4.0 HAZARDS, SAFETY, AND NOISE

Issues and topics related to health, safety, and noise within the Planning Area are addressed in this chapter. Some of these hazards may be naturally induced, such as wildfire hazards. Other health and safety hazards may be the result of natural hazards, which are exacerbated by human activity, such as development in areas prone to flooding. Additional hazards are entirely human-made, including airport crash hazards and exposure to hazardous materials.

This chapter is divided into the following sections:

- 4.1 Hazards and Hazardous Materials
- 4.2 Air Traffic
- 4.3 Fire Hazards
- 4.4 Flooding
- 4.5 Noise

4.1 HAZARDS AND HAZARDOUS MATERIALS

A hazardous material is a substance or combination of substances which, because of its quantity, concentration, or physical, chemical, or infectious characteristics, may either (1) cause or significantly contribute to an increase in mortality or an increase in serious, irreversible, or incapacitating irreversible illness; or (2) pose a substantial present or potential hazard to human health and safety or the environment when improperly treated, stored, transported, or disposed of. Hazardous materials are mainly present because of industries involving chemical byproducts from manufacturing, petrochemicals, and hazardous building materials.

Hazardous waste is the subset of hazardous materials that has been abandoned, discarded, or recycled and is not properly contained, including contaminated soil or groundwater with concentrations of chemicals, infectious agents, or toxic elements sufficiently high to increase human mortality or to destroy the ecological environment. If a hazardous material is spilled and cannot be effectively picked up and used as a product, it is considered to be hazardous waste. If a hazardous material site is unused, and it is obvious there is no realistic intent to use the material, it is also considered to be a hazardous waste. Examples of hazardous materials include flammable and combustible materials, corrosives, explosives, oxidizers, poisons, materials that react violently with water, radioactive materials, and chemicals.

REGULATORY FRAMEWORK

FEDERAL

Comprehensive Environmental Response, Compensation & Liability Act (CERCLA)

This act, commonly associated with the term “Superfund,” established:

- Regulations concerning closed and abandoned hazardous waste sites
- Liability of parties responsible for any releases of hazardous waste at these sites
- Funding for cleanup when responsible parties cannot be identified

Resource Conservation and Recovery Act (RCRA)

This act established EPA's "cradle to grave" control (generation, transportation, treatment, storage, and disposal) over hazardous materials and wastes. In California, the Department of Toxic Substances Control (DTSC) has RCRA authorization.

Clean Air Act

In according with the Clean Air Act, the EPA has established National Emissions Standards for Hazardous Air Pollutants. Exceeding the emissions standard for a given air pollutant may cause an increase in illnesses and/or fatalities.

Clean Water Act (CWA)

The CWA, which amended the WPCA of 1972, sets forth the Section 404 program to regulate the discharge of dredged and fill material into Waters of the U.S. and the Section 402 National Pollutant Discharge Elimination System (NPDES) to regulate the discharge of pollutants into Waters of the U.S. The Section 401 Water Quality Certification program establishes a framework of water quality protection for activities requiring a variety of Federal permits and approvals (including CWA Section 404, CWA Section 402, FERC Hydropower and Section 10 Rivers and Harbors).

STATE

California Health & Safety Code

Division 20 of the Health and Safety Code establishes Department of Toxic Substances Control (DTSC) authority and sets forth hazardous waste and underground storage tank regulations. In addition, the division creates a State superfund framework that mirrors the Federal program.

Division 26 of the Health and Safety Code establishes California Air Resources Board (CARB) authority. The division designates CARB as the air pollution control agency per Federal regulations and charges the Board with meeting Clean Air Act requirements.

Food and Agriculture Code

Division 6 of the California Food and Agricultural Code (FAC) establishes pesticide application regulations. The division establishes training standards for pilots conducting aerial applications as well as permitting and certification requirements.

Water Code

Division 7 of the California Water Code, commonly referred to as the Porter-Cologne Water Quality Control Act, created the State Water Resources Control Board (SWRCB) and the Regional Water Quality Control Boards (RWQCB). In addition, water quality responsibilities are established for the SWRCB and RWQCBs.

California Code of Regulations

Title 3 of the CCR pertains to the application of pesticides and related chemicals. Parties applying regulated substances must continuously evaluate application equipment, the weather, the treated lands and all surrounding properties. Title 3 prohibits any application that would:

- Contaminate persons not involved in the application
- Damage non-target crops or animals or any other public or private property
- Contaminate public or private property or create health hazards on said property

Title 8 of the CCR establishes California Occupational Safety and Health Administration (Cal OSHA) requirements related to public and worker protection. Topics addressed in Title 8 include materials exposure limits, equipment requirements, protective clothing, hazardous materials, and accident prevention. Construction safety and exposure standards for lead and asbestos are set forth in Title 8.

Title 14 of the CCR establishes minimum standards for solid waste handling and disposal.

Title 17 of the CCR establishes regulations relating to the use and disturbance of materials containing naturally occurring asbestos.

Title 22 of the CCR sets forth definitions of hazardous waste and special waste. The section also identifies hazardous waste criteria and establishes regulations pertaining to the storage, transport, and disposal of hazardous waste.

Title 26 of the CCR is a medley of State regulations pertaining to hazardous materials and waste that are presented in other regulatory sections. Title 26 mandates specific management criteria related to hazardous materials identification, packaging, and disposal. In addition, Title 26 establishes requirements for hazardous materials transport, containment, treatment, and disposal. Finally, staff training standards are set forth in Title 26.

Title 27 of the CCR sets forth a variety of regulations relating to the construction, operation and maintenance of the State's landfills. The title establishes a landfill classification system and categories of waste. Each class of landfill is constructed to contain specific types of waste (household, inert, special, and hazardous).

LOCAL

City of Manteca General Plan

The current City of Manteca General Plan identifies the following policy framework related to hazardous materials and waste:

Safety Element

GOAL S-1: Prevent loss of lives, injury, and property damage due to geological hazards and seismic activity.

GOAL S-2: Prevent loss of lives, injury, and property damage due to the collapse of buildings and critical facilities, and to prevent disruption of essential services in the event of an earthquake.

POLICY S-P-1: The City shall require preparation of geological reports and/or geological engineering reports for proposed new development located in areas of potentially significant geological hazards, including potential subsidence (collapsible surface soils) due to groundwater extraction.

POLICY S-P-2: The City shall require new development to mitigate the potential impacts of geologic hazards through Building Plan review.

POLICY S-P-3: The City shall require new development to mitigate the potential impacts of seismic induced settlement of uncompacted fill and liquefaction (water-saturated soil) due to the presence of a high water table.

POLICY S-P-4: The City shall maintain an inventory of pre-1940 unreinforced masonry buildings within the city. No change in use to a higher occupancy or more intensive use shall be approved in such

structures until an engineering evaluation of the structure has been conducted and any structural deficiencies corrected. The Redevelopment Agency shall be encouraged to assist property owners in reinforcing buildings.

POLICY S-P-5: The City shall ensure that all public facilities, such as buildings, water tanks, and reservoirs, are structurally sound and able to withstand seismic shaking and the effects of seismically induced ground failure.

POLICY S-P-6: The City shall comply with the California State seismic and building standards in the design and siting of critical facilities, including police and fire stations, school facilities, hospitals, hazardous materials manufacturing and storage facilities, and large public assembly halls.

IMPLEMENTATION S-I-1: All new development shall comply with the current Uniform Building Code (UBC) requirements that stipulate building structural material and reinforcement.

IMPLEMENTATION S-I-2: All new development shall comply with California Health and Safety Code Section 19100 et seq. (Earthquake Protection Law), which requires that buildings be designed to resist stresses produced by natural forces such as earthquakes and wind.

IMPLEMENTATION S-I-3: The City shall inventory potentially hazardous buildings within the city and adopt a mitigation program, including requirements for strengthening buildings, changing the use of the buildings to an acceptable occupancy level, or demolishing the buildings.

GOAL S-3: Prevent loss of lives, injury, and property damage due to flooding.

GOAL S-4: Pursue flood control solutions that minimize environmental impacts.

POLICY S-P-7: Regulate all uses and development in areas subject to potential flooding through zoning and other land use regulations.

POLICY S-P-8: Cooperate with other agencies in the pursuit of a regional approach to flood issues.

POLICY S-P-9: Combine flood control, recreation, water quality, and open space functions where feasible.

POLICY S-P-10: Ensure that any existing structures subject to the 100-year flood provide adequate protection from flood hazards.

POLICY S-P-11: Ensure that the impacts of potential flooding are adequately analyzed when considering areas for future urban expansion.

POLICY S-P-12: New residential development, including mobilehomes, shall be constructed so that the lowest floor is at least one foot above the 100- year flood level.

POLICY S-P-13: Non-residential development shall be anchored and flood-proofed in accord with Federal Emergency Management Agency (FEMA) standards to prevent damage or causing damage due to a 100-year flood or, alternatively, elevated to at least one foot above the 100- year flood level.

POLICY S-P-14: When improvements to existing developments are made costing at least 50 percent of the current market value of the structure before improvements, the structure shall be brought into compliance with FEMA standards.

IMPLEMENTATION S-I-4: The City shall continue to participate in the National Flood Insurance Program. To this end, the City shall ensure that local regulations are in full compliance with standards adopted by the Federal Emergency Management Agency (FEMA). The City shall adopt and implement local flood management development standards.

IMPLEMENTATION S-I-5: Provide flood warning and forecasting information to City residents.

IMPLEMENTATION S-I-6: Discourage large continuous paved areas unless provided with engineered drainage facilities.

IMPLEMENTATION S-I-7: Where feasible, require the use of pervious paving materials, such as brick or stepping stones with sand joints.

IMPLEMENTATION S-I-8: New development shall be required to maintain natural stream courses and adjacent habitat and combine flood control, recreation, water quality, and open space functions.

GOAL S-5: The City shall protect the health, safety, natural resources, and property through regulation of use, storage, transport, and disposal of hazardous materials.

POLICY S-P-15: The City shall maintain an awareness of hazardous materials throughout the Manteca region.

POLICY S-P-16: City approvals of all new development shall consider the potential for the production, use, storage, and transport of hazardous materials and provide for reasonable controls on such hazardous materials.

POLICY S-P-17: Within its authority, the City shall regulate the production, use, storage, and transport of hazardous materials to protect the health of Manteca residents.

IMPLEMENTATION S-I-9: The City shall require businesses that manufacture, store, use, or transport significant quantities of hazardous materials to identify annually such materials and their quantities.

IMPLEMENTATION S-I-10: The City shall require the submittal of lists of hazardous materials used in existing and proposed industrial and commercial businesses within the City of Manteca. The list shall be maintained through the Manteca Fire Department and updated through periodic review.

IMPLEMENTATION S-I-11: The City shall work with San Joaquin County and other public agencies to inform consumers about household use and disposal of hazardous materials.

IMPLEMENTATION S-I-12: Cooperate fully with Union Pacific Railroad and other agencies, such as the CHP, in the event of a hazardous material emergency.

IMPLEMENTATION S-I-13: Continue the City hazardous waste pick-up program for household hazardous materials.

GOAL S-6: Ensure that City emergency procedures are adequate in the event of potential natural or man-made disasters.

POLICY S-P-18: The City shall maintain and periodically update the City's Emergency Plan.

IMPLEMENTATION S-I-14: The City shall conduct periodic emergency response exercises to test the effectiveness of City emergency response procedures.

IMPLEMENTATION S-I-15: The City shall review County and State emergency response procedures that must be coordinated with City procedures.

ENVIRONMENTAL SETTING

Envirostor Data Management System

The DTSC maintains the *Envirostor Data Management System*, which provides information on hazardous waste facilities (both permitted and corrective action) as well as any available site cleanup information. This site cleanup information includes: Federal Superfund Sites (NPL), State Response Sites, Voluntary Cleanup Sites, School Cleanup Sites, Corrective Action Sites, Tiered Permit Sites, and Evaluation / Investigation Sites. The hazardous waste facilities include: Permitted–Operating, Post-Closure Permitted, and Historical Non-Operating.

There are 19 locations with a Manteca address that are listed in the Envirostor database. Ten sites are listed as school investigation sites with no action required, one site is listed as a school investigation site which requires further evaluation, two sites were listed as active and are under state cleanup programs, two sites were listed as no further action, two sites were listed as inactive and need further evaluation, one site was referred to the RWQCB, and one site is a voluntary cleanup site that has land use restrictions. Table 4.1-1 lists the active sites and the inactive (needs evaluation or action required) sites within Manteca. Following the table is a background discussion of these sites.

TABLE 4.1-1: MANTECA SITE CLEANUP AND HAZARDOUS FACILITIES LIST (ENVIROSTOR)

NAME	*STATUS DATE*	*LOCATION*
ACTIVE – STATE RESPONSE		
Gordon Research Company	10/15/2007	1085 South Union Road
Nur-Al-Huda Academy	10/3/2014	1085 South Union Road
INACTIVE – NEEDS EVALUATION (TIERED PERMIT)		
ISE Labs, Inc., Assembly Operations	N/A	400 Industrial Park Drive
Qualex, Inc. - Manteca	N/A	555 Industrial Park Drive
INACTIVE – NEEDS EVALUATION (SCHOOL INVESTIGATION)		
Proposed Manteca High School Addition	10/17/2007	206, 216 & 220 South Garfield Avenue
INACTIVE – ACTION REQUIRED (VOLUNTARY CLEANUP)		
Satellite Housing	3/16/2009	280 and 282 North Airport
REFER – OTHER AGENCY (EVALUATION)		
Schmiedt Soil Service, Inc.	3/7/1996	20696 South Manteca Road

SOURCE: CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL, ENVIROSTOR DATABASE, 2016.

ACTIVE SITES

The Gordon Research Company site is located within a residential district of Manteca. The southwestern corner of the property abuts the northwestern corner of the Brock Elliot Elementary School.

According to information provided by the DTSC, state and local agencies involvement in the site began in 1984 in response to a complaint. An inspection by agency representatives revealed that Mr. Larry Gordon was engaged in chemical reformulation and repackaging of chemicals for resale without the

required permits. A review of the available DTSC file revealed that prior to 1988, a chemical formulation, repackaging and resale businesses operated at the Site. The businesses were known as Gordon Research Company and U.S. Gordon Subproperty. These businesses purchased bulk chemicals and stored them at the site. In 1984, in response to a complaint received by the State of California DHS, a predecessor to DTSC, conducted an inspection at the site. The inspection revealed activities for which the operator did not hold the required permits. By December 1985, DHS inspections found that most of the chemicals were removed from the site.

From 1984 through 1986, the San Joaquin County District Attorney's Office along with the California Department of Health Services (DHS) conducted enforcement actions. In 1986, a permanent injunction was obtained prohibiting Mr. Gordon from handling, treating, storing, or disposing of hazardous substances or wastes.

In 1988, the site was inspected by DHS staff, the Manteca Fire Department, and the county District Attorney's office. At the time of the inspection, a portion of the property was surrounded by a fence. Within the fenced area, approximately 10 to 20 drums with markings similar to military specifications were noted. These drums contained products used by the property owner in maintaining equipment used in the commercial/agricultural operations. A 2007 inspection noted unlabeled containers, high pressure cylinders, and open containers with handwritten notations; some of these containers were deteriorated and leaking.

In October of 2007, San Joaquin County Environmental Health Department conducted an inspection which revealed wastes accumulated and potentially being deposited into the soil at the site. Reportedly, trespassers are scavenging for recyclable or salable materials, or squatting on the site. A deceased owner of the property operated numerous commercial ventures at the site and maintained a residence at the property. The county requested DTSC oversight of the removal and disposal of the improperly stored chemicals at the site.

On November 28, 2007, the DTSC issued an Imminent and Substantial Determination and Order that specified the assessment and remedies necessary to address existing conditions at the site. In response, the property owner representatives (the Gordon Family Trust) began removing unlabeled containers, high-pressure cylinders, and debris; however, the Gordon Family Trust was unable to finish the required activities in 2009. The DTSC obtained the necessary funds to complete the removal action. Between 2010 and 2011, DTSC conducted a Preliminary Endangerment Assessment where soil and groundwater samples were taken from the property in order to determine extent of contamination.

The Nur-Al-Huda Academy site is located within a residential district of Manteca. The southwestern corner of the property abuts the northwestern corner of the Brock Elliot Elementary School. As shown in Table 4.1-1, this site is located on the same site as the Gordon Research Company site. The Nur-Al-Huda Academy site property owner is working with DTSC to remediate the site in order to establish a school, Nur-Al-Huda Academy, on the site.

In response to the Imminent & Substantial Determination and Order issued by the DTSC in 2007, representatives of the property owner have constructed and maintained site fencing, submitted a draft public participation plan, and a draft chemical identification and disposal plan. Once the plan is approved, all of the containers and vessels will be located, assessed, and if necessary packaged for off-site disposal. Following this removal, soil sampling will occur to determine if there has been an impact to the soil.

Cortese List

The Hazardous Waste and Substances Sites (Cortese) List is a planning document used by the State, local agencies, and developers to comply with the California Environmental Quality Act requirements in providing information about the location of hazardous materials release sites. Government Code Section 65962.5 requires the California Environmental Protection Agency to develop at least annually an updated Cortese List. California Department of Toxic Substances Control (DTSC) is responsible for a portion of the information contained in the Cortese List. Other State and local government agencies are required to provide additional hazardous material release information for the Cortese List. There are no hazardous materials release sites located in the Planning Area.

GeoTracker

GeoTracker is the California Water Resource Control Board's data management system for managing sites that impact groundwater, especially those that require groundwater cleanup (Underground Storage Tanks, Department of Defense, Site Cleanup Program) as well as permitted facilities such as operating USTs and land disposal sites.

LEAKING UNDERGROUND STORAGE TANKS (LUST)

There are 60 locations with a Manteca address that are listed in the GeoTracker database for Leaking Underground Storage Tanks (LUST). Fifty-eight of the locations have undergone LUST cleanup and the State has closed the case. There two six locations in Manteca with an open case. Table 4.1-2 lists the location of open and closed cases for LUSTs in Manteca.

TABLE 4.1-2: MANTECA LUST CLEANUP SITES

NAME	*ACTIVITY*	*LOCATION*
OPEN CASES		
Frank's One Stop	Open - Verification Monitoring	2072 Yosemite Ave W
Rainwater Car Wash	Open - Verification Monitoring	420 Yosemite Ave W
CLOSED CASES (CLEANUP COMPLETED)		
7-11 Store #2243-17647	Completed - Case Closed	1048 Yosemite Ave W
7-Eleven Store #21756	Completed - Case Closed	853 Yosemite Ave E
ABF Freight	Completed - Case Closed	2427 Yosemite Ave W
Ace Tomato Co Inc	Completed - Case Closed	2771 E. French Camp Rd
Arco #6020 Case #2	Completed - Case Closed	1711 Yosemite Ave E
Arco #6020 Case #1	Completed - Case Closed	1711 Yosemite Ave E
Beacon #3-492	Completed - Case Closed	470 Main St N
Bob's Muffler	Completed - Case Closed	466 Moffat Blvd
Boyett Petroleum	Completed - Case Closed	419 Main St S
Brophy Texaco (Former)	Completed - Case Closed	941 Yosemite Ave E
Cal-West Concrete Cutting Inc	Completed - Case Closed	1153 Vanderbilt Cir
Cardoza Enterprises	Completed - Case Closed	1151 Louise
Carl Karcher Enterprises	Completed - Case Closed	800 Mellon St
Carrol/Richie Property	Completed - Case Closed	443 Sycamore Ave
Center Plumbing	Completed - Case Closed	2001 Main St N
Chevron #9-1848	Completed - Case Closed	1257 Yosemite Ave W
City Of Manteca	Completed - Case Closed	210 Wetmore St E
City Of Manteca Public Works	Completed - Case Closed	220 Oak St

NAME	*ACTIVITY*	*LOCATION*
Claudio Dell'eva	Completed - Case Closed	260 Main St S
Delicato Vineyards	Completed - Case Closed	12001 Hwy 99 S
Diamond Lumber	Completed - Case Closed	151 Main St S
E-Z Serve #100878	Completed - Case Closed	1012 Yosemite Ave W
Eckert Cold Storage	Completed - Case Closed	757 Moffat Blvd
Food & Liquor #76	Completed - Case Closed	890 Main St N
Frank's Exxon #2	Completed - Case Closed	1399 Yosemite Ave E
Frank's Exxon #4	Completed - Case Closed	14800 Frontage Rd W & Hwy 99 S
House Of Redwood	Completed - Case Closed	1199 Vanderbilt Cir
Jackpot Food Mart	Completed - Case Closed	1434 Yosemite Ave W
Jiffy Lube	Completed - Case Closed	1130 Main St N
Karlson Bros Trucking	Completed - Case Closed	23675 Airport Way S
Lathrop Gas And Food Mart	Completed - Case Closed	14800 West Frontage Road, Hwy 99
Lee Jennings Enterprises	Completed - Case Closed	815 Moffat Blvd
Manteca Bean	Completed - Case Closed	229 Moffat Blvd
Manteca Equipment Rental	Completed - Case Closed	616 Main St S
Manteca School Dist (Case #1)	Completed - Case Closed	2901 Louise Ave E
Manteca Unified School Dist	Completed - Case Closed	2901 Louise Ave (Case #2)
Manteca Unified School Dist	Completed - Case Closed	660 Mikesell Rd
Manteca-Lathrop Fire Protect.	Completed - Case Closed	9121 Lathrop Rd E
MBP-Manteca	Completed - Case Closed	983 Moffat Blvd
Mountain Valley Express	Completed - Case Closed	1299 Vanderbilt Cir
Payless Shoe Store	Completed - Case Closed	1160 Yosemite Ave W
Pitts Property	Completed - Case Closed	203 Lincoln Ave S
Ponte's Car Wash Case #2	Completed - Case Closed	707 Yosemite Ave E
Ponte's Car Wash Case #1	Completed - Case Closed	707 Yosemite Ave E
Pony Express Courier	Completed - Case Closed	959 Moffat Blvd
Private Residence	Completed - Case Closed	Private Residence
Quick Stop #121	Completed - Case Closed	1196 Louise Ave W
Rino Gas (Diablo Gasoline)	Completed - Case Closed	1001 Yosemite Ave E
Royal Oaks S&L	Completed - Case Closed	510 Main St N
Samuel Farrow	Completed - Case Closed	440 Main St N
San Joaquin Delta College Farm	Completed - Case Closed	5298 Brunswick Rd
Shell SS	Completed - Case Closed	1071 Main St N
Southland 7-11 #19976	Completed - Case Closed	1399 Main St N
Super Stop Market	Completed - Case Closed	290 Main St N
Ted Peters Trucking	Completed - Case Closed	1985 Yosemite Ave W
Tuff Boy Trailers	Completed - Case Closed	5151 Almondwood Dr
Union #5417	Completed - Case Closed	1700 Yosemite Ave E
Western Stone Products	Completed - Case Closed	1945 Lathrop Rd E

SOURCE: CALIFORNIA WATER RESOURCES CONTROL BOARD GEOTRACKER DATABASE, 2016.

PERMITTED UNDERGROUND STORAGE TANK (UST)

There are 14 locations with a Manteca address that have Underground Storage Tanks (UST) that are permitted through the California Water Resources Control Board. Table 4.1-3 lists the location of the 14 permitted underground storage tanks in Manteca.

TABLE 4.1-3: MANTECA PERMITTED UST SITES

NAME	*LOCATION*
Arco Product Co #6313	1100 Main St
Boyett Petroleum	419 Main St
Cal Central Farm Service	12776 French Camp Rd
Chevron USA #201761	1103 Main St
Doctors Hospital Of Manteca	1205 North St
Jackpot Food Mart	1434 Yosemite Ave
Machado & Machado Dairy	26234 Union Rd
Machado Bros Dairy 39-338	12700 Louise Ave
Manteca Liquor & Food	890 Main St
One Stop Market	1151 Louise Ave
Quik Stop #124	505 Main St
Raymond Dowell	8330 Southland Rd
Shinko Electric America Inc	551 Carnegie St
St Dominic's Hospital/Manteca	1777 Yosemite Ave

SOURCE: CALIFORNIA WATER RESOURCES CONTROL BOARD GEOTRACKER DATABASE, 2016.

WATER BOARD PROGRAM CLEANUP SITES

There are 12 locations with a Manteca address that are listed in the GeoTracker database for Water Board Cleanup Sites. Three of the locations have undergone cleanup and the State has closed the case. There are nine locations in Manteca with an open case. Table 4.1-4 lists the location of open and closed cases for Water Board Program Cleanup Sites in Manteca.

TABLE 4.1-4: MANTECA WATER BOARD CLEANUP SITES

NAME	*LOCATION*
OPEN - REMEDIATION	
Former Suprema Cheese Wastewater Pond	N. Of Lathrop Rd. And E. Of Airport Rd.
Ted Peters Trucking Mantic Facility	1985 W Yosemite Ave
OPEN - INACTIVE CASE	
99 Auto Recycling (De Rose Property)	430 Moffat Blvd.
Balmat & Co	Sedan Avenue
Ditz Brothers Incorporated	575 Industrial Park Drive
Former French Cleaners	416 West Yosemite Avenue
ISF Labs Incorporated	400-560 Industrial Park Drive
Tri-Ag Service	20696 S. Manteca Road
United Agri Products	301 Wetmore St
CLOSED CASES (CLEANUP COMPLETED)	
Karlson Trucking	9909 East Woodward Ave
PG&E Transformer Release	2978 W. Yosemite Ave.
Sterling Transit	410 S. Main Street

SOURCE: CALIFORNIA WATER RESOURCES CONTROL BOARD GEOTRACKER DATABASE, 2016.

WATER BOARD CEASE AND DESIST ORDERS

On March 19, 2004, the Regional Water Quality Control Board, Central Valley Region, adopted Waste Discharge Requirements Order No. R5-2004-0028, (Order) NPDES No. CA0081558, prescribing waste discharge requirements for the City of Manteca Wastewater Quality Control Facility. Cease and Desist Order No. R5-2004-0029 (CDO) was also issued, which includes requirements and time schedules to bring the discharge into full compliance with the final effluent and receiving water limitations contained in the Order.

On March 29, 2005, the Executive Officer issued Administrative Civil Liability (ACL) Complaint No. R5-2005-0509 (Complaint) to the City of Manteca to assess mandatory penalties for effluent limitation violations, pursuant to California Water Code Section 13385(h) and (i), and for noncompliance with several time schedules required in the Order and CDO. Following settlement negotiations, on 16 September 2005, the Regional Water Board issued ACL Order No. R5-2005-0128 for $463,000, including a supplemental environmental project. In accordance with the settlement discussions, the Discharger provided an updated schedule for meeting the compliance time schedule for thermal limitations, and requested an extension of an interim compliance date to submit a Thermal Plan Exception Report.

Solid Waste Information System (SWIS)

FACILITY/SITE LISTING

The Solid Waste Information System (SWIS) is a database of solid waste facilities that is maintained by the California Integrated Waste Management Board (CIWMB). The SWIS data identifies active, planned and closed sites. The City of Manteca has seven solid waste facilities listed in the database, four of which are active. The site details are listed in Table 4.1-5 below.

TABLE 4.1-5: CIWMB FACILITIES/SITES

NUMBER	*NAME*	*ACTIVITY*	*REGULATORY*	*STATUS*
39-AA-0008	Lovelace Transfer Station	Large Volume Transfer/Proc Facility	Permitted	Active
39-AA-0015	Forward Landfill, Inc.	Solid Waste Landfill	Permitted	Active
39-AA-0020	Forward Resource Recovery Facility	Large Volume Transfer/Proc Facility	Permitted	Active
39-AA-0037	Delicato Vineyards	Composting Operation (Ag)	Permitted	Active
39-CR-0024	Manteca City Dump	Solid Waste Disposal Site	Pre-regulations	Closed
39-CR-0025	Manteca County Dump	Solid Waste Disposal Site	Pre-regulations	Closed
39-CR-0032	Spic And Span Private Garbage Dump	Solid Waste Disposal Site	Pre-regulations	Closed

SOURCE: CALIFORNIA DEPARTMENT OF RESOURCES RECYCLING AND RECOVERY, 2016.

The Lovelace Transfer Station is located at 2323 Lovelace Road. The facility is owned by the County of San Joaquin, is administered by the Public Works Department, and is inspected numerous times each year. The most recent inspection of this facility (as of 7/2016) by the Local Enforcement Agency (San Joaquin County Health Services Department Environmental Health Division) shows one area of concern and no violations. The area of concern pertained to truck drivers failing to wearing safety equipment. No other areas of concern or violations have been noted at this facility.

The Forward Landfill is located at 9999 S. Austin Road. The facility is owned by Forward Inc./Allied Waste North America and is inspected numerous times each year. The most recent inspections of this facility (as of 7/2016) by the Local Enforcement Agency (San Joaquin County Health Services Department Environmental Health Division) shows eleven areas of concern and one violation. The violation pertained

to exposed waste from the previous day. The areas of concern pertained to litter accumulation, daily cover, drainage and erosion control, lighting, and grading of fill surfaces.

The Forward Resources Recovery Facility is located at 9999 N. Austin Road. The facility is owned by Forward Inc./Allied Waste North America and is inspected numerous times each year. The most recent inspections of this facility (as of 7/2016) by the Local Enforcement Agency (San Joaquin County Health Services Department Environmental Health Division) show no violations or areas of concern.

The Delicato Vineyards composting operation is located at 12001 S. Highway 99. The facility is owned by Delicato Vineyards, and is inspected numerous times each year. The most recent inspections of this facility (as of 7/2016) by the Local Enforcement Agency (San Joaquin County Health Services Department Environmental Health Division) show no violations or areas of concern.

REFERENCES

California Department of Resources Recycling and Recovery. 2016. http://www.calrecycle.ca.gov/SWFacilities/Directory/Search.aspx.

California Department of Toxic Substances Control. 2016. Envirostor Database. http://www.envirostor.dtsc.ca.gov/public/.

California Water Resources Control Board. 2016. https://geotracker.waterboards.ca.gov/.

City of Manteca. Adopted October 6, 2003. City of Manteca General Plan 2023.

4.2 AIR TRAFFIC

The State Division of Aeronautics has compiled extensive data regarding aircraft accidents around airports in California. This data is much more detailed and specific than data currently available from the FAA and the National Transportation Safety Board (NTSB). According to the California Airport Land Use Planning Handbook (2002), prepared by the State Division of Aeronautics, 18.2% of general aviation accidents occur during takeoff and initial climb and 44.2% of general aviation accidents occur during approach and landing. The State Division of Aeronautics has plotted accidents during these phases at airports across the country and has determined certain theoretical areas of high accident probability.

Approach and Landing Accidents

As nearly half of all general aviation accidents occur in the approach and landing phases of flight, considerable work has been done to determine the approximate probability of such accidents. Nearly 77% of accidents during this phase of flight occur during touchdown onto the runway or during the roll-out. These accidents typically consist of hard or long landings, ground loops (where the aircraft spins out on the ground), departures from the runway surface, etc. These types of accidents are rarely fatal and often do not involve other aircraft or structures. Commonly these accidents occur due to loss of control on the part of the pilot and, to some extent, weather conditions. (California Division of Aeronautics, 2002).

The remaining 23% of accidents during the approach and landing phase of flight occur as the aircraft is maneuvered towards the runway for landing, in a portion of the airspace around the airport commonly called the traffic pattern. Common causes of approach accidents include the pilot's misjudging of the rate of descent, poor visibility, unexpected downdrafts, or tall objects beneath the final approach course. Improper use of rudder on an aircraft during the last turn toward the runway can sometimes result in a stall (a cross-control stall) and resultant spin, causing the aircraft to strike the ground directly below the aircraft. The types of events that lead to approach accidents tend to place the accident site fairly close to the extended runway centerline. The probability of accidents increases as the flight path nears the approach end of the runway. (California Division of Aeronautics, 2002).

According to aircraft accident plotting provided by the State Division of Aeronautics, most accidents that occur during the approach and landing phase of flight occur on the airport surface itself. The remainder of accidents that occur during this phase of flight are generally clustered along the extended centerline of the runway, where the aircraft is flying closest to the ground and with the lowest airspeed. (California Division of Aeronautics, 2002).

Takeoff and Departure Accidents

According to data collected by the State Division of Aeronautics, nearly 65% of all accidents during the takeoff and departure phase of flight occur during the initial climb phase, immediately after takeoff. This data is correlated by two physical constraints of general aviation aircraft:

- The takeoff and initial climb phase are times when the aircraft engine(s) is under maximum stress and is thus more susceptible to mechanical problems than at other phases of flight; and
- Average general aviation runways are not typically long enough to allow an aircraft that experiences a loss of power shortly after takeoff to land again and stop before the end of the runway.

While the majority of approach and landing accidents occur on or near to the centerline of the runway, accidents that occur during initial climb are more dispersed in their location as pilots are not attempting

to get to any one specific point (such as a runway). Additionally, aircraft vary widely in payload, engine power, glide ratio, and several other factors that affect glide distance, handling characteristics after engine loss, and general response to engine failure. This further disperses the accident pattern. However, while the pattern is more dispersed than that seen for approach and landing accidents, the departure pattern is still generally localized in the direction of departure and within proximity of the centerline. This is partially due to the fact that pilots are trained to fly straight ahead and avoid turns when experiencing a loss of power or engine failure. Turning flight causes the aircraft to sink faster and flying straight allows for more time to attempt to fix the problem. (California Division of Aeronautics, 2002).

REGULATORY FRAMEWORK

FEDERAL

Aviation Act of 1958

The Federal Aviation Act resulted in the creation of the Federal Aviation Administration (FAA). The FAA was charged with the creation and maintenance of a National Airspace System.

Federal Aviation Regulations (CFR, Title 14)

The Federal Aviation Regulations (FAR) establish regulations related to aircraft, aeronautics, and inspections and permitting.

STATE

Aeronautics Act (Public Utilities Code §21001)

The Caltrans Division of Aeronautics bases the majority of its aviation policies on the Aeronautics Act. Policies include permits and annual inspections for public airports and hospital heliports and recommendations for schools proposed within two miles of airport runways.

Airport Land Use Commission Law (Public Utilities Code §21670 et seq.)

The law, passed in 1967, authorized the creation of Airport Land Use Commissions (ALUC) in California. Per the Public Utilities Code, the purpose of an ALUC is to protect *public health, safety, and welfare by encouraging orderly expansion of airports and the adoption of land use measures that minimizes exposure to excessive noise and safety hazards within areas around public airports to the extent that these areas are not already devoted to incompatible uses* (§21670). Furthermore, each ALUC must prepare an Airport Land Use Compatibility Plan (ALUCP). Each ALUCP, which must be based on a twenty-year planning horizon, should focus on broadly defined noise and safety impacts.

ENVIRONMENTAL SETTING

Local Airport Facilities

There are no private or public airport facilities in the Planning Area.

Stockton Metropolitan Airport: The Stockton Metropolitan Airport is located approximately 3.5 miles north of the Manteca City limits. This airport is a County-owned facility that occupies approximately 1,609 acres at an elevation of 23 feet above Mean Sea Level (MSL). The acreage within Airport Influence Area is 56,184 acres.

The Stockton Metropolitan Airport is designated as a Non-hub Commercial Service Airport within the Federal Aviation Administration's (FAA) National Plan of Integrated Airport Systems (NPIAS). The airport

is served by Allegiant Air, which provides service to Phoenix/Mesa, Arizona and Las Vegas, Nevada. In addition to commercial service, Stockton Metropolitan Airport offers a wide range of fixed base operators (FBOs) providing fuel, aircraft maintenance, aircraft hangar and tie-down rental, aircraft rental, flight training, aircraft management services, and pilot lounges for corporate and general aviation pilots. The airport also houses FBOs that support air cargo operations.

Stockton Metropolitan Airport is served by a parallel runway system in a northwest-southeast orientation. Runway 11L-29R is 10,650 feet long and 150 feet wide and is constructed of asphalt. Runway 11R-29L is 4,448 feet long and 75 feet wide and also constructed of asphalt. Runway 11L- 29R is accommodated by several instrument approach procedures aiding pilots in navigation to the runway. Runway 29R contains a medium intensity approach lighting system with runway alignment lights (MALSR) to provide runway alignment guidance for pilots in reduced visibility conditions. Runway 11L-29R is served by a four-light Precision Approach Path Indicator (PAPI- 4) at both ends and contains high intensity runway lighting (HIRL) to indicate the location of the runway edge. Runway 11R-29L does not contain approach or runway edge lighting.

The northernmost portion of the Planning Area is located within the airport influence area for the Stockton Metropolitan Airport identified in the ALUCP. The majority of this land within the airport influence area is zoned for agricultural uses by the City's General Plan 2023. Other land uses within the airport influence area include park, industrial, commercial, public, low density residential, and medium density residential.

The lands within the City limits that are located in the airport influence area for the Stockton Metropolitan Airport are not within the Airport's noise exposure contours. However, the lands within the City that are located in the airport influence area are within two of the Airport's Safety Zones: Traffic Pattern Zone 7b and Zone 8. Lands within Traffic Pattern Zone 7b cannot be developed with non-residential intensities greater than 450 persons per acre and must have open land over 10% of the site. Additionally, uses within Traffic Pattern Zone 7b cannot be hazardous to flight, and outdoor stadiums are prohibited. Non-residential development on land within Traffic Pattern Zone 8 is not subject to a maximum intensity or open space requirement. Airspace review is required for development greater than 100 feet tall on lands within Zone 7b or Zone 8. Similarly, new dumps or landfills within Zone 7b or Zone 8 are subject to the FAA notification and review and are further subject to restrictions and conditions outlined by the FAA.

Major Regional Airport Facilities

San Francisco International Airport (SFO): SFO is the largest airport in the region, and a hub for United Airlines. It provides a wide range of domestic airline service and all of the region's long-haul international flights. San Francisco serves 68% of regional Bay Area air passengers and 43% of regional air cargo shipments.

Metropolitan Oakland International Airport (OAK): Oakland Airport has traditionally been the hub for low cost carriers and a major air cargo center due to operations by FedEx and UPS. Oakland serves 17% of Bay Area regional air passengers and 52% of air cargo.

Norman Y. Mineta San Jose International Airport (SJC): Traffic at San Jose Airport has been affected by the recent realignment of airline services in the Bay Area. The airport does not currently offer any long-haul international flights, and air cargo facilities are limited due to space constraints. San Jose serves 15% of the Bay Area regional air passengers and 6% of air cargo.

Sacramento International Airport (SMF): The Sacramento Airport served nearly 9 million passengers in 2012 with 150 daily departures to 36 destinations. Southwest provides the majority of flights. Many Sacramento area air passengers use Oakland and San Francisco for their air service needs. Conversely, some Bay Area passengers choose Sacramento Airport.

National Transportation Safety Board Aviation Accident Database

The National Transportation Safety Board Aviation Accident Database does not identify any aircraft accidents with Manteca identified as the nearest location between January of 1983 to 2017. (National Transportation Safety Board, 2017).

REFERENCES

California Department of Transportation, Division of Aeronautics. 2001. California Airport Land Use Planning Handbook.

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4.3 FIRE HAZARDS

This section addresses the hazards associated with wildfires in the Planning Area. The discussion of fire suppression resources is located in the Community Services and Facilities section of this report.

REGULATORY SETTING

FEDERAL

FY 2001 Appropriations Act

Title IV of the Appropriations Act required the identification of "Urban Wildland Interface Communities in the Vicinity of Federal Lands that are at High Risk from Wildfire" by the U.S. Departments of the Interior and Agriculture.

STATE

California Government Code Section 65302

This section, which establishes standards for developing and updating General Plans, includes fire hazard assessment and Safety Element content requirements.

Assembly Bill 337

Per AB 337, local fire prevention authorities and the California Department of Forestry and Fire Protection (CalFire) are required to identify "Very High Fire Hazard Severity Zones (VHFHSZ) in Local Responsibility Areas (LRA). Standards related to brush clearance and the use of fire resistant materials in fire hazard severity zones are also established.

California Public Resources Code

The State's Fire Safe Regulations are set forth in Public Resources Code §4290, which include the establishment of State Responsibility Areas (SRA).

Public Resources Code §4291 sets forth defensible space requirements, which are applicable to anyone that …*owns, leases, controls, operates, or maintains a building or structure in, upon, or adjoining a mountainous area, forest-covered lands, brush-covered lands, grass-covered lands, or land that is covered with flammable material* (§4291(a)).

Uniform Fire Code

The Uniform Fire Code (UFC) establishes standards related to the design, construction, and maintenance of buildings. The standards set forth in the UFC range from designing for access by firefighters and equipment and minimum requirements for automatic sprinklers and fire hydrants to the appropriate storage and use of combustible materials.

CA Code of Regulations Title 8

In accordance with CCR, Title 8, §1270 and §6773 (*Fire Prevention* and *Fire Protection and Fire Equipment*), the Occupational Safety and Health Administration (Cal OSHA) establishes fire suppression service standards. The standards range from fire hose size requirements to the design of emergency access roads.

CA Code of Regulations Title 14 (Natural Resources)

Division 1.5 (Department of Forestry and Fire Protection), Title 14 of the CCR establishes a variety of wildfire preparedness, prevention, and response regulations.

CA Code of Regulations Title 19 (Public Safety)

Title 19 of the CCR establishes a variety of emergency fire response, fire prevention, and construction and construction materials standards.

CA Code of Regulations Title 24 (CA Building Standards Code)

The California Fire Code is set forth in Part 9 of the Building Standards Code. The CA Fire Code, which is pre-assembled with the International Fire Code by the ICC, contains fire-safety building standards referenced in other parts of Title 24.

CA Health and Safety Code and UBC Section 13000 et seq.

State fire regulations are set forth in §13000 *et seq*. of the California Health and Safety Code, which is divided into "Fires and Fire Protection" and "Buildings Used by the Public." The regulations provide for the enforcement of the UBC and mandate the abatement of fire hazards.

The code establishes broadly applicable regulations, such as standards for buildings and fire protection devices, in addition to regulations for specific land uses, such as childcare facilities and high-rise structures.

CA Health and Safety Code Division 11 (Explosives)

Division 11 of the Health and Safety Code establishes regulations related to a variety of explosive substances and devices, including high explosives and fireworks. Section 12000 et seq. establishes regulations related to explosives and explosive devices, including permitting, handling, storage, and transport (in quantities greater than 1,000 pounds).

CA Health and Safety Code Division 12.5 (Buildings Used by the Public)

This Division establishes requirements for buildings used by the public, including essential services buildings, earthquake hazard mitigation technologies, school buildings, and postsecondary buildings.

CA Vehicle Code §31600 (Transportation of Explosives)

Establishes requirements related to the transportation of explosives in quantities greater than 1,000 pounds, including licensing and route identification.

LOCAL

City of Manteca General Plan

The existing City of Manteca General Plan identifies the following goals, policies, and implementation measures related to fire:

Safety Element

GOAL S-1: Prevent loss of lives, injury, and property damage due to geological hazards and seismic activity.

GOAL S-5: The City shall protect the health, safety, natural resources, and property through regulation of use, storage, transport, and disposal of hazardous materials.

GOAL S-6: Ensure that City emergency procedures are adequate in the event of potential natural or man-made disasters.

POLICY S-P-6: The City shall comply with the California State seismic and building standards in the design and siting of critical facilities, including police and fire stations, school facilities, hospitals, hazardous materials manufacturing and storage facilities, and large public assembly halls.

IMPLEMENTATION S-I-10: The City shall require the submittal of lists of hazardous materials used in existing and proposed industrial and commercial businesses within the City of Manteca. The list shall be maintained through the Manteca Fire Department and updated through periodic review.

Public Facilities and Services Element

POLICY PF-P-42: The City shall endeavor to maintain an overall fire insurance (ISO) rating of 4 or better.

POLICY PF-P-43: The City shall endeavor through adequate staffing and station locations to maintain the minimum feasible response time for fire and emergency calls.

POLICY PF-P-44: The City shall provide fire services to serve the existing and projected population.

POLICY PF-P-45: The City will establish the criteria for determining the circumstances under which fire service will be enhanced.

IMPLEMENTATION PF-I-24: The Fire Department shall continuously monitor response times and report annually on the results of the monitoring.

IMPLEMENTATION PF-I-25: The Planning Commission and City Engineer will review proposed residential street patterns to evaluate the accessibility for fire engines and emergency response.

IDENTIFYING FIRE HAZARDS

Fuel Rank

Fuel rank is a ranking system developed by CalFire that incorporates four wildfire factors: fuel model, slope, ladder index, and crown index.

The U.S. Forest Service has developed a series of fuel models, which categorize fuels based on burn characteristics. These fuel models help predict fire behavior. In addition to fuel characteristics, slope is an important contributor to fire hazard levels. A surface ranking system has been developed by CalFire, which incorporates the applicable fuel models and slope data. The model categorizes slope into six ranges: 0-10%, 11-25%, 26-40%, 41-55%, 56-75% and >75%. The combined fuel model and slope data are organized into three categories, referred to as surface rank. Thus, surface rank is a reflection of the quantity and burn characteristics of the fuels and the topography in a given area.

The ladder index is a reflection of the distance from the ground to the lowest leafy vegetation for tree and plant species. The crown index is a reflection of the quantity of leafy vegetation present within individual specimens of a given species.

The surface rank, ladder index, and crown index for a given area are combined in order to establish a fuel rank of medium, high, or very high. Fuel rank is used by CalFire to identify areas in the California Fire Plan where large, catastrophic fires are most likely.

The City of Manteca contains areas with “moderate” and “non-wildland fuel” ranks. The areas warranting “moderate” fuel ranks possess combustible material in sufficient quantities combined with

topographic characteristics that pose a wildfire risk. CalFire data for the areas immediately surrounding the Planning Area also include “moderate” and “non-wildland fuel” ranks. Areas west of Interstate 5, approximately 15 miles or further southwest of the Planning Area, are designated as “moderate” and “high” fuel ranks.

Fire Threat

The fuel rank data are used by CalFire to delineate fire threat based on a system of ordinal ranking. Thus, the Fire Threat model creates discrete regions, which reflect fire probability and predicted fire behavior. The four classes of fire threat range from moderate to extreme.

FIRE HAZARD SEVERITY ZONES

The state has charged CalFire with the identification of Fire Hazard Severity Zones (FHSZ) within State Responsibility Areas. In addition, CalFire must recommend Very High Fire Hazard Severity Zones (VHFHSZ) identified within any Local Responsibility Areas. The FHSZ maps are used by the State Fire Marshall as a basis for the adoption of applicable building code standards.

Local Responsibility Areas

The majority of the Planning Area is not located within a Local Responsibility Area (LRA). Three portions of the Planning Area are located in an LRA: a developed area near Airport Way and W. Yosemite Avenue, a developed area near E. Yosemite Avenue and Austin Road, and a developed area near W. Louise Avenue and S. Airport Way. Manteca is an LRA that is served by the Manteca Fire Department. The Manteca Fire Department serves approximately 71,164 residents throughout approximately 17.2 square miles within the City limits. The City of Manteca is not categorized as a "Very High" FHSZ by CalFire. No cities or communities within San Joaquin County are categorized as a "Very High" FHSZ by CalFire.

State Responsibility Areas

There are no State Responsibility Areas (SRAs) within the vicinity of the Planning Area.

Federal Responsibility Areas

There are no Federal Responsibility Areas (FRAs) within the vicinity of the Planning Area.

REFERENCES

California Department of Forestry and Fire Protection and State Board of Forestry and Fire Protection. 2010. 2010 Strategic Fire Plan for California.

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4.4 FLOODING

This section addresses the hazards associated with flooding in the Planning Area. The discussion of storm drainage infrastructure is located in the Community Services and Facilities section of this report.

REGULATORY FRAMEWORK

FEDERAL

Federal Emergency Management Agency (FEMA)

FEMA operates the National Flood Insurance Program (NFIP). Participants in the NFIP must satisfy certain mandated floodplain management criteria. The National Flood Insurance Act of 1968 has adopted as a desired level of protection, an expectation that developments should be protected from floodwater damage of the Intermediate Regional Flood (IRF). The IRF is defined as a flood that has an average frequency of occurrence on the order of once in 100 years, although such a flood may occur in any given year. Communities are occasionally audited by the California Department of Water Resources to insure the proper implementation of FEMA floodplain management regulations.

Rivers and Harbors Appropriation Act of 1899

One of the country's first environmental laws, this Act established a regulatory program to address activities that could affect navigation in Waters of the United States.

Water Pollution Control Act of 1972

The Water Pollution Control Act (WPCA) established a program to regulate activities that result in the discharge of pollutants to waters of the United States

Clean Water Act of 1977

The CWA, which amended the WPCA of 1972, sets forth the §404 program to regulate the discharge of dredged and fill material into Waters of the U.S. and the §402 National Pollutant Discharge Elimination System (NPDES) to regulate the discharge of pollutants into Waters of the U.S. The §401 Water Quality Certification program establishes a framework of water quality protection for activities requiring a variety of Federal permits and approvals (including CWA §404, CWA §402, FERC Hydropower and §10 Rivers and Harbors).

Flood Control Act

The Flood Control Act (1917) established survey and cost estimate requirements for flood hazards in the Sacramento Valley. All levees and structures constructed per the Act were to be maintained locally but controlled federally. All rights of way necessary for the construction of flood control infrastructure were to be provided to the Federal government at no cost.

Federal involvement in the construction of flood control infrastructure, primarily dams and levees, became more pronounced upon passage of the Flood Control Act of 1936.

National Flood Insurance Program (NFIP)

Per the National Flood Insurance Act of 1968, the NFIP has three fundamental purposes: *Better indemnify individuals for flood losses through insurance; Reduce future flood damages through State and community floodplain management regulations; and Reduce Federal expenditures for disaster assistance and flood control.*

While the Act provided for subsidized flood insurance for existing structures, the provision of flood insurance by FEMA became contingent on the adoption of floodplain regulations at the local level.

Flood Disaster Protection Act (FDPA)

The FDPA of 1973 was a response to the shortcomings of the NFIP, which were experienced during the flood season of 1972. The FDPA prohibited Federal assistance, including acquisition, construction, and financial assistance, within delineated floodplains in non-participating NFIP communities. Furthermore, all Federal agencies and/or federally insured and federally regulated lenders must require flood insurance for all acquisitions or developments in designated Special Flood Hazard Areas (SFHAs) in communities that participate in the NFIP.

Improvements, construction, and developments within SFHAs are generally subject to the following standards:

- All new construction and substantial improvements of residential buildings must have the lowest floor (including basement) elevated to or above the base flood elevation (BFE).
- All new construction and substantial improvements of non-residential buildings must either have the lowest floor (including basement) elevated to or above the BFE or dry-floodproofed to the BFE.
- Buildings can be elevated to or above the BFE using fill, or they can be elevated on extended foundation walls or other enclosure walls, on piles, or on columns.
- Extended foundation or other enclosure walls must be designed and constructed to withstand hydrostatic pressure and be constructed with flood-resistant materials and contain openings that will permit the automatic entry and exit of floodwaters. Any enclosed area below the BFE can only be used for the parking of vehicles, building access, or storage.

STATE

Assembly Bill 162

This bill requires a general plan's land use element to identify and annually review those areas covered by the general plan that are subject to flooding as identified by flood plain mapping prepared by the Federal Emergency Management Agency (FEMA) or the Department of Water Resources (DWR). The bill also requires, upon the next revision of the housing element, on or after January 1, 2009, the conservation element of the general plan to identify rivers, creeks, streams, flood corridors, riparian habitat, and land that may accommodate floodwater for purposes of groundwater recharge and stormwater management. By imposing new duties on local public officials, the bill creates a State-mandated local program.

This bill also requires, upon the next revision of the housing element, on or after January 1, 2009, the safety element to identify, among other things, information regarding flood hazards and to establish a set of comprehensive goals, policies, and objectives, based on specified information for the protection of the community from, among other things, the unreasonable risks of flooding.

Assembly Bill 70

This bill provides that a city or county may be required to contribute its fair and reasonable share of the property damage caused by a flood to the extent that it has increased the State's exposure to liability for property damage by unreasonably approving, as defined, new development in a previously undeveloped

area, as defined, that is protected by a State flood control project, unless the city or county meets specified requirements.

CA Government Code

The Senate and Assembly bills identified above have resulted in various changes and additions to the California Government Code. Key sections related to the above referenced bills are identified below.

Section 65302

Revised safety elements must include maps of any 200-year flood plains and levee protection zones within the Planning Area.

Section 65584.04

Any land having inadequate flood protection, as determined by FEMA or DWR, must be excluded from land identified as suitable for urban development within the planning area.

Section 8589.4

California Government Code §8589.4, commonly referred to as the Potential Flooding-Dam Inundation Act, requires owners of dams to prepare maps showing potential inundation areas in the event of dam failure. A dam failure inundation zone is different from a flood hazard zone under the National Flood Insurance Program (NFIP). NFIP flood zones are areas along streams or coasts where storm flooding is possible from a "100-year flood." In contrast, a dam failure inundation zone is the area downstream from a dam that could be flooded in the event of dam failure due to an earthquake or other catastrophe. Dam failure inundation maps are reviewed and approved by the California Office of Emergency Services (OES). Sellers of real estate within inundation zones are required to disclose this information to prospective buyers.

LOCAL

City of Manteca General Plan

The existing City of Manteca General Plan identifies the following goals, policies, and implementation measures related to flooding:

Safety Element

GOAL S-3: Protect life and property from flood events.

GOAL S-4: Provide a planning framework suitable for flood protection and risk management consistent with Federal and State law.

GOAL S-5: Pursue flood control solutions that minimize environmental impacts.

POLICY S-P-7: Periodically review and update when necessary, the General Plan Safety Element goals, policies, and implementation measures in order to maintain compliance with applicable Federal and State requirements.

POLICY S-P-8: Maintain and periodically update, City flood safety plans, floodplain management ordinances, zoning ordinance, building codes and other related sections of the Manteca Municipal Code to reflect Safety Element goals, policies and standards, applicable Federal and State law, and National Flood Insurance Program requirement.

POLICY S-P-9: The City shall require evaluation of potential flood hazards prior to approval of development projects to determine whether the proposed development is reasonably safe from flooding and consistent with California Department of Water Resources (DWR) Urban Level of Flood Protection Criteria. The City shall not approve the execution of a development agreement, a tentative map, or a parcel map for which a tentative map is not required, or a discretionary permit or other discretionary entitlement that would result in the construction of a new building, or construction that would result in an increase in allowed occupancy for an existing building, or issuance of a ministerial permit that would result in the construction of a new residence for property that is located within a 200-year flood hazard zone, unless the adequacy of flood protection as described in Government Code §65865.5(a), 65962(a), or 66474.5(a), has been demonstrated.

POLICY S-P-10: The City may permit new development in areas not identified as "urban" or "urbanizing" provided that they are protected from 100-year flooding by FEMA-accredited levees or equivalent flood protection as shown on an adopted FEMA FIRM, a FEMA-approved Letter of Map Revision (LOMR) or a Conditional Letter of Map Revision (CLOMR), subject to conditions specified in the CLOMR.

POLICY S-P-11: The City may permit new development in areas not protected by FEMA-accredited 100-year levees subject to all applicable requirements of Manteca Municipal Code Chapter 8.30 (Floodplain Management), the California Building Standards Code as adopted by the City, and the latest promulgated FEMA standards for development in the 100-year floodplain, provided that new development approval will not cause the project site or area to be defined as "urban" or "urbanizing."

POLICY S-P-12: Work closely with the City of Lathrop, and the local reclamation districts to improve levee systems as required to provide ULOP for urban and urbanizing areas in Manteca by 2025, and to provide the basis for findings of "adequate progress" toward that objective based on substantial evidence as soon as possible.

POLICY S-P-13: The City shall continue to cooperate with local, regional, State, and Federal agencies in securing funding to obtain the maximum level of flood protection that is practical, with a goal of achieving 200-year flood protection for all areas of the City.

POLICY S-P-14: Maintain active participation in the National Flood Insurance Program (NFIP).

POLICY S-P-15: The City shall maintain eligibility in the Federal Emergency Management Agency's (FEMA's) Community Rating System (CRS) program, which gives property owners discounts on flood insurance.

POLICY S-P-16: Provide technical assistance and encourage landowners within the FEMA Special Flood Hazard Area (100-year floodplain) to purchase and maintain flood insurance.

POLICY S-P-17: Ensure that the impacts of potential flooding are adequately analyzed when considering areas for future urban expansion.

POLICY S-P-18: Provide opportunities for review of and comment by the reclamation districts, Manteca Police Services, Manteca Fire Department, the Lathrop Manteca Fire District for comment during new development project review.

POLICY S-P-19: Consider the risks of catastrophic dam failure in the planning and environmental review of new development projects.

POLICY S-P-20: Incorporate riparian habitat protection, mitigation or enhancement into flood protection improvements to maintain existing floodwater capacity where feasible.

POLICY S-P-21: Combine flood control, recreation, water quality, and open space functions where feasible.

POLICY S-P-22: Discourage large continuous paved areas unless provided with engineered drainage facilities, and where feasible, require the use of pervious paving materials.

POLICY S-P-23: When improvements to existing developments are made costing at least 50 percent of the current market value of the structure before improvements, structures shall be brought into compliance with relevant FEMA standards.

POLICY S-P-24: The City shall require, for areas protected by levees, all new developments to include a notice within the deed that the property is protected from flooding by a levee and that the property can be subject to flooding if the levee fails or is overwhelmed by floodwater flow.

POLICY S-P-25: The City shall update flood hazard maps as necessary to reflect impacts from climate change in terms of long-term flood safety and long-term flood event probabilities.

IMPLEMENTATION S-I-4: The City will amend Title 17 (Zoning) of the Manteca Municipal Code so as to require that ULOP or "adequate progress" findings specified in the Safety Element, and in Government Code Sections 65007, 65865.5, 65962 and 66474.5, be made prior to approving a development project located within RD 17 with predicted 200-year flood depths of more than three feet according to the official map approved by the City of Manteca or Floodplain Administrator. Title 17 amendments shall also implement all Safety Element policies related to development permitting in potentially flooded areas.

IMPLEMENTATION S-I-5: The City will evaluate the consistency of the Safety Element with applicable laws, regulations and plans in conjunction with its annual review of the General Plan. The City shall determine whether and when an amendment of the Safety Element is required.

IMPLEMENTATION S-I-6: The City will continue to participate in the FEMA CRS program, including dissemination of information to the public and annual reviews of its participation in the FEMA CRS program and improve the program as feasible to maintain or improve effects on flood insurance costs.

IMPLEMENTATION S-I-7: The City will consider, in the review of plans for new development, the need for levee setbacks, dam failure risks and the views of the local flood protection and emergency response agencies.

IMPLEMENTATION S-I-8: Applications for development in areas subject to 200-year flooding shall indicate the depth of predicted 200-year flooding on the basis of official maps approved by the City of Manteca or Floodplain Administrator.

IMPLEMENTATION S-I-9: The City will monitor changes in Federal and State laws and regulations related to local flood protection, including the National Flood Insurance Program (NFIP) and

incorporate necessary changes into Section 15.56, Title 17 of the Manteca Municipal Code, the City's Emergency Operations Plan and building codes as required.

IMPLEMENTATION S-I-10: The City will prepare an official 200-year Floodplain Map for the City of Manteca identifying predicted flood depths for reference when making land use determinations.

IMPLEMENTATION S-I-11: The City will amend Chapter 8.30 (Floodplain Management) of the Manteca Municipal Code to reflect flood protection requirements specified in the Safety Element as well as any relevant updates to Federal or State requirements.

IMPLEMENTATION S-I-12: The City will consider potential effects of climate change in planning, design and maintenance of levee improvements and other flood control facilities.

IMPLEMENTATION S-I-13: City will coordinate with RD 17 and RD 2094 as required for the purpose of ensuring that ULOP is available as soon as possible and that "adequate progress" findings can be made.

IMPLEMENTATION S-I-14: The City will encourage the reclamation districts to incorporate riparian habitat protection and/or enhancement in levee improvement plans where feasible.

ENVIRONMENTAL SETTING

The City of Manteca is located 12 miles south of downtown Stockton, 14 miles northwest of Modesto, and 75 miles southeast of San Francisco. The Manteca Planning Area is situated in the south central portion of San Joaquin County. Although Manteca is one of the smaller planning areas within the County geographically, Manteca is the third most populated planning area in the County. The San Joaquin River and the Stanislaus River border the southwest and southern edge of the Planning Area, respectively.

Manteca is located in northern San Joaquin Valley. The San Joaquin Valley is the southern section of the Great Central Valley of California; the Sacramento Valley is the northern section. The Great Central Valley is a sedimentary basin, with the Coast Range to the west and the Sierra Nevada to the east. Almost all of the sediments that fill the Great Central Valley eroded from the Sierra Nevada. The oldest of these sediments are full of fragments of volcanic rocks eroded from its early volcanoes. As erosion stripped the cover of volcanic rocks from the granites of the Sierra Nevada, their detritus of pale quartz and feldspar sand began to wash into the Great Central Valley. Drainage into the San Joaquin Valley is mainly from the Sierra Nevada. The sediments on the valley floor were deposited within the past one-two million years, some within the past few thousand years.

Generally, slopes are nearly level across the Planning Area. The elevation ranges from approximately 10 to 50 feet above sea level, gently rising from the San Joaquin River on the west toward the east and the Sierra Nevada.

Climate

Summers in the Planning Area are warm and dry ranging from an average high in July of 93°F to an average low of approximately 59°F. Winters are cool and mild, with an average high of 53°F and a low of 37°F in January. The average annual precipitation is approximately 13.81 inches. Precipitation occurs as rain most of which falls between the months of November through April, peaking in January at 2.85 inches. The average temperatures range from December lows of 37.5 F to July highs of 94.3 F.

FEMA Flood Zones

FEMA mapping provides important guidance for the City in planning for flooding events and regulating development within identified flood hazard areas. FEMA's National Flood Insurance Program (NFIP) is intended to encourage State and local governments to adopt responsible floodplain management programs and flood measures. As part of the program, the NFIP defines floodplain and floodway boundaries that are shown on Flood Insurance Rate Maps (FIRMs). The FEMA FIRM for the Planning Area is shown on Figure 4.4-1.

Areas that are subject to flooding are indicated by a series of alphabetical symbols, indicating anticipated exposure to flood events:

- **Zone A:** Subject to 100-year flooding with no base flood elevation determined. Identified as an area that has a one percent chance of being flooded in any given year.
- **Zone AE:** Subject to 100-year flooding with base flood elevations determined.
- **Zone AH:** Subject to 100-year flooding with flood depths between one and three feet being areas of ponding with base flood elevations determined.
- **500-year Flood Zone:** Subject to 500-year flooding. Identified as an area that has a 0.2 percent chance of being flooded in a given year.

The Planning Area is subject to flooding problems along the natural creeks and drainages that traverse the area. The primary flood hazard is the San Joaquin River (four miles outside the Study Area) and its tributaries, notably Walthall Slough (contiguous with the southwestern Study Area boundary). A levee running from Williamson Road east to Airport Way provides flood protection for the land north and east of Walthall Slough. This levee is under the jurisdiction of Reclamation District No. 17.

The 100-year flood plain is largely confined to the southwestern portion of the City limits and SOI. Similarly, the 500-year flood plain is located in the southwestern and western portions of the City limits and SOI.

SB 5 Flood Zones

Both State policy and recently enacted State legislation (Senate Bill 5) call for 200-year (0.5% annual chance) flood protection to be the minimum level of protection for urban and urbanizing areas in the Central Valley. Senate Bill 5 (SB5) requires that the 200-year protection be consistent with criteria used or developed by the Department of Water Resources. SB 5 requires all urban and urbanizing areas in the Sacramento and San Joaquin Valleys to achieve 200-year flood protection in order to approve development. The 200-year floodplain for the Planning Area, as mapped by the City of Manteca and San Joaquin County, is shown on Figure 4.4-2. As shown in the figure, the 200-year floodplain is located in the western portion of the City's SOI and City limits. Existing uses within the 200-year floodplain include mainly agricultural and rural-residential uses. Some more recently developed homes located south of SR 120 are also located within the 200-year floodplain.

The City's 2013 Public Facilities Implementation Plan (PFIP) Update notes several stormwater control improvements aimed to protect the City from flooding during storm events. The 2013 Storm Drain Master Plan evaluates drainage from the General Plan lands within the City's Primary Urban Service Area through build out. Five planning zones have been identified to define the capital improvements needed to serve future growth: Zones 30, 32, 34, 36 and 39. With the exception of drainage Zone 39, all drainage zones are located in the SSJID service area. For development within Zone 39, separate facilities

will be constructed to convey runoff to one regional pump station that will discharge to Walthall Slough. These facilities would be required as new development within Zone 39 occurs.

Additionally, as funds are available, the City will construct water level monitoring facilities in the various PFIP zones and in the French Camp Outlet Canal to monitor water elevations in real-time to prevent flooding caused by additional drainage flows. Each zone's proportionate share of the water level monitoring stations is included the various PFIP zone fees.

Dam Inundation

Earthquakes centered close to a dam are typically the most likely cause of dam failure. Dam Inundation maps have been required in California since 1972, following the 1971 San Fernando Earthquake and near failure of the Lower Van Norman Dam. The Planning Area has the potential to be inundated by four dams: Tulloch Dam, San Luis Dam, New Exchequer Dam (Lake McClure), and New Melones Dam. The dam inundation area for each dam is shown in Figure 4.4-3. Each dam is briefly described below:

- The Tulloch Dam, owned and operated by the Oakdale and South San Joaquin Irrigation Districts (collectively known as the Tri-Dam Project), is a gravity dam located on the Stanislaus River in both Calaveras and Tuolumne Counties. This dam was built in 1958 at a height of 205 feet with a reservoir capacity of 68,400 acre-feet. The Tulloch Dam is a jurisdictional dam.

- The San Luis Dam (or B.F. Sisk Dam), jointly owned and operated by the Bureau of Reclamation and the State of California, is a zoned earthfill dam that provides supplemental irrigation water to land in western Merced, Fresno and Kings Counties, as well as generates power. This dam, located on San Luis Creek near Los Banos, was completed in 1967 at a height of 382 feet with a reservoir capacity of 2,041,000 acre-feet. The San Luis Dam is a non-jurisdictional dam.

- The New Exchequer Dam, owned and operated by the Merced Irrigation District, is utilized for irrigation, power production, and downstream flood control. This concrete gravity-arch dam is located on the Merced River in Mariposa County. New Melones Dam was completed in 1967 at a height of 490 feet and a storage capacity of 1,024,600 acre-feet. The New Exchequer Dam is a jurisdictional dam.

- The New Melones Dam, owned and operated by Bureau of Reclamation's Central Valley Project, is utilized for irrigation, power production, and downstream flood control. This earth and rockfill dam is located on the Stanislaus River in southern Mother Lode, off of Highway 49. New Melones Dam was completed in 1979 at a height of 625 feet and a storage capacity of 2,400,000 acre-feet. The New Melones Dam is a non-jurisdictional dam.

These dams do not have a history of failure; however, they are identified as having the potential to inundate habitable portions of the Planning Area in the unlikely event of dam failure. The dam owners/operators, Oakdale and South San Joaquin Irrigation Districts, the Bureau of Reclamation, and the State of California, are responsible for the management, monitoring, and improvements to these dams to reduce the risk of dam failure and inundation.

Portions of the 100-year floodplain would be subject to inundation in the event of dam failure. Although the likelihood is remote, the area subject to inundation within the Study Area is not specifically defined, but would generally coincide with the area delineated as the 100-year floodplain.

Despite the number of dams near San Joaquin County, the risk of dam failure inundating portions of the County is considered low, and the degree and nature of risk for each dam is unknown. Dam failure can occur under three general conditions: as a result of an earthquake, an isolated incident due to structural instability, or because of intense rain in excess of design capacity.

Section 8589.5 of the California Government Code requires local jurisdictions to adopt emergency procedures for the evacuation of populated inundation areas identified by dam owners. The local Office of Emergency Services has prepared a Dam Failure Plan. This plan includes a description of dams, direction of floodwaters, responsibilities of local jurisdictions, and evacuation plans.

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4.5 NOISE

This section provides a discussion of the regulatory setting and a general description of existing noise sources in the City of Manteca. The analysis in this section was prepared with assistance from j.c. brennan & associates, Inc.

KEY TERMS

Acoustics	The science of sound.
Ambient Noise	The distinctive acoustical characteristics of a given area consisting of all noise sources audible at that location. In many cases, the term ambient is used to describe an existing or pre-project condition such as the setting in an environmental noise study.
Attenuation	The reduction of noise.
A-Weighting	A frequency-response adjustment of a sound level meter that conditions the output signal to approximate human response.
CNEL	Community Noise Equivalent Level. Defined as the 24-hour average noise level with noise occurring during evening hours (7 p.m. - 10 p.m.) weighted by a factor of three and nighttime hours weighted by a factor of 10 prior to averaging.
Decibel or dB	Fundamental unit of sound, defined as ten times the logarithm of the ratio of the sound pressure squared over the reference pressure squared.
Frequency	The measure of the rapidity of alterations of a periodic acoustic signal, expressed in cycles per second or Hertz.
Impulsive	Sound of short duration, usually less than one second, with an abrupt onset and rapid decay.
L_{dn}	Day/Night Average Sound Level. Similar to CNEL but with no evening weighting.
L_{eq}	Equivalent or energy-averaged sound level.
L_{max}	The highest root-mean-square (RMS) sound level measured over a given period of time.
$L_{(n)}$	The sound level exceeded as a described percentile over a measurement period. For instance, an hourly L_{50} is the sound level exceeded 50 percent of the time during the one-hour period.
Loudness	A subjective term for the sensation of the magnitude of sound.
Noise	Unwanted sound.
SEL	A rating, in decibels, of a discrete event, such as an aircraft flyover or train passby, that compresses the total sound energy into a one-second event

FUNDAMENTALS OF ACOUSTICS

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

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

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

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

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

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

The day/night average level (L_{dn}) is based upon the average noise level over a 24-hour day, with a +10 decibel weighing applied to noise occurring during nighttime (10:00 p.m. to 7:00 a.m.) hours. The nighttime penalty is based upon the assumption that people react to nighttime noise exposures as though they were twice as loud as daytime exposures. Because L_{dn} represents a 24-hour average, it tends to disguise short-term variations in the noise environment. CNEL is similar to L_{dn}, but includes a +3 dB penalty for evening noise. Table 4.5-1 lists several examples of the noise levels associated with common situations.

TABLE 4.5-1: TYPICAL NOISE LEVELS

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

SOURCE: CALTRANS, TECHNICAL NOISE SUPPLEMENT, TRAFFIC NOISE ANALYSIS PROTOCOL. NOVEMBER 2009.

EFFECTS OF NOISE ON PEOPLE

The effects of noise on people can be placed in three categories:

- Subjective effects of annoyance, nuisance, and dissatisfaction;
- Interference with activities such as speech, sleep, and learning; and
- Physiological effects such as hearing loss or sudden startling.

Environmental noise typically produces effects in the first two categories. Workers in industrial plants can experience noise in the last category. There is no completely satisfactory way to measure the subjective effects of noise or the corresponding reactions of annoyance and dissatisfaction. A wide variation in individual thresholds of annoyance exists and different tolerances to noise tend to develop based on an individual's past experiences with noise.

Thus, an important way of predicting a human reaction to a new noise environment is the way it compares to the existing environment to which one has adapted: the so-called ambient noise level. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by those hearing it.

With regard to increases in A-weighted noise level, the following relationships occur:

- Except in carefully controlled laboratory experiments, a change of 1 dBA cannot be perceived;
- Outside of the laboratory, a 3 dBA change is considered a just-perceivable difference;
- A change in level of at least 5 dBA is required before any noticeable change in human response would be expected; and

- A 10 dBA change is subjectively heard as approximately a doubling in loudness, and can cause an adverse response.

Stationary point sources of noise – including stationary mobile sources such as idling vehicles – attenuate (lessen) at a rate of approximately 6 dB per doubling of distance from the source, depending on environmental conditions (i.e., atmospheric conditions and either vegetative or manufactured noise barriers, etc.). Widely distributed noises, such as a large industrial facility spread over many acres, or a street with moving vehicles, would typically attenuate at a lower rate.

REGULATORY FRAMEWORK

FEDERAL

Federal Highway Administration (FHWA)

The FHWA has developed noise abatement criteria that are used for Federally funded roadway projects or projects that require Federal review. These criteria are discussed in detail in Title 23 Part 772 of the Federal Code of Regulations (23CFR772).

Environmental Protection Agency (EPA)

The EPA has identified the relationship between noise levels and human response. The EPA has determined that over a 24-hour period, an L_{eq} of 70 dBA will result in some hearing loss. Interference with activity and annoyance will not occur if exterior levels are maintained at an L_{eq} of 55 dBA and interior levels at or below 45 dBA. Although these levels are relevant for planning and design and useful for informational purposes, they are not land use planning criteria because they do not consider economic cost, technical feasibility, or the needs of the community.

The EPA has set 55 dBA L_{dn} as the basic goal for residential environments. However, other Federal agencies, in consideration of their own program requirements and goals, as well as difficulty of actually achieving a goal of 55 dBA L_{dn}, have generally agreed on the 65 dBA L_{dn} level as being appropriate for residential uses. At 65 dBA L_{dn} activity interference is kept to a minimum, and annoyance levels are still low. It is also a level that can realistically be achieved.

The U.S. Department of Housing and Urban Development (HUD) was established in response to the Urban Development Act of 1965 (Public Law 90-448). HUD was tasked by the Act (Public Law 89-117) "to determine feasible methods of reducing the economic loss and hardships suffered by homeowners as a result of the depreciation in the value of their properties following the construction of airports in the vicinity of their homes."

HUD first issued formal requirements related specifically to noise in 1971 (HUD Circular 1390.2). These requirements contained standards for exterior noise levels along with policies for approving HUD-supported or assisted housing projects in high noise areas. In general, these requirements established the following three zones:

- 65 dBA L_{dn} or less - an acceptable zone where all projects could be approved.
- Exceeding 65 dBA L_{dn} but not exceeding 75 dBA L_{dn} - a normally unacceptable zone where mitigation measures would be required and each project would have to be individually evaluated for approval or denial. These measures must provide 5 dBA of attenuation above the attenuation provided by standard construction required in a 65 to 70 dBA L_{dn} area and 10 dBA of attenuation in a 70 to 75 dBA L_{dn} area.

- Exceeding 75 dBA L_{dn} - an unacceptable zone in which projects would not, as a rule, be approved.

HUD's regulations do not include interior noise standards. Rather a goal of 45 dBA L_{dn} is set forth and attenuation requirements are geared towards achieving that goal. HUD assumes that using standard construction techniques, any building will provide sufficient attenuation so that if the exterior level is 65 dBA L_{dn} or less, the interior level will be 45 dBA L_{dn} or less. Thus, structural attenuation is assumed at 20 dBA. However, HUD regulations were promulgated solely for residential development requiring government funding and are not related to the operation of schools or churches.

The Federal government regulates occupational noise exposure common in the workplace through the Occupational Health and Safety Administration (OSHA) under the EPA. Noise exposure of this type is dependent on work conditions and is addressed through a facility's or construction contractor's health and safety plan. With the exception of construction workers involved in facility construction, occupational noise is irrelevant to this study and is not addressed further in this document.

STATE

California Department of Transportation (Caltrans)

Caltrans has adopted policy and guidelines relating to traffic noise as outlined in the Traffic Noise Analysis Protocol (Caltrans 1998b). The noise abatement criteria specified in the protocol are the same as those specified by FHWA.

Governor's Office of Planning and Research (OPR)

OPR has developed guidelines for the preparation of general plans (Office of Planning and Research, 1998). The guidelines include land use compatibility guidelines for noise exposure.

LOCAL

Existing City Noise Thresholds

The City of Manteca General Plan Noise Element establishes goals and policies, as well as criteria for evaluating the compatibility of individual land uses with respect to noise exposure.

Noise Element:

GOAL N-1: Protect the residents of Manteca from the harmful and annoying effects of exposure to excessive noise.

GOAL N-2: Protect the quality of life in the community and the tourism economy from noise generated by incompatible land uses.

GOAL N-3: Ensure that the downtown core noise levels remain acceptable and compatible with commercial and higher density residential land uses.

GOAL N-4: Protect public health and welfare by eliminating existing noise problems where feasible, by establishing standards for acceptable indoor and outdoor noise, and by preventing significant increases in noise levels.

GOAL N-5: Incorporate noise considerations into land use planning decisions, and guide the location and design of transportation facilities to minimize the effects of noise on adjacent land uses.

Policy N-P-1: Areas within Manteca exposed to existing or projected exterior noise levels from mobile noise sources exceeding the performance standards in Table 9-1 [Table 4.5-2] shall be designated as noise-impacted areas.

TABLE 4.5-2: CITY OF MANTECA MAXIMUM ALLOWABLE NOISE EXPOSURE - MOBILE NOISE SOURCES

LAND USE[4]	*OUTDOOR ACTIVITY AREAS*[1]	*INTERIOR SPACES*	
		L_{DN}/*CNEL, DB*	L_{EQ}, *DB*[3]
Residential	60[2]	45	
Transient Lodging	60[2]	45	
Hospitals, Nursing Homes	60[2]	45	
Theatres, Auditoriums, Music Halls			35
Churches, Music Halls	60[2]		40
Office Buildings	65		45
Schools, Libraries, Museums			45
Playgrounds, Neighborhood Parks	70		

1 Outdoor activity areas for residential development are considered to be backyard patios or decks of single family dwellings, and the common areas where people generally congregate for multi-family developments. Outdoor activity areas for non-residential developments are considered to be those common areas where people generally congregate, including pedestrian plazas, seating areas, and outside lunch facilities. Where the location of outdoor activity areas is unknown, the exterior noise level standard shall be applied to the property line of the receiving land use.

2 In areas where it is not possible to reduce exterior noise levels to 60 dB L_{dn} or below using a practical application of the best noise-reduction technology, an exterior noise level of up to 65 L_{dn} will be allowed.

3 Determined for a typical worst-case hour during periods of use.

4 Where a proposed use is not specifically listed on the table, the use shall comply with the noise exposure standards for the nearest similar use as determined by the City.

SOURCE: CITY OF MANTECA GENERAL PLAN NOISE ELEMENT 2023, TABLE 9-1.

Policy N-P-2: New development of residential or other noise-sensitive land uses will not be permitted in noise-impacted areas unless effective mitigation measures are incorporated into the project design to satisfy the performance standards in Table 9-1 [Table 4.5-1].

Policy N-P-3: The City may permit the development of new noise-sensitive uses only where the noise level due to fixed (non-transportation) noise sources satisfies the noise level standards of Table 9-2 [Table 4.5-3]. Noise mitigation may be required to meet Table 9-2 [Table 4.5-3] performance standards.

TABLE 4.5-3: CITY OF MANTECA PERFORMANCE STANDARDS FOR STATIONARY NOISE SOURCES OR PROJECTS AFFECTED BY STATIONARY NOISE SOURCES[1]

NOISE LEVEL DESCRIPTOR	*DAYTIME (7 A.M. TO 10 P.M.)*	*NIGHTTIME (10 P.M. TO 7 A.M.)*
Hourly L_{eq}, dB	50	45
Maximum Level, dB	70	65

1 Each of the noise levels specified above should be lowered by five (5) dB for simple noise tones, noises consisting primarily of speech or music, or recurring impulsive noises. Such noises are generally considered by residents to be particularly annoying and are a primary source of noise complaints.

2 No standards have been included for interior noise levels. Standard construction practices should, with the exterior noise levels identified, result in acceptable interior noise levels.

SOURCE: CITY OF MANTECA GENERAL PLAN NOISE ELEMENT 2023, TABLE 9-2.

Policy N-P-4: The City shall require stationary noise sources proposed adjacent to noise sensitive uses to be mitigated so as to not exceed the noise level performance standards in Table 9-2 [Table 4.5-3].

Policy N-P-5: In accord with the Table 9-2 [Table 4.5-3] standards, the City shall regulate construction-related noise impacts on adjacent uses.

Policy N-P-6: Where the development of residential or other noise-sensitive land use is proposed for a noise-impacted area, an acoustical analysis is required as part of the environmental review process so that noise mitigation may be considered in the project design. The acoustical analysis shall:

- Be the responsibility of the applicant.
- Be prepared by a qualified acoustical consultant experienced in the fields of environmental noise assessment and architectural acoustics.
- Include representative noise level measurements with sufficient sampling periods and locations to adequately describe local conditions and the predominant noise sources.
- Estimate existing and projected (20 years) noise levels in terms of the standards of Table 9-1 [Table 4.5-2] or Table 9-2 [Table 4.5-3], and compare those levels to the adopted policies of the Noise Element.
- Recommend appropriate mitigation measures to achieve compliance with the adopted policies and standards of the Noise Element.
- Estimate noise exposure after the prescribed mitigation measures have been implemented.
- Describe a post-project assessment program that could be used to monitor the effectiveness of the proposed mitigation measures.

Policy N-P-7: Noise level criteria applied to land uses other than residential or other noise-sensitive uses shall be consistent with noise performance levels of Table 9-1 [Table 4.5-2] and Table 9-2 [Table 4.5-3].

Policy N-P-8: The City shall enforce the Sound Transmission Control Standards of the California Building Code concerning the construction of new multiple occupancy dwellings such as hotels, apartments, and condominiums.

Policy N-P-9: New equipment and vehicles purchased by the City shall comply with noise level performance standards consistent with the best available noise reduction technology.

Policy N-P-10: The Manteca Police Department shall actively enforce requirements of the California Vehicle Code relating to vehicle mufflers and modified exhaust systems.

Policy N-P-11: For residential development backing on to a freeway or railroad right-of-way, the developer shall be required to build a sound barrier wall, and provide for other appropriate mitigation measures, to satisfy the performance standards in Table 9-1 [Table 4.5-2].

Policy N-P-12: The City shall require new roadways to be mitigated so as to not exceed the noise levels specified in Table 9-1 [Table 4.5-2]. Widening or other improvement projects of existing roadways shall be mitigated to the most practical extent.

Policy N-P-13: The City shall carefully review and shall give potentially affected residents an opportunity to fully review any proposals for the establishment of helipads or heliports.

IMPLEMENTATION N-I-1: New development in residential areas with an actual or projected exterior noise level of greater than 60 dB L_{dn} will be conditioned to use mitigation measures to reduce exterior noise levels to less than or equal to 60 dB L_{dn}.

IMPLEMENTATION N-I-2: Assist in enforcing compliance with noise emissions standards for all types of vehicles, established by the California Vehicle Code and by federal regulations, through coordination with the Manteca Police Department and the California Highway Patrol.

IMPLEMENTATION N-I-3: In making a determination of impact under the California Environmental Quality Act (CEQA), a substantial increase will occur if ambient noise levels are increased by 10 dB or more. An increase from 5-10 dB may be substantial. Factors to be considered in determining the significance of increases from 5-10 dB include:

- the resulting noise levels
- the duration and frequency of the noise
- the number of people affected
- the land use designation of the affected receptor sites
- public reactions or controversy as demonstrated at workshops or hearings, or by correspondence
- prior CEQA determinations by other agencies specific to the project

IMPLEMENTATION N-I-4: Control noise at the source through use of insulation, berms, building design and orientation, buffer space, staggered operating hours and other techniques. Use noise barriers to attenuate noise to acceptable levels.

IMPLEMENTATION N-I-5: Evaluate new transportation projects, such a rail or public transit routes, using the standards contained in Table 9-1 [Table 4.5-2]. However, noise from these projects may be allowed to exceed the standards contained in Table 9-1 [Table 4.5-2], if the City Council finds that there are special overriding circumstances.

IMPLEMENTATION N-I-6: Require an acoustical analysis where:

- Noise sensitive land uses are proposed in areas exposed to existing or projected noise levels exceeding the levels specified in Table 9.1 [Table 4.5-2] or 9.2 [Table 4.5-3].
- Proposed transportation projects are likely to produce noise levels exceeding the levels specified in Table 9.1 [Table 4.5-2] or 9.2 [Table 4.5-3] at existing or planned noise sensitive uses.

IMPLEMENTATION N-I-7: Require that all acoustical analyses utilize a consistent format and be prepared in accordance with Policy N-P-6.

IMPLEMENTATION N-I-8: Work in cooperation with Caltrans and the Union Pacific Railroad to maintain noise level standards for both new and existing projects in compliance with Table 9-1 [Table 4.5-2].

EXISTING NOISE LEVELS

Traffic Noise Levels

The FHWA Highway Traffic Noise Prediction Model (FHWA-RD 77-108) was used to develop L_{dn} (24-hour average) noise contours for all highways and major roadways in the Planning Area. The model is based upon the CALVENO noise emission factors for automobiles, medium trucks, and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver and the acoustical characteristics of the site. The FHWA Model predicts hourly L_{eq} values for free-flowing traffic conditions, and is generally considered to be accurate within 1.5 dB. To predict L_{dn} values, it is necessary to determine the hourly distribution of traffic for a typical 24-hour period.

Existing traffic volumes were obtained from the traffic modeling performed for the Planning Area. Day/night traffic distributions were based upon continuous hourly noise measurement data and j.c. brennan & associates, Inc. file data for similar roadways. Caltrans vehicle truck counts were obtained for CA-99 and CA-120. Using these data sources and the FHWA traffic noise prediction methodology, traffic noise levels were calculated for existing conditions. Table 4.5-4 shows the results of this analysis.

TABLE 4.5-4: PREDICTED EXISTING TRAFFIC NOISE LEVELS

ROADWAY	*SEGMENT*	*NOISE LEVEL AT CLOSEST RECEPTORS (DB, L_{DN})[1]*	*DISTANCES TO TRAFFIC NOISE CONTOURS, L_{DN} (FEET)*		
			70 DB	*65 DB*	*60 DB*
CA-99	North of 120	75.5	212	456	982
CA-99	South of 120	77.8	482	1039	2239
CA-120	I-5 to Airport Way	75.0	560	1207	2600
CA-120	Airport Way to Manteca Rd/Main St	71.7	182	392	845
CA-120	Manteca Rd/ Main St. to CA-99	71.8	220	475	1023
Lathrop Rd	I-5 to Airport Way	69.3	43	92	199
Lathrop Rd	Airport Way to Main St	70.3	51	111	239
Lathrop Rd	Main St. to Austin Rd	71.1	58	125	270
Louise Ave	I-5 to Airport Way	64.4	24	52	111
Louise Ave	Airport Way to Manteca Rd/Main St	64.8	21	45	98
Louise Ave	Manteca Rd/Main St to Austin Rd	59.1	8	17	37
Yosemite Ave	I-5 to Airport Way	70.4	50	108	232
Yosemite Ave	Airport Way to Union Rd	71.9	72	155	333
Yosemite Ave	Union Rd to Manteca Rd/Main St	68.7	42	91	196
Yosemite Ave	Manteca Rd/Main St to CA-99	70.9	46	99	212
Yosemite Ave	CA-99 to Austin Rd	68.3	55	120	258

ROADWAY	SEGMENT	NOISE LEVEL AT CLOSEST RECEPTORS (DB, L_{DN})[1]	DISTANCES TO TRAFFIC NOISE CONTOURS, L_{DN} (FEET)		
			70 DB	65 DB	60 DB
Woodward Ave	I-5 to Airport Way	58.5	7	15	32
Woodward Ave	Airport Way to Manteca Rd/Main St	59.3	10	22	47
Woodward Ave	Manteca Rd/Main St to Moffat Blvd	66.2	23	50	108
Airport Way	French Camp Rd to Lathrop Road	72.7	41	89	191
Airport Way	Lathrop Rd to Louise Ave	63.4	17	37	81
Airport Way	Louise Ave to Yosemite Ave	65.1	22	48	102
Airport Way	Yosemite Ave to CA-120	70.8	45	98	211
Airport Way	CA-120 to Woodward Ave	66.7	42	91	197
Airport Way	Woodward Ave to Nile Rd	72.1	69	148	320
Union Rd	French Camp Rd to Lathrop Road	61.4	13	29	62
Union Rd	Lathrop Rd to Louise Ave	64.3	19	41	88
Union Rd	Louise Ave to Yosemite Ave	65.9	21	46	99
Union Rd	Yosemite Ave to CA-120	70.5	50	108	232
Union Rd	CA-120 to Woodward Ave	61.3	18	39	85
Union Rd	Woodward Ave to Rippon Rd	68.8	31	68	146
Manteca Rd/Main St	Lathrop Rd to Louise Ave	67.7	34	73	158
Manteca Rd/Main St	Louise Ave to Yosemite Ave	60.1	43	94	202
Manteca Rd/Main St	Yosemite Ave to CA-120	70.2	60	130	281
Manteca Rd/Main St	CA-120 to Woodward Ave	68.0	41	89	192
Manteca Rd/Main St	Woodward Ave to Sedan Ave	67.0	21	45	97
Austin Rd	Lathrop Rd to Yosemite Ave	63.9	17	36	78
Austin Rd	Yosemite Ave to Woodward Ave	63.6	17	36	78
Austin Rd	Woodward Ave to Ripon Rd	65.9	25	54	116

NOTES: DISTANCES TO TRAFFIC NOISE CONTOURS ARE MEASURED IN FEET FROM THE CENTERLINES OF THE ROADWAYS.
[1] TRAFFIC NOISE LEVELS ARE PREDICTED AT THE CLOSEST SENSITIVE RECEPTORS OR AT A DISTANCE OF 100 FEET IN COMMERCIAL/RETAIL AREAS.
SOURCE: FEHR & PEERS, CALTRANS, J.C. BRENNAN & ASSOCIATES, INC., 2017.

Traffic noise levels are predicted at the sensitive receptors located at the closest typical setback distance along each Planning Area roadway segment. In some locations, sensitive receptors may be located at distances which vary from the assumed calculation distance and may experience shielding from intervening barriers or sound walls. However, the traffic noise analysis is believed to be representative of the majority of sensitive receptors located closest to the Planning Area roadway segments analyzed in this report.

The actual distances to noise level contours may vary from the distances predicted by the FHWA model due to roadway curvature, grade, shielding from local topography or structures, elevated roadways, or elevated receivers. The distances reported in Table 4.5-4 are generally considered to be conservative

estimates of noise exposure along roadways in the City of Manteca. Figure 4.5-1 shows existing citywide traffic noise contours.

Railroad Noise Levels

In order to quantify noise exposure from existing train operations, two continuous (24-hour) noise level measurement surveys were conducted along the two Union Pacific (UP) railroad lines which run through the City. In addition to freight, the westernmost line also carries commuter trains for the Altamont Corridor Express (ACE) service which provides passenger transportation between Stockton and San Jose.

The purpose of the noise level measurements was to determine typical sound exposure levels (SEL) for railroad line operations, while accounting for the effects of travel speed, warning horns and other factors which may affect noise generation. In addition, the noise measurement equipment was programmed to identify individual train events so that the typical number of train operations could be determined.

Table 4.5-5 shows a summary of the continuous noise measurement results for railroad activity within the City.

TABLE 4.5-5: RAILROAD NOISE MEASUREMENT RESULTS

MEASUREMENT LOCATION	*RAILROAD TRACK*	*GRADE CROSSING / WARNING HORN*	*TRAIN EVENTS PER 24-HOUR PERIOD*	*AVERAGE SEL AT 50 FEET*
Site A	U.P. and A.C.E.	Yes	13	109 dBA
Site B	U.P.	Yes	26	108 dBA

SOURCE: J.C. BRENNAN & ASSOCIATES, INC., 2017.

Noise measurement equipment consisted of Larson Davis Laboratories (LDL) Model 820 precision integrating sound level meters equipped with LDL ½" microphones. The measurement systems were calibrated using a LDL Model CAL200 acoustical calibrator before and after testing. The measurement equipment meets all of the pertinent requirements of the American National Standards Institute (ANSI) for Type 1 (precision) sound level meters.

To determine the distances to the day/night average (L_{dn}) railroad contours, it is necessary to calculate the L_{dn} for typical train operations. This was done using the SEL values and above-described number and distribution of daily train operations. The L_{dn} may be calculated as follows:

$$L_{dn} = SEL + 10 \log N_{eq} - 49.4 \text{ dB, where:}$$

SEL is the mean Sound Exposure Level of the event, N_{eq} is the sum of the number of daytime events (7 a.m. to 10 p.m.) per day, plus 10 times the number of nighttime events (10 p.m. to 7 a.m.) per day, and 49.4 is ten times the logarithm of the number of seconds per day. Based upon the above-described noise level data, number of operations and methods of calculation, the L_{dn} value for railroad line operations have been calculated, and the distances to the L_{dn} noise level contours are shown in Table 4.5-6.

TABLE 4.5-6: APPROXIMATE DISTANCES TO THE RAILROAD NOISE CONTOURS

EXTERIOR NOISE LEVEL AT 100 FEET, L_{DN}	DISTANCE TO EXTERIOR NOISE LEVEL CONTOURS, FEET		
	60 DB L_{DN}	65 DB L_{DN}	70 DB L_{DN}
U.P. AND A.C.E LINE WITH WARNING HORNS			
77 dB	642'	298'	138'
UPRR – WITH WARNING HORNS			
78 dB	833'	387'	179'

SOURCE: J.C. BRENNAN & ASSOCIATES, INC., 2017.

Fixed Noise Sources

The production of noise is a result of many industrial processes, even when the best available noise control technology is applied. Noise exposures within industrial facilities are controlled by Federal and State employee health and safety regulations (OSHA and Cal-OSHA), but exterior noise levels may exceed locally acceptable standards. Commercial, recreational, and public service facility activities can also produce noise which affects adjacent sensitive land uses. These noise sources can be continuous and may contain tonal components which have a potential to annoy individuals who live nearby. In addition, noise generation from fixed noise sources may vary based upon climatic conditions, time of day, and existing ambient noise levels.

In Manteca, fixed noise sources typically include parking lots, loading docks, parks, schools, and other commercial/retail use noise sources (HVAC, exhaust fans, etc.)

From a land use planning perspective, fixed-source noise control issues focus upon two goals:

1. To prevent the introduction of new noise-producing uses in noise-sensitive areas, and
2. To prevent encroachment of noise sensitive uses upon existing noise-producing facilities.

The first goal can be achieved by applying noise level performance standards to proposed new noise-producing uses. The second goal can be met by requiring that new noise-sensitive uses in near proximity to noise-producing facilities include mitigation measures that would ensure compliance with noise performance standards.

Fixed noise sources which are typically of concern include but are not limited to the following:

- HVAC Systems
- Pump Stations
- Steam Valves
- Generators
- Air Compressors
- Conveyor Systems
- Pile Drivers
- Drill Rigs
- Welders
- Outdoor Speakers
- Chippers
- Loading Docks
- Cooling Towers/Evaporative Condensers
- Lift Stations
- Steam Turbines
- Fans
- Heavy Equipment
- Transformers
- Grinders
- Gas or Diesel Motors
- Cutting Equipment
- Blowers
- Cutting Equipment
- Amplified Music and Voice

The types of uses which may typically produce the noise sources described above include, but are not limited to: wood processing facilities, pump stations, industrial/agricultural facilities, trucking operations, tire shops, auto maintenance shops, metal fabricating shops, shopping centers, drive-up windows, car washes, loading docks, public works projects, batch plants, bottling and canning plants, recycling centers, electric generating stations, race tracks, landfills, sand and gravel operations, and special events such as concerts and athletic fields. Typical noise levels associated with various types of stationary noise sources are shown in Table 4.5-7.

TABLE 4.5-7: TYPICAL STATIONARY SOURCE NOISE LEVELS

USE	NOISE LEVEL AT 100 FEET, LEQ[1]	DISTANCE TO NOISE CONTOURS, FEET			
		50 DB LEQ (NO SHIELDING)	45 DB LEQ (NO SHIELDING)	50 DB LEQ (WITH 5 DB SHIELDING)	45 DB LEQ (WITH 5 DB SHIELDING)
Auto Body Shop	56 dB	200	355	112	200
Auto Repair (Light)	53 dB	141	251	79	141
Busy Parking Lot	54 dB	158	281	89	158
Cabinet Shop	62 dB	398	708	224	398
Car Wash	63 dB	446	792	251	446
Cooling Tower	69 dB	889	1,581	500	889
Loading Dock	66 dB	596	1,059	335	596
Lumber Yard	68 dB	794	1,413	447	794
Maintenance Yard	68 dB	794	1,413	447	794
Outdoor Music Venue	90 dB	10,000	17,783	5,623	10,000
Paint Booth Exhaust	61 dB	355	631	200	355
School Playground / Neighborhood Park	54 dB	158	281	89	158
Skate Park	60 dB	316	562	178	316
Truck Circulation	48 dB	84	149	47	84
Vendor Deliveries	58 dB	251	446	141	251

[1] *ANALYSIS ASSUMES A SOURCE-RECEIVER DISTANCE OF APPROXIMATELY 100 FEET, NO SHIELDING, AND FLAT TOPOGRAPHY. ACTUAL NOISE LEVELS WILL VARY DEPENDING ON SITE CONDITIONS AND INTENSITY OF THE USE. THIS INFORMATION IS INTENDED AS A GENERAL RULE ONLY, AND IS NOT SUITABLE FOR FINAL SITE-SPECIFIC NOISE STUDIES.*

SOURCE: J.C. BRENNAN & ASSOCIATES, INC. 2017.

COMMUNITY NOISE SURVEY

A community noise survey was conducted to document ambient noise levels at various locations throughout the city. Short-term noise measurements were conducted at seven locations throughout the city on January 17th and 18th, 2017 during daytime and evening periods. In addition, three continuous 24-hour noise monitoring sites were also conducted to record day-night statistical noise level trends. The data collected included the hourly average (L_{eq}), median (L_{50}), and the maximum level (L_{max}) during the measurement period. Noise monitoring sites and the measured noise levels at each site are summarized in Table 4.5-8 and Table 4.5-9. Figure 4.5-2 shows the locations of the noise monitoring sites.

TABLE 4.5-8: EXISTING CONTINUOUS 24-HOUR AMBIENT NOISE MONITORING RESULTS

SITE	LOCATION	L_{DN} (DBA)	MEASURED HOURLY NOISE LEVELS, DBA LOW-HIGH (AVERAGE)					
			DAYTIME (7:00 AM - 10:00 PM)			NIGHTTIME (10:00 PM – 7:00 AM)		
			L_{EQ}	L_{50}	L_{MAX}	L_{EQ}	L_{50}	L_{MAX}
A	Lathrop/Manteca Light Rail Station. 51 ft from centerline of railroad.	79	58-76 (70)	55-64 (61)	70-105 (86)	55-79 (73)	53-63 (57)	68-107 (86)
B	Manteca Community Center. 48 ft from centerline of railroad.	78	53-76 (73)	49-61 (55)	66-102 (92)	48-75 (71)	46-57 (49)	62-99 (91)
C	12878 S. Austin Rd., North boundary. 78 ft to centerline of railroad.	63	56-63 (60)	49-59 (56)	70-85 (78)	46-60 (56)	37-58 (46)	66-85 (74)
D	Cottage Ave. at SR-99, 90 feet from median of SR-99 (collected 11/13/2015)	77	70-74 (73)	67-72 (71)	82-96 (86)	67-73 (70)	59-71 (64)	80-90 (84)
E	Atherton Dr., west of Hearthsong Dr. 330-feet from centerline of SR-120. (collected 5/24/16)	66	60-64 (61)	59-61 (60)	68-86 (73)	56-62 (60)	54-62 (58)	66-76 (71)

SOURCE – J.C. BRENNAN & ASSOCIATES, INC., 2017.

TABLE 4.5-9: EXISTING SHORT-TERM COMMUNITY NOISE MONITORING RESULTS

SITE	LOCATION	TIME[1]	MEASURED SOUND LEVEL, DB			NOTES
			L_{EQ}	L_{50}	L_{MAX}	
1	BMX Park on Spreckles Avenue	12:40 p.m.	59	58	68	Spreckles Ave. is the primary noise source. Freight train passed by.
		10:57 a.m.	65	64	78	Spreckles Ave. is the primary noise source.
2	Delicato Family Vineyards	1:59 p.m.	68	66	79	CA-99 is the primary noise source.
		11:28 a.m.	73	72	85	CA-99 is the primary noise source.
3	Raymus Village Park	2:40 p.m.	49	48	61	CA-99 is the primary noise source.
		11:52 a.m.	59	58	65	CA-99 is the primary noise source.
4	Airport Way, adjacent to 13033 Airport Way	3:18 p.m.	70	63	82	Airport Way is the primary noise source. Rumbling from freight trains.
		8:29 a.m.	70	66	79	Airport Way is the primary noise source.
5	Intersection of Airport Way and Fig Ave.	9:15 a.m.	65	54	78	Primary source is Airport Way.
		12:44 a.m.	67	55	82	Primary source is Airport Way.

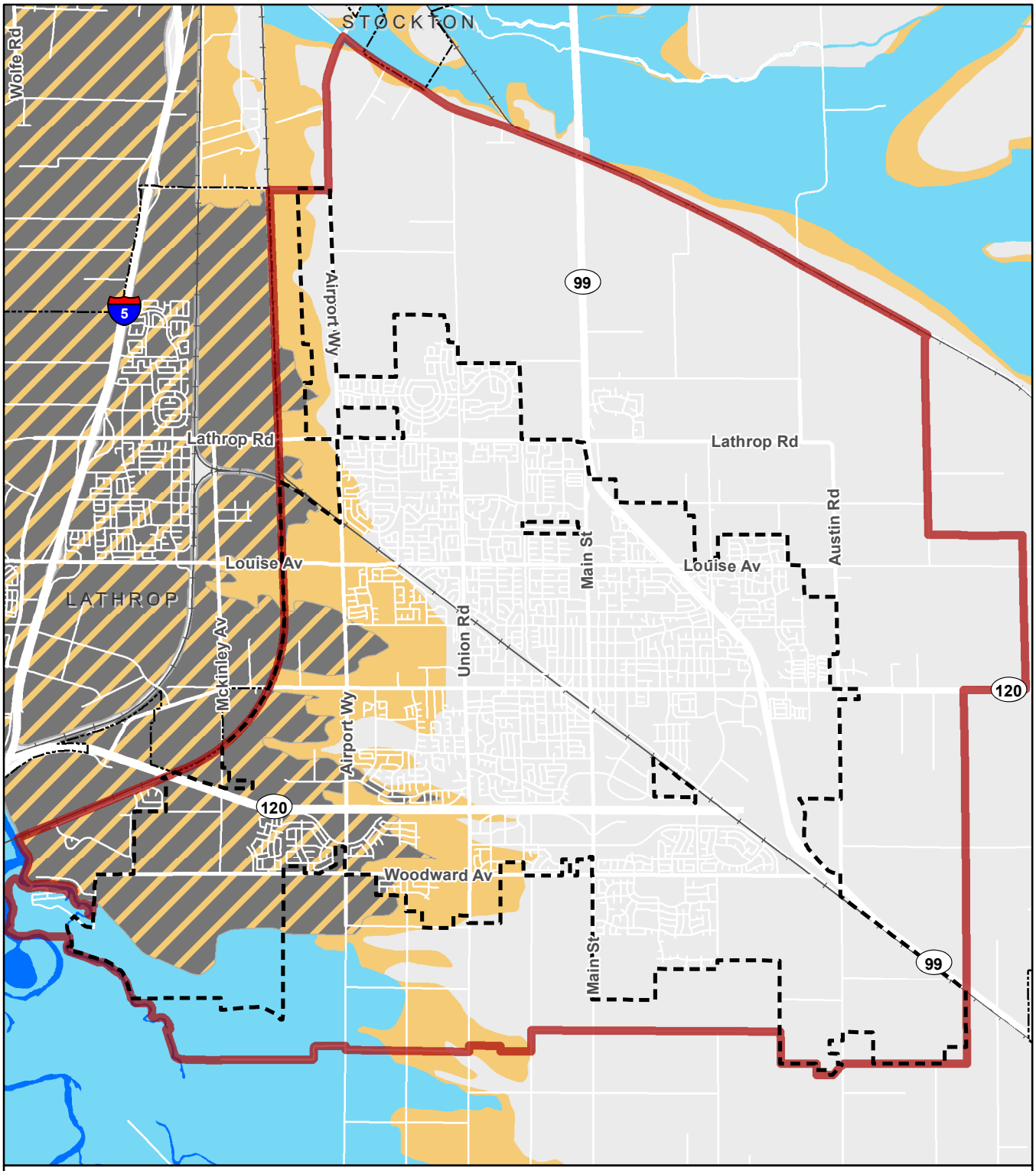
SITE	LOCATION	TIME[1]	MEASURED SOUND LEVEL, DB			NOTES
			L_{EQ}	L_{50}	L_{MAX}	
6	Intersection of Austin Rd. and Palm Ave.	10:02 a.m.	68	58	83	Austin Rd. is primary noise source.
		1:52 p.m.	69	62	84	Austin Rd. is primary noise source.
7	Dead end of Vasconcellos Ave, adjacent to El Rancho Mobile Home Park.	10:30 a.m.	60	59	72	CA-99 is primary noise source.
		2:24 p.m.	63	57	80	CA-99 is primary noise source.

1 - ALL COMMUNITY NOISE MEASUREMENT SITES HAVE TEST DURATIONS OF 10:00 MINUTES.

SOURCE - J.C. BRENNAN & ASSOCIATES, INC., 2017.

Community noise monitoring equipment included Larson Davis Laboratories (LDL) Model 820 precision integrating sound level meters equipped with LDL ½" microphones. The measurement systems were calibrated using a LDL Model CAL200 acoustical calibrator before and after testing. The measurement equipment meets all of the pertinent requirements of the American National Standards Institute (ANSI) for Type 1 (precision) sound level meters.

The results of the community noise survey shown in Tables 4.5-8 and 4.5-9 indicate that existing transportation noise sources were the major contributor of noise observed during daytime hours, especially during vehicle passbys.



FEMA Flood Hazards Designations

- 1% Annual Chance Flood Hazard (100-yr Flood)
- 0.2% Annual Chance Flood Hazard (500-yr Flood)
- Area with Reduced Risk Due to Levee

Planning Area

- Manteca City Limits
- Manteca Sphere of Influence

Source: FEMA's National Flood Hazard Layer, City of Manteca GIS.
Map date: October 7, 2016.

CITY OF MANTECA GENERAL PLAN UPDATE

Figure 4.4-1: FEMA Flood Zone Designations

0 ½ 1
Miles
1:75,000

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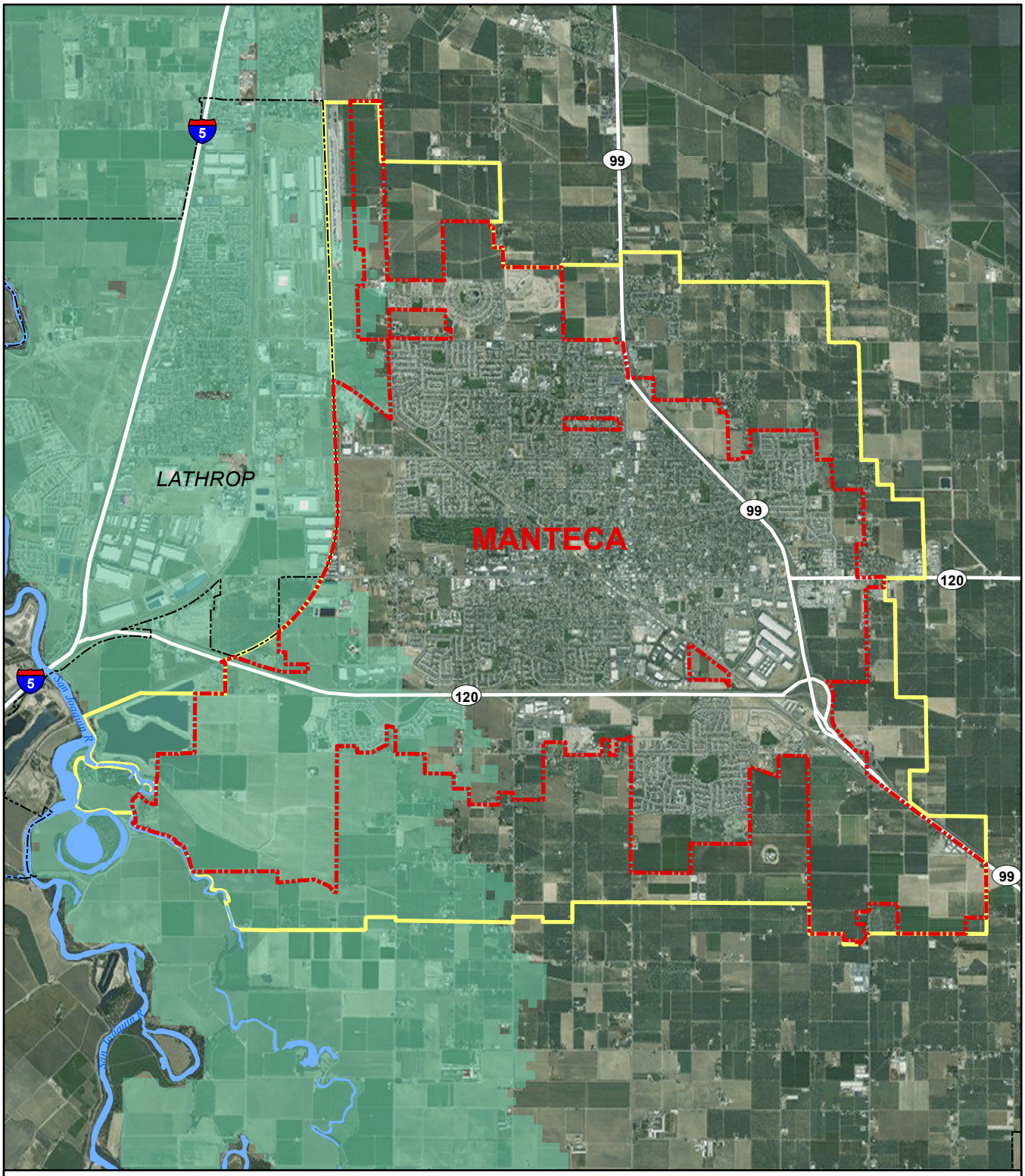
A Land Use Planning, Design, and Environmental Firm



CITY OF MANTECA GENERAL PLAN UPDATE

Figure 4.4-2: 200-Year Floodplain

Legend

- City of Manteca
- City of Lathrop
- City of Manteca Sphere of Influence
- 200-Year Floodplain

N

0 0.5 1

Miles

1:78,000

Sources: City of Manteca; San Joaquin County; CalAtlas. Map date: February 5, 2016.

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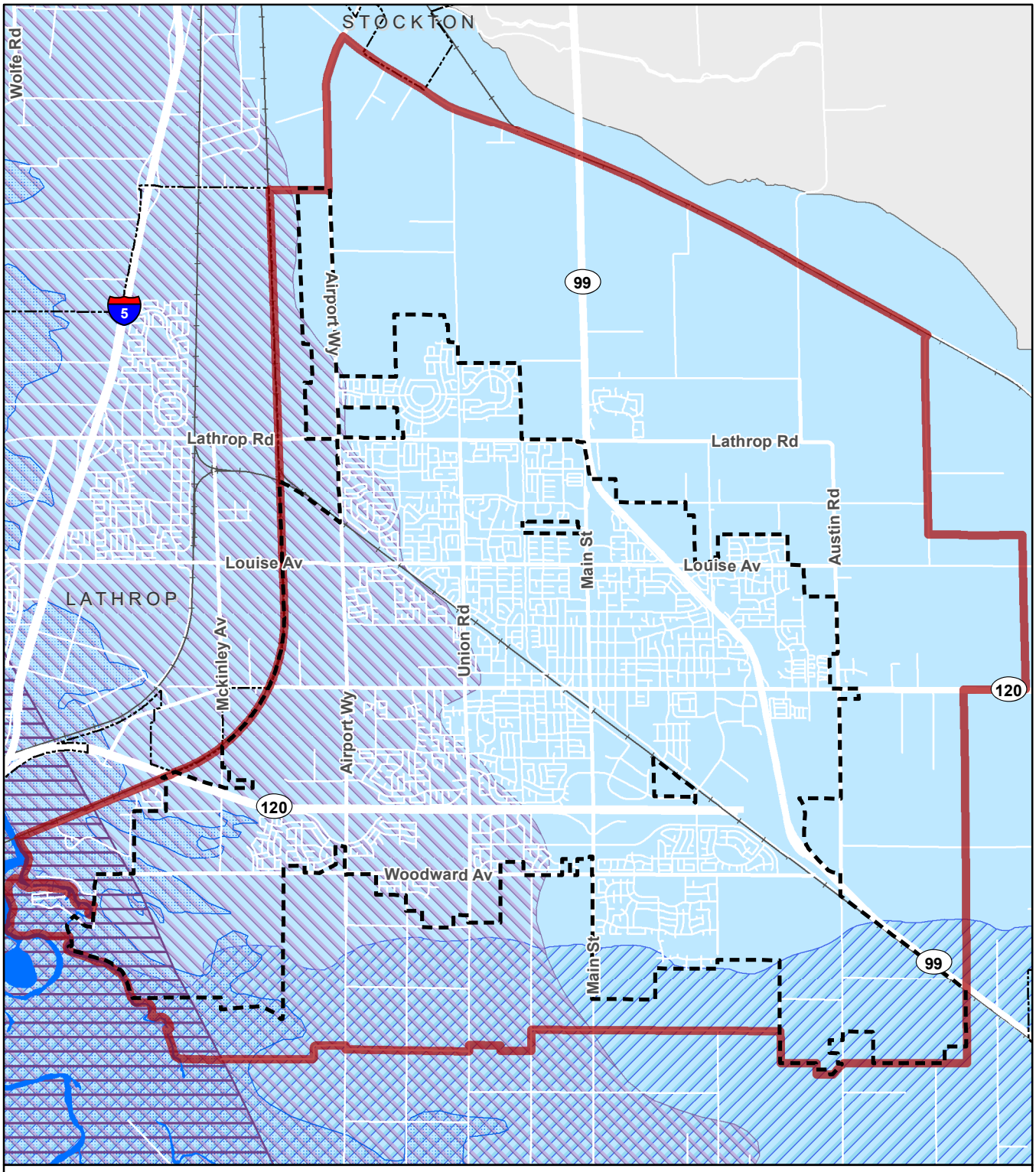

CITY OF MANTECA GENERAL PLAN UPDATE

Figure 4.4-3: Dam Inundation Areas

OES Dam Inundation Areas

- Pine Flat Dam
- Lake McClure Reservoir
- San Luis Reservoir
- Tulloch Reservoir
- New Melones Dam

Planning Area

- Manteca City Limits
- Manteca Sphere of Influence

0 ½ 1
Miles
1:75,000

Source: Office of Emergency Services Dam Inundation Areas offered by sjmap.org, San Joaquin County GIS, July 29, 2016; City of Manteca GIS. Map date: October 7, 2016.

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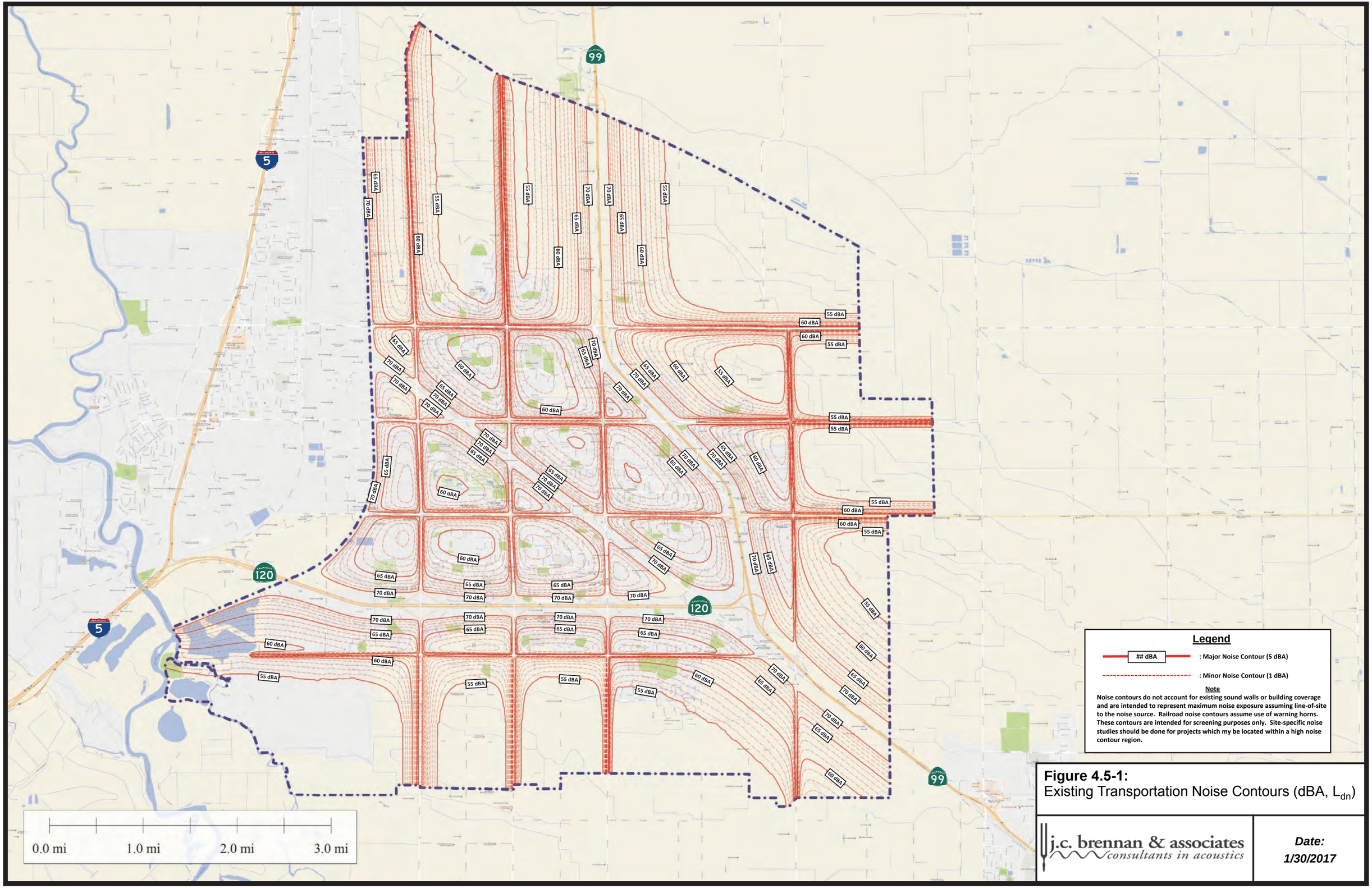
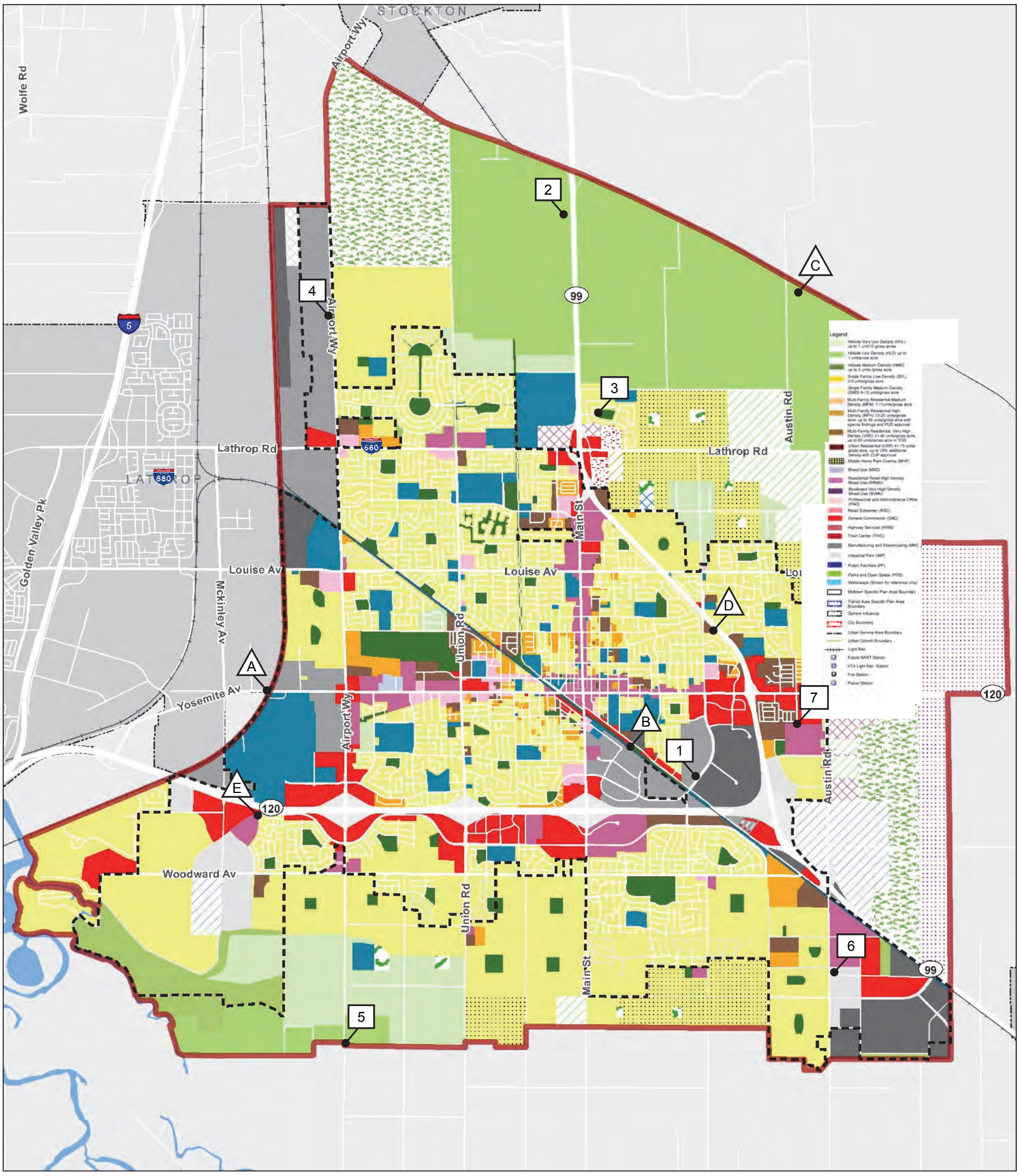


Figure 4.5-1:
Existing Transportation Noise Contours (dBA, L_{dn})

j.c. brennan & associates
consultants in acoustics

Date:
1/30/2017



Legend

X : **Continuous (24-hr) Noise Measurement Site**

: **Short-Term Noise Measurement Site**

Figure 4.5-2:
Noise Measurement Locations

j.c. brennan & associates
consultants in acoustics

Date:
1/27/2017