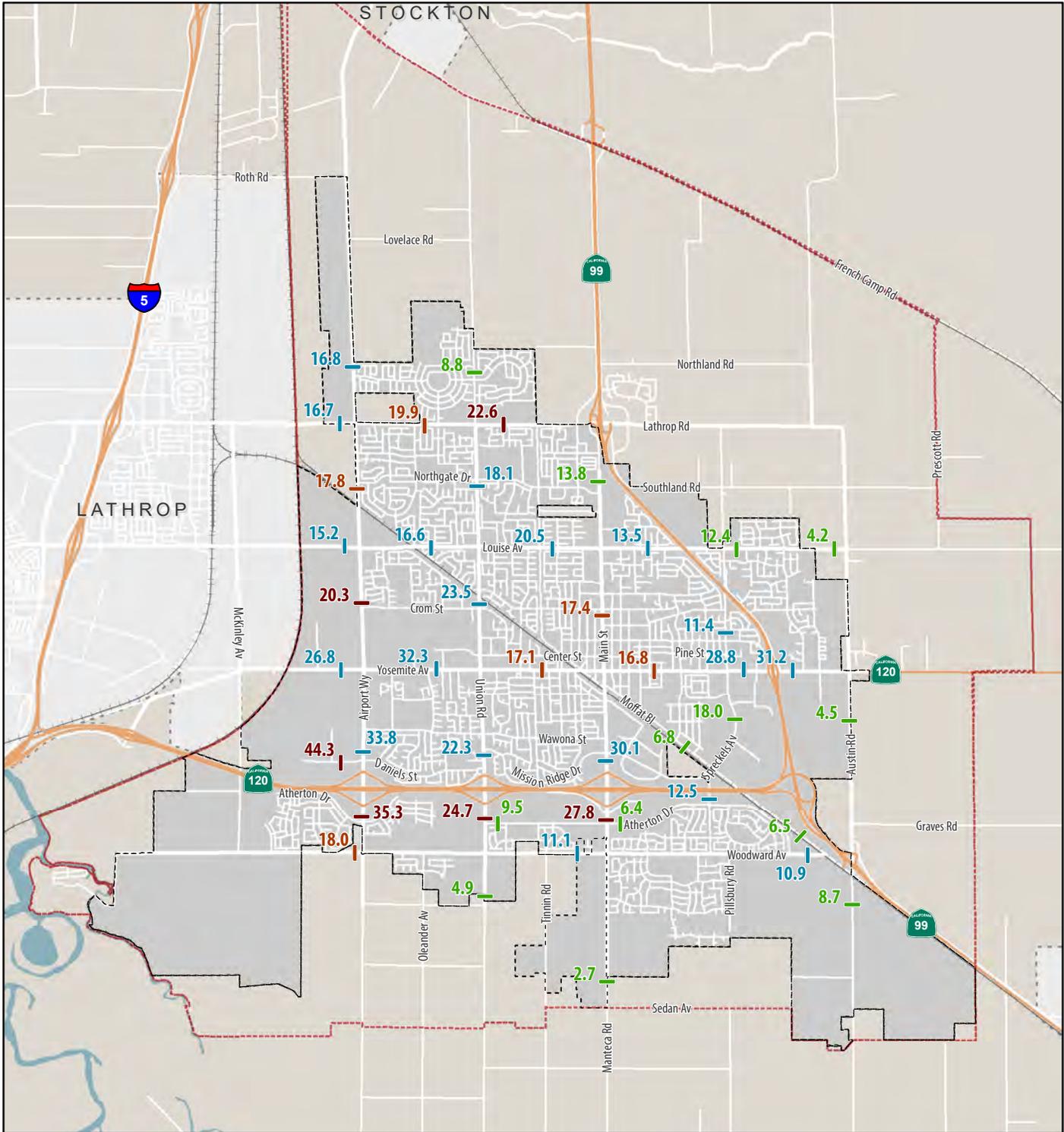


ID	Segment	Number of Lanes	Baseline		Baseline Plus Approved Projects	
			ADT	LOS	ADT	LOS
30	Louise Avenue west of Yvonne Avenue	4	17,400	D	20,500	D
31	Louise Avenue east of Tulip Place	4	13,400	D	13,500	D
32	Louise Avenue west of Cottage Avenue	4	12,400	C	12,400	C
33	Lathrop Avenue west of Airport Way	2	14,700	D	16,700	D
34	Lathrop Avenue west of Madison Grove Drive	4	18,000	E	19,900	E
35	Lathrop Avenue west of Sherwood Avenue	2	21,100	F	22,600	F
36	Daniels Street west of Airport Way	4	18,300	D	44,300	F
37	Woodward Avenue west of Airport Way	2	4,300	C	18,000	E
38	Union Road south of Woodward Avenue	2	4,900	C	4,900	C
39	Atherton Drive east of Union Road	4	7,000	C	9,500	C
40	Main Street (Manteca Rd) north of Sedan Avenue	2	2,600	C	2,700	C
41	Atherton Drive east of Main Street	4	4,700	C	6,400	C
42	Woodward Avenue west of Moffat Boulevard	2	7,900	C	10,900	D
43	Louise Avenue west of Austin Road	4	4,100	C	4,200	C
44	Van Ryn Avenue north of Atherton Drive	2	9,200	D	12,500	D

Notes: ¹LOS E acceptable in downtown according to General Plan Policy C-P-2
Bold = Unacceptable operation according to General Plan Policy C-P-2
 ADT = Average Daily Traffic; LOS = Level of Service

Source: Fehr & Peers, 2020





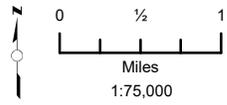
CITY OF MANTECA GENERAL PLAN
Figure 3: Baseline Plus Approved Projects
Average Daily Traffic and
Level of Service

Level of Service LOS

- C
- D
- E
- F

X.X Average Daily Traffic
 Volume (x 1,000)
 Rounded to nearest 100

Manteca City Limits
 Planning Area



Note: Counts conducted on October 25th and 26th, and November 9th and 10th, 2016.

Sources: City of Manteca; San Joaquin County, Fehr & Peers
 Map date: 11/24/2020

Previous General Plan Buildout Conditions

Under conditions of the buildout of the previous general plan, 31 of 43 study segments and 3 of 4 new segments were estimated to operate acceptably. Table 6 and Figure 4 present ADT and LOS for each study segment.

Table 6: Previous General Plan ADT and LOS

ID	Segment	Baseline			Previous General Plan		
		Number of Lanes	ADT	LOS	Number of Lanes	ADT	LOS
1	Airport Way north of Daniels Street	2	18,000	C	4	44,000	F
2	Union Road south of Mission Ridge Drive	4	20,400	D	4	30,600	D
3	Main Street north of SR 120 WB ramps	4	27,600	D	6	37,600	D
4	Moffat Boulevard east of Powers Avenue	2	6,400	C	2	9,600	C
5	Spreckels Avenue south of Phoenix Drive	4	16,100	C	4	21,200	D
6	Austin Road south of Yosemite Avenue	2	4,200	C	4	10,400	C
7	Airport Way north of Crom Street	2	14,300	D	4	40,600	F
8	Union Road north of Crom Street	4	17,900	C	4	32,000	D
9	Main Street south of Alameda Street	2	16,900	E ¹	4	22,200	D
10	Cottage Avenue south of Aldwina Lane	2	11,400	D	2	11,400	D
11	Airport Way south of Northgate Drive	2	10,800	D	4	30,100	D
12	Union Road south of Northgate Drive	4	15,500	C	4	25,900	D
13	Main Street north of Northgate Drive	4	12,100	C	4	16,700	C
14	Airport Way north of Daisywood Drive	2	10,100	D	4	34,600	D
15	Union Road north of Del Webb Boulevard	4	7,400	C	4	16,200	C
16	Airport Way south of SR 120 EB ramps	2	17,800	E	6	49,800	D
17	Union Road south of SR 120 EB ramps	2	15,200	D	6	53,600	E
18	Main Street south of Quintal Road	2	18,900	E	6	51,600	E
19	Austin Road south of Moffat Boulevard	2	4,700	C	4	13,100	C
20	Moffat Boulevard north of Woodward Avenue	2	6,000	C	2	12,200	D
21	Woodward Avenue west of Laurie Avenue	2	6,000	C	2	18,100	D
22	Yosemite Avenue west of Airport Way	4	14,000	C	4	40,100	F
23	Yosemite Avenue west of Pacific Road	4	20,600	C	4	44,100	F
24	Yosemite Avenue west of Almond Avenue	2	14,100	D	4	20,000	D
25	Yosemite Avenue west of Washington Avenue	2	16,100	E ¹	2	18,200	E ¹
26	Yosemite Avenue east of Cottage Avenue	5	26,000	D	5	34,400	E
27	Yosemite Avenue west of El Rancho Drive	5	27,100	D	5	65,200	F
28	Louise Avenue west of Airport Way	2	12,800	D	4	42,900	F



ID	Segment	Baseline			Previous General Plan		
		Number of Lanes	ADT	LOS	Number of Lanes	ADT	LOS
29	Louise Avenue east of Marguerite Avenue	4	13,400	D	4	25,000	D
30	Louise Avenue west of Yvonne Avenue	4	17,400	D	4	25,100	D
31	Louise Avenue east of Tulip Place	4	13,400	D	4	17,300	C
32	Louise Avenue west of Cottage Avenue	4	12,400	C	4	14,500	C
33	Lathrop Avenue west of Airport Way	2	14,700	D	4	50,600	F
34	Lathrop Avenue west of Madison Grove Drive	4	18,000	E	4	51,800	F
35	Lathrop Avenue west of Sherwood Avenue	2	21,100	F	4	53,400	F
36	Daniels Street west of Airport Way	4	18,300	D	4	29,300	D
37	Woodward Avenue west of Airport Way	2	4,300	C	2	9,800	D
38	Union Road south of Woodward Avenue	2	4,900	C	2	15,500	D
39	Atherton Drive east of Union Road	4	7,000	C	4	22,900	D
40	Main Street (Manteca Rd) north of Sedan Avenue	2	2,600	C	2	4,300	C
41	Atherton Drive east of Main Street	4	4,700	C	4	9,900	C
42	Woodward Avenue west of Moffat Boulevard	2	7,900	C	NA ²	NA ²	NA ²
43	Louise Avenue west of Austin Road	4	4,100	C	2	5,200	C
44	Van Ryn Avenue north of Atherton Drive	2	9,200	D	2	10,900	D
new	Raymus Parkway west of Airport Way				2	9,600	C
new	Raymus Parkway east of Union Road				2	20,500	F
new	Raymus Parkway east of Main Street				4	18,000	C
new	Raymus Parkway east of Austin Road				6	30,300	C

Notes: ¹LOS E acceptable in downtown according to General Plan Policy C-P-2

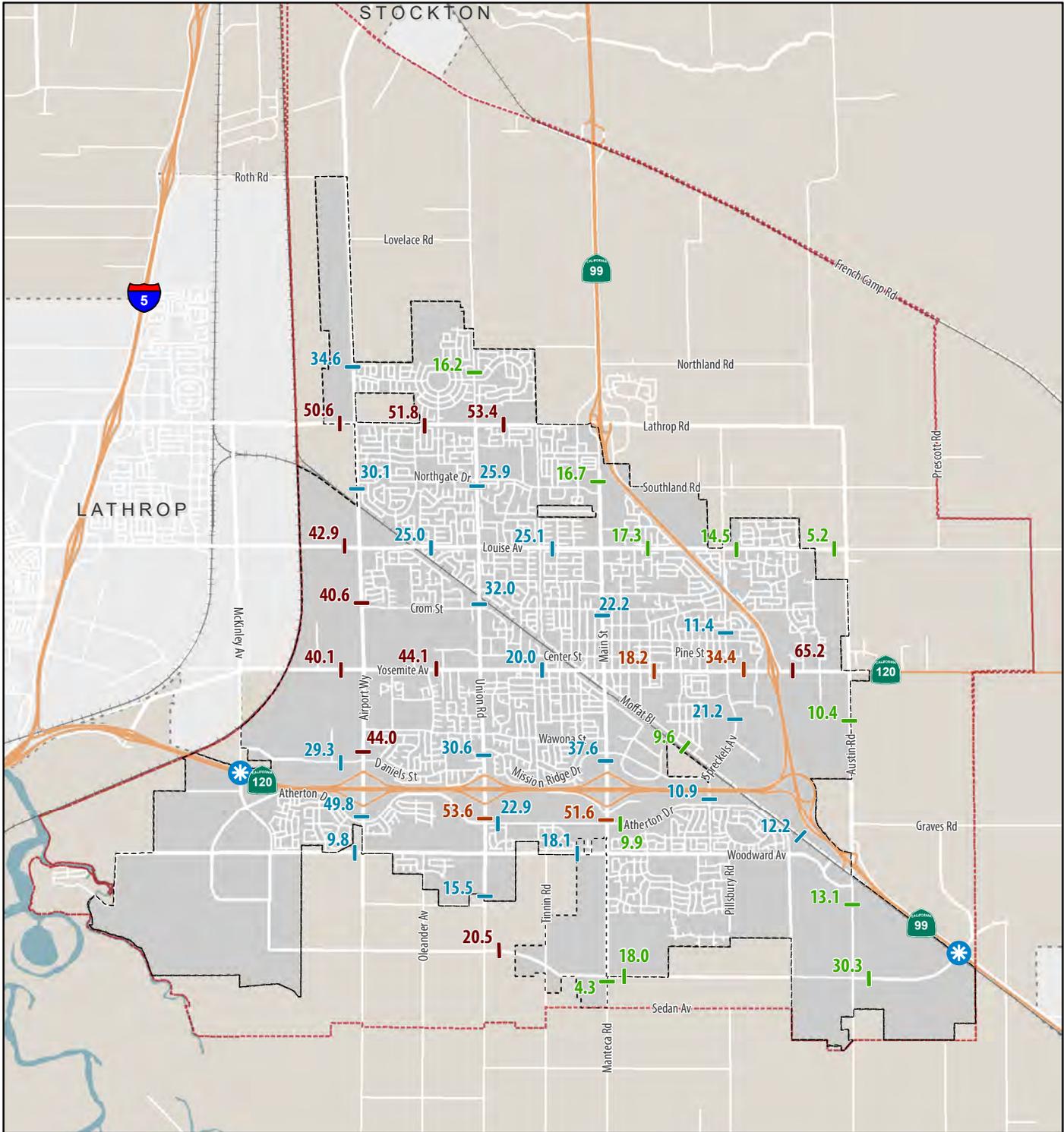
²NA = Not applicable, segment not in this scenario

Bold = Unacceptable operation according to General Plan Policy C-P-2

ADT = Average Daily Traffic; LOS = Level of Service

Source: Fehr & Peers, 2020





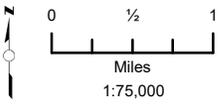
CITY OF MANTECA GENERAL PLAN
Figure 4: Previous General Plan Buildout
Average Daily Traffic and
Level of Service

Level of Service

- C
- D
- E
- F

X.X Average Daily Traffic Volume (x 1,000) Rounded to nearest 100

- Future Interchange
- Manteca City Limits
- Planning Area



Note: Counts conducted on October 25th and 26th, and November 9th and 10th, 2016.

Sources: City of Manteca; San Joaquin County, Fehr & Peers
 Map date: 12/3/2020

Proposed General Plan Buildout Conditions

Under conditions of buildout of the updated general plan, 25 of 43 study segments and 6 of 6 new segments were estimated to operate acceptably. Table 7 and Figure 5 present ADT and LOS for each study segment.

Table 7: Proposed General Plan Buildout ADT and LOS

ID	Segment	Baseline			Proposed General Plan		
		Number of Lanes	ADT	LOS	Number of Lanes	ADT	LOS
1	Airport Way north of Daniels Street	2	18,000	C	6	49,200	D
2	Union Road south of Mission Ridge Drive	4	20,400	D	4	31,700	D
3	Main Street north of SR 120 WB ramps	4	27,600	D	4	39,100	F
4	Moffat Boulevard east of Powers Avenue	2	6,400	C	2	10,500	D
5	Spreckels Avenue south of Phoenix Drive	4	16,100	C	4	23,100	D
6	Austin Road south of Yosemite Avenue	2	4,200	C	4	17,200	C
7	Airport Way north of Crom Street	2	14,300	D	4	43,200	F
8	Union Road north of Crom Street	4	17,900	C	4	38,200	F
9	Main Street south of Alameda Street	2	16,900	E ¹	4	25,000	D
10	Cottage Avenue south of Aldwina Lane	2	11,400	D	2	16,500	E
11	Airport Way south of Northgate Drive	2	10,800	D	4	38,100	F
12	Union Road south of Northgate Drive	4	15,500	C	4	31,800	D
13	Main Street north of Northgate Drive	4	12,100	C	4	21,700	D
14	Airport Way north of Daisywood Drive	2	10,100	D	4	45,400	F
15	Union Road north of Del Webb Boulevard	4	7,400	C	4	20,800	C
16	Airport Way south of SR 120 EB ramps	2	17,800	E	6	49,400	D
17	Union Road south of SR 120 EB ramps	2	15,200	D	4	51,300	F
18	Main Street south of Quintal Road	2	18,900	E	6	54,800	F
19	Austin Road south of Moffat Boulevard	2	4,700	C	4	17,700	C
20	Moffat Boulevard north of Woodward Avenue	2	6,000	C	2	14,500	D
21	Woodward Avenue west of Laurie Avenue	2	6,000	C	2	20,400	F
22	Yosemite Avenue west of Airport Way	4	14,000	C	4	46,300	F
23	Yosemite Avenue west of Pacific Road	4	20,600	C	4	47,700	F
24	Yosemite Avenue west of Almond Avenue	2	14,100	D	4	20,800	D
25	Yosemite Avenue west of Washington Avenue	2	16,100	E ¹	2	17,900	E ¹
26	Yosemite Avenue east of Cottage Avenue	5	26,000	D	5	36,500	E
27	Yosemite Avenue west of El Rancho Drive	5	27,100	D	5	81,500	F
28	Louise Avenue west of Airport Way	2	12,800	D	4	47,900	F



ID	Segment	Baseline			Proposed General Plan		
		Number of Lanes	ADT	LOS	Number of Lanes	ADT	LOS
29	Louise Avenue east of Marguerite Avenue	4	13,400	D	4	29,000	D
30	Louise Avenue west of Yvonne Avenue	4	17,400	D	4	30,000	D
31	Louise Avenue east of Tulip Place	4	13,400	D	4	24,400	D
32	Louise Avenue west of Cottage Avenue	4	12,400	C	4	22,100	D
33	Lathrop Avenue west of Airport Way	2	14,700	D	4	59,200	F
34	Lathrop Avenue west of Madison Grove Drive	4	18,000	E	4	54,300	F
35	Lathrop Avenue west of Sherwood Avenue	2	21,100	F	4	57,300	F
36	Daniels Street west of Airport Way	4	18,300	D	4	33,700	E
37	Woodward Avenue west of Airport Way	2	4,300	C	2	12,600	D
38	Union Road south of Woodward Avenue	2	4,900	C	4	19,200	D
39	Atherton Drive east of Union Road	4	7,000	C	4	23,700	D
40	Main Street (Manteca Rd) north of Sedan Avenue	2	2,600	C	2	9,600	C
41	Atherton Drive east of Main Street	4	4,700	C	4	11,400	C
42	Woodward Avenue west of Moffat Boulevard	2	7,900	C	NA ²	NA ²	NA ²
43	Louise Avenue west of Austin Road	4	4,100	C	4	8,800	C
44	Van Ryn Avenue north of Atherton Drive	2	9,200	D	2	13,900	D
new	Lovelace Road west of SR 99				4	37,700	D
new	Raymus Parkway east of Union Road				2	12,500	D
new	Raymus Parkway east of Main Street				4	15,000	C
new	Raymus Parkway east of Austin Road				6	18,700	C
new	Roth Rd east of Airport Way				4	19,200	D
new	Lovelace Rd east of Union Rd				4	36,400	D

Notes: ¹LOS E acceptable in downtown according to General Plan Policy C-P-2

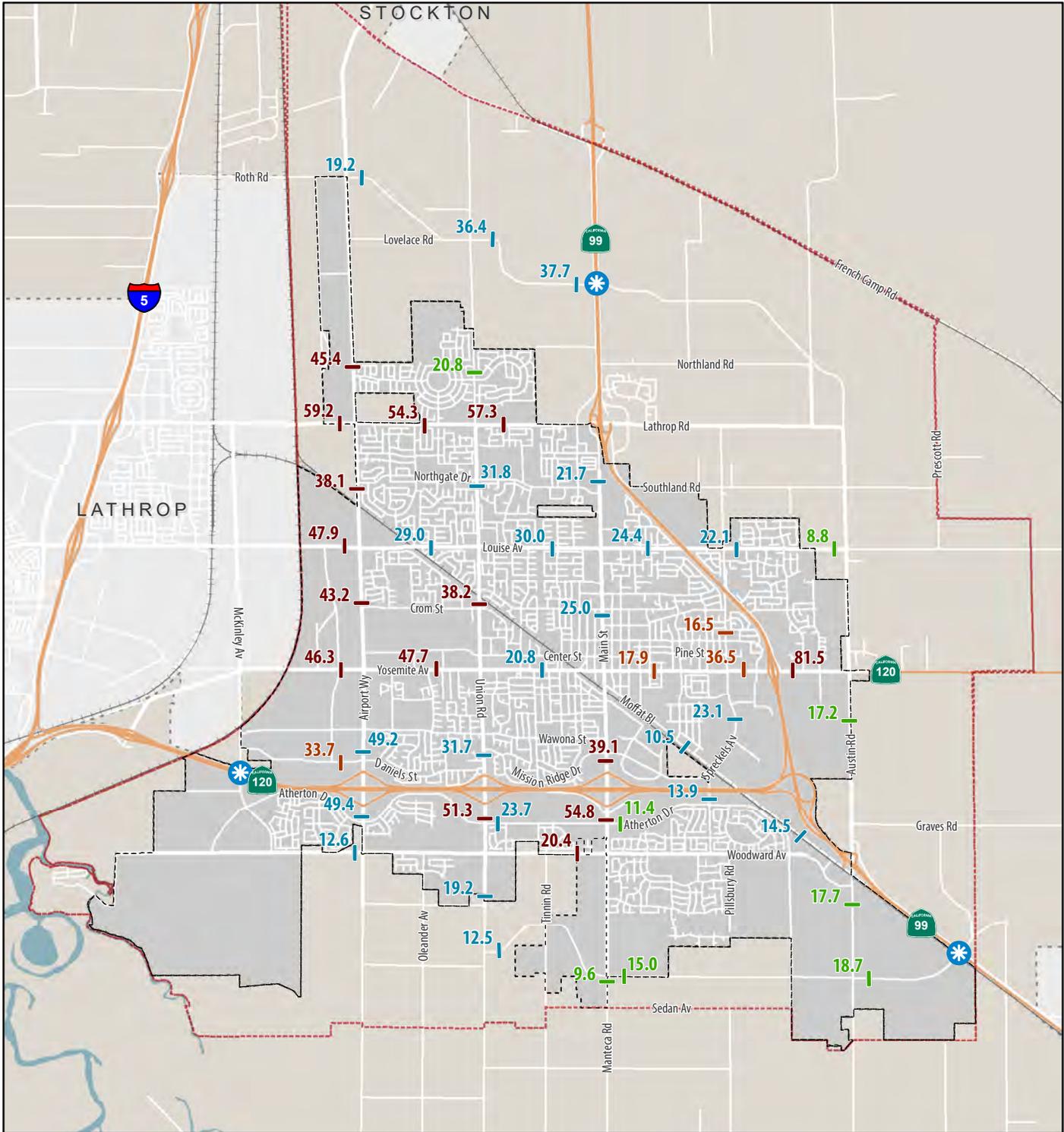
²NA = Not applicable, segment not in this scenario

Bold = Unacceptable operation according to General Plan Policy C-P-2

ADT = Average Daily Traffic; LOS = Level of Service

Source: Fehr & Peers, 2020





Level of Service LOS

- C
- D
- E
- F

X.X Average Daily Traffic
Volume (x 1,000)
Rounded to nearest 100



Future Interchange

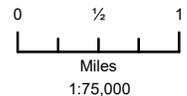


Manteca City Limits



Planning Area

CITY OF MANTECA GENERAL PLAN
Figure 5: Proposed General Plan Buildout
Average Daily Traffic and
Level of Service



Note: Counts conducted on October 25th and 26th, and November 9th and 10th, 2016.

Alternative D Buildout Conditions

Under conditions of buildout of Alternative D, 25 of 43 study segments and 6 of 6 new segments were estimated to operate acceptably. Table 8 and Figure 6 present ADT and LOS for each study segment.

Table 8: Propose General Plan Buildout ADT and LOS

ID	Segment	Baseline			Alternative D		
		Number of Lanes	ADT	LOS	Number of Lanes	ADT	LOS
1	Airport Way north of Daniels Street	2	18,000	C	6	49,600	D
2	Union Road south of Mission Ridge Drive	4	20,400	D	4	30,600	D
3	Main Street north of SR 120 WB ramps	4	27,600	D	4	40,200	F
4	Moffat Boulevard east of Powers Avenue	2	6,400	C	2	10,400	D
5	Spreckels Avenue south of Phoenix Drive	4	16,100	C	4	23,600	D
6	Austin Road south of Yosemite Avenue	2	4,200	C	4	16,700	C
7	Airport Way north of Crom Street	2	14,300	D	4	44,600	F
8	Union Road north of Crom Street	4	17,900	C	4	35,800	E
9	Main Street south of Alameda Street	2	16,900	E ¹	4	24,400	D
10	Cottage Avenue south of Aldwina Lane	2	11,400	D	2	16,100	E
11	Airport Way south of Northgate Drive	2	10,800	D	4	40,900	F
12	Union Road south of Northgate Drive	4	15,500	C	4	29,600	D
13	Main Street north of Northgate Drive	4	12,100	C	4	19,900	D
14	Airport Way north of Daisywood Drive	2	10,100	D	4	41,200	F
15	Union Road north of Del Webb Boulevard	4	7,400	C	4	19,700	C
16	Airport Way south of SR 120 EB ramps	2	17,800	E	6	47,800	D
17	Union Road south of SR 120 EB ramps	2	15,200	D	4	47,500	F
18	Main Street south of Quintal Road	2	18,900	E	6	52,300	E
19	Austin Road south of Moffat Boulevard	2	4,700	C	4	17,200	C
20	Moffat Boulevard north of Woodward Avenue	2	6,000	C	2	14,500	D
21	Woodward Avenue west of Laurie Avenue	2	6,000	C	2	20,100	F
22	Yosemite Avenue west of Airport Way	4	14,000	C	4	46,200	F
23	Yosemite Avenue west of Pacific Road	4	20,600	C	4	46,400	F
24	Yosemite Avenue west of Almond Avenue	2	14,100	D	4	20,900	D
25	Yosemite Avenue west of Washington Avenue	2	16,100	E ¹	2	17,500	E ¹
26	Yosemite Avenue east of Cottage Avenue	5	26,000	D	5	37,000	E
27	Yosemite Avenue west of El Rancho Drive	5	27,100	D	5	79,700	F
28	Louise Avenue west of Airport Way	2	12,800	D	4	47,500	F
29	Louise Avenue east of Marguerite Avenue	4	13,400	D	4	28,800	D



ID	Segment	Baseline			Alternative D		
		Number of Lanes	ADT	LOS	Number of Lanes	ADT	LOS
30	Louise Avenue west of Yvonne Avenue	4	17,400	D	4	29,800	D
31	Louise Avenue east of Tulip Place	4	13,400	D	4	23,500	D
32	Louise Avenue west of Cottage Avenue	4	12,400	C	4	21,200	D
33	Lathrop Avenue west of Airport Way	2	14,700	D	4	56,400	F
34	Lathrop Avenue west of Madison Grove Drive	4	18,000	E	4	54,300	F
35	Lathrop Avenue west of Sherwood Avenue	2	21,100	F	4	55,900	F
36	Daniels Street west of Airport Way	4	18,300	D	4	34,600	E
37	Woodward Avenue west of Airport Way	2	4,300	C	2	11,300	D
38	Union Road south of Woodward Avenue	2	4,900	C	4	18,100	D
39	Atherton Drive east of Union Road	4	7,000	C	4	20,900	D
40	Main Street (Manteca Rd) north of Sedan Avenue	2	2,600	C	2	9,100	C
41	Atherton Drive east of Main Street	4	4,700	C	4	11,000	C
42	Woodward Avenue west of Moffat Boulevard	2	7,900	C	NA ²	NA ²	NA ²
43	Louise Avenue west of Austin Road	4	4,100	C	4	8,100	C
44	Van Ryn Avenue north of Atherton Drive	2	9,200	D	2	13,200	D
new	Lovelace Road west of SR 99				4	31,900	D
new	Raymus Parkway east of Union Road				2	12,400	D
new	Raymus Parkway east of Main Street				4	13,900	C
new	Raymus Parkway east of Austin Road				6	18,800	C
new	Roth Rd east of Airport Way				4	16,700	C
new	Lovelace Rd east of Union Rd				4	29,900	D

Notes: ¹LOS E acceptable in downtown according to General Plan Policy C-P-2

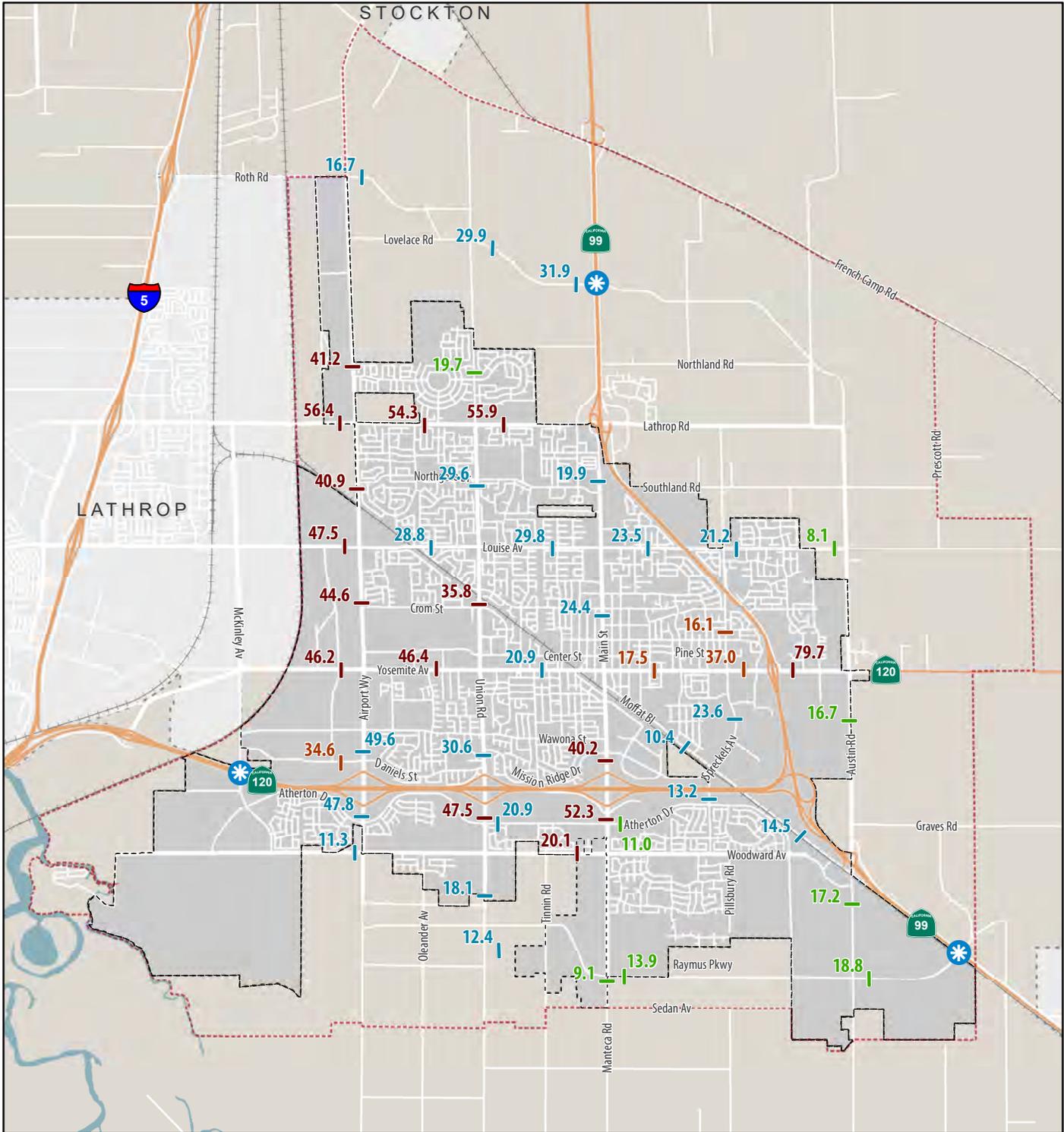
²NA = Not applicable, segment not in this scenario

Bold = Unacceptable operation according to General Plan Policy C-P-2

ADT = Average Daily Traffic; LOS = Level of Service

Source: Fehr & Peers, 2022





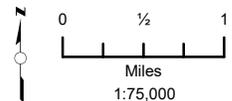
Level of Service

- C
- D
- E
- F

X.X Average Daily Traffic Volume (x 1,000) Rounded to nearest 100

- Future Interchange
- Manteca City Limits
- Planning Area

CITY OF MANTECA GENERAL PLAN
Figure 6: Alternative D Buildout
Average Daily Traffic and
Level of Service



Note: Counts conducted on October 25th and 26th, and November 9th and 10th, 2016.

Sources: City of Manteca; San Joaquin County, Fehr & Peers
 Map date: 2/15/2022

Discussion

Under 2019 baseline conditions, additional segments fail to meet the LOS standard, largely due to residential growth south of SR 120 and residential and industrial growth north of Lathrop Avenue.

Under baseline plus approved projects, a 30 percent increase in residential units and a 53 percent increase in employment result in further segment failing to meet the standard in several locations. Additionally, roadway improvements near approved projects sites are likely to be completed but not included in the model roadway network for this scenario.

More roadway segments do not meet the LOS standards under conditions of the previous and proposed general plan buildout than under baseline conditions, despite increased number of lanes and new roadways. Drivers of increased congestion include an 88 percent increase in VMT per model lane mile from the baseline scenario to the proposed general plan buildout scenario. Although VMT is somewhat reduced in the Alternative D buildout scenario, VMT per lane mile is still estimated to increase 81 percent.

However, general plan and Alternative D buildout is not associated with a particular year and is expected to occur beyond 2040. As discussed in the EIR chapter, changes in the amount of residential and employment land use will affect travel patterns. Actual built land use may be less than full buildout, affecting the results of this analysis. Additionally, policies to reduce VMT will also reduce ADT and improve LOS. As projects are approved, LOS should continue to be analyzed and additional roadway improvements planned as required.



Previous General Plan VMT Analysis

VMT analysis for the previous general plan was conducted with the procedures describe in the DEIR Transportation and Circulation chapter (3.14). Major land use for the scenario (and other analyzed scenarios as reported in the DEIR chapter) is shown in Table 9.

Table 9: Scenario Major Land Use

Land Use	Units	2019 Baseline	Baseline Plus Approved Projects	Previous General Plan	Proposed General Plan Buildout
Single family	Households	21,226	28,060	38,735	47,360
Multi family	Households	4,788	6,035	11,747	14,829
Age restricted	Households	2,236	2,741	2,551	2,741
Restaurant	Employees	730	1,125	2,187	2,433
Industrial	Employees	4,721	7,972	14,852	18,764
Office	Employees	1,291	3,631	6,315	12,370
Retail	Employees	4,831	7,421	14,158	15,728

Source: Fehr & Peers, 2020

Results of the VMT analysis are shown in Table 10.

Table 10: Daily Total VMT Efficiency Comparison by Scenario

Land Use	Units	2019 Baseline	85 Percent of baseline	Baseline Plus Approved Projects	Previous General Plan	Proposed General Plan
Single family	VMT per dwelling unit	103.8	88.2	100.2	71.9	75.4
Multi family	VMT per dwelling unit	78.6	66.8	74.7	54.3	57.2
Age restricted	VMT per dwelling unit	44.1	37.5	40.5	27.5	28.4
Restaurant	VMT per employee	186.0	158.1	179.5	229.7	228.6
Industrial	VMT per employee	75.3	64.0	62.8	76.6	74.9
Office	VMT per employee	32.4	27.5	35.0	43.4	43.1
Retail	VMT per employee	118.9	101.1	130.0	222.1	211.5
All residential	VMT per dwelling unit	94.8	NA ³	91.6	65.9	69.3
All residential	VMT per resident ¹	29.8	NA ³	28.8	20.7	21.8
All employment	VMT per employee	82.2	NA ³	82.5	126.1	112.8
All land uses	VMT per service population ^{1,2}	36.7	NA ³	38.3	42.4	41.4
Total VMT	VMT	3,755,100	NA ³	4,957,000	8,296,900	9,921,000

Notes: ¹Based on 3.18 residents/dwelling unit (California Department of Finance, E-5 City/County Population and Housing



Appendix D: Supporting Transportation Data and Analysis
February 18, 2022

Estimates, 1/1/2020)

²Service population includes residents, employees, and students

³NA = not applicable, metric for informational purposes only

⁴**Bold** = Exceeds threshold

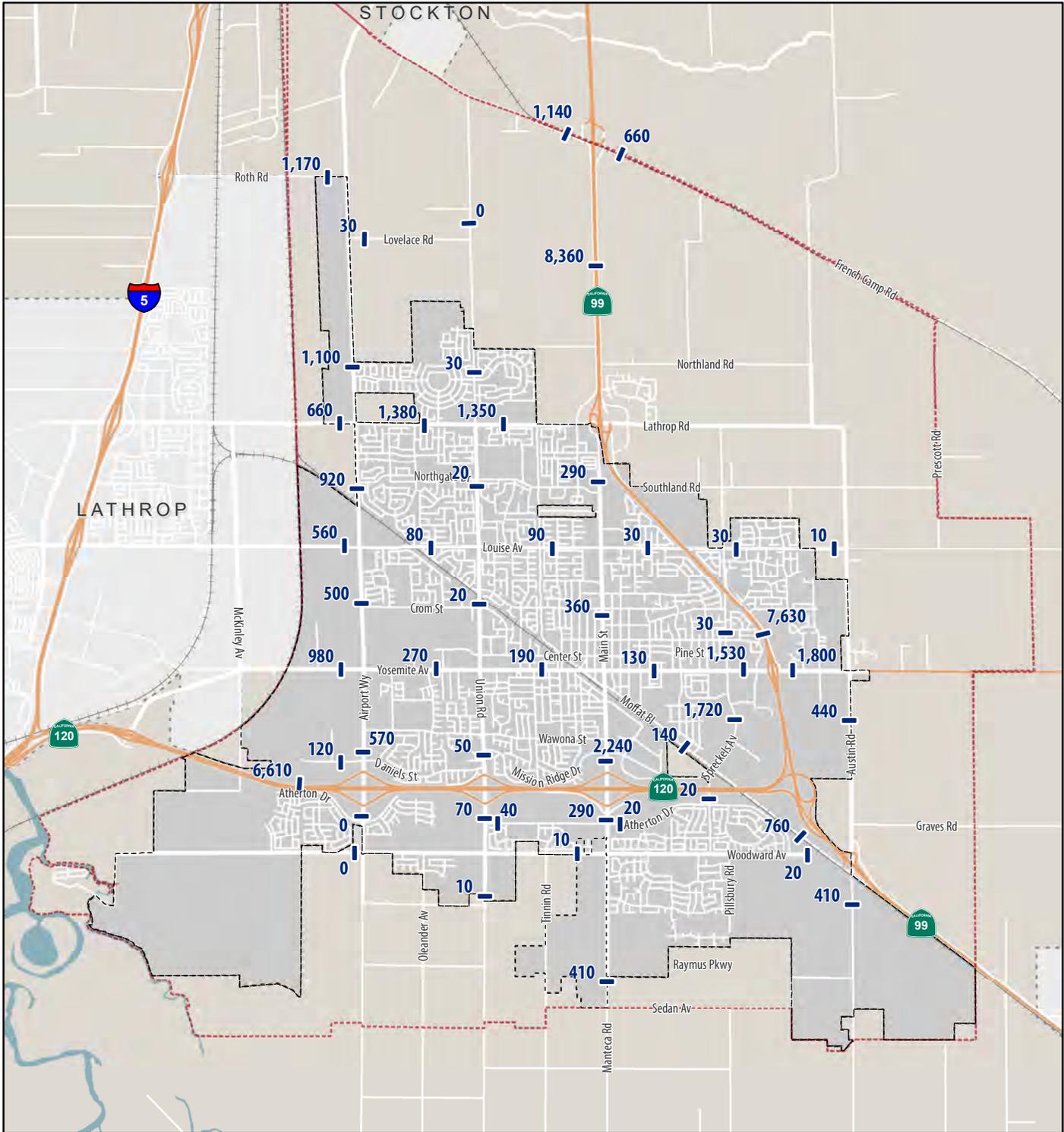
Source: Fehr & Peers, 2020



Daily Truck Traffic Analysis

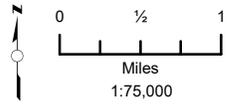
As part of the recent City truck study, the City developed a model to estimate heavy truck traffic volumes. Truck volumes were analyzed for each of the scenarios noted above and are presented in Figures 7-12.

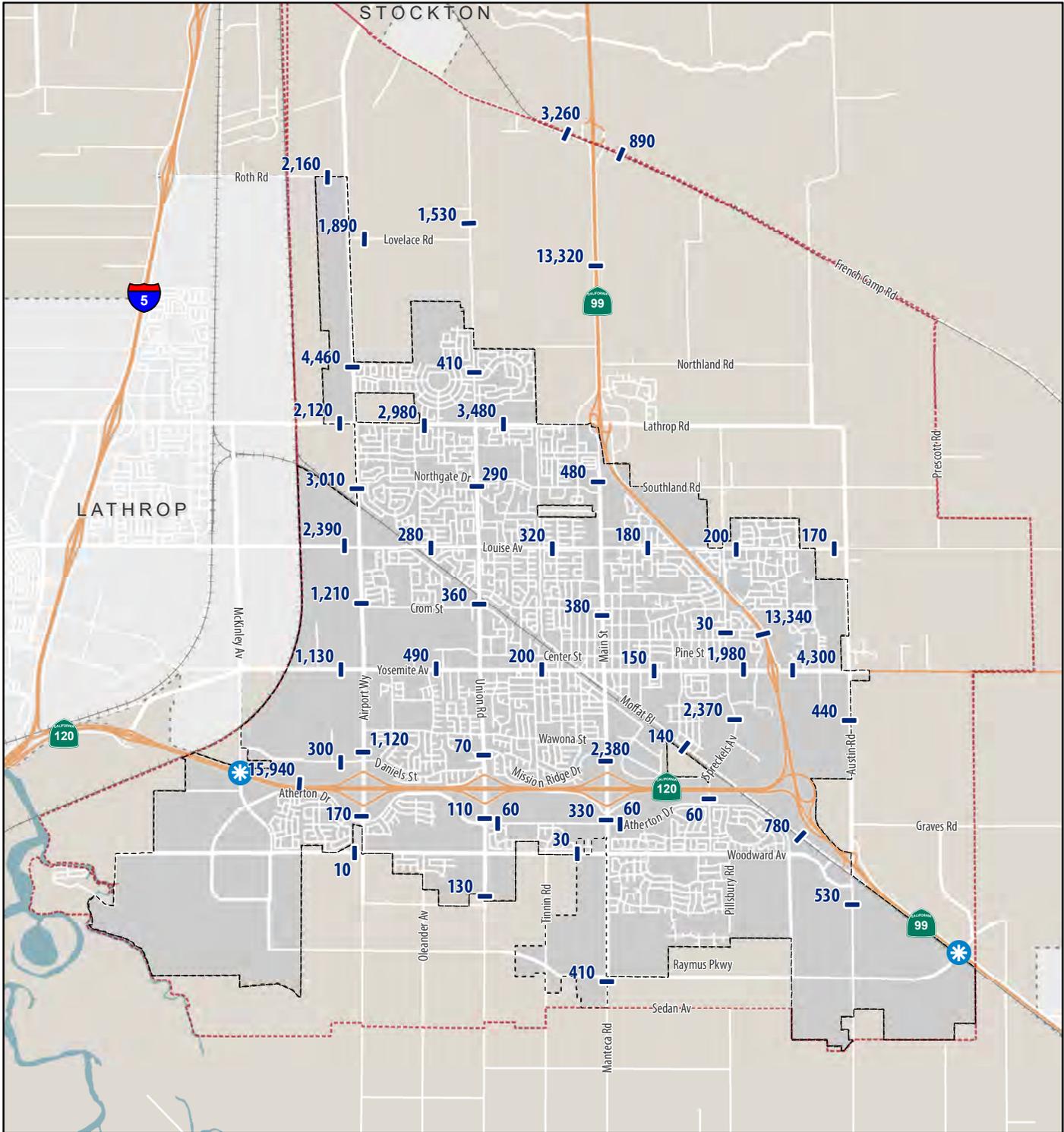




- Manteca City Limits
- Planning Area
- XXX** Average Daily Truck Volume

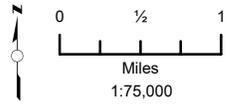
CITY OF MANTECA GENERAL PLAN
Figure 7: Existing Conditions
Average Daily Truck Volumes

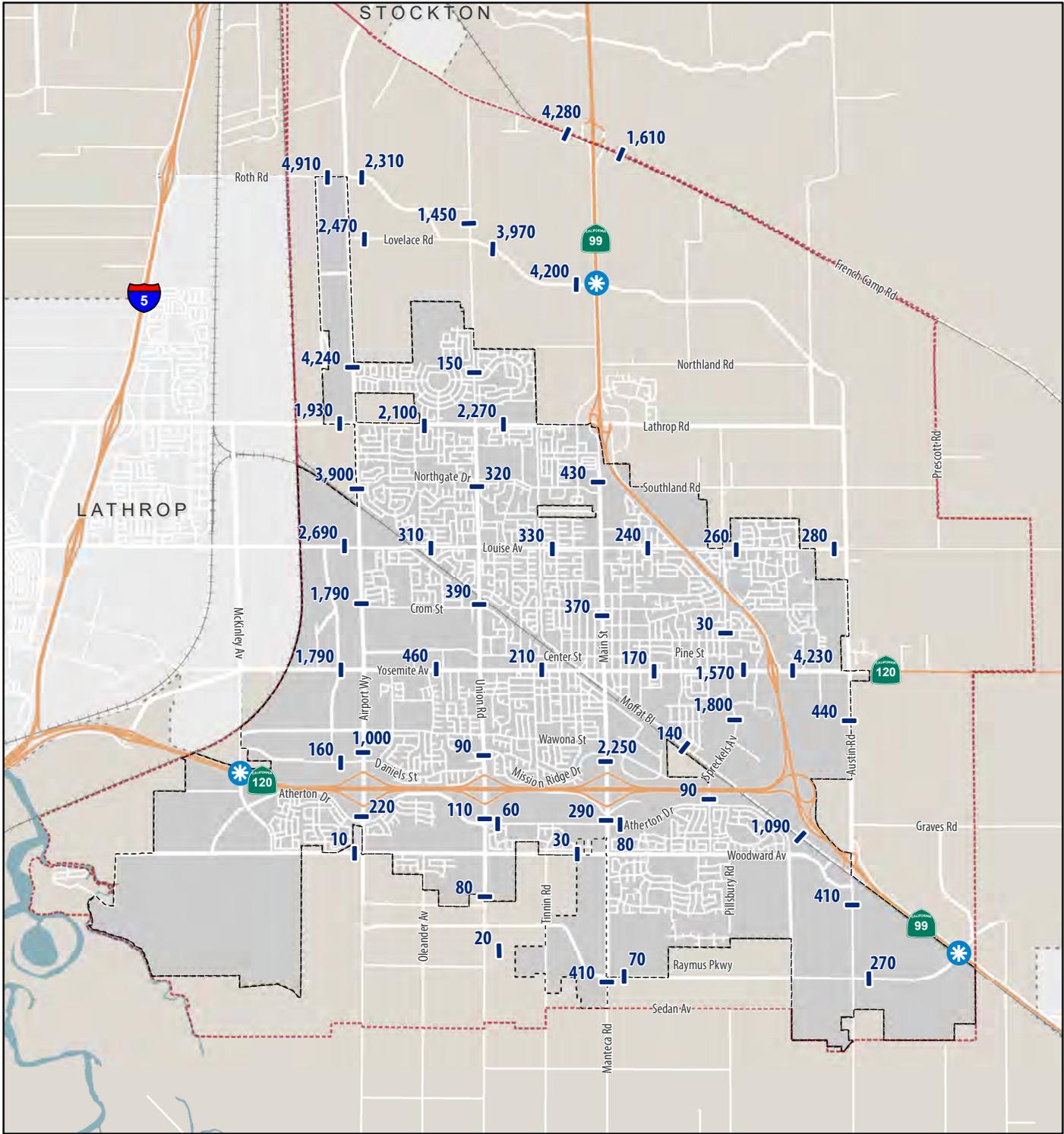




CITY OF MANTECA GENERAL PLAN
Figure 10: Previous General Plan Buildout
Average Daily Truck Volumes

- XXX** Average Daily Truck Volume
-  Future Interchange
-  Manteca City Limits
-  Planning Area





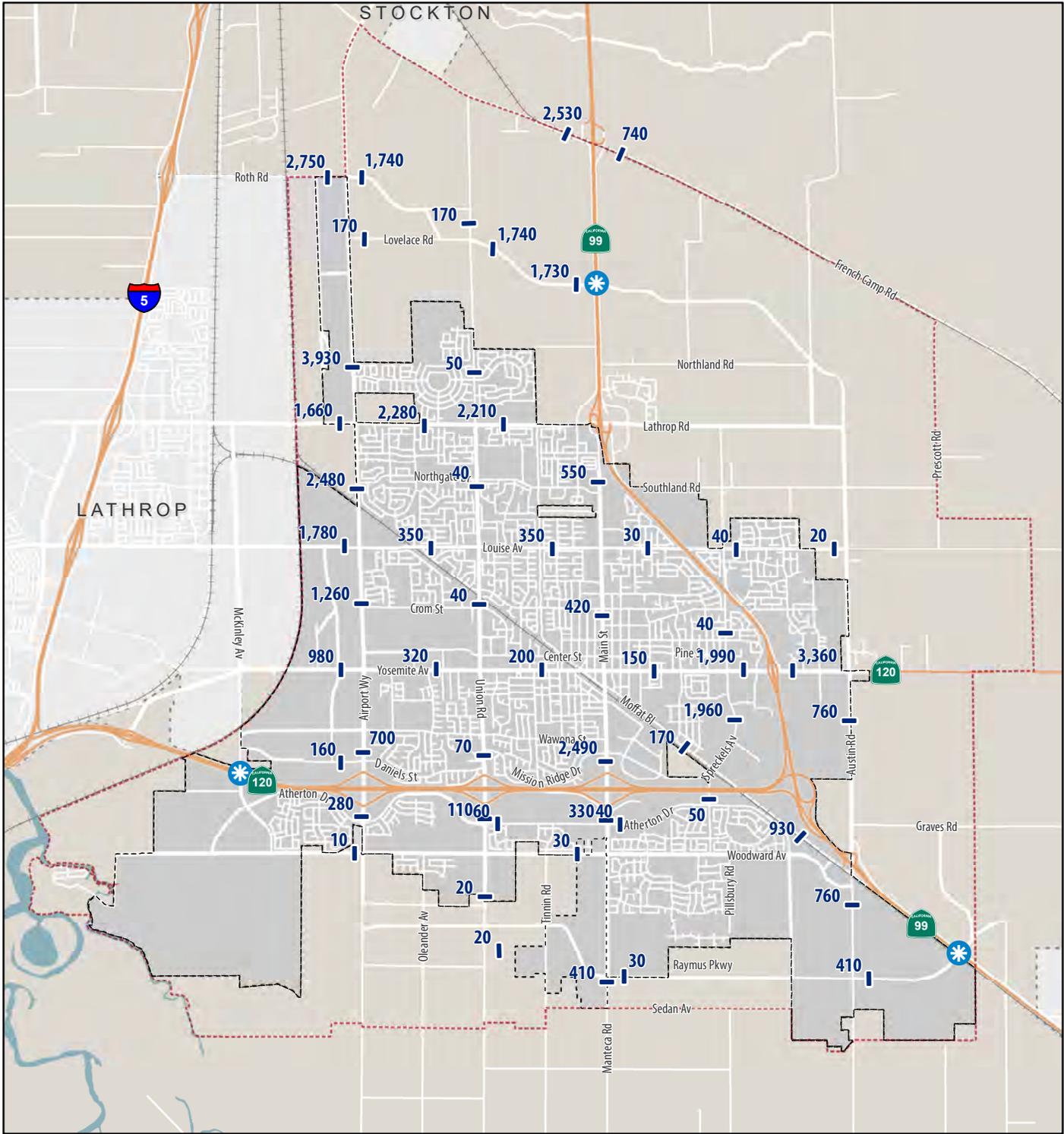
CITY OF MANTECA GENERAL PLAN
Figure 11: Proposed General Plan Buildout
Average Daily Truck Volumes

- XXX Average Daily Truck Volume
- Future Interchange
- Manteca City Limits
- Planning Area

Sources: City of Manteca; San Joaquin County, Fehr & Peers
 Map date: 2/10/2022

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

0 1/2 1
 Miles
 1:75,000



CITY OF MANTECA GENERAL PLAN
Figure 12: Alternative D Buildout
Average Daily Truck Volumes

- XXX Average Daily Truck Volume
- Future Interchange
- Manteca City Limits
- Planning Area

Sources: City of Manteca; San Joaquin County, Fehr & Peers
 Map date: 2/15/2022

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

0 1/2 1
 Miles
 1:75,000