Public Review Draft Initial Study/Mitigated Negative Declaration and Environmental Assessment/Finding of No Significant Impact

Manteca Arsenic Reduction Project

Prepared for:

City of Manteca:

U.S. Environmental Protection Agency, Region 9

March 1, 2010

AECOM

Public Review Draft Initial Study/Mitigated Negative Declaration and Environmental Assessment/Finding of No Significant Impact

Manteca Arsenic Reduction Project

Prepared for:

City of Manteca
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March 1, 2010

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MITIGATED NEGATIVE DECLARATION

Project: Manteca Arsenic Reduction Project

Lead Agency: City of Manteca

PROJECT DESCRIPTION

This Initial Study and Mitigated Negative Declaration (IS/MND) evaluates the environmental effects of the proposed Manteca Arsenic Reduction Project. The City of Manteca (City) proposes to implement a water quality improvement project that would reduce the arsenic concentrations in groundwater pumped through the City's potable water system and delivered to customers within the City. The City is experiencing high arsenic concentrations from some of its groundwater wells, specifically, Wells 12, 15, and 22. The project would result in the construction of a network of pipelines that would connect all three wells to a surface water tank site. Arsenic groundwater from the wells would be mixed with surface water at each well site to dilute the concentration of arsenic prior to being delivered to customers. The preferred alternative includes 14,415 linear feet of pipeline and is located entirely within existing roadway alignments. Alternative 1 includes 14,540 linear feet of pipeline and the majority of pipeline would be constructed in the existing Tidewater bike path alignment. Alternative 2 would involve the construction of well-head treatment facilities at each well site location that would blend groundwater to reduce its arsenic concentration.

FINDING

An IS/MND has been prepared to assess the project's potential effects on the environment and the significance of those effects. Based on the IS/MND, it has been determined that the proposed project would not have any significant effects on the environment after implementation of mitigation measures. This conclusion is supported by the following findings:

1. The proposed project would have no effect related to biological resources, mineral resources, agricultural resources, land use and planning, population and housing, and recreation.

2. The proposed project would have a less-than-significant impact on aesthetics, noise, public services, and utilities and service systems.

3. Mitigation is required to reduce potentially significant impacts related to air resources, hydrology and water quality, transportation and traffic, cultural resources, geology and soils, hazards and hazardous materials.

Following are the mitigation measures that will be implemented by the City of Manteca (City) to avoid or minimize environmental impacts. Implementation of these mitigation measures would reduce the environmental impacts of the proposed project to a less-than-significant level.

AIR QUALITY

Mitigation Measure AQ-1: Reduction of Short-Term Emissions of Criteria Air Pollutants and Ozone Precursors Generated by Construction.

The City will implement the following measures to control short-term emissions of criteria air pollutants and ozone precursors generated by project construction:

- The proposed project will comply with SJVAPCD Regulation VIII (Fugitive PM_{10} Prohibitions) and implement all applicable control measures, as required by law. Regulation VIII contains, but is not limited to, the following required control measures:
    - Pre-water site sufficient to limit visible dust emissions (VDE) to 20% opacity.
    - Phase work to reduce the amount of disturbed surface area at any one time.
    - Limit the speed of vehicles traveling on uncontrolled unpaved access/haul roads within construction sites to a maximum of 15 miles per hour.
    - When storing bulk materials, comply with the conditions for a stabilized surface as listed above.
    - When storing bulk materials, cover bulk materials stored outdoors with tarps, plastic, or other suitable material and anchor in such a manner that prevents the cover from being removed by wind action.
    - Load all haul trucks such that the freeboard is not less than 6 inches when material is transported across any paved public access road sufficient to limit VDE to 20% opacity.
    - Apply water to the top of the load sufficient to limit VDE to 20% opacity.
    - Cover haul trucks with a tarp or other suitable cover.
    - Clean the interior of the cargo compartment or cover the cargo compartment before the empty truck leaves the site; and prevent spillage or loss of bulk material from holes or other openings in the cargo compartment's floor, sides, and/or tailgate; and load all haul trucks such that the freeboard is not less than 6 inches when material is transported on any paved public access road, and apply water to the top of the load sufficient to limit VDE to 20% opacity; or cover haul trucks with a tarp or other suitable cover.
    - Owners/operators will remove all visible carryout and trackout at the end of each workday.
    - Cleanup of carryout and trackout will be accomplished by manually sweeping and picking-up; or operating a rotary brush or broom accompanied or preceded by sufficient wetting to limit VDE to 20% opacity; or operating a PM_{10}-efficient street sweeper that has a pick-up efficiency of at least 80%; or flushing with water, if curbs or gutters are not present and where the use of water would not result as a source of trackout material or result in adverse impacts on storm water drainage systems or violate any National Pollutant Discharge Elimination System permit program.

Please note that compliance with Regulation VIII, as stated above, is required by law, but the measures listed here are to provide a comprehensive list of all required and recommended measures.

- The following SJVAPCD-recommended enhanced and additional control measures will be implemented to further reduce fugitive PM_{10} dust emissions beyond compliance with Regulation VIII:
    - Install sandbags or other erosion control measures to prevent silt runoff to public roadways from adjacent project areas with a slope greater than 1%.
    - Suspend excavation and grading activity when winds exceed 20 mph.
    - Limit area subject to excavation, grading, and other construction activity at any one time.

HYDROLOGY AND WATER QUALITY

Mitigation Measure Hydro-1:

Before the start of any project construction work, site grading, or excavation, the City or its primary construction contractor will prepare a SWPPP detailing measures to control soil erosion and waste discharges from construction areas and shall submit a notice of intent to the Central Valley RWQCB for stormwater discharges associated with general construction activity. The City will require all contractors conducting construction-related work to implement the SWPPP to control soil erosion and waste discharges of other construction-related contaminants. The general contractor(s) and subcontractor(s) conducting the work will be responsible for constructing or implementing, regularly inspecting, and maintaining the measures in good working order.

The SWPPP will identify the grading and erosion control best management practices (BMPs) and specifications that are necessary to avoid and minimize water quality impacts to the extent practicable. Standard erosion control measures (e.g., management, structural, and vegetative controls) will be implemented for all construction activities that expose soil. Grading operations will be conducted to eliminate direct routes for conveying potentially contaminated runoff. Erosion control barriers such as silt fences and mulching material shall be installed, and disturbed areas will be reseeded with grass or other plants where necessary.

The SWPPP will contain specific measures for stabilizing soils at the construction site before the onset of the winter rainfall season. These standard erosion control measures shall be designed to reduce the potential for soil erosion and sedimentation of drainage channels.

The following specific BMPs are recommended for implementation:

- Conduct all work according to site-specific construction plans that identify areas for clearing, grading, and revegetation so that ground disturbance is minimized.
- Avoid existing vegetation wherever possible and identify vegetation to be retained for habitat maintenance (i.e., as identified through preconstruction biological surveys), cover cleared areas with mulches, install silt fences if needed to control erosion and trap sediment, and reseed cleared areas with native vegetation.
- Stabilize disturbed soils at all construction sites and staging areas before the onset of the winter rainfall season.
- Stabilize and protect stockpiles from exposure to erosion and flooding.
- The SWPPP also shall specify appropriate hazardous materials handling, storage, and spill response practices to reduce the possibility of adverse impacts from use or accidental spills or releases of contaminants. Specific measures applicable to the project include but are not limited to the following:
- Develop and implement strict on-site handling rules to keep construction and maintenance materials out of waterways.
- Conduct refueling and servicing of equipment and vehicles on the land side of the Feather River levee whenever possible. Only conduct refueling and servicing on the water side of the levee under extreme circumstances (e.g., vehicle or equipment breaks down and is not mobile). Leave absorbent material or drip pans underneath to contain spilled fuel during refueling and servicing. Collect any fluid

drained from machinery during servicing in leak-proof containers and deliver to an appropriate disposal or recycling facility.

- Prevent oil or other petroleum products, or any other substances that could be hazardous to aquatic life, from contaminating the soil or entering watercourses.

Maintain spill cleanup equipment in proper working condition. Clean up all spills immediately according to the spill prevention and response plan, and immediately notify DFG and the Central Valley RWQCB of any spills and cleanup procedures.

TRANSPORTATION AND TRAFFIC

Mitigation Measure Traffic-1

The City will prepare and implement a Construction Management Plan, which identifies the timing of construction and the timing of elements that would result in the full or partial blockage of local roadways. The plan will specify the measures that would be implemented to minimize traffic-related impacts including construction parking during construction, which will be limited to on-site areas. These measures could include, but are not limited to the following: use of signage notifying travelers that they are entering a construction zone; use of cones, flaggers, and guide-vehicles to direct traffic through the construction zone. A copy of the plan will be submitted to local emergency response agencies and these agencies shall be notified at least 14 days before the commencement of construction that would partially or fully obstruct local roadways.

CULTURAL RESOURCES

Mitigation Measure Cul-1

If an inadvertent discovery of cultural materials (e.g., unusual amounts of shell, animal bone, glass, ceramics, etc.) is made during project-related ground disturbing activities, any ground disturbances in the area of the find will be halted and a qualified professional archaeologist shall be notified regarding the discovery. The archaeologist will determine whether the resource is potentially significant per the NRHP / CRHR and develop appropriate mitigation. Mitigation may include, but not necessarily be limited to, in-field documentation, archival research, archaeological testing, data recovery excavations or recordation.

Mitigation Measure Cul-2

In accordance with the California Health and Safety Code, if human remains are uncovered during ground-disturbing activities, the contractor and/or the project proponent will immediately halt potentially damaging excavation in the area of the burial and notify the County Coroner and a professional archaeologist to determine the nature of the remains. The coroner is required to examine all discoveries of human remains within 48 hours of receiving notice of a discovery on private or state lands (Health and Safety Code Section 7050.5[b]). If the coroner determines that the remains are those of a Native American, he or she must contact the Native American Heritage Commission by phone within 24 hours of making that determination (Health and Safety Code Section 7050[c]). Following the coroner's findings, the archaeologist, and the NAHC designated Most Likely Descendent (MLD) shall determine the ultimate treatment and disposition of the remains and take appropriate steps to ensure that additional human interments are not disturbed. The responsibilities for acting upon notification of a discovery of Native American human remains are identified in California Public Resources Code Section 5097.9.

California law recognizes the need to protect Native American human burials, skeletal remains, and items associated with Native American burials from vandalism and inadvertent destruction. The procedures for

the treatment of Native American human remains are contained in California Health and Safety Code §7050.5 and §7052 and California Public Resources Code §5097.

HAZARDS AND HAZARDOUS MATERIALS

Mitigation Measure Haz-1:

Before the commencement of project construction, the City or its contractor will:

- ensure that any employee handling hazardous materials is trained in the safe handling and storage of hazardous materials and trained to follow all applicable regulations with regard to such hazardous materials, and
- identify staging areas where hazardous materials will be stored during construction in accordance with applicable state and federal regulations.

It is determined that with the incorporation of the mitigation measures described above, potentially significant impacts to air resources, hydrology and water quality, transportation and traffic, cultural resources, and hazards and hazardous materials would be reduced to less-than-significant levels.

Questions or comments regarding this Mitigated Negative Declaration and Initial Study may be addressed to:

Fernando Ulloa
City of Manteca
Public Works Department- Engineering Division
1001 W. Center Street
Manteca, CA 95337
(209) 456-8427

_____ _____

Fernando Ulloa [Date]
Senior Civil Engineer

Pursuant to Section 21082.1 of the California Environmental Quality Act, the City has independently reviewed and analyzed the Initial Study and Mitigated Negative Declaration for the proposed project and finds that the Initial Study and Mitigated Negative Declaration reflect the independent judgment of the City. The lead agency further finds that the project mitigation measures will be implemented as stated in the Mitigated Negative Declaration.

I hereby approve this project:

_____

Phil Govea
Deputy Director Public Works - Engineering, City of Manteca
(To be signed upon approval of the Project after the public review period is complete)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX Southern California Field Office
600 Wilshire Blvd. Suite 1460
Los Angeles, CA 90017

FINDING OF NO SIGNIFICANT IMPACT FOR THE CITY OF MANTECA ARSENIC REDUCTION PROJECT

PROJECT LOCATION AND DESCRIPTION

This Environmental Assessment and Finding of No Significant Impact (EA/FONSI) evaluates the environmental effects of the proposed Manteca Arsenic Reduction Project. The City of Manteca (City) proposes to implement a water quality improvement project that would reduce the arsenic concentrations in groundwater pumped through the City's potable water system and delivered to customers within the City. The City is experiencing high arsenic concentrations from some of its groundwater wells, specifically Wells 12, 15, and 22. The project would result in the construction of a network of pipelines that would connect all three wells to a surface water tank site. Groundwater from the wells would be mixed with surface water at each well site to dilute the concentration of arsenic prior to being delivered to customers. The preferred alternative includes 14,415 linear feet of pipeline and is located entirely within existing roadway alignments. Alternative 1 includes 14,540 linear feet of pipeline and the majority of the pipeline would be constructed in the existing Tidewater bike path alignment. Alternative 2 would involve the construction of well-head treatment facilities at each well site location that would reduce its arsenic concentrations.

The project would be constructed within a 2 square-mile area, located in the central, urbanized area of the City of Manteca. The project area is bounded by Lathrop Road to the North, West North Street to the south, North Union Road to the west, and Tidewater bike path to the east.

ENVIRONMENTAL CONSEQUENCES AND CONDITIONS

In compliance with the National Environmental Policy Act (NEPA), 42 USC §§4321–4370f; Council of Environmental Quality Regulations, 40 CFR §§1500.1–1508.28; and EPA NEPA regulations, 40 CFR Part 6, EPA has prepared an EA that examines the potential environmental impacts and alternatives to the proposed project. After carefully considering the regulatory, environmental (both natural and human) and socio-economic factors, the EA did not identify any significant impacts to the environment that would result from the implementation of this project.

The following mitigation measures will be incorporated into this project.

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- Cleanup of carryout and trackout will be accomplished by manually sweeping and picking-up; or operating a rotary brush or broom accompanied or preceded by sufficient wetting to limit VDE to 20% opacity; or operating a PM_{10}-efficient street sweeper that has a pick-up efficiency of at least 80%; or flushing with water, if curbs or gutters are not present and where the use of water would not result as a source of trackout material or result in adverse impacts on storm water drainage systems or violate any National Pollutant Discharge Elimination System permit.

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- identify staging areas where hazardous materials will be stored during construction in accordance with applicable state and federal regulations.

PUBLIC REVIEW

The EA and unsigned FONSI are available for public review at the EPA Southern California Field Office in Los Angeles, CA. In addition, the EA will be posted on the EPA website at http://www.epa.gov/region09/nepa/epa-generated.html.

The EA is also available for public review at the following City of Manteca location:

City of Manteca
Public Works Department
1001 W. Center Street
Manteca, CA 95337

To obtain additional information about the project, please contact Howard Kahan by e-mail at: kahan.howard@epa.gov or by calling (213)-244-1819. All interested persons may submit comments to EPA Region 9 by April 10, 2010. No administrative action will be taken on this proposed project prior to the expiration of the comment period. Comments, via letter, fax or e-mail, should be sent to Howard Kahan at the address listed below.

Howard Kahan
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Fax: (213) 244-1850
E-mail: kahan.howard@epa.gov

After EPA assesses any comments received, those comments, EPA's responses, and this FONSI will be forwarded to the Region 9 Water Division Director for signature. If this FONSI is signed by the Water Division Director, it will not be re-circulated for review, but will be available to any individual upon request.

FINDING

After review of the EA and any comments received, EPA will determine if the proposed project will have a significant impact on the environment and whether an Environmental Impact Statement will be prepared for this project.

_____ _____

Alexis Strauss Date
Director, Water Division

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ACRONYMS AND ABBREVIATIONS

µPa	micropascals
$\mu g/m^3$	micrograms per cubic meter
AB	Assembly Bill
AFY	acre feet per year
AQAP	air quality attainment plan
ARB	California Air Resources Board
BBN	Bolt Beranek and Newman Inc.
BMP	best management practice
CAA	Clean Air Act
CAAA	Clean Air Act Amendments
CAAQS	California ambient air quality standards
Caltrans	California Department of Transportation
CCAA	California Clean Air Act
CCAR	California Climate Action Registry
CCIC	Central California Information Center
CCR	California Code of Regulations
CDFG	California Department of Fish and Game
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CH_4	methane
City	City of Manteca
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	carbon monoxide
CO_2	carbon dioxide
CPS	cycles per second
CRHR	California Register of Historical Resources
CSO	Community Service Officer
CWA	federal Clean Water Act
dB	decibel

dB/DD	per doubling of distance
Delta	Sacramento-San Joaquin Delta
DFG	Department of Fish and Game
EA	Environmental Assessment
EIR	Environmental Impact Report
EIS	environmental impact statement
EPA	United States Environmental Protection Agency
ESA	federal Endangered Species Act
ESJCGB	Eastern San Joaquin County Groundwater Basin
FMMP	Farmland Mapping and Monitoring Program
FONSI	finding of no significant impact
GHG	greenhouse gas
gpm	gallons per minute
GWP	global warming potential
IS	Initial Study
L_{dn}	Day-Night Noise Level
L_{eq}	Equivalent Noise Level
L_{max}	Maximum Noise Level
L_n	Statistical Descriptor
M	magnitude
MCL	Maximum Contaminant Level
MEI	Maximally Exposed Individual
MFD	Manteca Fire Department
MGD	million gallons per day
MLD	Most Likely Descendent
mm/yr	millimeters per year
MND	Mitigated Negative Declaration
MPD	Manteca Police Department
N_2O	nitrous oxide
NAAQS	national ambient air quality standards
NAHC	Native American Heritage Commission
ND	Negative Declaration
NEPA	National Environmental Policy Act
NEPA	National Environmental Quality Act
NO_2	nitrogen dioxide

NO_X	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
OEHHA	Office of Environmental Health Hazard Assessment
OPR	Governor's Office of Planning and Research
PM_{10}	respirable particulate matter
$PM_{2.5}$	fine particulate matter
ppb	parts per billion
ppm	parts per million
PVC	polyvinyl chloride
ROG	reactive organic gases
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SCADA	Supervisory Control and Data Acquisition
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SJVAB	San Joaquin Valley Air Basin
SJVAPCD	San Joaquin Air Pollution Control District
SMARA	California Surface Mining and Reclamation act of 1975
SO_2	sulfur dioxide
SR	State Route
SSJID	South San Joaquin Irrigation District
SWPPP	storm water pollution prevention plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminant
tpy	tons per year
UCMP	University of California Museum of Paleontology
URBEMIS	Urban Emissions
USACE	U.S. Army Corps of Engineers
USAR	Urban Search and Rescue
USFWS	U.S. Fish and Wildlife Service
VDE	visible dust emissions
VMT	vehicle miles traveled
WQCF	Wastewater Quality Control Facility

1 PURPOSE AND NEED

1.1 INTRODUCTION

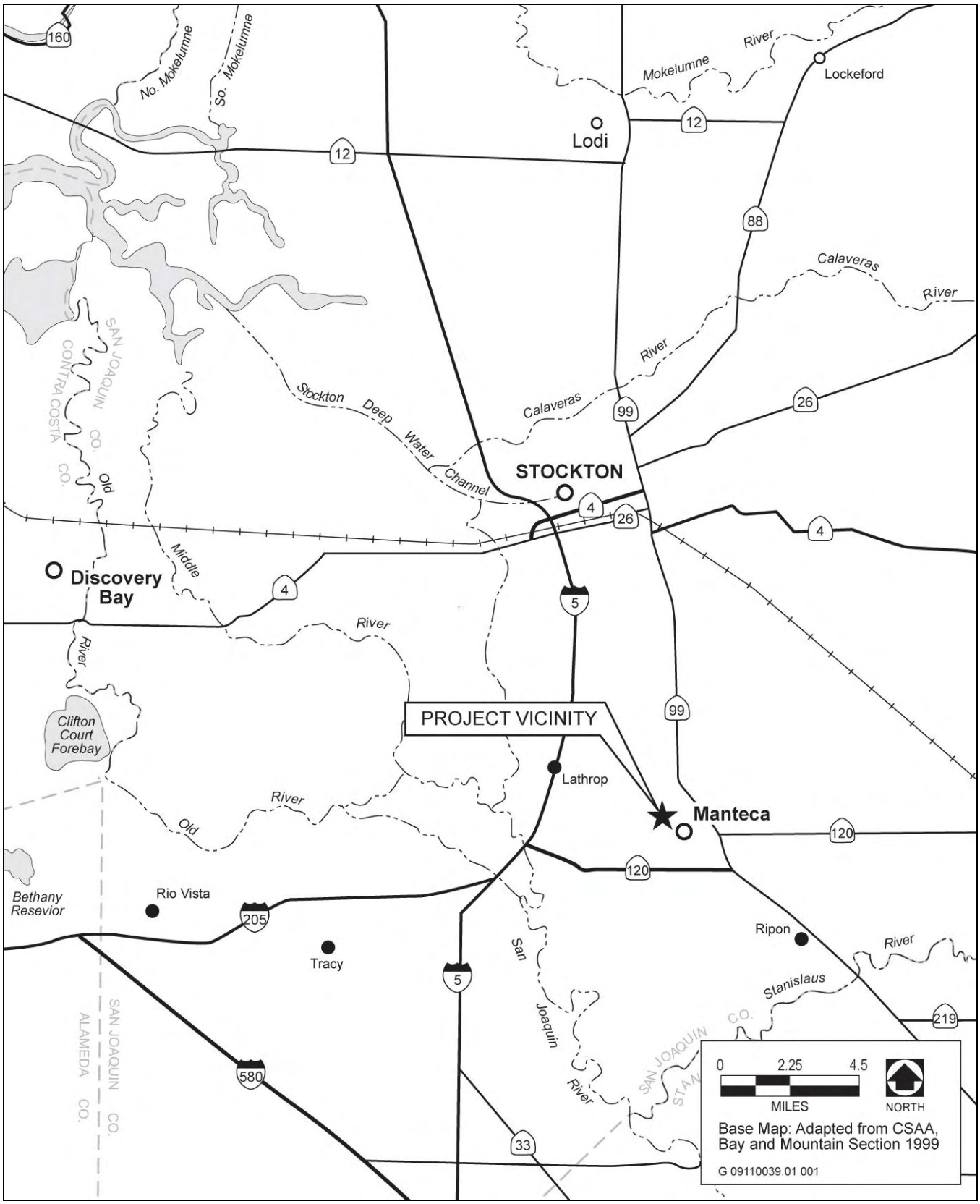
The City of Manteca (City) proposes to implement a water quality improvement project that would reduce the arsenic concentrations in groundwater pumped through the City's potable water system and delivered to customers within the City. The City is experiencing high arsenic concentrations from some of its groundwater wells, specifically, Wells 12, 15, and 22. These wells are generally located within the central urbanized area of the City. The project would result in the construction of a network of pipelines that would connect all three wells to a surface water storage tank site. Arsenic groundwater from the wells would be mixed with surface water at each well site to dilute the concentration of arsenic prior to being delivered to customers. Three alternatives are under consideration by the City: Preferred Alternative, Alternative 1, and Alternative 2 as shown in Exhibits 1-1 and 1-2. The Preferred Alternative, shown in blue on Exhibit 1-2, includes 14,415 linear feet of pipeline and is located entirely within existing roadway alignments. Alternative 1 includes 14,540 linear feet of pipeline and the majority of pipeline would be constructed in the existing Tidewater bike path alignment. Alternative 2 would involve the construction of well-head treatment facilities at each well site location that would blend groundwater to reduce its arsenic concentration. No pipelines would be required under this alternative.

The National Environmental Policy Act (NEPA) requires agencies to evaluate a No Action Alternative along with its impacts in the preparation of an Environmental Assessment (EA). This allows decision makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project. In most cases, a no action alternative would result in the continuation of existing conditions and no development would occur. For example, if a subdivision is proposed for an undeveloped site, the no action alternative would be the continuation of the undeveloped conditions.

In the case of this project, because the City is required to comply with the United States Environmental Protection Agency (EPA) regulations pertaining to arsenic and the City is operating under a compliance timeline from the Department of Health Services, the City cannot reasonably continue with status quo conditions. One reasonable scenario that could occur would be for the City to cease the delivery of water from these wells and secure and deliver water from alternate sources. However, it is unknown and too speculative to determine at this time whether alternative water supply (e.g., surface, reclaimed) sources are available to replace water lost by the decommissioning of the contaminated wells. No surplus water supplies are known to the City. Therefore, this alternative is eliminated from further discussion. Further, the construction of new groundwater wells is likely not a viable option because of the widespread elevated arsenic concentrations that occur throughout the City. This alternative is also eliminated from further discussion. Likely actions could include construction of a new pipeline from existing wells and surface water supply sources that meet current water quality standards or implementation of other treatment technologies to remove the arsenic levels.

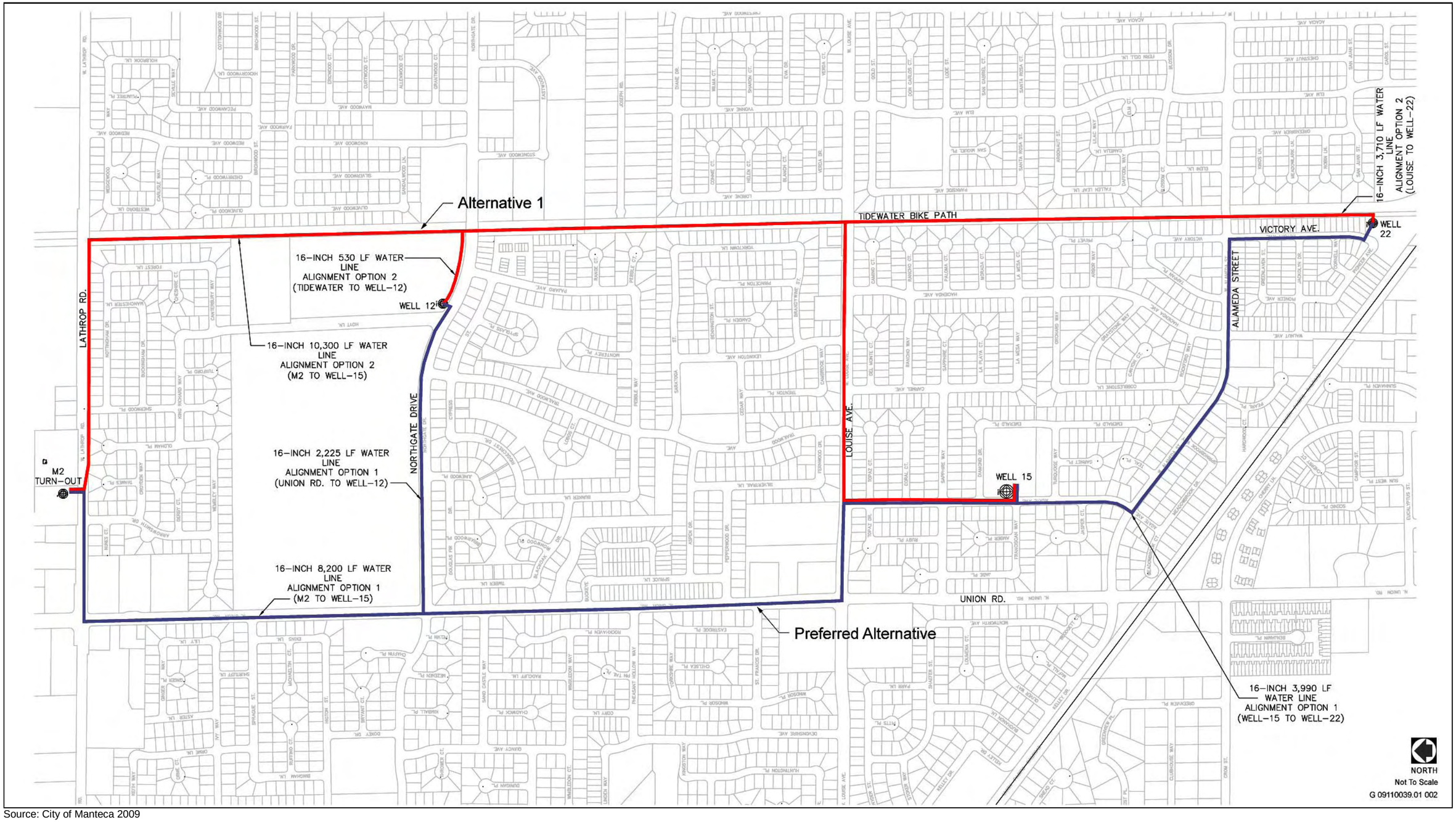
The alternatives evaluated in this Initial Study (IS)/EA contemplate the full-range of feasible alternatives for lowering arsenic levels from the identified City wells. In the event that the Preferred Alternative is not approved, one of the other alternatives would need to be implemented in order for the City to continue to provide a safe and reliable source of water to its customers. The impacts of these alternatives are evaluated throughout this document. While a traditional "No Action Alternative" would compare the impacts of a preferred alternative to the status quo conditions, status quo for the project would not be feasible or allowable by regulatory agencies. Therefore, one of the alternative options (Alternative 1 or 2) would need to be implemented. This IS/EA compares the impact of the Preferred Alternative to Alternative 1 and 2. In addition, while not a feasible alternative, for comparison purposes, a No Action Alternative that includes no development or corrective actions is also evaluated throughout this document and compared to all alternatives.

These four alternatives (Preferred Alternative, Alternative 1, Alternative 2, and No Action Alternative) are evaluated in this environmental document. No other feasible alternatives, based on relevant economic, environmental, social, technical, and legal factors, are known to the City.



Source: Adapted by EDAW 2009

Regional Map **Exhibit 1-1**



Source: City of Manteca 2009

Alternative Pipeline Routes **Exhibit 1-2**

1.2 PURPOSE OF THIS ENVIRONMENTAL REVIEW

This document is a joint Initial Study (IS) and EA prepared for the Arsenic Reduction Project ("proposed action" for purposes of NEPA and "proposed project" for purposes of the California Environmental Quality Act [CEQA]). This IS/EA has been prepared by both the City of Manteca, as lead agency under CEQA, and the EPA, as lead agency under NEPA. The IS/EA is a joint document intended to comply with both CEQA and NEPA. See California Code of Regulations (CCR), Title 14, Division 6, Chapter 3 (State CEQA Guidelines), Section 15222 ("Preparation of Joint Documents"); and Code of Federal Regulations (CFR), Title 40 Section 1502.25, 1506.2, and 1506.4 (authority for combining federal and state environmental documents).

A congressional earmark, issued by Congressman McNerney, is providing funding to the City of Manteca for the implementation of the proposed action. Consistent with the requirements of CEQA and NEPA, the City and EPA have determined that an IS/EA is the appropriate environmental document for this project.

An IS is prepared by a lead agency to determine if a project may have a significant effect on the environment. In accordance with State CEQA Guidelines Section 15064(a), an Environmental Impact Report (EIR) must be prepared if there is substantial evidence that a project may have a significant effect on the environment. A Negative Declaration (ND) or Mitigated Negative Declaration (MND) may be prepared if the lead agency determines that the project would have no potentially significant impacts, or if mitigation measures, conditions of approval, or the design of the project would mitigate potentially significant impacts to a less-than-significant level (State CEQA Guidelines Section 15070).

Similar to an IS, an EA is prepared by a lead agency to determine the level of environmental effects associated with a proposed action and to briefly provide sufficient evidence and analysis for determining whether to prepare an environmental impact statement (EIS) or a finding of no significant impact (FONSI) (40 CFR Section 1508.9).

Once this IS/EA review process is completed, the City will consider the adoption of a MND and EPA will consider whether to issue a FONSI. If it is determined that significant impacts would occur with implementation of the project and could not be reduced to a less-than-significant level through adoption of mitigation measures, an EIR/EIS would need to be prepared. Only after the above procedures are completed can the proposed project be approved and funded with subsequent finalization of site and engineering plans and construction of the project.

1.3 PROJECT PURPOSE AND NEED

The City's existing potable water system serves the area within the City of Manteca city limits. The system produces an average of 419 acre feet per year (AFY), with a peak production of 621 AFY. The City's potable water is provided from surface water and groundwater sources and is stored in water tanks and distributed to customers through a network of pipes. The South San Joaquin Irrigation District provides the City's surface water, while groundwater is pumped from a series of City water wells. Prior to distribution, the water is treated to ensure compliance with drinking water standards. Water treatment includes a combination of filtration and surface water blending. The City's raw groundwater is extracted from sand aquifers, and is of high quality. It has no bacteria, and contains dissolved minerals and some dissolved metals. Arsenic is the only constituent measured above the MCL. The arsenic is removed or blended to bring the distributed water into compliance with the MCL. (Ulloa 2009)

Arsenic is a semi-metal element that is odorless and tasteless. It enters drinking water supplies from natural deposits in the earth or from agricultural and industrial practices (EPA 2009).

Arsenic ingested at sufficient concentrations can result in a variety of non-cancer effects including thickening and discoloration of the skin, stomach pain, nausea, vomiting, diarrhea, numbness in the hands and feet, partial paralysis and blindness. Carcinogenic effects of ingestion or exposure to arsenic at sufficient concentration have

been documented to include cancer of the bladder, lungs, skin, kidney, nasal passages, liver, and prostate (EPA 2009).

On January 22, 2001 the U.S. Environmental Protection Agency (EPA 2009) established an arsenic standard for drinking water at 10 parts per billion (ppb) and this rule went into effect on February 22, 2002. As a result of this rule, all public water systems were required to comply with the EPA's Maximum Contaminant Level (MCL) of 10 ppb by January 23, 2006 (EPA 2009). MCL is the legal threshold limit on the amount of arsenic allowed by the EPA in drinking water.

In accordance with this rule, the City of Manteca engaged in an extensive groundwater monitoring program to collect water samples from all of its public wells and identify whether arsenic concentration exceeded 10 ppb (the EPA MCL for arsenic). As of the writing of this IS/MND-EA/FONSI, nine of the City's wells had arsenic concentrations above the MCL (City of Manteca 2009) including wells 12, 15, and 22. The annual average arsenic concentration for the nine wells is 13.7 ppb (City of Manteca 2009). Table 1-1 shows the individual arsenic concentrations for wells 12, 15, and 22. The average arsenic concentration levels were calculated using historical data available at each well. Prior to 2005, water sampling was collected yearly from each groundwater well, and since then it has been collected intermittingly.

Table 1-1
City of Manteca Blending Water Requirements

Well No.	Well Capacity, GPM	Arsenic Concentration ppb	Surface Water, GPM	Total Blended Flow, GPM
12	2,200	12	1,394	3,594
15	2,000	13	1,594	3,549
22	950	12	602	1,552

Note: Surface water arsenic concentration ppb - .004; blended water arsenic concentration ppb - .075.
ppb = parts per billion
gpm = gallons per minute

In 2005, the City completed the City of Manteca 2005 Water Master Plan (May 2005), which guides the future improvement and expansion of its potable water system. The master plan acknowledged that the City's biggest water quality issue was groundwater arsenic concentrations that exceed the EPA's MCL. The master plan identified the following two methods for reducing arsenic concentration levels in the City's potable water system.

1) Blend surface water with groundwater to dilute arsenic concentrations, and
2) Install well-head treatment to reduce arsenic levels prior to delivery into the potable water system.

While the water master plan identified the water wells that were non-compliant with the MCL, it did not specify which treatment method to use at these well sites. Since publication of its master plan, the City has decided to proceed with implementing a system that can blend its surface and groundwater supplies to reduce arsenic concentrations. This document evaluates the impacts of constructing a pipeline system that would connect wells 12, 15, and 22 (exceed the arsenic MCL) to a surface water source with low to no arsenic concentration where the surface and groundwater would be blended prior to delivery to customers.

2 PROPOSED ACTION, INCLUDING ALTERNATIVES

2.1 PROPOSED PROJECT/ACTION

The project generally consists of the construction of a network of pipelines that would connect City wells 12, 15, and 22 to a surface water storage tank site. Arsenic groundwater from the wells would be mixed with surface water at each well site to dilute arsenic concentrations prior to being delivered to customers. Three alternatives are under consideration: Preferred Alternative, Alternative 1, and Alternative 2 as shown in Exhibit 1-2. Consistent with the requirements of Title 40, Section 1502.14 (d) a No Action Alternative is also evaluated and is described in Section 2.3.1.

2.2 PROJECT LOCATION

The project would be constructed within a 2 square-mile area, located in the central, urbanized area of the City of Manteca. Manteca is located in southern San Joaquin County, as shown on Exhibit 1-1. Regional access is provided by Highway 99, State Route 120, and Interstate 5.

The project area is bounded by Lathrop Road to the north, West North Street to the south, North Union Road to the west, and the Tidewater bike path to the east. As shown on Exhibit 1-2, well 12 is located in Northgate Park, on Northgate Drive, near the intersection of Northgate Drive and Hoyt Lane. Well 15 is located in Greystone Park, on Agate Avenue, near the intersection of Agate Avenue and Jade Place. Well 22 is located on an undeveloped parcel on Victory Avenue, east of its intersection with Pioneer Avenue. The wells are separated by approximately ½ to 1 ¼ miles (Exhibit 1-2).

For purposes of the analysis that follows, “project area” will be used to describe the areas where wells are located and proposed pipeline alignments. The project area is generally surrounded by single-family residential and recreational (i.e., public park) land uses. The Preferred Alternative would be constructed entirely within existing roadways. Alternative 1 would be constructed along the existing Tidewater bike path, a 3.4 mile Class 1 bike and pedestrian path, and existing roadways. Alternative 2 would not include construction activities.

2.3 PROJECT CHARACTERISTICS

The proposed project would improve potable water quality by reducing the arsenic levels in water pumped from the City’s groundwater wells 12, 15, and 22 to meet the EPA’s MCL of 10 ppb consistent with the EPA’s Arsenic Rule (66 CFR 6976).

The proposed project would construct a network of pipelines primarily within existing roadway rights-of-ways that would connect wells 12, 15, and 22 with an existing surface water storage tank site. The groundwater wells and the surface water storage tank site are currently in place and operational. The only new proposed facilities would be the pipelines that would connect the wells with the surface water storage tank site and mixing chambers at the existing well site locations that would allow the mixing of groundwater and surface water.

The pipeline would carry surface water from the surface water storage tank site to wells 12, 15, and 22. Mixing chambers would be constructed in the existing pump houses at each well location. The mixing chambers would contain static mixers, consisting of enclosed orifice plates, and would be installed above ground at the location where the surface water pipe intersects the well water pipe. Because both water sources are under pressure, the turbulence resulting from the forced-flow of water through the orifice plates would create a single, blended product that would be arsenic compliant. After the mixing process, the arsenic compliant water would exit through existing pipes and would be delivered to existing city customers. The volume of surface water used would depend on the level of arsenic at each well. As depicted in Table 1-1, 1,394 gallons per minute (gpm) of surface water would be pumped for blending with water from well 12, 1,549 gpm of surface water would be

pumped for blending with water from well 15, and 602 gpm of surface water would be pumped for blending with water from well 22.

To ensure the MCL of 10 ppb is achieved and maintained, the City has established a goal of achieving an arsenic concentration of 8 ppb in the mixed water supply, which would be monitored on a weekly basis. Surface water would be added to each well in predetermined quantities, as shown on Table 1-1. A water sampling system would be installed at each well location that would measure arsenic levels on a weekly basis to ensure the City's goal of 8 ppb is met. Monitoring results would be submitted to the State of California, Regional Water Quality Control Board (RWQCB) for their review and oversight. Surface water volumes would be delivered on a continuous, steady-state basis and would not be reduced even if arsenic concentrations at well 12, 15, or 22 are less than 8 ppb. No on-site storage of water would be required.

The City has identified two alternative routes for the proposed pipeline (see Section 2.4, "Project Alternatives," for additional details regarding each alternative). Under either alternative, the proposed pipeline would be 16 inches in diameter and would be constructed of polyvinyl chloride (PVC). Approximately 100 feet of pipeline would be constructed each day during the 90-day construction period. Construction dewatering activities are not anticipated because of the substantial depth to groundwater in the project area. Once implemented, the pipeline would be located below ground and no maintenance activities would be required. Minor maintenance activities may be required for the mixing chambers, but these activities would be combined with the existing maintenance activities at the well sites such that no new traffic trips or employees would be required.

Section 102(2)(E) of NEPA requires that an EA briefly describe alternatives to the proposed action and requires federal agencies to study, develop, and describe alternatives to the proposed action involving unresolved resource conflicts. In general, EPA should develop a range of alternatives that could reasonably achieve the intended need of the proposed action and evaluate those alternatives within the EA. Consistent with the requirements of NEPA, the following alternatives are evaluated throughout this IS/EA.

2.3.1 No Action Alternative

The No Action alternative would result in the continuation of existing operations for groundwater wells 12, 15, and 22. No construction activities would occur. Under this alternative, the City would not be able to reduce the arsenic concentrations in wells 12, 15, and 22 and, therefore, would not comply with EPA's MCL for arsenic. As described in Section 1.1, the No Action alternative is not feasible as a proposed action because the City is required to comply with EPA's MCL for arsenic.

2.3.2 Preferred Alternative: North Union Road Route

The Preferred Alternative would result in the construction of 14,415 linear feet of pipeline along Lathrop Road, North Union Road, Northgate Drive, Louise Avenue, Agate Avenue, Alameda Street, and Victory Avenue as shown in Exhibit 1-2. Mixing chambers would be constructed in each existing well pump house.

2.3.3 Alternative 1: Tidewater Bike Path Route

Alternative 1 would result in the construction of 14,540 linear feet of pipeline along Lathrop Road, the Tidewater bike path, Northgate Drive, Louise Avenue, and Agate Avenue as shown in Exhibit 1-2. Mixing chambers would be constructed in each existing well pump house.

2.3.4 Alternative 2: Well-Head Treatment

Alternative 2 would result in the construction of well-head treatment facilities at each well site location that would blend groundwater to reduce its arsenic concentration. These facilities would be located entirely within the footprint of the existing well site locations.

2.4 CONSTRUCTION

Construction of the proposed pipeline would begin in March/April 2010 and would last approximately 90 days. The construction staging areas for the Preferred Alternative would be located near the water storage tank site on Lathrop Road, at the northeast corner of the Union Road and Louise Avenue intersection, and at the southwest corner of the Alameda Street and Walnut Avenue intersection (Exhibit 2-1). The construction staging areas for Alternative 1 would be located near the water tank site on Lathrop Road and at the southwest corner of Alameda Street and Walnut Avenue. For either alternative, approximately 10 construction workers would commute to the site on a daily basis. Construction equipment would likely include backhoes, loaders, excavators, and compaction machines and would be operated approximately eight hours each day. Four one-way truck trips would occur each day for the delivery of materials. All construction activities would occur during daytime hours and no night lighting would be required. Pipeline construction within the roadway would likely require partial lane closures. Construction of the pipeline would be divided into three phases as described below.

- **Phase 1:** Pipelines would be installed. Pipeline construction within the roadway would likely require partial lane closures. This phase would last approximately 90 days.

- **Phase 2:** Static mixers, control valves, flow meters, and a water sampling system would be installed at each well location, and the surface water pipes and groundwater pipes would be connected to the static mixers. This phase would last approximately 14 days.

- **Phase 3:** The Supervisory Control and Data Acquisition (SCADA) system would be programmed to monitor and control the flow of well water and surface water at each well to achieve an arsenic-compliant blended product.

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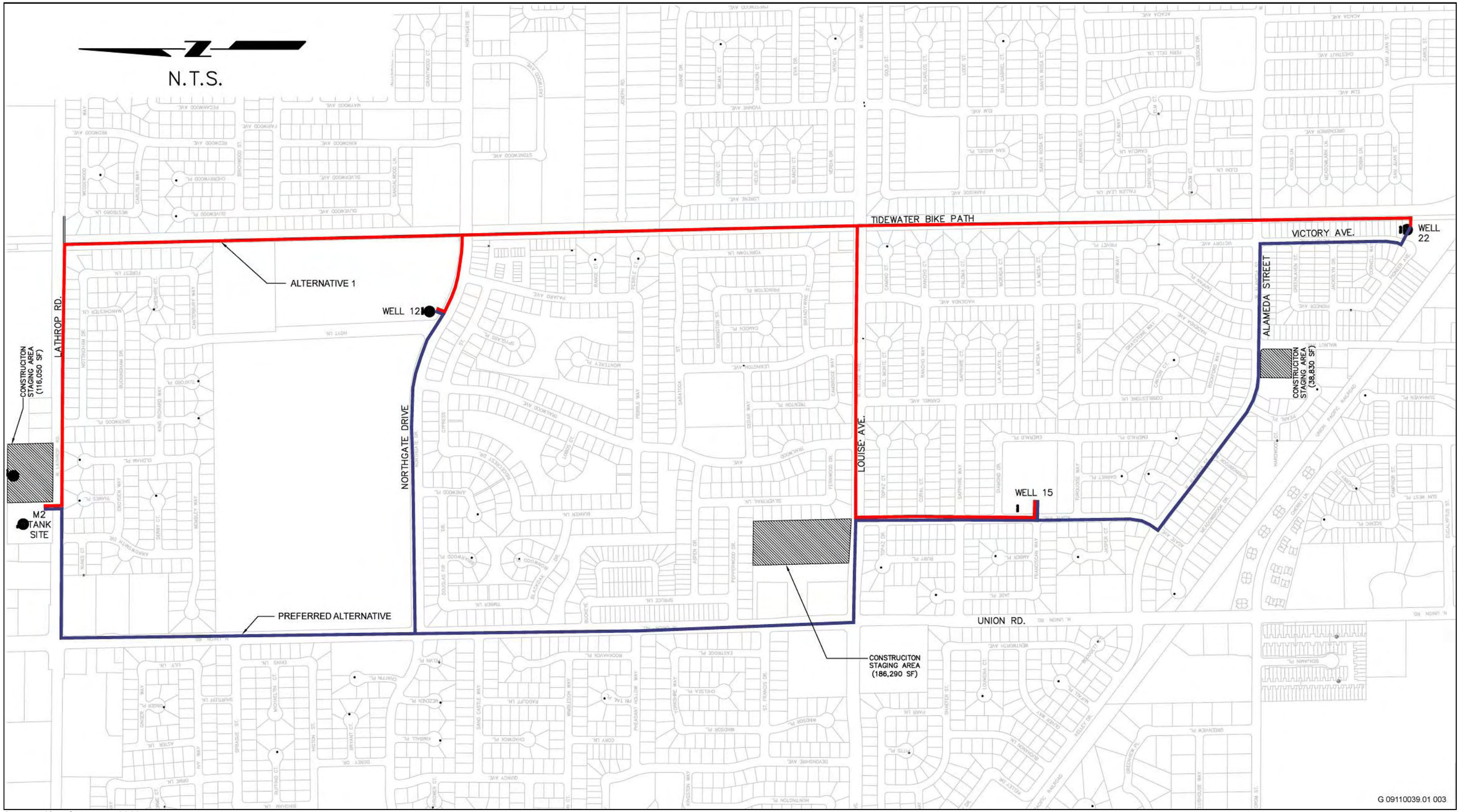


Source: City of Manteca 2009

Construction Staging Areas **Exhibit 2-1**

3 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

3.1 AIR QUALITY

	ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
III.	**Air Quality.**				
	Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied on to make the following determinations.				
	Would the project:				
	a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☒ (Preferred, Alt 1, Alt 2)	☐	☒ (No Action)
	b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☒ (Preferred, Alt 1, Alt 2)	☐	☒ (No Action)
	c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?				
	– Criteria Air Pollutant and Precursor Emissions	☐	☒ (Preferred, Alt 1, Alt 2)	☐	☒ (No Action)
	– Greenhouse Gas Emissions	☐	☐	☒ (Preferred, Alt 1, Alt 2)	☒ (No Action)
	d) Expose sensitive receptors to substantial pollutant concentrations?				
	– Criteria Air Pollutant and Precursor Emissions	☐	☒ (Preferred, Alt 1, Alt 2)	☐	☒ (No Action)
	– Toxic Air Contaminant Emissions	☐	☐	☒ (Preferred, Alt 1, Alt 2)	☒ (No Action)
	e) Create objectionable odors affecting a substantial number of people?	☐	☐	☒ (Preferred, Alt 1, Alt 2)	☒ (No Action)

3.1.1 ENVIRONMENTAL SETTING

The project area is located in the San Joaquin County-portion of the San Joaquin Valley Air Basin (SJVAB), which is under the local jurisdiction of San Joaquin Air Pollution Control District (SJVAPCD). Concentrations of the following air pollutants: ozone, carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), respirable and fine particulate matter (PM_{10} and $PM_{2.5}$, respectively), and lead are used as indicators of ambient air quality conditions. Because these are the most prevalent air pollutants known to be deleterious to human health, and there is extensive documentation available on health-effects criteria for these pollutants, they are commonly referred to as criteria air pollutants.

Criteria air pollutant concentrations are measured at several monitoring stations in the SJVAB. The Hazelton Street station in Stockton is the closest station to the project site with recent data for ozone, PM_{10}, and $PM_{2.5}$. In general, the ambient air quality measurements from these stations are representative of the air quality in the vicinity of the project site. Table AQ-1 summarizes the air quality data from the last 3 years.

Table AQ-1
Summary of Annual Data on Ambient Air Quality (2006–2008) [1]

	2006	2007	2008
OZONE			
Maximum concentration (1-hr/8-hr avg, ppm) [2]	0.109/0.092	0.093/0.082	0.105/0.091
Number of days state standard exceeded (1-hr/8-hr)	6/21	0/4	2/7
Number of days national standard exceeded (8-hr)	13	3	4
FINE PARTICULATE MATTER ($PM_{2.5}$)			
Maximum concentration ($\mu g/m^3$) [2]	53.3	66.8	91.0
Number of days national standard exceeded (measured/estimated [3])	7/20.8	11/34.1	5/*
RESPIRABLE PARTICULATE MATTER (PM_{10})			
Maximum concentration ($\mu g/m^3$) [2]	85.0	75.0	105.0
Number of days state standard exceeded (measured/estimated [3])	11/63	4/24	8/*
Number of days national standard exceeded (measured/estimated [3])	0/0	0/0	0/*

Notes: $\mu g/m^3$ = micrograms per cubic meter; ppm = parts per million
* Insufficient data to determine the value.
[1] Measurements from the Hazelton Street station, Stockton, CA.
[2] Represent California statistics
[3] Measurements are usually collected every six days. Measured days counts the days that a measurement was greater than the level of the standard where the estimated days mathematically estimates how many days concentrations would have been greater than the level of the standard had each day been monitored.
Source: ARB 2008b

Both the California Air Resources Board (ARB) and U.S. Environmental Protection Agency (EPA) use the monitoring data to designate areas according to attainment status for criteria air pollutants established by the agencies. The purpose of these designations, described above, is to identify those areas with air quality problems and thereby initiate planning efforts for improvement. San Joaquin County is currently designated as a nonattainment area for the national and state ozone and $PM_{2.5}$ ambient air quality standards. With respect to PM_{10}, San Joaquin County is also designated as a nonattainment area for the state standard (ARB 2009a, EPA 2009).

SJVAPCD prepares and submits air quality attainment plans (AQAPs) to ARB in compliance with the requirements set forth in the Clean Air Act (CAA) and the California Clean Air Act (CCAA). The CCAA also requires a triennial assessment of the extent of air quality improvements and emissions reductions achieved through the use of control measures. As part of the assessment, the AQAPs must be reviewed and, if necessary, revised to correct for deficiencies in progress and to incorporate new data or projections. Because the region is a nonattainment area, SJVAPCD is also required to submit rate-of-progress milestone evaluations in accordance with the Clean Air Act Amendments (CAAA). These milestone reports include compliance demonstrations to show that the requirements have been met for the nonattainment area. The air quality attainment plans and reports present comprehensive strategies to reduce reactive organic gases (ROG), oxides of nitrogen (NO_X), and PM_{10} emissions from stationary, area, mobile, and indirect sources. Such strategies include the adoption of rules and regulations; enhancement of CEQA participation; implementation of a new and modified indirect source review program; adoption of local air quality plans; and stationary-, mobile-, and indirect-source control measures. Table AQ-2 summarizes SJVAPCD's most current AQAPs.

Table AQ-2
Summary of San Joaquin Valley Air Pollution Control District Air Quality Attainment Plans

Pollutant	Plan Title	Date/Status
Ozone	*Extreme Ozone Attainment Demonstration Plan, San Joaquin Valley Air Basin Plan Demonstrating Attainment of Federal 1-Hour Ozone Standards*	October 2004 (Amended October 2005)
	Draft Staff Report, 8-Hour Ozone Reasonably Available Control Technology—State Implementation Plan Analysis	April 2006
	8-Hour Ozone Attainment Demonstration Plan for the San Joaquin Valley	April 2007
Carbon Monoxide (CO)	*2004 Revision to the California State Implementation Plan for Carbon Monoxide Updated Maintenance Plan for the Federal Planning Areas*	July 2004
Respirable and Fine Particulate Matter (PM_{10} and $PM_{2.5}$)	*2007 PM_{10} Maintenance Plan and Request for Redesignation*	September 2007
	$PM_{2.5}$ Plan	April 2008
	Natural Events Action Plan for High Wind Events in the San Joaquin Valley	February 2006

Notes:
ARB = California Air Resources Board; EPA= U.S. Environmental Protection Agency; SJVAPCD = San Joaquin Valley Air Pollution Control District, SIP = State Implementation Plan
Sources: ARB 2009c; SJVAPCD 2009.

3.1.2 THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the State CEQA Guidelines, the proposed project would result in a significant impact on air quality if it would:

- conflict with or obstruct implementation of the applicable air quality plan,
- violate any air quality standard or contribute substantially to an existing or projected air quality violation,
- result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable national ambient air quality standards (NAAQS) or California ambient air quality standards (CAAQS) (including releasing emissions which exceed quantitative thresholds for ozone precursors),
- expose sensitive receptors to substantial pollutant concentrations, or
- create objectionable odors affecting a substantial number or people.

As stated in Appendix G of the State CEQA Guidelines, the significance criteria established by the applicable air quality management or air pollution control district may be relied on to make the above determinations. Thus, according to SJVAPCD, the proposed project would result in a significant impact on air quality if:

- all SJVAPCD-required control measures in compliance with Regulation VIII (Fugitive PM_{10} Prohibitions) or other project applicable SJVAPCD-recommended mitigation measures would not be incorporated into project design or implemented during project construction,
- construction-related emissions of ROG or NO_X would exceed the SJVAPCD-recommended mass emissions threshold of 10 tons per year (tpy),
- long-term operation-related (regional) emissions of ROG or NO_X would exceed the SJVAPCD-recommended mass emissions threshold of 10 tpy,
- long-term operation-related (local) emissions of mobile-source CO would violate or substantially contribute to a violation of the NAAQS and/or CAAQS (e.g., 20 parts per million (ppm) [1-hour], 9 ppm [8-hour]),
- sensitive receptors would be exposed to a substantial incremental increase in toxic air contaminant (TAC) emissions (e.g., from stationary or mobile sources) exceeding 10 in 1 million for the carcinogenic risk (i.e., the excess risk of contracting cancer) and/or a noncarcinogenic Hazard Index of 1 for the Maximally Exposed Individual (MEI), or
- sensitive receptors would be located near an existing odor source for which one confirmed complaint per year averaged over a 3-year period (or three unconfirmed complaints per year averaged over a 3-year period) has been generated by existing receptors as close as the project to the odor source; or by existing receptors in the vicinity of a similar facility considering distance, frequency, and odor control (where there is currently no nearby development and for proposed odor sources near existing receptors).

The U.S. Court of Appeals Ninth Circuit ruled that federal agencies must assess carbon dioxide emissions and other climate change impacts in environmental review documents prepared pursuant to NEPA (*Center for Biological Diversity v. NHTSA* No. 06-71891 [9th Cir. 2007]). However, no federal significance threshold has been adopted as of the time of writing. No air district or other regulatory agency in California, including SJVAPCD, has adopted a significance threshold for greenhouse gas (GHG) emissions or a specific methodology for analyzing impacts related to GHG emissions or global climate change for nonindustrial projects. ARB has released draft recommendations for both thresholds and analysis methodologies (ARB 2008); however, they have not been adopted at the time of this writing. By the passage of Assembly Bill (AB) 32, the California Global Warming Solutions Act of 2006, and Senate Bill (SB) 97; however, the State of California has established GHG reduction targets and determined that GHG emissions as they relate to global climate change are a source of adverse environmental impacts in California that should be addressed under CEQA. Although AB 32 did not amend CEQA, the legislation does include language identifying the various environmental problems in California

caused by global warming (Health & Safety Code, Section 38501[a].). SB 97, in contrast, did amend CEQA to require the Governor's Office of Planning and Research (OPR) to prepare State CEQA Guidelines revisions addressing the mitigation of GHGs or their consequences.

AB 32 demonstrates California's commitment to reducing the rate of GHG emissions and the state's associated contribution to climate change, without the intent to limit population or economic growth within the state. Thus, to achieve the goals of AB 32, which are tied to GHG emission rates of specific benchmark years (i.e., 1990), California would have to achieve a lower rate of emissions per unit of population (per person) than it has now. Further, to accommodate future population and economic growth, the state would have to achieve an even lower rate of emissions per unit than was achieved in 1990. (The goal to achieve 1990 quantities of GHG emissions by 2020 means that this will need to be accomplished with 30 years of population and economic growth beyond 1990 in place.) Thus, future projects that would not encourage reductions in GHG emissions (or continue at "Business as Usual" emission rates) would conflict with the policy decisions contained in the spirit of AB 32, thus impeding California's ability to comply with the mandate. In addition, if a project would be affected by the reasonably foreseeable effects of climate change, the project should be designed to adapt to altered future conditions.

Thus, the consistency with the state's requirements for GHG emissions reductions is one metric for determining whether the proposed project would contribute to global warming. In the case of the proposed project under all alternatives (Preferred Alternative, Alternative 1, Alternative 2, and No Action Alternative), if the project does not conform with the state mandate to reduce GHG emissions to 1990 levels by the year 2020 and the associated increase in the amount of mass emissions is considered to be substantial, then the impact of the project would be cumulatively considerable (significant). For the purposes of this analysis, the proper context for addressing climate change is the discussion of cumulative impacts, because GHG emissions from multiple projects throughout the world could result in a cumulative impact with respect to global climate change.

3.1.3 DISCUSSION

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

Less than significant with mitigation incorporated. Implementation of the proposed project under all alternatives would not result in any new sources of long-term operation-related emissions (e.g., regional ROG, NO_X, PM_{10}, and $PM_{2.5}$) from mobile, stationary, and area sources. With implementation of the project, no changes to the existing ambient air environment would occur. New equipment such as the static mixers, control valves, flow meters, and water sampling systems would not generate any emissions, no new vehicle trips would be created, and all additional infrastructure other than pipelines would be housed in existing facilities.

However, under the Preferred Alternative, Alternative 1, and Alternative 2 construction-related emissions are described as "short-term" or temporary in duration and have the potential to represent a significant impact with respect to air quality, especially fugitive PM_{10} dust emissions. Fugitive PM_{10} dust emissions are primarily associated with site preparation and vary as a function of such parameters as soil silt content, soil moisture, wind speed, acreage of disturbance area, and vehicle miles traveled (VMT) by construction vehicles on- and off-site. Ozone precursor emissions of ROG and NO_X are primarily associated with gas and diesel equipment exhaust and the application of architectural coatings.

Project-generated construction-related emissions under Alternative 1 were modeled using ARB's EMFAC2007 model for on-road vehicle emissions and the OFFROAD2007 model for off-road vehicle emissions, as contained in the Urban Emissions (URBEMIS) 2007, version 9.2.4 computer model (Rimpo and Associates 2008).
The emissions presented in Table AQ-3 represent project construction-generated emissions related to pipeline installation. Please refer to Appendix A for URBEMIS modeling output and detailed assumptions. Emissions under Alternative 1 would represent the maximum emission levels associated with all alternatives as the intensity of construction activities would be higher than those associated with the Preferred Alternative, Alternative 2, and the No Action Alternative.

Based on the modeling conducted, under all alternatives construction-related activities would not result in project-generated emissions of ROG or NO_X that exceed SJVAPCD's significance threshold of 10 tpy (Refer to Table AQ-3).

SJVAPCD does not require a quantitative analysis of construction-related fugitive PM_{10} dust emissions and relies on a project's compliance with Regulation VIII (Fugitive Dust Prohibition) and supplemental dust control measures to control PM_{10} levels in the SJVAB.

Table AQ-3
Summary of Modeled Project-Generated Construction-Related Emissions of Criteria Air Pollutants and Precursors –Alternative 1 [1]

Source	Emissions (tpy)				
	ROG	NO_X	PM_{10}	$PM_{2.5}$	CO_2 [3]
Construction Emissions					
2009	0.1	0.5	<0.1	<0.1	44.6
Maximum Annual Emissions [2]	0.1	0.5	<0.1	<0.1	44.6
SJVAPCD Thresholds	10	10	-	-	-

Notes: ROG = reactive organic gases; NO_X = nitrogen oxides; PM_{10} = respirable particulate matter; $PM_{2.5}$ = respirable particulate matter, CO_2 = carbon dioxide; tpy = tons per year.

[1] Based on EMFAC2007 and OFFROAD2007 emission factors contained in URBEMIS2007 Version 9.2.4, using general information provided in the project description and default model settings and parameters. Model assumes each construction activity would occur for 104 days (90 for Phase 1, 14 for Phase 2).

[2] Maximum daily emissions include on-road emissions, equipment exhaust emissions (staging, trenching etc.), worker commute exhaust, and fugitive PM_{10} dust from ground disturbance.

[3] CO_2 emissions are presented in metric tons per year.

Refer to Appendix A for detailed modeling input parameters and results.

Source: Data modeled by EDAW in 2009.

Fugitive PM dust (e.g., PM_{10} and $PM_{2.5}$) is emitted primarily when the ground is disturbed during site preparation. The amount of fugitive PM dust in the air varies depending on the quantity of earth being moved, soil silt content, soil moisture, wind speed, acreage of the disturbance area, and vehicle miles traveled on- and off-site. Under the Preferred Alternative, Alternative 1, and Alternative 2, fugitive PM_{10} dust would be caused primarily by construction-related activities during pipeline installation (e.g., excavation, grading, and clearing). Exhaust emissions from diesel equipment and worker commute trips would also contribute to short-term increases in PM_{10} and $PM_{2.5}$ emissions, but to a much lesser extent (Refer to Table AQ-3).

Though projected emissions of ROG and NO_X under all alternatives would not exceed applicable thresholds, the Preferred Alternative, Alternative 1, and Alternative 2 would be required by law to comply with Regulation VIII (Fugitive Dust Prohibition). These required control measures and additional SJVAPCD-recommended control measures, which would be applicable and feasible under the Preferred Alternative, Alternative 1, and Alternative 2, are not currently part of the project description. Thus, project-generated, construction-related emissions of fugitive dust could conflict with or obstruct implementation of the applicable air quality plan. As a result, this would be a significant impact. Implementation of Mitigation Measure AQ-1, which would result in an approximate 75% reduction in fugitive dust emissions, would reduce this impact to a less-than-significant level.

No impact. No construction-related activity would occur under the No Action Alternative. Therefore, no impact would occur.

Mitigation Measure AQ-1
Reduction of Short-Term Emissions of Criteria Air Pollutants and Ozone Precursors Generated by Construction.

The City will implement the following measures to control short-term emissions of criteria air pollutants and ozone precursors generated by project construction:

- The proposed project will comply with SJVAPCD Regulation VIII (Fugitive PM_{10} Prohibitions) and implement all applicable control measures, as required by law. Regulation VIII contains, but is not limited to, the following required control measures:
    - Pre-water site sufficient to limit visible dust emissions (VDE) to 20% opacity.
    - Phase work to reduce the amount of disturbed surface area at any one time.
    - Limit the speed of vehicles traveling on uncontrolled unpaved access/haul roads within construction sites to a maximum of 15 miles per hour.
    - When storing bulk materials, comply with the conditions for a stabilized surface as listed above.
    - When storing bulk materials, cover bulk materials stored outdoors with tarps, plastic, or other suitable material and anchor in such a manner that prevents the cover from being removed by wind action.
    - Load all haul trucks such that the freeboard is not less than 6 inches when material is transported across any paved public access road sufficient to limit VDE to 20% opacity.
    - Apply water to the top of the load sufficient to limit VDE to 20% opacity.
    - Cover haul trucks with a tarp or other suitable cover.
    - Clean the interior of the cargo compartment or cover the cargo compartment before the empty truck leaves the site; and prevent spillage or loss of bulk material from holes or other openings in the cargo compartment's floor, sides, and/or tailgate; and load all haul trucks such that the freeboard is not less than 6 inches when material is transported on any paved public access road, and apply water to the top of the load sufficient to limit VDE to 20% opacity; or cover haul trucks with a tarp or other suitable cover.
    - Owners/operators will remove all visible carryout and trackout at the end of each workday.
    - Cleanup of carryout and trackout will be accomplished by manually sweeping and picking-up; or operating a rotary brush or broom accompanied or preceded by sufficient wetting to limit VDE to 20% opacity; or operating a PM_{10}-efficient street sweeper that has a pick-up efficiency of at least 80%; or flushing with water, if curbs or gutters are not present and where the use of water would not result as a source of trackout material or result in adverse impacts on storm water drainage systems or violate any National Pollutant Discharge Elimination System permit program.

Please note that compliance with Regulation VIII, as stated above, is required by law, but the measures listed here are to provide a comprehensive list of all required and recommended measures.

- The following SJVAPCD-recommended enhanced and additional control measures will be implemented to further reduce fugitive PM_{10} dust emissions beyond compliance with Regulation VIII:
    - Install sandbags or other erosion control measures to prevent silt runoff to public roadways from adjacent project areas with a slope greater than 1%.

- Suspend excavation and grading activity when winds exceed 20 mph.
- Limit area subject to excavation, grading, and other construction activity at any one time.

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Less than significant with mitigation incorporated. As discussed in a) above, under all alternatives project operations would not result in an increase in emissions. However, SJVAPCD-required control measures and additional SJVAPCD-recommended control measures, which would be applicable under the Preferred Alternative, Alternative 1, and Alternative 2 for construction-related emissions of fugitive dust, are not currently part of the project description. Thus, project-generated, construction-related emissions of fugitive dust could violate and/or contribute substantially to a violation of the applicable air quality standard, especially considering the current nonattainment status of the County. As a result, this impact would be a significant impact. Implementation of Mitigation Measure AQ-1 would reduce this impact to a less-than-significant level.

No impact. No construction-related activity would occur under the No Action Alternative. Therefore, no impact would occur.

c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

Criteria Air Pollutant and Precursor Emissions

Less than significant with mitigation incorporated. As discussed in a) above, under all alternatives project operations would not result in an increase in emissions. However, SJVAPCD-required control measures and additional SJVAPCD-recommended control measures, which would be applicable under the Preferred Alternative, Alternative 1, and Alternative 2 for construction-related emissions of fugitive dust, are not currently part of the project description. Thus, project-generated, construction- related emissions of fugitive dust could result in a cumulatively considerable net increase, especially considering the current nonattainment status of the County. As a result, this impact would be a significant. Implementation of Mitigation Measure AQ-1 would reduce this impact to a less-than-significant level.

No impact. No construction-related activity would occur under the No Action Alternative. Therefore, no impact would occur.

Greenhouse Gas Emissions

Less-than-significant impact. GHG emissions generated by the proposed project would predominantly be in the form of carbon dioxide (CO_2). While emissions of other GHGs such as methane (CH_4) and nitrous oxide (N_2O) are important with respect to global climate change, the emission levels of these GHGs for the sources associated with pipeline construction are relatively small compared with CO_2 emissions, even considering their higher global warming potential (GWP). Therefore, all GHG emissions for construction and operation are reported as CO_2.

Emission factors and calculation methods for estimating GHG emissions associated with utility projects have not been formally adopted for use by the state, SJVAPCD, or any other air district. The California Climate Action Registry (CCAR) *General Reporting Protocol* is the most comprehensive guidance, but the protocol is designed to be used by existing large entities and facilities which have records of energy use, vehicle fleet activity, and manufacturing processes (CCAR 2009). The construction-related GHG emissions associated with pipeline installation were calculated using URBEMIS 2007 version 9.2.4 (Rimpo and Associates 2008).

Table AQ-3 shows the annual GHG emissions associated with construction of Alternative 1. GHG emissions associated with the Preferred Alternative and Alternative 2 would be less than those calculated for Alternative 1 due to the lower intensity activities proposed under these alternatives. Detailed calculations and related assumptions are presented in Appendix A.

There would be no sources of direct (e.g., natural gas combustion for space and water heating) and indirect (e.g., vehicle trips) CO_2 emissions generated by operation of the proposed project under all alternatives.

As described in the project description, under the Preferred Alternative, Alternative 1, and Alternative 2 construction activities associated with construction of the new pipelines would occur over a 3-month period (March/April–June/July 2010). During this time, a net increase in GHG emissions would result from various construction activities. Construction-related GHG emissions would be generated in engine exhaust from heavy-duty construction equipment, material (e.g., loaders, excavators), material transport trucks, and worker commute trips. While any increase in GHG emissions would add to the quantity of emissions that contribute to global climate change, it is noteworthy that emissions associated with construction of the new pipelines would occur over a finite period of time (i.e., 3 months). Following full buildout of the new pipelines, all construction emissions would cease. Thus, the incremental contribution to climate change by the project's construction emissions would be minimal and would not be a considerable contribution to the cumulative global impact.

To establish additional context in which to consider the order of magnitude of project-generated construction GHG emissions, it may be noted that facilities (i.e., stationary, continuous sources of GHG emissions) that generate greater than 25,000 metric tons CO_2/year are mandated to report their GHG emissions to the ARB pursuant to AB 32. As shown in Table AQ-3, estimated GHG emissions associated with construction of the entire project would be approximately 45 metric tons of CO_2 over a 3-month period. Absent any air quality regulatory agency–adopted threshold for GHG emissions, it is notable that the proposed project would generate substantially fewer emissions than 25,000 metric tons CO_2/year. This information is presented for informational purposes, and it is not the intention of the City of Manteca to adopt 25,000 metric tons CO_2/year as a numeric threshold. Rather, the intention is to put project-generated GHG emissions in the appropriate statewide context in order to evaluate whether the project's contribution to the global impact of climate change is considered substantial.

Because construction-related emissions would be temporary and finite in nature, and negligible in magnitude, the project's GHG emissions under the Preferred Alternative, Alternative 1, and Alternative 2 would not be a considerable contribution to the cumulative global impact, and therefore, would be less than significant.

No impact. No construction-related activity would occur under the No Action Alternative. Therefore, no impact would occur.

d) Expose sensitive receptors to substantial pollutant concentrations?

Criteria Air Pollutant and Precursor Emissions

Less than significant with mitigation incorporated. Sensitive receptors within the vicinity of the proposed project under the Preferred Alternative, Alternative 1, and Alternative 2, include nearby single-family residential dwellings in the neighborhoods on all sides of the project area. The nearest of these residences are located at the project area property line.

No impact. No construction-related activity would occur under the No Action Alternative. Therefore, no impact would occur.

Less than significant with mitigation incorporated. As discussed in a) above, under all alternatives, project operations would not result in an increase in emissions. However, SJVAPCD-required control measures and additional SJVAPCD-recommended control measures, which would be applicable and feasible under the Preferred Alternative, Alternative 1, and Alternative 2 for construction-related emissions of fugitive dust, are not

currently part of the project description. Thus, project-generated, construction-related emissions of fugitive dust could exposure sensitive receptors to substantial pollutant concentrations, especially considering the current nonattainment status of the County. As a result, this impact would be a significant. Implementation of Mitigation Measure AQ-1 would reduce this impact to a less-than-significant level.

No impact. No construction-related activity would occur under the No Action Alternative. Therefore, no impact would occur.

Toxic Air Contaminant Emissions

Less-than-significant impact. As discussed in a) above, under all alternatives project operations would not result in an increase in emissions. However, construction-related activities under the Preferred Alternative, Alternative 1, and Alternative 2 could result in project-generated emissions of TACs (e.g., diesel PM) from heavy-duty truck travel and heavy-duty construction equipment at the proposed staging areas and along proposed pipeline routes. Diesel PM was identified as a TAC by ARB in 1998. The potential cancer risk from the inhalation of diesel PM, as discussed below, outweighs the potential non-cancer health impacts (OEHHA 2003). SJVAPCD has not adopted a methodology for analyzing such impacts and has not recommended that health risk assessments be completed for construction-related emissions of TACs, with a few exceptions (e.g., where construction phase is the only phase of the project) (Reed, pers. comm., 2007).

More specifically, the dose to which receptors are exposed is the primary factor used to determine health risk (i.e., potential exposure to TAC emission levels that exceed applicable standards). Dose is a function of the concentration of a substance or substances in the environment and the duration of exposure to the substance. Dose is positively correlated with time, meaning that a longer exposure period would result in a higher exposure level for the maximally exposed individual. Thus, the risks estimated for a maximally exposed individual are higher if a fixed exposure occurs over a longer period of time. According to the Office of Environmental Health Hazard Assessment (OEHHA), health risk assessments, which determine the exposure of sensitive receptors to TAC emissions, should be based on a 70-year exposure period; however, such assessments should be limited to the period/duration of activities associated with the proposed project (Salinas, pers. comm., 2004). In addition, diesel PM is highly dispersive. Studies have shown that measured concentrations of vehicle-related pollutants, including ultra-fine particles, decreased dramatically within approximately 300 feet of the source (Zhu and Hinds 2002, ARB 2005). Thus, because the use of off-road heavy-duty diesel equipment would be temporary in combination with the highly dispersive properties of diesel PM, and the sensitive receptor exposure period would be minimal as construction activities moved along the pipeline route, project-generated construction-related emissions of TACs would not expose sensitive receptors to substantial pollutant concentrations. As a result, this impact is considered less than significant.

No impact. No construction-related activity would occur under the No Action Alternative. Therefore, no impact would occur.

e) Create objectionable odors affecting a substantial number of people?

Less-than-significant impact. The construction of the proposed project under the Preferred Alternative, Alternative 1, and Alternative 2 would result in diesel exhaust emissions from on-site diesel equipment. The diesel exhaust emissions would be intermittent and temporary and would dissipate rapidly from the source with an increase in distance. In addition, the project does not propose the creation of any major odor source. Thus, the construction and operation of the proposed project are not anticipated to result in the creation of objectionable odors affecting a substantial number of people. As a result, this impact is considered less than significant.

No impact. No construction-related activity would occur under the No Action Alternative. Therefore, no impact would occur.

3.2 HYDROLOGY AND WATER QUALITY

	ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
VIII.	**Hydrology and Water Quality. Would the project:**				
a)	Violate any water quality standards or waste discharge requirements?	☒ (No Action)	☒ (Preferred, Alt 1, Alt 2)	☐	☐
b)	Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☒ (Preferred, Alt 1, Alt 2)	☒ (No Action)
c)	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial on- or off-site erosion or siltation?	☐	☐	☒ (Preferred, Alt 1, Alt 2)	☒ (No Action)
d)	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in on- or off-site flooding?	☐	☐	☒ (Preferred, Alt 1, Alt 2)	☒ (No Action)
e)	Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☒ (Preferred, Alt 1, Alt 2)	☒ (No Action)
f)	Otherwise substantially degrade water quality?	☒ (No Action)	☐	☒ (Preferred, Alt 1, Alt 2)	☐
g)	Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h)	Place within a 100-year flood hazard area structures that would impede or redirect flood flows?	☐	☐	☐	☒
i)	Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☒ (Preferred, Alt 1, Alt 2)	☒ (No Action)
j)	Result in inundation by seiche, tsunami, or mudflow?	☐	☐	☒ (Preferred, Alt 1, Alt 2)	☒ (No Action)

3.2.1 ENVIRONMENTAL SETTING

Existing ground slopes in Manteca are relatively flat, with an elevation of approximately 25 feet above mean sea level. Average annual rainfall in the project area is approximately 14 inches, with most of this rain occurring between November and March (Climate Zone 2006).

The City currently provides storm drainage via a system of gravity storm drain lines that terminate at detention or retention facilities to provide storage to attenuate peak flow. There are currently 23 basins in the City with up to 65 additional basins planned for the future (City of Manteca 2006). Most stormwater is pumped into South San Joaquin Irrigation District (SSJID) drains. There are currently 38 drainage pump stations in the City with an additional pump station planned for each proposed detention basin. The SSJID operates drainage facilities that traverse the City of Manteca and carry a portion of the City's stormwater drainage. Water in the SSJID drainage system flows west through drains and laterals into the French Camp Outlet Canal located at the western boundary of the City. From Manteca, the French Camp Outlet Canal flows north into the French Camp Slough and ultimately drains into the Sacramento-San Joaquin Delta (Delta) northwest of the city.

The City is located in the Eastern San Joaquin County Groundwater Basin (ESJCGB), a sub-basin of the San Joaquin Valley Groundwater Basin. The Department of Water Resources (DWR) classified the ESJCGB as a basin in a critical condition of overdraft (California Department of Water Resources 2003).

Groundwater levels historically drop during severe drought periods and recover in subsequent wet periods; however, the Manteca area has experienced a long-term drop in groundwater levels resulting from local groundwater pumping and severe overdraft in the central and eastern portions of the groundwater basin. The City continues to reduce overdraft of groundwater supplies and maintain historical reliability of groundwater resources by limiting groundwater usage to meet the safe aquifer yield for the area identifies as 1.0 acre-foot per acre per year by the City's Public Works Department Engineering Division.

3.2.2 DISCUSSION

a) Violate any water quality standards or waste discharge requirements?

Potentially significant impact. As of the writing of this IS/MND-EA/FONSI, nine of the City's wells had arsenic concentrations above the EPA's established MCL, including wells 12, 15, and 22. Under the No Action Alternative, no improvements would be made to reduce the arsenic concentration in ground water pumped from the contaminated wells. Therefore, water pumped from wells 12, 15, and 22 would continue to exceed the EPA's MCL for arsenic. This would represent a violation of national water quality standards and would result in a potentially significant impact.

Less than significant with mitigation incorporated. Proposed project construction activities under the Preferred Alternative, Alternative 1, and Alternative 2 would occur over a maximum 3-month period. Soil loosened during grading, accidental spills of fluids or fuels from vehicles and equipment, or miscellaneous construction materials and debris, if mobilized and transported off-site in overland flow, could degrade receiving water quality.
As described in Mitigation Measure Hydro-1, the City would prepare a storm water pollution prevention plan (SWPPP) with associated best management practices (BMPs) designed to protect water quality, by minimizing sediment transport and controlling pollutant discharge from the site and staging areas. Therefore, implementation of mitigation measure Hydro-1 would reduce this impact to a less-than-significant level.

Mitigation Measure Hydro-1

Before the start of any project construction work, site grading, or excavation, the City or its primary construction contractor will prepare a SWPPP detailing measures to control soil erosion and waste discharges from construction areas and shall submit a notice of intent to the Central Valley RWQCB for stormwater discharges

associated with general construction activity. The City will require all contractors conducting construction-related work to implement the SWPPP to control soil erosion and waste discharges of other construction-related contaminants. The general contractor(s) and subcontractor(s) conducting the work will be responsible for constructing or implementing, regularly inspecting, and maintaining the measures in good working order.

The SWPPP will identify the grading and erosion control BMPs and specifications that are necessary to avoid and minimize water quality impacts to the extent practicable. Standard erosion control measures (e.g., management, structural, and vegetative controls) will be implemented for all construction activities that expose soil. Grading operations will be conducted to eliminate direct routes for conveying potentially contaminated runoff. Erosion control barriers such as silt fences and mulching material will be installed, and disturbed areas shall be reseeded with grass or other plants where necessary.

The SWPPP will contain specific measures for stabilizing soils at the construction site before the onset of the winter rainfall season. These standard erosion control measures shall be designed to reduce the potential for soil erosion and sedimentation of drainage channels.

The following specific BMPs are recommended for implementation:

- Conduct all work according to site-specific construction plans that identify areas for clearing, grading, and revegetation so that ground disturbance is minimized.
- Avoid existing vegetation wherever possible and identify vegetation to be retained for habitat maintenance (i.e., as identified through preconstruction biological surveys), cover cleared areas with mulches, install silt fences if needed to control erosion and trap sediment, and reseed cleared areas with native vegetation.
- Stabilize disturbed soils at all construction sites and staging areas before the onset of the winter rainfall season.
- Stabilize and protect stockpiles from exposure to erosion and flooding.
- The SWPPP also shall specify appropriate hazardous materials handling, storage, and spill response practices to reduce the possibility of adverse impacts from use or accidental spills or releases of contaminants. Specific measures applicable to the project include but are not limited to the following:
- Develop and implement strict on-site handling rules to keep construction and maintenance materials out of waterways.
- Conduct refueling and servicing of equipment and vehicles on the land side of the Feather River levee whenever possible. Only conduct refueling and servicing on the water side of the levee under extreme circumstances (e.g., vehicle or equipment breaks down and is not mobile). Leave absorbent material or drip pans underneath to contain spilled fuel during refueling and servicing. Collect any fluid drained from machinery during servicing in leak-proof containers and deliver to an appropriate disposal or recycling facility.
- Prevent oil or other petroleum products, or any other substances that could be hazardous to aquatic life, from contaminating the soil or entering watercourses.
- Maintain spill cleanup equipment in proper working condition. Clean up all spills immediately according to the spill prevention and response plan, and immediately notify DFG and the Central Valley RWQCB of any spills and cleanup procedures.

b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)?

Less-than-significant impact. Construction of either the Preferred Alternative or Alternative 1 would not result in an increased amount of impervious surface areas that could reduce groundwater recharge because all pipelines would be constructed below the ground surface and surface conditions would return to pre-project conditions (i.e., developed or landscaped). Further, no facilities or structures would be constructed that would result in water demands. While the project would implement a groundwater withdrawal program, this program would be conducted in compliance with the City's Water Supply Master Plan and would not exceed the safe aquifer yield. Therefore, impacts to groundwater under the Preferred Alternative and Alternative 1 would be less than significant.

Under Alternative 2, construction of pipelines would not occur thereby resulting in less groundwater impacts. Wellhead treatment facilities would be constructed within the existing developed footprint of the pump houses and no substantial increases in impervious surfaces would occur. These impacts would be less than significant.

No impact. No construction-related activity would occur under the No Action Alternative. Therefore, no impact to groundwater supplies would occur.

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial on- or off-site erosion or siltation?

Less-than-significant impact. The existing drainage pattern of the project area would not be substantially altered as a result of the proposed action under the Preferred Alternative or Alternative 1. The proposed pipeline would be buried, constructed along the existing road right-of-way, and would not change the pre-project conditions of the project area (i.e., paved or landscaped). The static mixer would be built within the existing developed (i.e., paved/concrete) footprint of the pumping stations. Therefore, the proposed action would not substantially alter the drainage pattern of the area and this would be a less-than-significant impact.

Under Alternative 2, construction of pipelines would not occur. Wellhead treatment facilities would be constructed within the existing developed footprint of the pump houses and no substantial changes to the drainage of the project area would occur. These impacts would be less than significant.

No impact. No construction-related activity would occur under the No Action Alternative. Therefore, no impact to the drainage of the project area would occur.

d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in on- or off-site flooding?

Less-than-significant impact. As described in c) above, implementation of the Preferred Alternative, Alternative 1, and Alternative 2 would not substantially alter the existing drainage pattern of the site. Implementation of the grading and erosion control plan, as described in Mitigation Measure Hydro-1, would ensure that such alterations do not result in adverse impacts related to on- or off-site flooding. Therefore, this impact would be less than significant.

No impact. No construction-related activity would occur under the No Action Alternative. Therefore, no impact related to on- or off-site flooding would occur.

e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

Less-than-significant impact. As described in b) above, implementation of the Preferred Alternative, Alternative 1, and Alternative 2 would not change impervious surface conditions from pre-project conditions and, therefore, would not result in substantial changes to existing drainage patterns. Implementation of the grading and erosion control plan as described in Mitigation Measure Hydro-1 BMPs would ensure that the proposed action would not result in adverse impacts related to on- or off-site flooding. Therefore, this impact would be less than significant.

No impact. No construction-related activity would occur under the No Action Alternative. Therefore, no impact would occur.

f) Otherwise substantially degrade water quality?

Potentially significant impact. As of the writing of this IS/MND-EA/FONSI, nine of the City's wells had arsenic concentrations above the EPA's established MCL, including wells 12, 15, and 22. Under the No Action Alternative, no improvements would be made to reduce the arsenic concentration in ground water pumped from the contaminated wells. Therefore, water pumped from wells 12, 15, and 22 would continue to exceed the EPA's MCL for arsenic. This would result in a potentially significant impact to water quality.

Less-than-significant impact. Please refer to the analysis in a) and c) above.

g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

No impact. No housing would be constructed as part of the proposed action under all alternatives. Therefore, there no impact would occur.

h) Place within a 100-year flood hazard area structures that would impede or redirect flood flows?

No impact. Project facilities would be located outside designated 100-year flood plain areas under the Preferred Alternative, Alternative 1, and Alternative 2 (City of Manteca 2003, 10-3). Further, facilities would either be located below ground or would be a minor addition to an existing facility such that they would not impede or redirect flood flows. No new facilities would be constructed under the No Action Alternative. Therefore, no impact would occur.

i) Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?

Less-than-significant impact. No structures that would house people would be constructed. Additionally, the project area is not located in an area identified as subject to inundation from catastrophic dam failure. The San Joaquin River, located approximately 4.25 miles west of the project is the closest inland water body. The city is protected by a levee system that has not experienced any issues related to structural integrity. Therefore, this impact is less than significant.

No impact. No construction-related activity would occur under the No Action Alternative. Therefore, no impact would occur.

j) Result in inundation by seiche, tsunami, or mudflow?

Less-than-significant impact. The project area is not located in an area that is subject to seiche or tsunami, and the topography in the project vicinity is relatively level and not subject to mudflow. The nearest body of water is the San Joaquin River, which is protected by a levee system. Therefore, this would be a less-than-significant impact.

No impact. No construction-related activity would occur under the No Action Alternative. Therefore, no impact would occur.

3.3 UTILITIES / SERVICE SYSTEMS

	ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
XVI.	**Utilities and Service Systems. Would the project:**				
a)	Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
b)	Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☒ (No Action)	☐	☐	☒ (Preferred, Alt 1, Alt 2)
c)	Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
d)	Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☒ (No Action)	☐	☐	☒ (Preferred, Alt 1, Alt 2)
e)	Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand, in addition to the provider's existing commitments?	☐	☐	☐	☒
f)	Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☒ Preferred, Alt 1, Alt 2)	☒ (No Action)
g)	Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☒

3.3.1 ENVIRONMENTAL SETTING

DRAINAGE SYSTEM

The South San Joaquin Irrigation District (SSJID) operates drainage facilities that pass through Manteca and carry a portion of the City's drainage. Because of topography, drainage facilities generally follow east-to-west alignment. Water from the SSJID, along with drainage pumped by the City, flows west into the French Camp Canal, which eventually flows into French Camp Slough. The San Joaquin Delta is the ultimate destination of drainage carried by French Camp Slough.

WASTEWATER/SEWER

The City of Manteca operates a Wastewater Quality Control Facility (WQCF). The WQCF is a 6.95 million gallons per day (MGD) rated, combined bio-filter-activated sludge plant. Secondary effluent is land applied during the spring and summer (flood irrigation for alfalfa production) and discharged to the San Joaquin River

during the winter (October–March). Dried sludge is subsequently spread on agricultural lands adjacent to the plant site (City of Manteca 2003 14-2).

The WQCF serves commercial and residential properties in the City of Manteca (5.93 mgd) and in to the City of Lathrop (1.02 mgd).

WATER SUPPLY

The City of Manteca's water is supplied from two sources. The City operates a system of wells interconnected with a transmission/distribution pipeline. Well depths range from 155 feet to 400 feet, and individual capacities of the operating wells range from 380 gpm to 2,300 gpm. The City has abandoned six wells over time due to age and water quality problems, and has added new ones to maintain supply. The groundwater aquifers underlying the City extend to depths in excess of 600 feet. In general, the underlying strata slope from the hills east of the City downward to the west. The groundwater basin safe yield was estimated in the 1985 Groundwater Study at 1.0 acre-foot per acre per year (City of Manteca 2003: 14-1).

The City's second source of water is treated surface water from Woodward Reservoir, which is purchased from SSJID. During the summer of 2005, the City began receiving up to 11,500 acre feet per year of treated surface water from SSJID. The majority of the City's customers receive a mixture of groundwater and surface water.

SOLID WASTE DISPOSAL

The City of Manteca Solid Waste Division collects waste throughout the City and deposits it at the Lovelace Solid Waste Transfer Station. Recyclable materials are sorted at the Lovelace facility. Green waste is delivered to the Austin Road/Forward Landfill. This landfill has a closure date of 2053 and has a remaining capacity of 1,608,752 cubic yards (City of Manteca 2003: 14-5).

3.3.2 DISCUSSION

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

No impact. Implementation of the proposed action under all alternatives would not generate any wastewater because no structures are proposed. Therefore, no impact would occur.

b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

Potentially significant impact. Water pumped from City wells 12, 15, and 22 currently exceeds the EPA's MCL for arsenic. Under the No Action Alternative, no improvements would be made to reduce the arsenic concentration in ground water pumped from these wells. Therefore, because the City is required to comply with the EPA's regulations pertaining to arsenic, the No Action Alternative would result in alternative actions that the City would need to implement to prevent the delivery of water that exceeds the adopted arsenic concentrations.

The likely outcome would be that the City would either need to cease operation of the wells and investigate other water supply sources or implement other treatment technologies such as well-head treatment to reduce the concentration of arsenic in groundwater pumped from wells 12, 15, and 22. It is unknown whether the City could secure alternative water supply (e.g., surface, reclaimed) sources to replace water lost by the decommissioning of the contaminated wells. Further, the construction of new groundwater wells is likely not a viable option because of the widespread elevated arsenic concentrations that occur throughout the City. Finally, the outcome of both of these options would likely result in the construction of new facilities and pipelines that would result in greater

construction and environmental impacts compared to the alternatives considered in Section 2.3. Therefore, this would be a potentially significant impact under the No Action Alternative.

No impact. Implementation of the proposed action under the Preferred Alternative, Alternative 1, and Alternative 2 would not increase demands for water or generate any wastewater because no structures are proposed. Therefore, no impact would occur.

c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

No impact. No new drainage facilities would be constructed or expanded under any of the alternatives. Therefore, no impact would occur.

d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

Potentially significant impact. Water pumped from City wells 12, 15, and 22 currently exceeds the EPA's MCL for arsenic. Under the No Action Alternative, no improvements would be made to reduce the arsenic concentration in ground water pumped from the contaminated wells. Therefore, because the City is required to comply with the EPA's regulations pertaining to arsenic, the No Action Alternative would result in alternative actions that the City would need to implement to prevent the delivery of water that exceeds the adopted arsenic concentrations. Additional review would be necessary to determine if the City has adequate access to water in the absence of supplies from the contaminated wells to meet its water demand. Therefore, this would be a potentially significant impact under the No Action Alternative.

No impact. The Preferred Alternative, Alternative 1 and Alternative 2 would improve water quality for existing city water supplies. No water demands would be associated with the Preferred Alternative, Alternative 1, or Alternative 2 because no new facilities, homes, or structures would be constructed. Existing water supplies would continue to be used and delivered as prescribed in the City's Water Supply Master Plan. Therefore, no impact would occur.

e) Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand, in addition to the provider's existing commitments?

No impact. See a) above. No wastewater would be generated under any of the alternatives; therefore, no impact would occur.

f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

Less-than-significant impact. Construction of the Preferred Alternative, Alternative 1, and Alternative 2 would result in the generation of some solid waste for a short period of time. These wastes would generally include construction materials, soil debris that is not suitable for backfilling, and other ancillary waste. Sufficient capacity exists within area landfills to accommodate this waste. Therefore, this would be a less-than-significant impact.

No impact. No construction-related activity would occur under the No Action Alternative. Therefore, no solid waste disposal impacts would occur.

g) Comply with federal, state, and local statutes and regulations related to solid waste?

No impact. No solid waste would be generated by any of the alternatives because no new facilities, homes, or structures would be constructed. Therefore, no impact would occur.

3.4 LAND USE / PLANNING

	ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant-Impact	No Impact
IX.	**Land Use and Planning. Would the project:**				
	a) Physically divide an established community?	☐	☐	☐	☒
	b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, a general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒
	c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

3.4.1 ENVIRONMENTAL SETTING

The project area is adjacent to residential, commercial, and public uses, as shown on Exhibit 3.4-1. City General Plan land use designations adjacent to the proposed action include low density residential, medium density residential, high density residential, park, commercial mixed use, neighborhood commercial, and public/quasi-public (City of Manteca 2009a). The majority of land uses adjacent to the proposed action are residential. Land use zones adjacent to the proposed action include residential, commercial, and special purpose zones.
The majority of adjacent land is zoned as R-1, which is a single family residential district (City of Manteca 2009b). In addition to residential uses, there are several sensitive land uses in the vicinity of this project area, including:

- Lions-N-Lambs Preschool, located at 815 West Lathrop Road;
- East Union High located, at 1700 North Union Road;
- Neil Hafley School, located at 849 Northgate Drive;
- United Lutheran Preschool, located at 649 Northgate Drive;
- Headstart Child Development Center, located at 955 West Center Street #1;
- Always Friends Preschool, located at 907 Davis Drive; and
- Sequoia Annex Preschool, located at 737 West Yosemite Avenue.

3.4.2 DISCUSSION

a) Physically divide an established community?

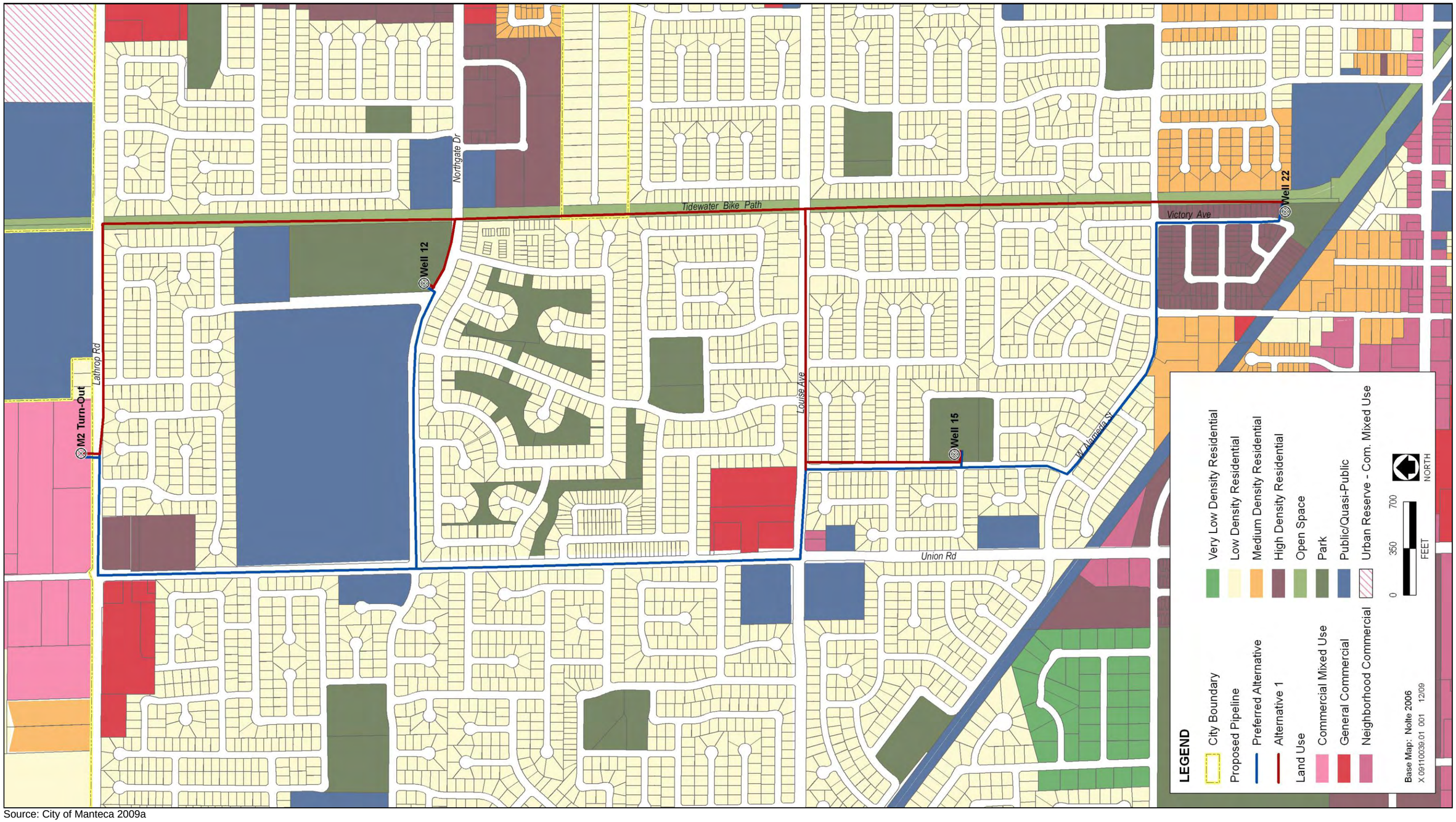
No impact. The project area is located in an existing residential neighborhood. The Preferred Alternative, Alternative 1, and Alternative 2 would result in the construction of an underground pipeline and/or minor facilities at existing developed well site locations. These facilities would not physically divide the established community. No construction activity would occur under the No Action Alternative. Therefore, no impact would occur under all alternatives.

b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, a general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

No impact. Proposed facilities would either be located underground and would not change existing land uses or would be located at existing public facilities and would be consistent with those land uses. Therefore, all alternatives would not conflict with applicable land use plans, policies, or regulations and no impact would occur.

c) Conflict with any applicable habitat conservation plan or natural community conservation plan?

No impact. None of the alternatives would result in any significant impacts related to conflicting with an applicable habitat conservation plan or natural community conservation plan (See Section 3.6.1, "Biological Resources," questions e and f).



Source: City of Manteca 2009a

Land Use Designations **Exhibit 3.4-1**

3.5 TRANSPORTATION/TRAFFIC

	ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
XV.	**Transportation/Traffic. Would the project:**				
	a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	☐	☒ (Preferred, Alt 1)	☐	☒ (Alt 2, No Action)
	b) Exceed, individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	☐	☐	☒ (Preferred, Alt 1)	☒ (Alt 2, No Action)
	c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒
	d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☒ (Preferred, Alt 1)	☒ (Alt 2, No Action)
	e) Result in inadequate emergency access?	☐	☐	☒ (Preferred, Alt 1)	☒ (Alt 2, No Action)
	f) Result in inadequate parking capacity?	☐	☐	☐	☒
	g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	☐	☐	☒ (Alt 1)	☒ (Preferred, Alt 2, No Action)

3.5.1 ENVIRONMENTAL SETTING

Regional access to the project area is provided by State Route (SR) 99, which is a four-lane north-south freeway. The City of Manteca General Plan Draft EIR identifies three major local roadways that provide access to the project area, including Union Road, Lathrop Road, and Louise Avenue. Union Road runs north-south and serves as a major arterial in the project vicinity. Union Road is a four-lane roadway in the project area. Lathrop Road is a two-lane roadway that runs east-west and serves as a major arterial in the project vicinity. Lathrop Road connects to SR 99 east of the project area. Louise Avenue is a four-lane, east-west roadway.

According to the City of Manteca Department of Public Works, the average daily traffic levels shown in Table 3.5-1 were recorded along segments of the three major local roadways described above. Traffic counts were taken in March and April of 2008.

Table 3.5-1 Select Traffic Volumes from the City of Manteca Traffic Statistics 2008		
Roadway	**Between**	**March and April 2008 Traffic Count**
Union Road	Lathrop to Sprague	8,500
	Sprague to Northgate	11,200
	Northgate to Louise	12,800
	Louise to Alameda	15,600
Lathrop Road	Union to Main	14,600
Louise Avenue	Union to Elm	20,200

3.5.2 DISCUSSION

a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?

Less than significant with mitigation incorporated. Construction of the Preferred Alternative or Alternative 1 would require approximately 10 construction workers to commute to and from the pipeline alignment for approximately 90 days. Project operation would not require any new employees to commute to the project area or any new maintenance activities that would generate traffic trips.

Project construction would result in short-term increases in traffic on local roadways. Construction activities would include equipment and materials hauling to and from the project area, construction worker transportation to and from the site, and the hauling of equipment and materials within the project area. Conservatively assuming each worker arrives and departs the site twice per day, the number of passenger vehicle trips generated during peak construction periods would be approximately 40 trips per day (10 construction workers with four trips per day each). In addition, construction related traffic would be expected to include the use of a backhoe, loaders, excavators, compaction machines, and various deliveries of material and equipment occurring throughout the construction period. The number of construction-related heavy truck trips (one-way) would not be anticipated to exceed 4 trips per day for a maximum total of 48 construction-related trips per day. While these construction personnel and deliveries would generate a minor amount of traffic trips, these trips would fall within the normal traffic volume fluctuations of area roadways (see Table 3.5-1). The addition of 48 trips per day on a short-term basis (over a 3-month construction period) would represent a minor and temporary increase in traffic volumes on roadways in the project area and would not be expected to result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections. Although project construction activities would generally result in less-than-significant impacts to traffic, construction activities could result in temporary disruptions to traffic flows. This could be a potentially significant impact. Implementation of Mitigation Measure Traffic-1 would ensure traffic circulation impacts remain at a less-than-significant level during construction of the Preferred Alternative or Alternative 1.

No impact. Under Alternative 2, the City would either cease operations at Wells 12, 15, and 22, or would implement well-head treatment at the existing well facilities. The treatment facilities would be minor and would likely not require more than 6 construction personnel. While these construction personnel would generate a minor amount of traffic trips, these trips would fall within the normal traffic volume fluctuations of area roadways (see Table 3.5-1). Pipelines would not be constructed in existing roadways under this alternative and, therefore, roadway closures or other traffic disruption would not occur. No construction activity would occur under the No Action Alternative. Therefore, Alternative 2 and the No Action Alternative would result in no traffic impacts to local roadways.

Mitigation Measure Traffic-1

The City will prepare and implement a Construction Management Plan, which identifies the timing of construction and the timing of elements that would result in the full or partial blockage of local roadways. The plan will specify the measures that would be implemented to minimize traffic-related impacts including construction parking during construction, which will be limited to designated staging areas. These measures could include, but are not limited to the following: use of signage notifying travelers that they are entering a construction zone; use of cones, flaggers, and guide-vehicles to direct traffic through the construction zone. A copy of the plan will be submitted to local emergency response agencies and these agencies will be notified at least 14 days before the commencement of construction that would partially or fully obstruct local roadways.

b) Exceed, individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?

Less-than-significant impact. As described in a) above, project operation would not require any new employees, and thus would not result in any long-term increase in traffic on local roadways. Project construction activities for the Preferred Alternative or Alternative 1 would not exceed 48 total trips per day. Traffic trips generated by the proposed action would fall within the normal traffic volume fluctuations of area roadways (see Table 3.5-1) and would cease once the project is constructed. This short-term, temporary traffic increase would not result in a change to a level of service standard on roadways in the project area. Therefore, this would be considered a less-than-significant impact under the Preferred Alternative and Alternative 1.

No impact. See a) above.

c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

No impact. Stockton Metropolitan Airport is located approximately 4.5 miles north of the project area. The proposed action under all alternatives would have no effect on air traffic patterns because no tall structures or other facilities would be constructed. Therefore, no impact would occur.

d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Less-than-significant impact. The proposed pipeline alignment would be located below ground and would not change or alter existing roadways once implemented. Mixing chamber facilities would be constructed within existing well sites and would not alter area roadways. Therefore, the Preferred Alternative and Alternative 1 would not increase hazards due to a design feature or incompatible use. This would be a less-than-significant impact.

No impact. Under Alternative 2 and the No Action Alternative, no new pipeline improvements would be constructed and/or well-head treatment facilities would be constructed within existing well sites and would not alter area roadways. Therefore, there would be no impact under Alternative 2 or the No Action Alternative.

e) Result in inadequate emergency access?

Less-than-significant impact. Emergency service information is provided in Section 3.17.3, “Public Services,” of this IS/EA. Project operation would not result in additional traffic that could interfere with emergency access, nor would the proposed action change current emergency access routes or cause a significant increase in the need for emergency services. Therefore, this impact would be less than significant under the Preferred Alternative and Alternative 1.

No impact. Under Alternative 2 and the No Action Alternative, no new pipeline improvements would be constructed and/or well-head treatment facilities would be constructed within existing well sites and would not result in inadequate emergency access. Therefore, there would be no impact under Alternative 2 and the No Action Alternative.

f) Result in inadequate parking capacity?

No impact. The Preferred Alternative would provide construction worker parking in staging areas that would be located near the surface water storage tank site on Lathrop Road, at the northeast corner of the Union Road and Louise Avenue intersection, and at the southwest corner of the Alameda Road and Walnut Avenue intersection. No additional permanent parking capacity would be required. Under Alternative 1 adequate parking capacity for the approximately 10 construction workers would likely be provided in staging areas located near the surface water storage tank site on Lathrop Road and at the southwest corner of the Alameda Road and Walnut Avenue intersection. Project operations would not require any new employees and, therefore, no additional permanent parking capacity would be required. Under Alternative 2, construction workers would likely park on-street near wells 12, 15, and 22 while completing any necessary well upgrades. No additional permanent parking capacity would be required. No construction activity would occur under the No Action Alternative. Therefore, no impact would occur under all alternatives.

g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?

Less-than-significant impact. The proposed action is a water quality improvement project and would not generate the need for alternative transportation and, therefore, would not conflict with adopted policies, plan, or programs supporting alternative transportation. While Alternative 1 would temporarily partially block access to the Tidewater bike path during construction, alternative routes would be available, including a Class II and III bike lane that runs parallel to the Tidewater bike path from Diane Drive on Yosemite Avenue and Elm Avenue to West Center Drive. This bike lane is within ¼ mile of the Tidewater bike path and would serve the needs of bicyclists during construction. Therefore, this is considered a less-than-significant impact under Alternative 1.

No impact. The Preferred Alternative, Alternative 2, and the No Action Alternative would not generate the need for alternative transportation or affect existing alternative transportation facilities and routes. Therefore, these alternatives would not conflict with adopted policies, plans, or programs supporting alternative transportation and no impact would occur.

3.6 NATURAL RESOURCES

3.6.1 BIOLOGICAL RESOURCES

	ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
IV.	**Biological Resources. Would the project:**				
	a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or the U.S. Fish and Wildlife Service?	☐	☐	☐	☒
	b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Game or the U.S. Fish and Wildlife Service?	☐	☐	☐	☒
	c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
	d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	☒
	e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
	f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

3.6.1.1 ENVIRONMENTAL SETTING

The project area does not support any natural plant communities or sensitive biological resources. However, sensitive biological resources are known to occur in the vicinity of the project area. Sensitive biological resources evaluated as part of this analysis include special-status species and sensitive habitats.

Special-status species include plants and animals in the following categories:

- Plants and wildlife species that are listed under the federal Endangered Species Act (ESA) and/or California Endangered Species Act (CESA);

- Plant and wildlife species considered candidates for listing or proposed for listing;
- Wildlife species indentified by Department of Fish and Game (DFG) as fully protected and/or California species of special concern; and
- Plants considered by the California Native Plant Society (CNPS) to be rare, threatened, or endangered.

Sensitive habitats include those of special concern to resource agencies and habitats that are afforded specific consideration through CEQA, the California Fish and Game Code, and/or Section 404 of the federal Clean Water Act (CWA). Under Section 404 of CWA, wetlands and other waters of the United States are subject to the jurisdiction of the U.S. Army Corps of Engineers (USACE). Aquatic habitats may also receive protection under state statutes including Section 1602 of the California Fish and Game Code and the California Porter-Cologne Water Quality Control Act.

The California Natural Diversity Database (CNDDB 2009) was used as the primary source to identify previously reported occurrences of sensitive biological resources in the vicinity of the project area. The CNDDB is a statewide inventory managed by the California Department of Fish and Game (CDFG) that includes the location and condition of the state's rare and declining species and habitats. A search of the CNDDB was conducted for sensitive biological resources reported in the Manteca 7.5 minute USGS quadrangle, on which the project site is located.

An EDAW biologist conducted reconnaissance-level surveys of the project area on January 10 and March 3, 2009.

The project area does not include any essential fish habitat, including rivers, streams, or waters of the United States. This issue will not be discussed further in this environmental document.

3.6.1.2 DISCUSSION

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or the U.S. Fish and Wildlife Service?

No impact. The only special-status species reported to the CNDDB for the Manteca quadrangle are tricolored blackbird (*Agelaius tricolor*) and Swainson's hawk (*Buteo swainsoni*). The tricolored blackbird occurrence was reported south of Manteca in 1936; no additional details are included in the CNDDB. There are three documented occurrences of Swainson's hawk nests in the CNDDB. The most recent occurrence from the Manteca area is from 2002. The closest Swainson's hawk nest is reported three miles north of Manteca.

The project area does not include any suitable habitat for tricolored blackbird, Swainson's hawk, or other special-status species. Suitable nesting habitat for tricolored blackbird includes freshwater marsh or dense patches of spiny vegetation (e.g., blackberry). Swainson's hawks nest in riparian woodland and isolated trees in close proximity to suitable foraging habitat, which includes grassland and certain agricultural crops. The project area is heavily urbanized within the developed core of the City of Manteca. Vegetation in the project area is limited to landscaped areas at existing residences and along the Tidewater bike path. Landscaped areas along the Tidewater bike path include some native plant species but these provide limited wildlife habitat and only wildlife species common in residential areas are expected to occur.

In an electronic mail dated January 25, 2010, a representative of the U.S. Fish and Wildlife Service (USFWS) stated the department's intent to file a No Effect determination letter for the project. This determination was made for the Preferred Alternative. Please refer to Appendix D for correspondence received from USFWS regarding this determination.

Construction of the proposed action under the Preferred Alternative, Alternative 1, and Alternative 2 would not remove any habitat for tricolored blackbird, Swainson hawk, or any other special-status species. Construction activity would be limited to trenching and other temporary disturbance of landscaped and other developed areas. No construction activity would occur under the No Action Alternative. Therefore, no impact would occur under all alternatives.

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Game or the U.S. Fish and Wildlife Service?

No impact. There are no natural plant communities present in the project area. Removal of vegetation is expected to be limited to a temporary disturbance of landscaped areas under the Preferred Alternative, Alternative 1, and Alternative 2. No vegetation would be removed under the No Action Alternative. Therefore, no impact would occur under all alternatives.

c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

No impact. There no federally protected wetlands in the project area. Therefore, no impact would occur under all alternatives.

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

No impact. Wildlife species expected to occur in the project area are limited to common species adapted to utilizing landscaped vegetation in urbanized areas. No important wildlife corridors are present in the project area. Therefore, no impact would occur under all alternatives.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

No impact. The project would not conflict with any local policies or ordinances protecting biological resources. Construction of the project is not expected to require removal of any trees or other vegetation that provide important habitat for wildlife. Therefore, no impact would occur under all alternatives.

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

No impact. The project would not conflict with the San Joaquin County Multi-species Habitat Conservation and Open Space Plan because no habitat for any species covered by the plan would be affected. Therefore, no impact would occur under all alternatives.

3.6.2 GEOLOGY AND SOILS

	ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
VI.	**Geology and Soils. Would the project:**				
	a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
	i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? (Refer to California Geological Survey Special Publication 42.)	☐	☐	☒ (Preferred, Alt 1, Alt 2)	☒ (No Action)
	ii) Strong seismic ground shaking?	☐	☐	☒ (Preferred, Alt 1, Alt 2)	☒ (No Action)
	iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒ (Preferred, Alt 1, Alt 2)	☒ (No Action)
	iv) Landslides?	☐	☐	☐	☒
	b) Result in substantial soil erosion or the loss of topsoil?	☐	☒ (Preferred, Alt 1)	☐	☒ (Alt 2, No Action)
	c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☐	☒ (Preferred, Alt 1, Alt 2)	☒ (No Action)
	d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994, as updated), creating substantial risks to life or property?	☐	☐	☐	☒
	e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒

3.6.2.1 ENVIRONMENTAL SETTING

The project site is located in the San Joaquin Valley which, together with the Sacramento Valley, composes the Central Valley of California. Most of the surface of the Central Valley is covered with Pleistocene and recent (Holocene) alluvium. This alluvium is composed of sediments from the Sierra Nevada Mountains to the east and the Coast Range Mountains to the west, which were carried by water and deposited on the valley floor. Siltstone, claystone, and sandstone are the primary types of sedimentary deposits.

The project site is located in the Modesto Formation (Wagner, Bortugno, and McJunkin 1991). In the San Joaquin Valley, the Modesto Formation forms ancient alluvial fans of several major rivers, including the San Joaquin

River, and can be divided into upper and lower members. Researchers differ as to the age of this formation: Marchand and Allwardt (1981) place the age between approximately 12,000 and 42,000 years BP, while Atwater (1982) places the age from 9,000 to 73,000 years BP. The upper member is composed primarily of unconsolidated, unweathered, coarse sand and sandy silt. The lower member of the Modesto Formation is composed of consolidated, slightly weathered, well-sorted silt and fine sand, silty sand, and sandy silt. The thickness of the Modesto Formation at the project site is undetermined; borings in Pleistocene-age sediments throughout the San Joaquin Valley suggest that the thickness of the Modesto Formation varies widely from location to location (i.e., 65 feet deep along the Chowchilla River, 130 feet deep along the Merced River).

There are numerous fault zones in the region. The most prominent area faults include the San Andreas Fault Zone, the Hayward Fault Zone, and the San Joaquin Fault Zone. The San Andreas Fault is considered the main source of ground shaking in the area, and is located about 70 miles west of the City. About 50 miles to the west is the Hayward Fault. The closest known fault is the Tracy-Stockton fault, which is located about 10 miles to the north (Jennings 1994). The Tracy-Stockton Fault is a buried fault and is considered inactive (Tracy 2006, 8-2).

The most recent soil survey data from the Natural Resources Conservation Service (NRCS) identifies three soil units occurring in the project area. These soil units include Veritas fine sandy loam, 0 to 20% slopes (266), Timor loamy sand, 0 to 2% slopes (254), and Delhi-Urban land complex, 0 to 2% slopes (143) (NRCS 2009).

3.6.2.2 DISCUSSION

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? (Refer to California Geological Survey Special Publication 42.)

Less-than-significant impact. The San Andreas fault and nearby Tracy-Stockton faults could produce ground shaking in the project area. The Tracy-Stockton fault is located approximately 10 miles north of the project area, but is considered inactive (Tracy 2006, 8-2). None of the alternatives would result in the construction of facilities on or near any known faults. In addition, Manteca is not located within an Alquist-Priolo Fault-Rupture Hazard area (City of Manteca 2003a, 7-2). Therefore, the potential hazard for a surface fault rupture in the project area is considered low. Because no active (i.e., fault ruptures within the last 11,000 years) faults are located in the project area, and because surface ground rupture along faults is generally limited to a linear zone a few feet wide, ground rupture because of a fault across the project area is unlikely. Therefore, this is considered a less-than-significant impact under all alternatives.

No impact. No construction would occur under the No Action Alternative. Therefore, no impact related to the rupture of a known fault would occur.

ii) Strong seismic ground shaking?

Less-than-significant impact. Earthquakes associated with various faults in the region have caused ground shaking in San Joaquin County in the past. Records indicate evidence of ground shaking in San Joaquin County from the 1836–1989 earthquakes.

According to the California Geologic Survey, faults with an “A” classification are capable of producing large magnitude (M) events (M greater than 7.0), have a high rate of seismic activity (e.g., having slip rates greater than 5 millimeters per year [mm/yr]), and have well constrained paleoseismic data (e.g., evidence of displacement within the last 700,000 years). Class “B” faults are those that lack paleoseismic data necessary to constrain the recurrence intervals of large-scale events. Faults with a “B” classification are capable of producing an event of M

6.5 or greater. None of the faults located within close proximity to the project site are classified as a Class A or B fault (California Geological Survey 2006).

Because several active faults are located within the regional vicinity, the project area would likely be subject to strong seismic ground shaking in the event of an earthquake. However, proposed facilities would be required to be constructed consistent with the requirements of the Uniform Building Code Standard. Although strong seismic ground shaking could result in cracking the proposed pipeline or water treatment structures, any impacts to proposed facilities under the Preferred Alternative, Alternative 1, and Alternative 2 would not directly place people at risk related to safety hazards resulting from seismic ground shaking. Therefore, this is considered a less-than-significant impact.

No impact. No construction would occur under the No Action Alternative. Therefore, no impact related to seismic ground shaking would occur.

iii) Seismic-related ground failure, including liquefaction?

Less-than-significant impact. Soil liquefaction is a process by which water-saturated materials (including soil, sediment, and certain types of volcanic deposits) lose strength and may fail during strong ground shaking. Liquefaction is most commonly induced by strong ground shaking associated with earthquakes. Factors determining the liquefaction potential are soil type, the level and duration of seismic ground motions, the type and consistency of soils, and the depth to groundwater. Loose sands and peat deposits are susceptible to liquefaction, while clayey silts, silty clays, and clays deposited in freshwater environments are generally stable under the influence of seismic ground shaking.

Liquefaction poses a hazard to engineered structures. The loss of soil strength can result in a bearing capacity that is insufficient to support foundation loads, increased lateral pressure on retaining or basement walls, and slope instability. Although no specific liquefaction hazard areas have been identified in the county, this potential is recognized throughout the San Joaquin Valley, where unconsolidated sediments and a high water table coincide.

The EIR prepared for the General Plan identifies liquefaction as potentially significant in the city because of the relatively high water table in the city (City of Manteca 2003b, 8-13). Although strong seismic-related ground failure could result in liquefaction causing the proposed pipeline to rupture or well sites to become unstable, any impacts to proposed facilities would not directly place people or property at risk of a safety hazard resulting from seismic-related ground failure. This would be a less-than-significant impact under the Preferred Alternative, Alternative 1, and Alternative 2.

No impact. No construction would occur under the No Action Alternative. Therefore, no impact resulting from seismic-related ground failure would occur.

iv) Landslides?

No impact. All alternatives are located in an area that is relatively flat and is not subject to landslides. Therefore, there would be no impact under all alternatives.

b) Result in substantial soil erosion or the loss of topsoil?

Less than significant with mitigation incorporated. The project area consists primarily of flat, developed (paved, concrete) land. According to the EIR prepared for the City General Plan, water erosion hazard is considered low for soil types in the area. Wind erosion potential within the project area is moderate to high in the spring, summer, and fall, and diminishes in the winter (City of Manteca 2003b, 8-15). Construction activities would involve substantial excavating, moving, filling, and temporary stockpiling of soil in the project area. Because the proposed action would occur within existing street rights-of-way, developed well sites, and/or the Tidewater bike path, grading activities in the project area would not be expected to remove any vegetative cover.

During construction activities, the excavated and stockpiled soil could be exposed to erosion via wind and surface water runoff. Because construction of the Preferred Alternative or Alternative 1 would disturb more than 1 acre of land, the City would be required to develop and implement a SWPPP as part of its National Pollutant Discharge Elimination System (NPDES) permit for construction activities administered by the State Water Resources Control Board (SWRCB). As described in Mitigation Measure Hydro-1, the SWPPP would include a description of construction activities and would identify the BMPs that would be employed to prevent soil erosion and discharge of other construction-related pollutants (e.g., petroleum products, solvents, paints, cement) that could contaminate nearby water resources. A monitoring program is generally required to ensure that BMPs are implemented according to the SWPPP and are effective at controlling discharges of stormwater-related pollutants. Implementation of Mitigation Measure Hydro-1 would ensure compliance with NPDES permit requirements and ensure that potential impacts from soil erosion would be less than significant under the Preferred Alternative and Alternative 1. This impact would be reduced to a less-than-significant level.

No impact. Under Alternative 2 and the No Action Alternative, no new pipeline improvements would be constructed and/or only minor facility construction would occur at the existing developed well sites. No soils would be stockpiled and exposed to wind and rain events. Therefore, there would be no erosion impacts under Alternative 2 and the No Action Alternative.

c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?

Less-than-significant impact. As described in item ‘iii’ above, liquefaction impacts are considered less than significant. In addition, proposed pipelines and structures would be designed to meet all engineering requirements that ensure that the facilities would not be affected by potential lateral spreading, liquefaction, or collapse. With proper engineering design of the pipeline, the proposed action would result in less-than-significant impacts related to unstable geologic or soil units under all alternatives.

No impact. No construction would occur under the No Action Alternative. Therefore, no impact would occur.

d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994, as updated), creating substantial risks to life or property?

No impact. Expansive soils increase in volume when wet and decrease in volume when dry. Shrink-swell potential is used to measure the likelihood of soil expansion. Based on a review of the NRCS soil survey data (NRCS 2009, Soil Conservation Service 1992), proposed construction activities under the Preferred Alternative, Alternative 1, and Alternative 2 would take place in soils with a low shrink-swell potential. No construction would occur under the No Action Alternative. Therefore, there would be no impact under all alternatives.

e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

No impact. The proposed action would not include the use of septic systems. Therefore, there would be no impact under all alternatives.

3.6.3 MINERAL RESOURCES

	ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
X.	**Mineral Resources. Would the project:**				
	a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
	b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	☐	☐	☐	☒

3.6.3.1 ENVIRONMENTAL SETTING

The primary extractive resources in San Joaquin County are sand, gravel, and natural gas. Peat soil, placer gold, and silver are also extracted from the County to a lesser extent. Other resources that have been extracted in the past include coal, clay, and manganese ore, all of which have been mined in the southwestern portion of the County.

Pursuant to the California Surface Mining and Reclamation act of 1975 (SMARA), the mineral deposits in San Joaquin County have been identified and classified by the State Geologist in Special Report 160, issued August 1988. Also required by SMARA, the States Mines and Geology Board has designated the sand and gravel deposits that are of regional and statewide significance.

The principal deposits where extraction is occurring are in the southwestern portion of San Joaquin County along Corral Hollow Creek alluvial fan and along the major rivers in the eastern portion of the County. The State of California has identified lands in the City of Manteca General Plan Study Area, near the San Joaquin River, as areas of significant mineral resources. The proposed project area is more than four miles from the San Joaquin River.

3.6.3.2 DISCUSSION

a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

No impact. The project area is not located in an area that contains known mineral resources. The project area does not contain any state designated mineral resource zones, according to maps prepared by the State Mining and Geology Board. In addition, the City of Manteca General Plan EIR concluded that mineral resources are not a significant environmental issue requiring environmental analysis. Therefore, implementation of the proposed action would not result in the loss of availability of known mineral resources and there would be no impact to mineral resources under all alternatives.

b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?

No impact. The project area is not likely to contain a source of locally important mineral resources, and no important sand and gravel or other mineral deposits exist within the project area. In addition, the General Plan EIR concluded that mineral resources are not a significant environmental issue requiring environmental analysis.

Therefore, implementation of the proposed action would not result in the loss of availability of locally important mineral resources and there would be no impact under all alternatives.

3.6.4 VISUAL RESOURCES/ AESTHETICS

	ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
I.	**Visual Resources/Aesthetics. Would the project:**				
	a) Have a substantial adverse effect on a scenic vista?	☐	☐	☒ (Preferred, Alt 1, Alt 2)	☒ (No Action)
	b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
	c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒ (Preferred, Alt 1, Alt 2)	☒ (No Action)
	d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒

3.6.4.1 ENVIRONMENTAL SETTING

Visual resources are the natural and artificial features of the landscape that can be seen and that contribute to the public's appreciative enjoyment of the environment. Visual resources or aesthetic impacts are generally defined in terms of a project's physical characteristics and potential visibility, and the extent to which the project's presence would change the perceived visual character and quality of the environment in which it would be located.

The City of Manteca is located in the center of California's Central Valley and is virtually flat. With the exception of views from highway overpasses that provide brief panoramas, the city is primarily viewed from the ground-level perspective. Residential neighborhoods in the city are typically composed of one- to two-story single family houses. Many neighborhoods include a small park and detention basin (approximately 5.0 acres or larger) that serve the local neighborhood. From the project area, views are primarily dominated by residential development. Vacant land north of the project area along Lathrop Road provides limited open views of agricultural land. The Tidewater bike path establishes the project area's eastern boundary and is a visual feature within the city. The bike path is a 3.5 mile Class I bikeway and pedestrian path that runs north-south through the city and passes through the downtown area, Library Park, and many residential neighborhoods. The bike path includes an approximately 12-foot asphalt path that meanders within the 100-foot alignment, and is landscaped with trees, shrubs, and other vegetation. Wooden privacy fencing separates the bike path from adjacent residential development in the project area.

3.6.4.2 DISCUSSION

a) Have a substantial adverse effect on a scenic vista?

Less-than-significant impact. A scenic vista is generally considered a view of an area that has remarkable scenery or a resource that is indigenous to the area. The City has not designated any scenic corridors within its boundaries and no scenic resources were identified in the City's General Plan. During the construction period, construction equipment such as backhoes, loaders, excavators, and compaction machines would be visible to motorists and bicyclists on Lathrop Road, Louise Avenue, Northgate Drive, Agate Avenue, and the Tidewater bike path and at existing well site locations. However, upon completion of the project, the appearance of the

project area would be returned to pre-project conditions. Therefore, the visual impacts would be short-term and temporary in nature. No long-term visual impacts would occur. Therefore, this impact is considered less than significant under the Preferred Alternative, Alternative 1, and Alternative 2.

No impact. No construction activity would occur under the No Action Alternative. Therefore, no impact on a scenic vista would occur.

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

No impact. There are no state-designated scenic highways in the project vicinity. Therefore, the proposed action would not damage any scenic resources within view of a state scenic highway. No impact would occur under all alternatives.

c) Substantially degrade the existing visual character or quality of the site and its surroundings?

Less-than-significant impact. As discussed in a) above, project-related visual impacts resulting from the proposed action would be temporary, of short duration (approximately 3 months), and the project site would be returned to pre-project conditions. The proposed action would not substantially degrade the existing visual character or quality of the site and its surroundings. Therefore, this impact would be less than significant under the Preferred Alternative, Alternative 1, and Alternative 2.

No impact. No construction activity would occur under the No Action Alternative. Therefore, no impact on the existing visual character would occur.

d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

No impact. All construction activities would occur during daytime hours and no night lighting would be required. Therefore, the proposed action would not create a new source of substantial light or glare and no impact would occur under all alternatives.

3.7 POPULATION AND HOUSING

	ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XII.	**Population and Housing. Would the project:**				
	a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
	b) Displace substantial numbers of existing homes, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
	c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

3.7.1 ENVIRONMENTAL SETTING

The California Department of Finance, Demographic Research Unit estimates that the population in the City of Manteca was 66,451 as of January 1, 2008 (Department of Finance 2009). Strong residential growth in the 1990s and early 2000s encouraged the city's development as a bedroom community in which residents commute to areas west of the Altamont Pass and into the Bay Area to work (City of Manteca 2003, 13-2). The project area is primarily a residential neighborhood of approximately 2 square miles within the City of Manteca. The project area is entirely surrounded by existing residential, commercial, and public/quasi-public development.

3.7.2 DISCUSSION

a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

No impact. The proposed action under all alternatives does not include residential housing and would not result in an expansion of the City's water service area. Therefore, implementation of the proposed action would not directly nor indirectly induce substantial population growth and no impact would occur under all alternatives.

b) Displace substantial numbers of existing homes, necessitating the construction of replacement housing elsewhere?

No impact. No displacement of existing housing would occur under any alternative. Therefore, no impact would occur.

c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

No impact. The proposed action would be constructed in city streets, along an existing bike path alignment, and/or at existing developed well sites. Therefore, the proposed action would not result in displacement of any people and no impact would occur under all alternatives.

3.8 CONSTRUCTION ASPECTS

Construction impacts and related mitigation measures are described in various parts of Section 3 of this document. Many of the construction impacts addressed in this document are subject to mitigation and the proposed action can be implemented without any significant adverse short-term environmental effects.

3.9 ENERGY ISSUES

Overall, the proposed action would result in the consumption of some energy resources during construction including petroleum-based fuels for equipment and electricity for pumps. Because of the short construction period (3 months) and small numbers of construction equipment, the demand for petroleum products is considered minimal and less than significant.

3.10 COASTAL ZONE MANAGEMENT ACT

The project is located over 50 miles from the Pacific coast line and would not affect any coastal zone management areas. This issue will not be discussed further in this environmental document.

3.11 CULTURAL RESOURCES

	ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
V.	**Cultural Resources. Would the project:**				
	a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	☐	☐	☐	☒
	b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	☐	☒ (Preferred, Alt 1, Alt 2)	☐	☒ (No Action)
	c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☒ (Preferred, Alt 1, Alt 2)	☒ (No Action)
	d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒ (Preferred, Alt 1, Alt 2)	☐	☒ (No Action)

3.11.1 ENVIRONMENTAL SETTING

Background information on cultural resources issues for the project area was obtained from a review of data kept on file at the CCIC of the California Historical Resources Information System. The files reviewed included, but were not necessarily limited to, historic and contemporary maps, previously conducted cultural resource studies, and various state and local listings.

To better understand the cultural and physical development of the project area and its immediate surrounds, a broad regional setting was established. Appendix B briefly discusses and summarizes cultural developments through the prehistoric, ethnographic, and historic past.

3.11.1.1 RESULTS

Native American Consultation

Consultation with the Native American community was initiated by EDAW in January 2009, with a letter to the Native American Heritage Commission (NAHC) requesting a list of local Native American representatives and/or tribal contacts. This letter also requested a search of the NAHC Sacred Lands file to determine if any properties of cultural concern to the Native American community are situated within or near the project area. No such properties were identified by the NAHC in the area. Letters and follow-up phone calls were made to the Native American groups / individuals identified by the NAHC. To date, no response has been received. A concurrence letter was also sent to the State Historic Preservation Officer (SHPO) with regards to the cultural resources investigations in the project area. SHPO has concurred with the findings of this report and documents this concurrence in a letter dated December 9, 2009 (see Appendix B).

Study Findings

The records search indicated that four previous cultural resources investigations have been conducted within the project area (CCIC Reports SJ-729, 3995, 4786, and 6345). A segment of the Tidewater-Southern Railroad (CA-SJO-256H), no longer extant, was previously recorded as being within the project area. The ties and rails were

removed in the 1930s according to the site record. This resource was previously determined ineligible for National Register of Historic Places (NRHP) / California Register of Historical Resources (CRHR) listing due to a loss of historic integrity. No other previously recorded prehistoric or historic resources were identified within the project area. However, the CCIC did indicate that a review of historic maps showed that four historic roads, five historic buildings, a segment of the Southern Pacific Railroad San Joaquin Valley Mainline, and a NRHP-eligible historic cemetery are within a 1-mile radius of the project area.

A site visit was made to the project area by an EDAW cultural resource specialist in February 2009. Field methods were consistent with the *Secretary of the Interior's Standards and Guidelines for Identification of Cultural Resources* (48CFR 44720-23). Much of the area is developed (residential) and covered in impervious surfaces (concrete). In areas where ground surface was visible, the surveyor closely inspected the soil. In these areas, visibility was obscured by tall grasses and was generally less than 20 percent. No archaeological resources were observed during the survey.

One historic-era residence (2064 N. Union Road) was observed within the project area, near the southwest boundary. A review of the historic 1914 Manteca topographic map did not depict a residence at this location. Manteca Assessor's records indicate that this building was constructed ca. 1920. This residence is a single-story, wood-frame building with a gable roof, exposed rafter tails, decorative brackets, inset porch, and a perimeter foundation. The residence has been modified over the years (e.g., some sash windows changed to aluminum sliders, concrete steps added to porch, doors replaced). The wood-framed detached garage located south of the residence appears to have been altered at some time to function as living space. A small gable roofed shed is located immediately south of the garage. Research did not indicate that this property holds important associations to significant local events or persons. It's vernacular architecture, which has been modified over the years, does not embody distinguishing characteristics or embody the work of a master. This property does not appear eligible for listing, and therefore is not considered a historical resource as defined in CEQA Guidelines Section 15064.5.

Paleontological Resource Assessment Criteria

The potential paleontological importance of the proposed project site can be assessed by identifying the paleontological importance of exposed rock units within the project area. Because the aerial distribution of a rock unit can be easily delineated on a topographic map, this method is conducive to delineating parts of the project site that are of higher and lower sensitivity for paleontological resources and to delineating parts of the project that may require monitoring during construction.

A paleontologically important rock unit is one that: 1) has a high potential paleontological productivity rating, and 2) is known to have produced unique, scientifically important fossils. The potential paleontological productivity rating of a rock unit exposed at the project site refers to the abundance/densities of fossil specimens and/or previously recorded fossil sites in exposures of the unit in and near the project site. Exposures of a specific rock unit at the project site are most likely to yield fossil remains representing particular species in quantities or densities similar to those previously recorded from the unit in and near the project site.

An individual vertebrate fossil specimen may be considered unique or significant if it is identifiable and well preserved, and it meets one of the following criteria:

- a type specimen (i.e., the individual from which a species or subspecies has been described);
- a member of a rare species;
- a species that is part of a diverse assemblage (i.e., a site where more than one fossil has been discovered) wherein other species are also identifiable, and important information regarding life history of individuals can be drawn;
- a skeletal element different from, or a specimen more complete than, those now available for its species; or

- a complete specimen (i.e., all or substantially all of the entire skeleton is present).

For example, identifiable vertebrate marine and terrestrial fossils are generally considered scientifically important because they are relatively rare. The value or importance of different fossil groups varies, depending on the age and depositional environment of the rock unit that contains the fossils, their rarity, the extent to which they have already been identified and documented, and the ability to recover similar materials under more controlled conditions such as part of a research project. Marine invertebrates are generally common, well developed, and well documented. They would generally not be considered a unique paleontological resource.

The following tasks were completed to establish the paleontological importance of each rock unit exposed at or near the project site:

- The potential paleontological productivity of each rock unit was assessed, based on the density of fossil remains previously documented within the rock unit.

- The potential for a rock unit exposed at the project site to contain a unique paleontological resource was considered.

Paleontological Resource Inventory and Assessment by Rock Unit

Remains of land mammals have been found in the project region at various localities in alluvial deposits referable to the Modesto Formation (see Section 3.6.2, “Geology and Soils” for a discussion of project area soil formations). Jefferson (1991a, 1991b) compiled a database of California late Pleistocene vertebrate fossils from published records, technical reports, unpublished manuscripts, information from colleagues, and inspection of museum paleontological collections at more than 40 public and private institutions. He listed a number of sites in San Joaquin County that have yielded Rancholabrean vertebrate fossils that could be referable to the Modesto Formation. Jefferson’s information corresponds with the records in the University of California Museum of Paleontology (UCMP) database for San Joaquin County, presented below.

The closest identified vertebrate fossils to the project area are located approximately 3 miles northeast, at Littlejohns Creek (UCMP V-5107). This site yielded 7 specimens from Rancholabrean-age Columbian mammoth, horse, and an unidentified carnivore from sediments of the Modesto Formation. Approximately 2 miles west of the project site, remains a Pleistocene mammal were encountered in sediments of the Modesto Formation during construction activities associated with the River Islands project. Approximately 9 miles north of the project site, in Stockton, locality V-4822 yielded a Rancholabrean-age horse specimen. Hay (1927) reported remains of camel, horse, and mammoth at another site in Stockton.

UCMP localities V-66150, V-3315, V-4809, V-4810, V-4808, V4819, and V-4807, along the Delta Mendota Canal west of Tracy (approximately 20 miles southwest of the project site), yielded numerous specimens from bison, mammoth, ground sloth, horse, and gopher. In the same area, the Wagner’s Aqueduct site, V-70122, yielded 3 specimens from the class Osteichthyes (bony fishes). Localities V-4804 and V-4867 from the Reiche Gravel Pit, west of the Delta Mendota Canal, yielded three specimens of horse and mammoth remains. Locality V-66150 at the Tracy Gravel Pit yielded a specimen of Jefferson’s ground sloth, while locality V-3315 at the Hetch Hetchy Tunnel yielded remains from a Rancholabrean-age camel. Finally, a site along Cometa Road, approximately 20 miles east of the project site (V-5039) yielded 2 Pleistocene horse specimens.

Specimens from sediments referable to the Modesto Formation have been reported at other locations throughout the Central Valley (UCMP 2009). The Tranquility site in Fresno County (UCMP V-4401), for example, has yielded more than 130 Rancholabrean-age fossils of fish, turtles, snakes, birds, moles, gophers, mice, wood rats, voles, jack rabbits, coyote, red fox, grey fox, badger, horse, camel, pronghorn antelope, elk, deer, and bison from sediments referable to the Modesto Formation.

Results of a paleontological record search at the UC Berkeley Museum of Paleontology indicated no fossil remains at the project site. However, the widespread occurrence of Pleistocene vertebrate fossil remains in sediments referable to the Modesto Formation throughout the Sacramento and San Joaquin Valleys, suggests there is a potential for uncovering additional similar fossil remains during construction-related earthmoving activities within the Modesto Formation.

3.11.2 DISCUSSION

a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?

No impact. No previously recorded historical resources (i.e., NRHP / CRHR eligible) were noted by the CCIC as being located within the project area. No resources considered historical, as defined by CEQA, were identified during the cultural resources survey. SHPO provided a letter concurring with the findings of this report in a letter dated December 9, 2009 (see Appendix B). Therefore, no impact to existing historic resources would occur under all alternatives.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?

Less than significant with mitigation incorporated. No known archaeological sites have been documented within the project area. However, the potential exists to encounter previously undiscovered cultural material during project-related ground disturbing activities. Because these activities could disturb previously unknown, buried, and important cultural resources, this would be a potentially adverse effect / significant impact. Implementation of the following mitigation measure would reduce the project's potential for the disturbance of buried important cultural resources to a less-than-significant level under the Preferred Alternative, Alternative 1, and Alternative 2.

No impact. No construction activity would occur under the No Action Alternative. Therefore, no impact to significant archaeological resources would occur.

Mitigation Measure Cul-1

If an inadvertent discovery of cultural materials (e.g., unusual amounts of shell, animal bone, glass, ceramics, etc.) is made during project-related ground disturbing activities, any ground disturbances in the area of the find will be halted and a qualified professional archaeologist will be notified regarding the discovery. The archaeologist will determine whether the resource is potentially significant per the NRHP / CRHR and develop appropriate mitigation. Mitigation may include, but not necessarily be limited to, in-field documentation, archival research, archaeological testing, data recovery excavations or recordation.

c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Less-than-significant impact. The project site is underlain by Pleistocene-age sediments of the Modesto Formation. As discussed in detail above in the section titled "Paleontological Resource Inventory and Assessment by Rock Unit," numerous vertebrate fossil specimens have been recorded from the Modesto Formation throughout the San Joaquin Valley. The Modesto Formation is considered a paleontologically sensitive rock unit under Society of Vertebrate Paleontology guidelines (1995). However, the proposed pipelines would be installed within road right-of-ways. Earth-moving activities associated with the initial construction of these roadways would have destroyed any fossil remains at the time the roadways were constructed, if any fossil remains were present. Therefore, the potential for damage to unique paleontological resources during earthmoving activities for either the Preferred Alternative or Alternative 1 is considered a less-than-significant impact. Similarly, under

Alternative 2, previous construction activities at the well sites would have destroyed any fossil remains, if present. Therefore, the potential for damage to unique paleontological resources during earthmoving activities under Alternative 2 is considered a less-than-significant impact.

No impact. No construction activity would occur under the No Action Alternative. Therefore, no impact to unique paleontological resources would occur.

d) Disturb any human remains, including those interred outside of formal cemeteries?

Less than significant with mitigation incorporated. Based on documentary research, no evidence suggests that any prehistoric or historic-era marked or un-marked human interments are present within or in the immediate vicinity of the project area. However, there is a possibility that unmarked, previously unknown Native American graves could be present within the project area. Potential disturbance of previously undiscovered human remains during project ground disturbing activities would be a potentially significant impact. Implementation of the following mitigation measure would reduce the project's potential for disturbance of human remains to a less-than-significant level under the Preferred Alternative, Alternative 1, and Alternative 2.

No impact. No construction activity would occur under the No Action Alternative. Therefore, no impact to human remains would occur.

Mitigation Measure Cul-2

In accordance with the California Health and Safety Code, if human remains are uncovered during ground-disturbing activities, the City's contractor will immediately halt potentially damaging excavation in the area of the burial and notify the County Coroner and a professional archaeologist to determine the nature of the remains. The coroner is required to examine all discoveries of human remains within 48 hours of receiving notice of a discovery on private or state lands (Health and Safety Code Section 7050.5[b]). If the coroner determines that the remains are those of a Native American, he or she must contact the Native American Heritage Commission by phone within 24 hours of making that determination (Health and Safety Code Section 7050[c]). Following the coroner's findings, the archaeologist, and the NAHC designated Most Likely Descendent (MLD) will determine the ultimate treatment and disposition of the remains and take appropriate steps to ensure that additional human interments are not disturbed. The responsibilities for acting upon notification of a discovery of Native American human remains are identified in California Public Resources Code Section 5097.9.

California law recognizes the need to protect Native American human burials, skeletal remains, and items associated with Native American burials from vandalism and inadvertent destruction. The procedures for the treatment of Native American human remains are contained in California Health and Safety Code §7050.5 and §7052 and California Public Resources Code §5097.

3.12 WILD AND SCENIC RIVERS

The Wild and Scenic Rivers Act does not apply to this project. No such rivers occur within or near the proposed project site. This issue will not be discussed further in this environmental document.

3.13 ENDANGERED SPECIES

Please refer to Section 3.6.1, "Biological Resources," for a discussion endangered species impacts.

3.14 FLOODPLAIN MANAGEMENT AND PROTECTION OF WETLANDS

Please refer to Section 3.2, "Hydrology and Water Quality," and Section 3.6.1, "Biological Resources" for a discussion of floodplain and wetland impacts, respectively.

3.15 FARMLAND PROTECTION

	ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
II.	**Agricultural Resources.**				
	In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997, as updated) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland.				
	Would the project:				
	a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
	b) Conflict with existing zoning for agricultural use or a Williamson Act contract?	☐	☐	☐	☒
	c) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland to non-agricultural use?	☐	☐	☐	☒

3.15.1 ENVIRONMENTAL SETTING

The State of California Department of Conservation, under the Farmland Mapping and Monitoring Program (FMMP), delineates farmland into several categories. Mapping is conducted on a county-wide scale in 10-acre units. Although the proposed action would occur within existing street rights-of-way and an existing bike path alignment, farmland categories are present to the north of the project area. Land to the north of Lathrop Road contains Prime Farmland, Farmland of Statewide Importance, and Semi Agricultural and Rural Commercial Land. The remainder of the project area contains Urban and Built-Up Land (Department of Conservation 2009).

3.15.2 DISCUSSION

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

No impact. None of the project alternatives would be constructed within areas designated as prime, unique, or farmland of Statewide importance. Therefore, no impact would occur under all alternatives.

b) Conflict with existing zoning for agricultural use or a Williamson Act contract?

No impact. The project area does not contain land that is subject to a Williamson Act contract and none of the alternatives would conflict with existing zoning. Therefore, no impact would occur under all alternatives.

c) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland to non-agricultural use?

No impact. The proposed action is a water quality improvement project and does not involve any activities that would result in the conversion of important farmland. Therefore, no impacts would occur under all alternatives.

3.16 COASTAL BARRIER RESOURCES

The project area is approximately 50 miles inland from the California coast. No coastal barrier resources would be affected by the project and this issue is not discussed further in this environmental document.

3.17 OTHER ENVIRONMENTAL ISSUES

3.17.1 HAZARDS AND HAZARDOUS MATERIALS

	ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
VII.	**Hazards and Hazardous Materials. Would the project:**				
a)	Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☒ (Preferred, Alt 1, Alt 2)	☐	☒ (No Action)
b)	Create a significant hazard to the public or the environment through reasonably foreseeable upset and/or accident conditions involving the release of hazardous materials into the environment?	☐	☒ (Preferred, Alt 1, Alt 2)	☐	☒ (No Action)
c)	Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☒ (Preferred, Alt 1, Alt 2)	☒ (No Action)
d)	Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e)	For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f)	For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g)	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☒ (Preferred, Alt 1)	☐	☒ (Alt 2, No Action)
h)	Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☒

3.17.1.1 ENVIRONMENTAL SETTING

As stated in the Manteca General Plan, Draft Environmental Impact Report, no sites within Manteca have been classified as a confirmed hazardous materials site, also known as a CalSite or State Superfund site (City of Manteca 2003a: 9-2).

Within the project area, eleven sites were identified by the EPA that handle materials designated as hazardous waste (EPA 2009). Hazardous waste is any by-product of society that can pose a substantial or potential hazard to human health or the environment when improperly managed. These sites consist of retail stores, cleaners, automobile maintenance shops, and a health center, none of which were reported for toxic waste releases (EPA 2009).

There are several sensitive land uses in the vicinity of this project area, including:

- Lions-N-Lambs Preschool, located at 815 West Lathrop Road;
- East Union High, located at 1700 North Union Road;
- Neil Hafley School, located at 849 Northgate Drive;
- United Lutheran Preschool, located at 649 Northgate Drive;
- Headstart Child Development Center, located at 955 West Center Street #1;
- Always Friends Preschool, located at 907 Davis Drive; and
- Sequoia Annex Preschool, located at 737 West Yosemite Avenue.

3.17.1.2 DISCUSSION

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Less than significant with mitigation incorporated. Construction of the proposed action under the Preferred Alternative, Alternative 1, and Alternative 2 would involve the routine transport and handling of hazardous substances such as diesel fuels and lubricants. Handling and transport of these materials could result in the exposure of workers to hazardous materials. Therefore, this impact would be significant. However, implementation of Mitigation Measure Hydro-1, requiring preparation of a SWPPP and implementation of BMPs, would reduce this impact to a less-than-significant level.

In addition, various state agencies regulate hazardous materials, including the California Environmental Protection Agency and the Governor's Office of Emergency Services. The California Highway Patrol and California Department of Transportation (Caltrans) enforce regulations for hazardous materials transport. Within the California Environmental Protection Agency, the California Department of Toxic Substances Control has primary regulatory authority for enforcing hazardous materials regulations. State hazardous waste regulations are contained primarily in Title 22 of the California Code of Regulations. The California Occupational Health and Safety Administration has developed rules and regulations regarding worker safety around hazardous and toxic substances. Compliance with these regulations would further minimize the potential for adverse impacts to occur related to the routine transport, use, and disposal of hazardous materials. Such compliance combined with implementation of Mitigation Measure Hydro-1, would reduce this impact to a less-than-significant level.

No impact. No construction activity would occur under the No Action Alternative. Therefore, no impact would occur.

b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and/or accident conditions involving the release of hazardous materials into the environment?

Less than significant with mitigation incorporated. During construction of the proposed action under the Preferred Alternative, Alternative 1, and Alternative 2, hazardous materials such as fuels and lubricants would be used to operate construction equipment such as backhoes, loaders, excavators, and compaction machines. Fuels and lubricants have the potential to be released into the environment at the project site, causing environmental and/or human exposure to these hazards. This impact would be potentially significant. Implementation of

Mitigation Measure Hydro-1, described above, and Mitigation Measure Haz-1 would reduce this impact to a less-than-significant level.

No impact. No construction activity would occur under the No Action Alternative. Therefore, no impact would occur.

Mitigation Measure Haz-1

Before the commencement of project construction, the City or its contractor will:

- ensure that any employee handling hazardous materials is trained in the safe handling and storage of hazardous materials and trained to follow all applicable regulations with regard to such hazardous materials, and
- identify staging areas where hazardous materials will be stored during construction in accordance with applicable state and federal regulations.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

Less-than-significant impact. As described in the environmental setting above, the proposed alternatives all would be located within close proximity to existing schools. Mitigation Measures Hydro-1 and Haz-1 would ensure the safe handling and use of hazardous materials during project construction. Therefore, implementation of the proposed action, including construction activities, would not pose a hazard to students attending the above schools. This impact would be less than significant.

No impact. No construction activity would occur under the No Action Alternative. Therefore, no impact would occur.

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code §65962.5 and, as a result, would it create a significant hazard to the public or the environment?

No Impact. The project area is not identified by EPA as a hazardous materials site (EPA 2009). Thus, the proposed project would not create a significant hazard to the public or to the environment as a result of existing hazardous material contamination. Therefore, no impact would occur under all alternatives.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?

No impact. The project area is not located within an airport land use plan or within 2 miles of a public airport or public use airport. The nearest airport is the Stockton Metropolitan Airport, located approximately 4.5 miles from the project area. Therefore, no impact would occur under all alternatives.

f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

No impact. No private airstrips occur within or near the project area. The closest air transport facility is the Stockton Metropolitan Airport, located approximately 4.5 miles from the project area. Therefore, no impact would occur under all alternatives.

g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Less than significant with mitigation incorporated. The proposed action would be located in the Manteca Fire Department (MFD) service area. The MFD provides public fire education, fire prevention, organized and efficient response times to fires, first response to hazardous materials incidents, and basic level "first responder" medical response. The MFD responds to emergencies and calls for service from three fire stations located within the city limits.

Construction activities associated with the Preferred Alternative or Alternative 1 would temporarily cause delays on local roadways and could interfere with emergency response abilities of local emergency responders. Therefore, this is considered a potentially significant impact. Implementation of the Mitigation Measure Traffic-1, requiring the preparation and implementation of a Construction Management Plan would reduce or eliminate potential emergency response impacts to a less-than-significant level.

No impact. Under Alternative 2, construction of pipelines would not occur. Wellhead treatment facilities would be constructed within the existing developed footprint of the pump houses and partial lane closure or traffic delays would occur. No construction activity would occur under the No Action Alternative. Therefore, there would be no impact to an adopted emergency response plan under Alternative 2 and the No Action Alternative.

h) Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

No impact. Land uses in the project area, consist of single-family residences and commercial land uses. The project area is not designated as a high wildfire risk area. No undeveloped open space areas would undergo substantial construction activities such that they may be at risk of wildland fires. Therefore, no impacts would occur under all alternatives.

3.17.2 NOISE

	ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
XI.	**Noise. Would the project result in:**				
	a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or in other applicable local, state, or federal standards?	☐	☐	☒ (Preferred, Alt 1, Alt 2)	☒ (No Action)
	b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒ (Preferred, Alt 1, Alt 2)	☒ (No Action)
	c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒ (Preferred, Alt 1, Alt 2)	☒ (No Action)
	d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒ (Preferred, Alt 1, Alt 2)	☒ (No Action)
	e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
	f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

3.17.2.1 ENVIRONMENTAL SETTING

Acoustics is the scientific study that evaluates perception, propagation, absorption, and reflection of sound waves. Sound is a mechanical form of radiant energy, transmitted by a pressure wave through a solid, liquid or gaseous medium. Sound that is loud, disagreeable, unexpected, or unwanted is generally defined as noise; consequently, the perception of sound is subjective in nature, and can vary substantially from person to person.

A sound wave is initiated in a medium by a vibrating object (e.g., vocal chords, the string of a guitar or the diaphragm of a radio speaker). The wave consists of minute variations in pressure, oscillating above and below the ambient atmospheric pressure. The number of pressure variation cycles occurring per second is referred to as the frequency of the sound wave and is expressed in hertz.

Directly measuring sound pressure fluctuations would require the use of a very large and cumbersome range of numbers. To avoid this and have a more useable numbering system, the decibel scale was introduced. A sound level expressed in decibels is the logarithmic ratio of two like pressure quantities, with one pressure quantity being a reference sound pressure. For sound pressure in air the standard reference quantity is generally considered to be 20 micropascals (µPa), which directly corresponds to the threshold of human hearing. The use of the decibel is a convenient way to handle the million-fold range of sound pressures to which the human ear is sensitive too. A decibel is logarithmic; as such it does not follow normal algebraic methods and cannot be directly added. For example, a 65 decibel (dB) source of sound, such as a truck, when joined by another 65 dB source results in a

sound amplitude of 68 dB, not 130 dB (i.e., doubling the source strength increases the sound pressure by 3 dB). A sound level increase of 10 dB corresponds to 10 times the acoustical energy, and an increase of 20 dB equates to a 100 fold increase in acoustical energy.

The loudness of sound preserved by the human ear is dependent primarily on the overall sound pressure level and frequency content of the sound source. The human ear is not equally sensitive to loudness at all frequencies in the audible spectrum. To better relate overall sound levels and loudness to human perception, frequency-dependent weighting networks were developed. The standard weighting networks are identified as A through E. There is a strong correlation between the way humans perceive sound and A-weighted sound levels, (abbreviated dBA). For this reason the dBA can be used to predict community response to environmental, and transportation noise. Sound levels expressed as dB in this section are A-weighted sound levels, unless noted otherwise.

Noise can be generated by a number of sources, including mobile sources (transportation noise sources), such as automobiles, trucks and airplanes; and stationary sources (non-transportation noise sources), such as construction sites, machinery, commercial and industrial operations. As acoustic energy spreads through the atmosphere from the source to the receiver, noise levels attenuate (decrease) dependent on ground absorption characteristics, atmospheric conditions, and the presence of physical barriers (walls, building facades, berms). Noise generated from mobile sources generally attenuate at a rate of 4.5 dB per doubling of distance (dB/DD). Stationary noise sources spread with more spherical dispersion patterns which attenuate at a rate of 6 dB to 7.5 dB/DD.

Atmospheric conditions such as wind speed, turbulence, temperature gradients, and humidity may additionally alter the propagation of noise, and affect levels at a receiver. Furthermore, the presence of a large object (barrier) between the source and the receptor can provide significant attenuation of noise levels at the receiver. The amount of noise level reduction or “shielding” provided by a barrier is primarily dependent upon the size of the barrier, the location of the barrier in relation to the source and receivers, and the frequency spectra of the noise. Natural barriers such as berms, hills, or dense woods, and manmade features such as buildings and walls may be used as noise barriers.

The intensity of environmental noise changes over time, and several different descriptors of time-averaged noise levels are used. The selection of a proper noise descriptor for a specific source depends on the spatial and temporal distribution, duration, and fluctuation of both the noise source and the environment. The noise descriptors most often used to describe environmental noise are defined below:

- CNEL (Community Noise Equivalent Level): The CNEL is similar to the L_{dn} described above, but with an additional 5 dB “penalty” for the noise-sensitive hours between 7:00 p.m. to 10:00 p.m., which are typically reserved for relaxation, conversation, reading, and television. If using the same 24-hour noise data, the CNEL is typically 0.5 dB higher than the L_{dn}.

- L_{max} (Maximum Noise Level): The highest A/B/C weighted integrated noise level occurring during a specific period of time.

- L_n (Statistical Descriptor): The noise level exceeded n percent of a specific period of time, generally accepted as an hourly statistic. An L_{10} would be the noise level exceeded 10 % of the measurement period.

- L_{eq} (Equivalent Noise Level): The energy mean (average) noise level. The steady state sound level which, in a specified period of time contains the same acoustical energy as a varying sound level over the same time period.

- L_{dn} (Day-Night Noise Level): The 24-hour L_{eq} with a 10 dB “penalty” applied during nighttime noise-sensitive hours, 10:00 p.m. through 7:00 a.m. The L_{dn} attempts to account for the fact that noise during this specific period of time is a potential source of disturbance with respect to normal sleeping hours.

The project area is bounded by Lathrop Road to the north, West North Street to the south, North Union Road to the east, and the Tidewater Bike Path to the west within the City of Manteca. Existing noise-sensitive land uses in the project area include single family residences surrounding the project area, East Union High School and varied places of worship.

The existing noise environment within the project area is primarily influenced by surface-transportation noise emanating from vehicular traffic on the local roadway network, school and Union Pacific Railroad operations to the south of the project area. Intermittent agricultural noise from adjacent agricultural uses to the north also influences the existing noise environment. The dominant noise source in the vicinity of the project site is vehicular traffic on nearby roadways.

City of Manteca General Plan Noise Element

The City of Manteca General Plan Noise Element contains specific goals, and policies for the determination of a proposed projects compatibility with surrounding land uses. The following are goals and policies applicable to the proposed project:

Goals

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.

Policies

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 NOISE-1 of this document).

N-P-5: In accord with the Table 9-2 (Table NOISE-2 of this document) standards, the City shall regulate construction-related noise impacts on adjacent uses.

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 and Table 9-2 (Table NOISE-1 and Table NOISE-2 of this document, respectively).

City of Manteca Municipal Code

The City of Manteca Municipal Code provides specific noise level standards to be applied to new projects in Title 17, Chapter 17.13 Performance Standards. The specific noise level standards applicable to the proposed project are listed below:

The maximum sound pressure level radiated by any use or facility at the points of measurement specified in Section 17.13.030, shall not exceed the computed noise level values specified in Table 3 (Table NOISE-3 of this document), after applying corrections, except that normal household appliances or equipment in use during the hours of seven a.m. to seven p.m. shall not be subject to these regulations. The sound pressure level shall be measured with a sound level meter and associated octave band analyzer meeting the American National Standards Institute's standard S1.4-1971 for Type 1 or Type 2 sound level meters or an instrument and the associated recording and analyzing equipment which will provide equivalent data. The maximum permissible sound pressure levels at the points of measurement specified in Section 17.13.030 of this chapter are shown below in Table 3 (Table NOISE-3 of this document).

Table NOISE-1
Maximum Allowable Noise Exposure Mobile Noise Sources
(TABLE 9-1 OF THE CITY OF MANTECA GENERAL PLAN NOISE ELEMENT)

Land Use [1]	Outdoor Activity Areas [2]	Interior Spaces	
		L_{dn}/CNEL, dB	L_{eq}, dB [3]
Residential	60 [4]	45	
Transient Lodging	60 [4]	45	
Hospitals, Nursing Homes	60 [4]	45	
Theaters, Auditoriums, Music Halls			35
Churches, Music Halls	60 [4]		40
Office Buildings	65		45
Schools, Libraries, Museums			45
Playgrounds, Neighborhood Parks	70		

[1] 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.
[2] 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.
[3] Determined for a typical worst-case hour during periods of use.
[4] 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.
Source: City of Manteca General Plan Noise Element, 2003.

Table NOISE-2
Performance Standards for Stationary Noise Sources or Projects Affected by Stationary Noise Sources [1, 2]
(TABLE 9-2 OF THE CITY OF MANTECA GENERAL PLAN NOISE ELEMENT)

Noise Level Descriptor	Daytime	Nighttime
	7 a.m. to 10 p.m.	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, 2003

Construction activities occurring between the hours of 7 a.m. and 7 p.m. are considered exempt by the City from the standards established in the City's noise ordinance.

Table NOISE-3 Maximum Permissible Sound Pressure Levels (TABLE 3 OF THE CITY OF MANTECA MUNICIPAL CODE)		
Receiving Land Use Category	**Time Period**	**Maximum Exterior Noise Level (dBA)**
Single and Limited Multiple Family	10 p.m. to 7 a.m.	50
	7 a.m. to 10 p.m.	60
Multiple family, Public Institutional and Neighborhood Commercial	10 p.m. to 7 a.m.	55
	7 a.m. to 10 p.m.	60
Medium and Heavy Commercial	10 p.m. to 7 a.m.	60
	7 a.m. to 10 p.m.	65
Light industrial	Anytime	70
Heavy industrial	Anytime	75

Notes: The following corrections are applicable (apply only one correction):
1. Daytime Operation Only (7am – 7 pm): +5 decibels
2. Noise Source Operates Less Than:
   20% of any one-hour period: +5 decibels
   5% of any one-hour period: +10 decibels
   1% of any one-hour period: +15 decibels
3. Noise of Impulsive Character (hammering, etc.): -5 decibels
4. Noise Rising or Falling in Pitch or Volume (hum, screech, etc.): -5 decibels

Source: City of Manteca 1992. Title 17, Zoning Ordinance. Chapter 17.13, Section 17.13.040.

Vibration

No vibration shall be produced which is transmitted through the ground and is discernible without the aid of instruments at the points of measurement specified in Section 17.13.030 of this chapter nor shall any vibration produced exceed 0.002*g* peak at up to fifty CPS (cycles per second) frequency, measured at the point of measurement specified in Section 17.13.030 of this chapter using either seismic or electronic vibration measuring equipment. Vibrations occurring at higher than fifty cps frequency of a periodic vibration shall not induce accelerations exceeding .001*g*. Single impulse periodic vibrations occurring at an average interval greater than five minutes shall not induce accelerations exceeding 0.01*g*.

3.17.2.2 DISCUSSION

a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or in other applicable local, state, or federal standards?

Less-than-significant impact. With respect to long-term operational noise and traffic noise level increases due to the proposed action under all alternatives, there are no new stationary noise sources or a substantial increase in traffic noise levels in excess of standards. Proposed project construction activities under the Preferred Alternative, Alternative 1, and Alternative 2 would occur over a maximum 3-month period. Construction would generally occur in several discrete phases; each phase would require a specific complement of equipment with varying equipment type, quantity, and intensity. These variations in the operational characteristics of the equipment change the effect they have on the noise environment in the project vicinity. The effect of construction noise largely depends on the construction activities being performed on a given day, noise levels generated by those

activities, distances to noise-sensitive receptors, and the existing ambient noise environment at the receptors. Pipeline construction and improvements to existing pump houses, which would involve ground disturbance and material transport, would begin in March/April 2010 and would last 90 days. On-site construction equipment used during site preparation would include backhoes, loaders, excavators and compaction equipment. Table NOISE-4 depicts the noise levels generated by various types of construction equipment.

Table NOISE-4
Construction Equipment Noise Emission Levels

Equipment Type	Typical Noise Level (dB) @ 50 feet
Backhoe	78
Excavator	85
Loader	79
Compactor	83

Note: Assumes all equipment fitted with properly maintained and operational noise control device, per manufacturer specifications.
Source: Bolt, Beranek, and Newman 1981, Federal Transit Administration 2006: 12-6.

As indicated in Table NOISE-4 operational noise levels for project construction activities would range from 78 dB to 85 dB at a distance of 50 feet. Continuous combined noise levels generated by the simultaneous operation of the loudest pieces of equipment would result in noise levels of 88 dB at 50 feet. Accounting for the usage factor of individual pieces of equipment, topographical shielding and ground absorption effects; construction activities on the project site would be expected to result in hourly average noise levels of 83.6 dB L_{eq}, at a distance of 50 feet. Maximum noise levels generated by construction activities are not predicted to exceed 85 dB L_{max} at 50 feet.

The closest noise-sensitive receptors in the project area are the residential land uses located along proposed pipeline alignments, approximately 50 feet from the acoustical center of construction activities. Construction operations and related activities are predicted to generate exterior hourly noise levels of 83.6 dB L_{eq} at the nearest off-site sensitive receptor.

Construction operations that occur during the hours of 7 a.m.-7 p.m. Monday through Friday are exempt from the applicable standards. As described in the project description, all construction activities would occur between the hours of 7. a.m. and 7 p.m., Monday through Friday. Therefore, this impact would be less than significant under the Preferred Alternative, Alternative 1, and Alternative 2.

No impact. No construction activity would occur under the No Action Alternative. Therefore, no impact related to the generation of noise levels in excess of established standards would occur.

b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

Less-than-significant impact. Construction activities associated with the implementation of the proposed action under the Preferred Alternative, Alternative 1, and Alternative 2 could result in varying degrees of temporary ground vibration, depending on the specific construction equipment used and operations involved. Vibration generated by construction equipment spreads through the ground and diminishes in magnitude with increases in distance. While effects of ground vibration may be imperceptible at low levels, they may result in detectable vibrations and slight damage to nearby structures at moderate and high levels, respectively. At the highest levels of vibration, damage to structures is primarily architectural (e.g., loosening and cracking of plaster or stucco coatings) and rarely results in structural damage.

The proposed project would not involve the use of any equipment or processes that would generate potentially-high levels of ground vibration, such as pile drivers and bulldozers. Construction operations associated with the proposed project would be anticipated to include loaders, backhoes, compaction equipment and trucks; no pile driving would occur. Ground vibration generated during construction would be primarily associated with on-site truck activity. Because the temporary construction vibration associated with on-site equipment would not be anticipated to expose sensitive receptors to or generate excessive groundborne vibration or groundborne noise levels, this impact would be considered less than significant for the Preferred Alternative, Alternative 1, and Alternative 2.

No impact. No construction activity would occur under the No Action Alternative. Therefore, no impact related to the generation of groundborne vibration would occur.

c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

Less-than-significant impact. The proposed action involves pipeline construction and improvements to existing pump houses. None of the alternatives would include construction of any new long-term on-site stationary noise sources and would not result in an increase in vehicle miles traveled or off-site operational traffic source noise. Therefore, the proposed action would not result in the exposure of persons to or generation of noise levels in excess of applicable standards or create a substantial permanent increase in ambient noise levels in the project vicinity. As a result, this impact would be less than significant under the Preferred Alternative, Alternative 1, and Alternative 2.

No impact. No construction activity would occur under the No Action Alternative. Therefore, no impact related to a substantial permanent increase in ambient noise levels would occur.

d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Less-than-significant impact. Under the Preferred Alternative, Alternative 1, and Alternative 2 a maximum of approximately 10 workers would commute to the project area per day and it is estimated that four one way truck trips would occur each day for the delivery of materials. These trips would be indistinguishable from the existing traffic and noise levels on project area roadways. Project-related traffic increases would be considered temporary and would not result in a substantial temporary or periodic increase in existing traffic noise levels in the proposed project vicinity. Therefore, this would be a less-than-significant impact under the Preferred Alternative, Alternative 1, and Alternative 2.

No impact. No construction activity would occur under the No Action Alternative. Therefore, no impact related to a temporary increase in ambient noise levels would occur.

e) and f) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels? For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

No impact. The project area is not located within 2 miles of an airport land use plan or in the vicinity of a public or private airport. Thus, the proposed action would not be anticipated to result in the exposure of people residing or working in the project area to excessive noise levels due to airports. As a result, the proposed project would have no impact with regard to airport noise.

3.17.3 PUBLIC SERVICES

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XIII. Public Services. Would the project:				
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:				
Fire protection?	☐	☐	☐	☒
Police protection?	☐	☐	☐	☒
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other public facilities?	☐	☐	☒ (Alt 1)	☒ (Preferred, Alt 2, No Action)

3.17.3.1 ENVIRONMENTAL SETTING

The MFD provides fire services to the City of Manteca. The MFD has three fire stations with apparatus that includes: three engines, three reserve engines, one medium rescue unit, one Urban Search and Rescue (USAR) rescue trailer and 1 ladder truck (Manteca Fire Department, 2009). The department has 42 career personnel and 40 reserve personnel. The Manteca Fire Department's main functions are to provide fire prevention, organized and efficient response to fires, first response to hazardous materials incidents, basic level "first responder" medical response, and public fire education.

The project site is serviced by the Manteca Police Department (MPD). The MPD is a full service municipal law enforcement agency. The Patrol Division is commanded by the Operations Captain who administers the Patrol Division through six uniformed sergeants supervising the 31 officers and Community Service Officers (CSOs) assigned to patrol in the 24 hour a day 7 days a week operation (Manteca Police Department 2009).

The project site falls within the boundaries of Manteca Unified School District. There are twenty-one elementary schools, nine high schools and various other educational facilities within the district (Manteca Unified School District 2009). The Preferred Alternative and Alternative 1 are located one-quarter mile from Headstart Child Development Center, located at 955 West Center Street #1. The Preferred Alternative is located less than ¼ mile from Lions N Lambs Preschool, located at 815 West Lathrop Road, and East Union High, located at 1700 North Union Road.

As described in Section 3.14 "Recreation", the City of Manteca's Parks and Recreation Department maintains the parks within the City of Manteca. The Department oversees 275 acres of Neighborhood and Community Parks, Tidewater Bike Way, Skate Park, and the Senior Center. The Parks and Recreation Department also supervises

the operations of the 18-Hole Municipal Golf Course, and Library services (City of Manteca, Parks and Recreation Department 2009).

The City of Manteca maintains a bicycle route system within the central core of the City. The Tidewater bike path, a 3.4 mile Class I bike and pedestrian path, is the crux of that system. A Class I bike path provides a completely separate right-of-way and is designated for the exclusive use of bicycles and pedestrians with vehicle and pedestrian cross-flow minimized (City of Manteca 2003: 22). The Tidewater bike path was constructed with funds from Measure K, a sales tax initiative, passed on November 6, 1990.

3.17.3.2 DISCUSSION

a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:

Fire protection?

No impact. The proposed action under all alternatives would not directly or indirectly increase the population of Manteca. The proposed action would not result in the need to extend the service area of the fire department or require additional fire protection facilities to be constructed because no new facilities, residences, or employment centers would be constructed. Therefore, there would be no impact on fire protection under all alternatives.

Police protection?

No impact. With implementation of the proposed action the project area would continue to be served by the City of Manteca Police Department. The proposed action under all alternatives would not result in the need to increase police protection services or require additional police facilities to be constructed because no new facilities, residences, or employment centers would be constructed. Therefore, there would be no impact on police protection under all alternatives.

Schools?

No impact. The proposed action under all alternatives does not include the construction of residential housing; therefore, no increase in demand for school services is anticipated as a result of this action. Therefore, there would be no impact on schools under all alternatives.

Parks?

No impact. The proposed action under all alternatives does not include residential housing that would increase demand for park facilities. Therefore, no impact on parks is anticipated under all alternatives.

Other public facilities?

Less-than-significant impact. While Alternative 1 would temporarily interfere with the use of the Tidewater bike path during construction, alternative routes would be available and access to the bike path would be restored once the project is complete. Therefore, this would be a less-than-significant impact.

No impact. No impacts to other public facilities would occur under the Preferred Alternative, Alternative 2, and the No Action Alternative because no existing bike paths would be affected under these alternatives. No impact would occur under these alternatives.

3.17.4 RECREATION

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
XIV. Recreation. Would the project:				
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	☐	☐	☐	☒

3.17.4.1 ENVIRONMENTAL SETTING

The City of Manteca's Parks and Recreation Department maintains the parks within the City of Manteca. The Department oversees 275 acres of Neighborhood and Community Parks, the Tidewater bike path, a skate park, and the Senior Center. The Parks and Recreation Department also supervises the operations of the 18-Hole Municipal Golf Course and Library services (City of Manteca, Parks and Recreation Department 2009).

The City of Manteca maintains a bicycle route system within the central core of the City. The Tidewater bike path, a 3.4 mile Class I bike and pedestrian path, is the crux of that system. A Class I bike path provides a completely separate right-of-way and is designated for the exclusive use of bicycles and pedestrians with vehicle and pedestrian cross-flow minimized (City of Manteca 2003:22). The Tidewater bike path was constructed with funds from Measure K, a sales tax initiative, passed on November 6, 1990.

3.17.4.2 DISCUSSION

a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

No impact. The proposed action does not include the construction residential housing, and would not result in an increase in demand for park facilities. Therefore, no impact would occur under all alternatives.

b) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?

No Impact. The proposed project does not include plans for creating new recreational facilities nor would it result in the need to expand existing facilities in the City of Manteca. Therefore, no impact would occur under all alternatives.

3.17.5 AIRPORT HAZARDS

The project is located approximately 4.5 mile from the Stockton Metropolitan Airport. No airport-related hazards will affect the project area. No mitigation is required.

3.17.6 ENVIRONMENTAL JUSTICE

This section addresses Executive Order No. 12898 of February 11, 1994 (A Federal Actions to Address Environmental Justice in Minority and Low-Income Populations). Executive Order No 12898 requires that "each federal agency make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health effects of its programs, policies, and activities on minority populations and low-income populations." Council on Environmental Quality (CEQ) guidance also requires the evaluation of a project's socioeconomic effects on low-income and minority communities.

In a memorandum to heads of departments and agencies that accompanied Executive Order 12898, the President states that, "each federal agency shall analyze the environmental effects on minority communities and low-income communities, when such analysis is required by National Environmental Quality Act (NEPA)."

3.17.6.1 COMMUNITY DEMOGRAPHICS

The City of Manteca has a total population of approximately 66,451 (City of Manteca 2009). According to the 2000 U.S. Census the population of Manteca is broken down as follows: 74.2% are white; 2.9% are African American; 1.3% are Native American; 3.5% are Asian; .4% are native Hawaiian or other Pacific Islander; 11% are some other race; and 6.2% are mixed (U.S. Census Bureau 2000). The current labor force is approximately 28,400 (City of Manteca 2009). Unemployment was at 5.1% in 2000, but rose to 9% in 2008 as a result of the recent downturn in the economy (EDD 2009a). Additionally, the unemployment rate for San Joaquin County as a whole, in February 2009 was 15.8% (EDD 2009b). The median household income for the City of Manteca is $46,677 (City of Manteca 2009). 901 families in Manteca live below the poverty line (U.S. Census Bureau 2000).

3.17.6.2 ENVIRONMENTAL JUSTICE IMPACTS

The purpose of this project is to reduce arsenic concentrations at City wells 12, 15, and 22. In order to do this, a pipeline would be constructed and equipment would be installed that would enable surface water and groundwater to blend and generate an arsenic compliant product. This project is needed to reduce the arsenic concentrations in order to achieve the EPA's water quality standard MCL of 10 ppb. All proposed pipelines would be located below ground and would not change or otherwise alter the built environment once completed. Further, the project would benefit all communities within the City of Manteca including minority and low-income communities.

Therefore, the project would not have a disproportionate adverse impact on low-income or minority residents of the project area.

3.17.7 UNIQUE NATURAL FEATURES AND AREAS

Unique natural features of the project area are discussed in Section 3.6.2, "Geology and Soils."

3.17.8 SOLE SOURCE AQUIFER

Groundwater resources are discussed in Section 3.2, "Hydrology and Water Quality."

3.17.9 SITE ACCESS AND COMPATIBILITY

Site access and land use compatibility are discussed in Section 3.5, "Transportation/Traffic" and Section 3.4, "Land Use/Planning" respectively.

3.17.10 IRREVERSIBLE/IRRETRIEVABLE COMMITMENTS OF RESOURCES

Construction of the proposed action would consume a variety of natural resources including concrete, fuels, and construction materials (e.g., lumber, steel). The proposed action would be constructed within existing City right-of-ways. All proposed pipelines would be located below ground and would not change or otherwise alter the built environment once completed. As stated in 4.9 Energy Issues, with implementation of the proposed action, the project would not require additional energy than what is currently used to distribute water throughout the City. However, some energy would be required to manufacture, deliver, and construct the proposed action. The use of non-renewable energy sources such as petroleum products is considered an irreversible, irretrievable commitment of natural resources. This commitment would be short-term and the use of these resources would be minimal. This would be considered a less-than-significant impact.

3.18 INVASIVE SPECIES

Invasive species are discussed in Section 3.6.1, “Biological Resources.”

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4 CUMULATIVE IMPACTS

4.1 INTRODUCTION

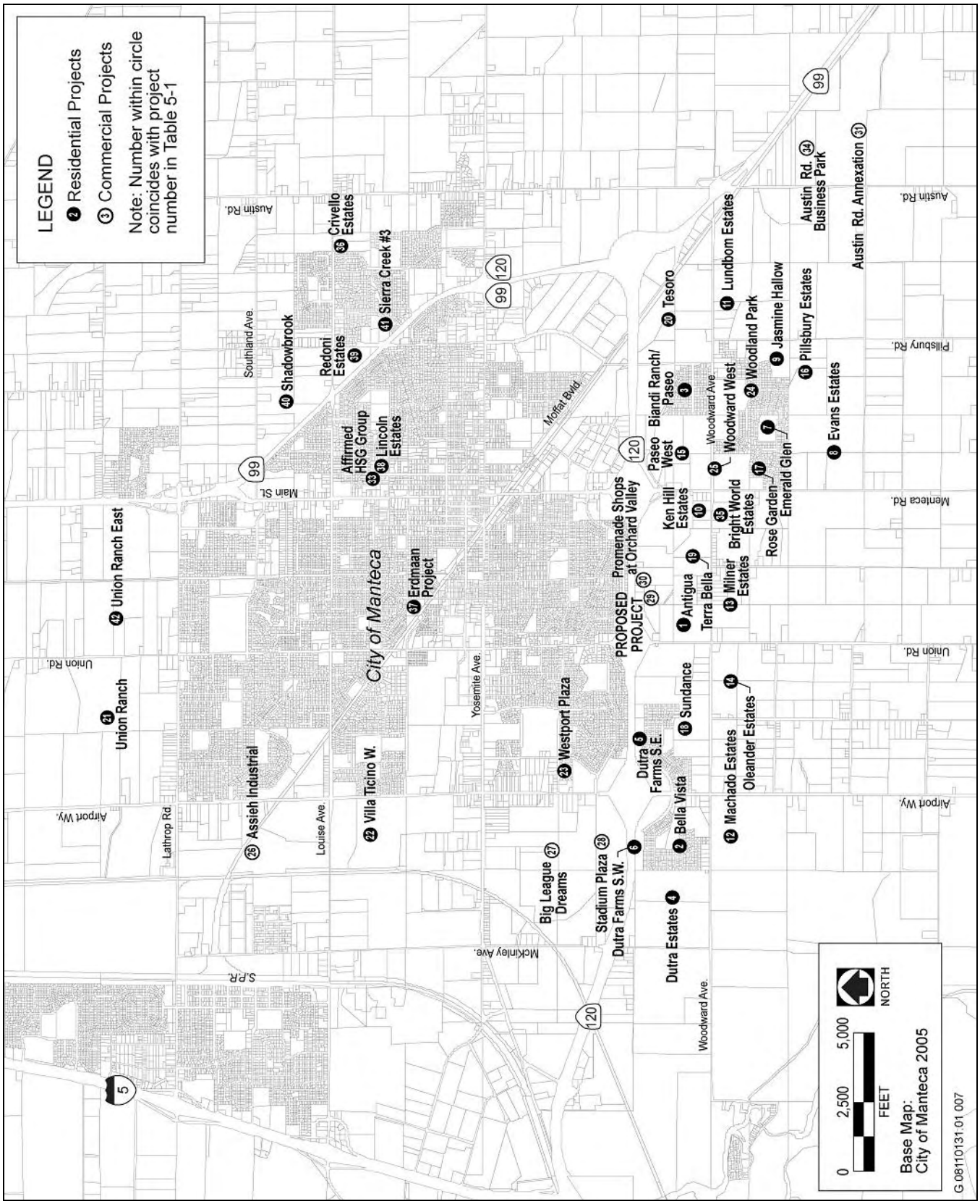
Consistent with the requirements of NEPA and CEQA, this section provides an analysis of overall cumulative impacts of the project taken together with other past, present, and probable future projects producing related impacts. Cumulative impacts are defined in State CEQA Guidelines Section 15355 as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." A cumulative impact occurs from "the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time" (State CEQA Guidelines Section 15355[b]).

4.2 PROJECTS CONTRIBUTING TO POTENTIAL CUMULATIVE IMPACTS

The list of past, present, and probable future projects used for this cumulative analysis is restricted to those projects that have occurred or are planned to occur within the city. For the purposes of this discussion, the projects that may have a cumulative effect on the resources in the project area will often be referred to as the "related projects." Related projects are identified in Exhibit 4-1 and Table 4-1; the numbering corresponds to the numbers used in the exhibit and table.

4.3 CUMULATIVE IMPACTS

The proposed action is the implementation of a water quality improvement project that would result in the construction of pipelines below ground and some minor above ground mixing and treatment facilities depending on the alternative selected. The proposed action is essentially a construction project in that once constructed, the project would not result in any operational impacts (i.e., no new employees, no stationary sources of emissions, no new facilities requiring maintenance). Impacts primarily center around construction-related air quality, traffic disruption, and erosion. Cumulative projects in the area have the potential to cumulatively combine with the construction-related impacts of the project. While cumulative project may result in significant impacts, the project's construction impacts have been reduced to less-than-significant level with implementation of mitigation (see Mitigation Measures Traffic-1, Cul-1, Cul-2, Haz-1, Hydro-1, AQ-1). Further, project impact would be short-term and would cease once the project is implemented. Therefore, the project would not result in a considerable contribution to any significant cumulative impacts.



Source: City of Manteca Community Development Department 2008; EDAW 2009

Location of Related Cumulative Projects **Exhibit 4-1**

Table 4-1
Related Cumulative Projects in the City of Manteca

Project No. in Exhibit 4-1	Project Name	Status	Acreage	Proposed Residential Units/(Acreage)
1	Antigua	Under construction	36	120
2	Bella Vista	Under construction	67	262
3	Bianchi Ranch / Paseo	Built	105	454
4	Dutra Estates	Under construction	77	423
5	Dutra Farms S.E.	Built	105	272
6	Dutra Farms S.W.	Built	61	194
7	Emerald Glen	Built	39	78
8	Evans Estates	In review	159	586
9	Jasmine Hollow	Under construction	61	245
10	Ken Hill Estates	Approved / Not yet building	5	12
11	Lundbom Estates	In review	5	21
12	Machado Estates	In review	160	564
13	Silva/Milner Estates	In review	60	215
14	Oleander Estates	Approved	112	544
15	Paseo West	Under construction	51	191
16	Pillsbury Estates	In review	80	275
17	Rose Garden	Built	48	206
18	Sundance	Approved	110	451
19	Terra Bella	Under construction	42.3	158
20	Tesoro	Under construction	81	492
21	Union Ranch	Under Construction	356	1,922
22	Villa Ticino West	Approved / Not yet building	237	711
23	Westport	Approved / Not yet building	5	24
24	Woodward Park	Built	118	276
25	Woodward West	Built	39	116
26	Assieh Industrial	Under construction	Industrial complex	(79.89)
27	Big League Dreams	Built	Commercial soft ball complex	(45)
28	Stadium Plaza	Under construction	Retail (Kohl's, Old Navy, Chili's etc.)	(54.4)
29	Union Crossing (Proposed Project)	In review	Retail	(65)
30	Promenade Shops at Orchard Valley	In review	Retail	(72)

Table 4-1
Related Cumulative Projects in the City of Manteca

Project No. in Exhibit 4-1	Project Name	Status	Acreage	Proposed Residential Units/(Acreage)
31	Austin Road Business Park	In review	456	3,404
32	Manteca Water Quality Control Facility 2005 Master Plan Treatment Plant and Collection System Expansion*	In review	Public/Quasi Public	(210)
33	Affirmed Hsg Group	Approved	2	1
34	Austin Road Business Park	In review	456	3,404
35	Bright World Estates	In review	5	21
36	Crivello Estates	In review	19	62
37	Erdman Project	Approved	2	8
38	Lincoln Estates	Under construction	4	19
39	Rodoni Estates	Approved	28	99
40	Shadowbrook	Approved	122	497
41	Sierra Creek #3	Approved	34	22
42	Union Ranch East	Under construction	163	294

*This project is not identified on Exhibit 4-1 as improvements would occur throughout the City.
Source: Data provided by the City of Manteca in 2008

5 SUMMARY OF MITIGATION MEASURES

The following mitigation measures will be incorporated into this project:

Mitigation Measure AQ-1: Reduction of Short-Term Emissions of Criteria Air Pollutants and Ozone Precursors Generated by Construction.

The City will implement the following measures to control short-term emissions of criteria air pollutants and ozone precursors generated by project construction:

- The proposed project will comply with SJVAPCD Regulation VIII (Fugitive PM_{10} Prohibitions) and implement all applicable control measures, as required by law. Regulation VIII contains, but is not limited to, the following required control measures:
  - Pre-water site sufficient to limit visible dust emissions (VDE) to 20% opacity.
  - Phase work to reduce the amount of disturbed surface area at any one time.
  - Limit the speed of vehicles traveling on uncontrolled unpaved access/haul roads within construction sites to a maximum of 15 miles per hour.
  - When storing bulk materials, comply with the conditions for a stabilized surface as listed above.
  - When storing bulk materials, cover bulk materials stored outdoors with tarps, plastic, or other suitable material and anchor in such a manner that prevents the cover from being removed by wind action.
  - Load all haul trucks such that the freeboard is not less than 6 inches when material is transported across any paved public access road sufficient to limit VDE to 20% opacity.
  - Apply water to the top of the load sufficient to limit VDE to 20% opacity.
  - Cover haul trucks with a tarp or other suitable cover.
  - Clean the interior of the cargo compartment or cover the cargo compartment before the empty truck leaves the site; and prevent spillage or loss of bulk material from holes or other openings in the cargo compartment's floor, sides, and/or tailgate; and load all haul trucks such that the freeboard is not less than 6 inches when material is transported on any paved public access road, and apply water to the top of the load sufficient to limit VDE to 20% opacity; or cover haul trucks with a tarp or other suitable cover.
  - Owners/operators will remove all visible carryout and trackout at the end of each workday.
  - Cleanup of carryout and trackout will be accomplished by manually sweeping and picking-up; or operating a rotary brush or broom accompanied or preceded by sufficient wetting to limit VDE to 20% opacity; or operating a PM_{10}-efficient street sweeper that has a pick-up efficiency of at least 80%; or flushing with water, if curbs or gutters are not present and where the use of water would not result as a source of trackout material or result in adverse impacts on storm water drainage systems or violate any National Pollutant Discharge Elimination System permit program.

Please note that compliance with Regulation VIII, as stated above, is required by law, but the measures listed here are to provide a comprehensive list of all required and recommended measures.

- The following SJVAPCD-recommended enhanced and additional control measures will be implemented to further reduce fugitive PM_{10} dust emissions beyond compliance with Regulation VIII:
  - Install sandbags or other erosion control measures to prevent silt runoff to public roadways from adjacent project areas with a slope greater than 1%.
  - Suspend excavation and grading activity when winds exceed 20 mph.
  - Limit area subject to excavation, grading, and other construction activity at any one time.

Mitigation Measure Hydro-1:

Before the start of any project construction work, site grading, or excavation, the City or its primary construction contractor will prepare a SWPPP detailing measures to control soil erosion and waste discharges from construction areas and shall submit a notice of intent to the Central Valley RWQCB for stormwater discharges associated with general construction activity. The City will require all contractors conducting construction-related work to implement the SWPPP to control soil erosion and waste discharges of other construction-related contaminants. The general contractor(s) and subcontractor(s) conducting the work will be responsible for constructing or implementing, regularly inspecting, and maintaining the measures in good working order.

The SWPPP will identify the grading and erosion control best management practices (BMPs) and specifications that are necessary to avoid and minimize water quality impacts to the extent practicable. Standard erosion control measures (e.g., management, structural, and vegetative controls) will be implemented for all construction activities that expose soil. Grading operations will be conducted to eliminate direct routes for conveying potentially contaminated runoff. Erosion control barriers such as silt fences and mulching material shall be installed, and disturbed areas will be reseeded with grass or other plants where necessary.

The SWPPP will contain specific measures for stabilizing soils at the construction site before the onset of the winter rainfall season. These standard erosion control measures shall be designed to reduce the potential for soil erosion and sedimentation of drainage channels.

The following specific BMPs are recommended for implementation:

- Conduct all work according to site-specific construction plans that identify areas for clearing, grading, and revegetation so that ground disturbance is minimized.
- Avoid existing vegetation wherever possible and identify vegetation to be retained for habitat maintenance (i.e., as identified through preconstruction biological surveys), cover cleared areas with mulches, install silt fences if needed to control erosion and trap sediment, and reseed cleared areas with native vegetation.
- Stabilize disturbed soils at all construction sites and staging areas before the onset of the winter rainfall season.
- Stabilize and protect stockpiles from exposure to erosion and flooding.
- The SWPPP also shall specify appropriate hazardous materials handling, storage, and spill response practices to reduce the possibility of adverse impacts from use or accidental spills or releases of contaminants. Specific measures applicable to the project include but are not limited to the following:

- Develop and implement strict on-site handling rules to keep construction and maintenance materials out of waterways.

- Conduct refueling and servicing of equipment and vehicles on the land side of the Feather River levee whenever possible. Only conduct refueling and servicing on the water side of the levee under extreme circumstances (e.g., vehicle or equipment breaks down and is not mobile). Leave absorbent material or drip pans underneath to contain spilled fuel during refueling and servicing. Collect any fluid drained from machinery during servicing in leak-proof containers and deliver to an appropriate disposal or recycling facility.

- Prevent oil or other petroleum products, or any other substances that could be hazardous to aquatic life, from contaminating the soil or entering watercourses.

- Maintain spill cleanup equipment in proper working condition. Clean up all spills immediately according to the spill prevention and response plan, and immediately notify DFG and the Central Valley RWQCB of any spills and cleanup procedures.

Mitigation Measure Traffic-1

The City will prepare and implement a Construction Management Plan, which identifies the timing of construction and the timing of elements that would result in the full or partial blockage of local roadways. The plan will specify the measures that would be implemented to minimize traffic-related impacts including construction parking during construction, which will be limited to on-site areas. These measures could include, but are not limited to the following: use of signage notifying travelers that they are entering a construction zone; use of cones, flaggers, and guide-vehicles to direct traffic through the construction zone. A copy of the plan will be submitted to local emergency response agencies and these agencies shall be notified at least 14 days before the commencement of construction that would partially or fully obstruct local roadways.

Mitigation Measure Cul-1

If an inadvertent discovery of cultural materials (e.g., unusual amounts of shell, animal bone, glass, ceramics, etc.) is made during project-related ground disturbing activities, any ground disturbances in the area of the find will be halted and a qualified professional archaeologist shall be notified regarding the discovery. The archaeologist will determine whether the resource is potentially significant per the NRHP / CRHR and develop appropriate mitigation. Mitigation may include, but not necessarily be limited to, in-field documentation, archival research, archaeological testing, data recovery excavations or recordation.

Mitigation Measure Cul-2

In accordance with the California Health and Safety Code, if human remains are uncovered during ground-disturbing activities, the contractor and/or the project proponent will immediately halt potentially damaging excavation in the area of the burial and notify the County Coroner and a professional archaeologist to determine the nature of the remains. The coroner is required to examine all discoveries of human remains within 48 hours of receiving notice of a discovery on private or state lands (Health and Safety Code Section 7050.5[b]). If the coroner determines that the remains are those of a Native American, he or she must contact the Native American Heritage Commission by phone within 24 hours of making that determination (Health and Safety Code Section 7050[c]). Following the coroner's findings, the archaeologist, and the NAHC designated Most Likely Descendent (MLD) shall determine the ultimate treatment and disposition of the remains and take appropriate steps to ensure that additional human interments are not disturbed. The responsibilities for acting upon notification of a discovery of Native American human remains are identified in California Public Resources Code Section 5097.9.

California law recognizes the need to protect Native American human burials, skeletal remains, and items associated with Native American burials from vandalism and inadvertent destruction. The procedures for the treatment of Native American human remains are contained in California Health and Safety Code §7050.5 and §7052 and California Public Resources Code §5097.

Mitigation Measure Haz-1:

Before the commencement of project construction, the City or its contractor will:

- ensure that any employee handling hazardous materials is trained in the safe handling and storage of hazardous materials and trained to follow all applicable regulations with regard to such hazardous materials, and
- identify staging areas where hazardous materials will be stored during construction in accordance with applicable state and federal regulations.

6 PREPARERS

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APPENDIX A

Air Quality Modeling Results

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Urbemis 2007 Version 9.2.4

Detail Report for Annual Construction Unmitigated Emissions (Tons/Year)

File Name: C:\Documents and Settings\weirichj\Desktop\Manteca AQ\manteca is.urb924

Project Name: Manteca IS

Project Location: San Joaquin Valley APCD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

CONSTRUCTION EMISSION ESTIMATES (Annual Tons Per Year, Unmitigated)

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10 Total	PM2.5 Dust	PM2.5 Exhaust	PM2.5 Total	CO2
2009	0.06	0.46	0.32	0.00	0.00	0.03	0.03	0.00	0.02	0.02	49.18
Trenching 09/01/2009-11/30/2009	0.05	0.39	0.29	0.00	0.00	0.02	0.02	0.00	0.02	0.02	42.34
Trenching Off Road Diesel	0.05	0.39	0.22	0.00	0.00	0.02	0.02	0.00	0.02	0.02	36.52
Trenching Worker Trips	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.81
Trenching 12/01/2009-12/15/2009	0.01	0.07	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.84
Trenching Off Road Diesel	0.01	0.07	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.42
Trenching Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.42

Phase Assumptions

Phase: Trenching 9/1/2009 - 11/30/2009 - Main Pipeline Installation

Off-Road Equipment:

2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

2 Plate Compactors (8 hp) operating at a 0.43 load factor for 8 hours per day

3 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 0 hours per day

Phase: Trenching 12/1/2009 - 12/15/2009 - Mixer and Surface Water Pipe Installation

Off-Road Equipment:

1 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Other General Industrial Equipment (238 hp) operating at a 0.51 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 0 hours per day

Page: 1

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Urbemis 2007 Version 9.2.4

Detail Report for Summer Construction Unmitigated Emissions (Pounds/Day)

File Name: C:\Documents and Settings\weirichj\Desktop\Manteca AQ\manteca is.urb924

Project Name: Manteca IS

Project Location: San Joaquin Valley APCD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

CONSTRUCTION EMISSION ESTIMATES (Summer Pounds Per Day, Unmitigated)

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10 Total	PM2.5 Dust	PM2.5 Exhaust	PM2.5 Total	CO2
Time Slice 9/1/2009-11/30/2009 Active Days: 65	1.62	12.05	8.84	**0.00**	**0.01**	0.69	0.70	**0.00**	0.64	0.64	1,302.75
Trenching 09/01/2009-11/30/2009	1.62	12.05	8.84	0.00	0.01	0.69	0.70	0.00	0.64	0.64	1,302.75
Trenching Off Road Diesel	1.55	11.93	6.73	0.00	0.00	0.69	0.69	0.00	0.63	0.63	1,123.83
Trenching Worker Trips	0.07	0.12	2.12	0.00	0.01	0.01	0.01	0.00	0.00	0.01	178.92
Time Slice 12/1/2009-12/15/2009 Active Days: 11	1.45	13.09	5.96	0.00	0.00	0.60	0.60	0.00	0.55	0.55	1,244.23
Trenching 12/01/2009-12/15/2009	1.45	13.09	5.96	0.00	0.00	0.60	0.60	0.00	0.55	0.55	1,244.23
Trenching Off Road Diesel	1.42	13.04	5.05	0.00	0.00	0.59	0.59	0.00	0.55	0.55	1,167.55
Trenching Worker Trips	0.03	0.05	0.91	0.00	0.00	0.00	0.01	0.00	0.00	0.00	76.68

Phase Assumptions

Phase: Trenching 9/1/2009 - 11/30/2009 - Main Pipeline Installation

Off-Road Equipment:

2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

2 Plate Compactors (8 hp) operating at a 0.43 load factor for 8 hours per day

3 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 0 hours per day

Phase: Trenching 12/1/2009 - 12/15/2009 - Mixer and Surface Water Pipe Installation

Off-Road Equipment:

1 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Other General Industrial Equipment (238 hp) operating at a 0.51 load factor for 8 hours per day

Page: 2

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1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 0 hours per day

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APPENDIX B

Cultural Developments Through the Prehistoric,
Ethnographic, and Historic Past

STATE OF CALIFORNIA – THE RESOURCES AGENCY

ARNOLD SCHWARZENEGGER, *Governor*

OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION
P.O. BOX 942896
SACRAMENTO, CA 94296-0001
(916) 653-6624 Fax: (916) 653-9824
calshpo@ohp.parks.ca.gov
www.ohp.parks.ca.gov

December 9, 2009

Reply In Reference To: EPA091112A

Howard Kahan
Environmental Scientist
United States Environmental Protection Agency, Region IX
600 Wilshire Boulevard, Suite 1460
Los Angeles, CA 90017

RE: Section 106 Consultation for Arsenic Dilution Project, City of Manteca, CA

Dear Mr. Kahan:

Thank you for consulting with me pursuant to 36 CFR Part 800, the implementing regulation of Section 106 of the National Historic Preservation Act of 1966 (16 U.S.C. 470f), as amended. On behalf of the Environmental Protection Agency (EPA), you are seeking my concurrence that the above-referenced project will not affect historic resources.

The City of Manteca (City) proposes to use an appropriation from the EPA to fund the installation of a series of pipelines. The lines will connect three existing wells to a storage tank. Surface water from the storage tank will be sent to the wells. The system will allow groundwater to mix with the well water, resulting in lower acceptable arsenic levels in the City's drinking water supply. The City has identified two project alternatives. The first would be constructed along the existing Tidewater bike path and existing roadways. The second and preferred alternative would be constructed entirely within existing roadways. The pipes will be installed at a depth of 3 feet below ground level. In addition to your letter, you have provided me with the following document:

- *Cultural Resources Assessment for the Manteca Arsenic Reduction Project, San Joaquin County, CA* (EDAW: June 2009)

This report includes maps, photographs, evidence of Native American consultation, and the results of a records search conducted at the Central California Information Center. Having reviewed this information, I have the following comments:

1) I concur that the Area of Potential Effects (APE) has been properly determined and documented for both project alternatives pursuant to 36 CFR Parts 800.4 (a)(1) and 800.16 (d);

2) I further concur that the finding of No Historic Properties Affected is appropriate for both alternatives pursuant to 36 CFR Part 800.4(d)(1) and that the documentation supporting this finding has been provided pursuant to 36 CFR Part 800.11(d);

EPA091112A

3) Be advised that under certain circumstances, such as an unanticipated discovery or a change in project description, you may have additional future responsibilities for this undertaking under 36 CFR Part 800.

Thank you for considering historic resources during project planning. If you have any questions or comments, please contact staff historian Tristan Tozer at (916) 653-8920 or email at ttozer@parks.ca.gov.

Sincerely,

Susan K Stratton for

Milford Wayne Donaldson, FAIA
State Historic Preservation Officer

REGIONAL ARCHAEOLOGICAL SETTING

The earliest well-documented entry and spread of humans into California occurred at the beginning of the Paleo Indian Period (10,000–6000 B.C.). Social units are thought to have been small and highly mobile. Known sites have been identified within the contexts of ancient pluvial lake shores and coast lines evidenced by such characteristic hunting implements as fluted projectile points and chipped stone crescent forms. Prehistoric adaptations over the ensuing centuries have been identified in the archaeological record by numerous researchers working in California since the early 1900s, as summarized by Fredrickson (1974) and Moratto (1984).

Beardsley (1948), Lillard (1939), and others conducted numerous studies that form the core of our early understanding of upper Central Valley archaeology. Little has been found archaeologically that dates to the Paleo Indian (10,000–6000 B.C.) or the Lower Archaic time periods; however, archaeologists have recovered a great amount of data from sites occupied by the Middle Archaic period. The lack of sites from earlier periods may be attributable to high sedimentation rates that left the earliest sites deeply buried and inaccessible. During the Middle Archaic Period (3000–1000 B.C.), the broad regional patterns of foraging subsistence strategies gave way to more intensive procurement practices. Subsistence economies were more diversified, possibly including the introduction of acorn-processing technology. Human populations were growing and occupying more diverse settings. Permanent villages that were occupied throughout the year were established, primarily along major waterways. The onset of status distinctions and other indicators of growing sociopolitical complexity mark the Upper Archaic Period (1000 B.C. to A.D. 500). Exchange systems become more complex and formalized. Evidence of regular, sustained trade between groups was seen for the first time.

Several technological and social changes characterized the Emergent Period (A.D. 500–1800). The bow and arrow were introduced, ultimately replacing the dart and atlatl (a spear-throwing device). Territorial boundaries between groups became well established. It became increasingly common that distinctions in an individual's social status could be linked to acquired wealth. Exchange of goods between groups became more regularized with more goods, including raw materials, entering into the exchange networks. In the latter portion of this period (A.D. 1500–1800), exchange relations became highly regularized and sophisticated. The clamshell disk bead became a monetary unit for exchange, and increasing quantities of goods moved greater distances. Specialists arose to govern various aspects of production and exchange.

Three specific cultural manifestations are well represented in archaeological assemblages in the general vicinity of the project area. These assemblages are discussed in detail in Moratto (1984) and summarized here. The Windmiller Pattern (3000–500 B.C.) of archaeological assemblages included an increased emphasis on acorn use as well as a continuation of hunting and fishing activities. Ground and polished charmstones, twined basketry, baked clay artifacts, and worked shell and bone were hallmarks of Windmiller culture. Widely ranging trade patterns brought goods in from the Coast Ranges and trans Sierran sources as well as closer trading partners. Distinctive burial practices identified with the Windmiller Pattern also appeared in the Sierra Nevada foothills, indicating possible seasonal migration into the Sierra Nevada. The Berkeley Pattern (500 B.C. to A.D. 700) represented a greater reliance on acorns as a food source than was seen previously. Distinctive stone and shell artifacts distinguished it from earlier or later cultural expressions. The Berkeley Pattern appears to have developed in the Bay Area and was spread through the migration of Plains Miwok Indians. Dating of the Berkeley Pattern varies across central California; in the Stockton region, the Windmiller Pattern continued longer than in other areas, gradually giving way to the changes that marked the Berkeley Pattern and which might represent the emergence of the Northern Valley Yokuts in this area.

ETHNOGRAPHIC SETTING

Ethnographically, the Northern Valley Yokuts occupied the project vicinity–that is, the land on either side of the San Joaquin River from the Delta to south of Mendota. The Diablo range probably marked the Yokuts' western boundary (Wallace 1978); the eastern edge would have lain along the Sierra Nevada foothills. Yokuts occupation of the northern parts of the range may be relatively recent, as linguistic evidence points toward an earlier Miwok

occupation. The Yokuts gradually expanded their range northward and clearly occupied the area during the Spanish Colonial period, as evidenced by mixed historic and prehistoric artifact assemblages. The late prehistoric Yokuts may have been the largest ethnic group in pre-contact California. The triblet, populated by a few hundred to a few thousand occupants, served as the basic political unit (Moratto 1984). Structures ranged from single family dwellings to multifamily communal structures and included sweat houses and ceremonial lodges.

Euro-American contact with the Northern Valley Yokuts began with infrequent excursions by Spanish explorers traveling through the Sacramento San Joaquin Valley in the late 1700s to early 1800s. During this time many Yokuts were lured or captured by missionaries and scattered among the various missions but many later escaped and returned to the valley. Yokuts raiding parties targeting the Spanish (and later Mexican) cattle herds became prevalent during the early 19th century, leading to retaliatory action by the settlers. Further pressures on Yokuts lifeways came with a widespread epidemic (possibly smallpox) in 1833 that decimated the Yokuts population, killing thousands of people. The influx of Europeans during the Gold Rush era further reduced the population through disease and violent relations with the miners. Although there was no gold within the Yokuts territory, miners passing through on their way to the diggings caused a certain amount of upheaval. Despite a long history of population decline and marginalization, descendants of the early Yokuts survive to this day and are reinvesting in their traditional culture and life-ways.

HISTORIC SETTING

Large-scale Euro-American settlement did not occur in San Joaquin County until the development of the Mexican land grant ranches in the region. The project area is situated on what was originally the *Campo de los Franceses* land grant that was made to Guillermo Gulnac in 1843. The grant consisted of over 48,000 acres near French Camp (Beck and Haase 1974). Gulnac entered into a partnership with Captain C. M. Weber, a German immigrant. Weber had brief stays in New Orleans and Salt Lake City before making his way to Sutter's Fort. There he was employed at the fort as an overseer and general assistant to Sutter. Weber moved to Stockton in 1847, after receiving a half interest in the rancho from Gulnac. He later purchased the other half interest and Weber actively encouraged settlement and convinced others to the region by offering them land (Cook 1975).

Joshua Cowell, known as the "Father of Manteca," was one of the early American settlers in the area; having first arrived in 1862. Cowell is credited with having established dairying in the region and several of the earliest buildings in the region were also built by him. His efforts resulted in the area being named Cowell Station once the Central Pacific Railroad built a line through the region. In 1897, Cowell Station was renamed Manteca (Spanish for "lard"). The origin of the city's present name is argued; however, many of California's early dairymen were Azorian Portuguese, and their word *manteiga* (butter), could easily have been corrupted to the present spelling (Covello and Hillman 1985).

The first organized Manteca government consisted of a board of trade, which was a cross between a city council and a chamber of commerce. Under its direction, a volunteer fire department was organized in 1912. This earliest Manteca town government was disbanded when the failure of a local septic tank system resulted in quarantine from the State Department of Health in 1918. To fund the bond issue for the installation of a sewer system, the town was incorporated. The new city council approved several projects for the area, among them were a new jail, street signs, the purchase of a fire bell, and street curbs for Yosemite Avenue between Main Street and the Southern Pacific Railroad track (formerly the Central Pacific) (Covello and Hillman 1985).

Agriculture and irrigation played a huge role in the growth of Manteca. Alfalfa, orchards, diversified crops, and large scale dairying operations were all instrumental to the economy. The once prevalent large grain farms were divided into smaller plots, usually forty acres in size. The increased number of farms resulted in a rapidly expanding population. Further expansion came with the creation of the South San Joaquin Irrigation District in 1909.

Much of the local industry in Manteca developed through association with agricultural activities. The dairy skimming station, which originally started in an old box car in 1896, grew to a company that produced 1,250 pounds of butter by 1915. By 1920, dairy farming was the largest enterprise in south San Joaquin County. One of the best known industries in Manteca, the Spreckles sugar mill, opened in 1918 and was one of the largest agri-businesses in San Joaquin County. During the 1930s, the Manteca Cream and Butter Company with its front room ice cream parlor, was a popular stop for motorists traveling between the Sierra and the Bay Area (Covello and Hillman 1985).

Beginning in the late 1940s and the ensuing decades, Manteca became a popular bedroom community, because of its proximity to Stockton, Tracy, and Modesto. Its growth and reputation as a burgeoning location for families to settle led to Manteca becoming known as “The Family City” (www.ci.manteca.ca.us).

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APPENDIX C

Noise Modeling Results

Appendix Noise

Project-Generated Construction Source Noise Prediction Model

Manteca Arsenic

EDAW | AECOM

Location	Distance to Nearest Receiver in feet	Combined Predicted Noise Level (L_{eq} dBA)
	50	83.6
	100	77.5
	150	74.0
	200	71.5
	250	69.6
	300	68.0
	350	66.6
	400	65.5
	450	64.5
	500	63.6
	550	62.7
	600	62.0

Assumptions:	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Excavator	85	0.4
Backhoe	80	0.4
Front End Loader	80	0.4
Compactor (ground)	80	0.2

Ground Type	Hard
Source Height	8
Receiver Height	5
Ground Factor	0.00

Predicted Noise Level [2]	L_{eq} dBA at 50 feet[2]
Excavator	81.0
Backhoe	76.0
Front End Loader	76.0
Compactor (ground)	73.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
83.6

Sources:

[1] Obtained from the FHWA Roadway Construction Noise Model, January 2006.

[2] Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006.

$L_{eq}(equip) = E.L.+10*\log(U.F.) - 20*\log(D/50) - 10*G*\log(D/50)$

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects; and

D = Distance from source to receiver.

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APPENDIX D

U.S. Fish and Wildlife Service Correspondence

From: Lathan, Joshua
To: Lathan, Joshua;
Subject: FW: RE: City of Manteca Arsenic Reduction Project
Date: Wednesday, February 10, 2010 4:54:58 PM

----- Forwarded by Howard Kahan/R9/USEPA/US on 08/20/2009 12:54 PM -----

From: Howard Kahan/R9/USEPA/US

To: "Olekszulin, Amanda" <Amanda.Olekszulin@aecom.com>

Cc: "Ulloa, Fernando" <fulloa@ci.manteca.ca.us>, Fernando" <fulloa@ci.manteca.ca.us/O=, "Govea/, Phil" <pgovea@ci.manteca.ca.us/O=,/,

Date: 08/20/2009 12:34 PM

Subject: Fw: City of Manteca Arsenic Reduction Project

Hello, below is a copy of the response I received from the USFWS office in Sacramento. Before any action is taken we should discuss the action. Howard.

Howard Kahan
Environmental Scientist
Phone (213) 244 - 1819
Fax (213) 244 - 1850
kahan.howard@epa.gov

US EPA Southern California Field Office
600 Wilshire Blvd Suite 1460
Los Angeles CA 90017

----- Forwarded by Howard Kahan/R9/USEPA/US on 08/20/2009 12:11 PM -----

From: Ellen_McBride@fws.gov

To: Howard Kahan/R9/USEPA/US@EPA

Date: 08/06/2009 04:50 PM

Subject: City of Manteca Arsenic Reduction Project

Dear Mr. Kahan,

Thank you for speaking with me earlier today. To recap our phone conversation, the Service received your undated letter regarding the City of Manteca Arsenic Reduction Project on August 3rd, 2009. At this time, the Service considers the initiation package to be incomplete for the following reasons:

Biological Assessment -- Since the EPA is a federal nexus, a Biological Assessment (B.A.) is needed. I am attaching a pdf of a fairly standard table of contents for a B.A. I am also including a link for guidance on writing B.A.s. Under the "Miscellaneous" section, click the "BA Preparation and Review - 3/10/93."

http://training.fws.gov/csp/Resources/dev_ba/index.htm

A full project description is needed -- project description should include color aerial map with a clearly identified action area. The action area should include all components of the proposed project, including direct and indirect effects. Click here for more guidance: http://www.fws.gov/sacramento/es/spp_list.htm. All activities associated with putting in the project should be included here, such as staging areas for the equipment, lay down areas, installation, etc.

The Service cannot consult on alternatives . Your initiation package should be completed after a preferred alternative has been identified. Only at this time can a complete project description be written.

Species for Concurrence -- Your initiation packet should include the species list that you obtained from our website, as well as a color map of those species occurrences overlaid onto the project site. A species list may be obtained from the Sacramento Fish & Wildlife website here: http://www.fws.gov/sacramento/es/spp_list.htm

The initial link above for the B.A. should provide you with the majority of the information that you need. Until the Service receives the above requested information, this project cannot begin consultation. If you have further questions, please feel free to contact me.

Ellen

"Wildness reminds us what it means to be human, what we are connected to rather than what we are separate from." -- Terry Tempest Williams

****
Ellen R. McBride, M.S.
Wildlife Biologist
U.S. Fish and Wildlife Service
Endangered Species Division
San Joaquin Valley Branch
2800 Cottage Way, Room W-2605
Sacramento, CA 95825
(916) 414-6561 (w)
Ellen_McBride@fws.gov
****

From: Kahan.Howard@epamail.epa.gov [mailto:Kahan.Howard@epamail.epa.gov]
Sent: Monday, August 24, 2009 10:57 AM
To: fulloa@ci.manteca.ca.us; pgovea@ci.manteca.ca.us; Olekszulin, Amanda
Subject: Fw: City of Manteca Arsenic Reduction Project

Hello everyone. I would like to set up a meeting on either Wednesday or thursday of this week to discuss the environmental document. Please let me know of some times that work. Howard.

Howard Kahan
Environmental Scientist
Phone (213) 244 - 1819
Fax (213) 244 - 1850
kahan.howard@epa.gov

US EPA Southern California Field Office
600 Wilshire Blvd Suite 1460
Los Angeles CA 90017

To: Howard Kahan/R9/USEPA/US@EPA, <fulloa@ci.manteca.ca.us>, <pgovea@ci.manteca.ca.us>
From: "Olekszulin, Amanda" <Amanda.Olekszulin@aecom.com>
Date: 08/24/2009 11:03AM
Subject: RE: City of Manteca Arsenic Reduction Project

Wed I am open 1:30 to 4 pm
Thurs I am open all except 11:30 to noon.

Amanda Olekszulin
Associate Principal
New email: amanda.olekszulin@aecom.com

EDAW AECOM
2022 J Street
Sacramento, CA 95811 USA
T +1 916.414.5800 F +1 916.414.5850
www.edaw.com www.aecom.com

From: Lathan, Joshua
To: Lathan, Joshua;
Subject: FW: Staging Areas
Date: Wednesday, February 10, 2010 4:36:19 PM

From: Olekszulin, Amanda [mailto:Amanda.Olekszulin@aecom.com]
Sent: Tuesday, November 10, 2009 3:58 PM
To: Ulloa, Fernando
Subject: Staging Areas

Fernando- I am preparing the letter for USFWS. Have you been able to identify potential staging locations for the preferred alternative and alternative 1? We will need to include this information in the letter.

Amanda Olekszulin
Associate Principal
Design + Planning
amanda.olekszulin@aecom.com

AECOM
2022 J Street, Sacramento, CA 95811 USA
T +1 916.414.5800 F +1 916.414.5850
www.aecom.com

From: Ulloa, Fernando [mailto:fulloa@ci.manteca.ca.us]
Sent: Tuesday, November 10, 2009 5:28 PM
To: Olekszulin, Amanda
Subject: RE: Staging Areas

I have identified potential locations for both alternatives. We are going to prepare an exhibit that will show these locations, but will not have it complete until Thursday due to City Hall being closed tomorrow for Vet's Day.
These locations will be:

- Next to the water tank site on Lathrop Road
- On the Northeast corner of Union/Louise Ave.
- On the southwest corner of Alameda/Walnut Ave

From: Olekszulin, Amanda [mailto:Amanda.Olekszulin@aecom.com]
Sent: Wednesday, November 11, 2009 9:01 AM
To: Ulloa, Fernando
Cc: Lathan, Joshua; Edson, Leo
Subject: RE: Staging Areas

Fernando- Attached is a Draft of the letter I would like to send to Ellen. See the highlighted areas for the information regarding the staging areas. Please let me know if you have any questions or comments.

Amanda Olekszulin
Associate Principal
Design + Planning
amanda.olekszulin@aecom.com

From: Ulloa, Fernando [mailto:fulloa@ci.manteca.ca.us]
Sent: Thursday, November 12, 2009 11:25 AM
To: Olekszulin, Amanda
Cc: Lathan, Joshua; Edson, Leo
Subject: RE: Staging Areas

Amanda-

The highlighted construction staging areas for the preferred alignment is correct and the same would be for Alternative-1 without the **"Northeast corner of Union/ Louise Ave."** In order to send this letter to Ellen what would you need from me?

Fernando Ulloa, P.E.
Public Works Department - Engineering Division
City of Manteca • 1001 W. Center Street • Manteca, CA 95337
(209) 456-8427 FAX: (209) 923-8940 E-mail: fulloa@mantecagov.com

From: Lathan, Joshua
To: Lathan, Joshua;
Subject: FW: City of Manteca Arsenic Reduction Project
Date: Wednesday, February 10, 2010 4:37:24 PM

From: Olekszulin, Amanda [mailto:Amanda.Olekszulin@aecom.com]
Sent: Monday, November 16, 2009 11:35 AM
To: Kahan.Howard@epamail.epa.gov; Ellen_McBride@fws.gov
Cc: Ulloa, Fernando; Edson, Leo; Govea, Phil
Subject: RE: City of Manteca Arsenic Reduction Project

Ellen-

As we discussed last week, attached is a letter responding to your information needs for the Manteca Arsenic Reduction Project. A hard copy of the letter and its attachments including a hard copy of the "Administrative Draft IS/EA" will be sent overnight to you today. We hope this information helps you in your concurrence determination and we look forward to seeing you on Thursday.

Fernando- should we select a place to meet on Thursday? You will know the best place.

Amanda Olekszulin
Associate Principal
Design + Planning
amanda.olekszulin@aecom.com

From: Ulloa, Fernando [mailto:fulloa@ci.manteca.ca.us]
Sent: Monday, November 16, 2009 1:33 PM
To: Olekszulin, Amanda; Kahan.Howard@epamail.epa.gov; Ellen_McBride@fws.gov
Cc: Edson, Leo; Govea, Phil
Subject: RE: City of Manteca Arsenic Reduction Project

All-

There is a gas station on the northeast corner of Union Rd. and Louise Avenue. We could meet on the parking lot if it's OK with everyone.

Fernando Ulloa, P.E.
Public Works Department - Engineering Division
City of Manteca • 1001 W. Center Street • Manteca, CA 95337
(209) 456-8427 FAX: (209) 923-8940 E-mail: fulloa@mantecagov.com

AECOM
2022 J Street
Sacramento, CA 95811
www.aecom.com

916.414.5800 tel
916.414.5850 fax

November 16, 2009

Ellen R. McBride, M.S.
Wildlife Biologist
U.S. Fish and Wildlife Service
Endangered Species Division
San Joaquin Valley Branch
2800 Cottage Way, Room W-2605
Sacramento, CA 95825

Subject: Request for No Effect Concurrence for the City of Manteca Arsenic Reduction Project

Dear Ms. McBride:

Thank you for taking the time to dicuss the biological issues pertaining to the City of Manteca's Arsenic Reduction project. At your request, we have prepared this letter to respond to your specific information request needs. We understand that in order for you to issue a concurrence determination you will need the following information:

- Identification and written verification of a "Preferred Alternative"
- Hard copy of the USFWS species list and species occurrence map for the project area
- Hard copy of the "Administrative Draft" Initial Study/Environmental Assessment (IS/EA)
- Exhibit of the Preferred and Alternative 1 pipeline alignments overlaid on an aerial
- Estimated construction period
- Location of staging areas for the Preferred Alternative and Alternative 1 alignments including:
    - Map of locations
    - Area of impact (temporary and permanent)
- A copy of the Stormwater Pollution Prevention Plan (SWPPP), if available.

We have provided the following information to respond to your specific needs.

Preferred Alternative – "North Union Road Route"
The Preferred Alternative pipeline alignment is the alignment identified in blue in Exhibit 1. This pipeline aligment would be 14,415 linear feet long and located completely within existing right-of-way. Staging for this alternative could occur in 3 locations as shown in Exhibit 2. Specific dimensions of the staging areas are as follows including a description of the total temporary and permanent disturbance area:

- Area 1 -near the water tank site on Lathrop Road –total area of site 116,050 square feet (2.66 acres)
- Area 2- northeast corner of Union/Louise Ave- total area of site 186,290 square feet (4.28 acres)
- Area 3 -southwest corner of Alameda/Walnut Ave-38,830 square feet (0.89 acres)

The total area of temporary disturbance would be 341,170 square feet (7.83 acres) and permanent disturbance would be 165,050 square feet (3.79 acres).

Species List and Species Occurrence Map

Attached to this letter is a hard copy of the USFWS species list for the Manteca Quadrangle and a species occurrence map prepared based on a database search of the California Natural Diversity Database.

"Administrative" Draft IS/EA

Attached to this letter is a hard copy of the "Adiministrative" Draft IS/EA for the Manteca Arsenic Reduction Project. Please note that the "Preferred Alternative" idenfitied herein is labeled as "Alternative 2: North Union Road Route" in the IS/EA. The IS/EA will be updated to reflect the correct naming convention of "Preferred Alternative" prior to publication of the document. All other project features remain unchanged.

Estimated Construction Period

The City of Manteca anticipates initiating construction of the project in March/April 2010. Construction would last approximately three months.

Staging Areas

Please see discussion above regarding staging areas for the "Preferred Alternative." Staging areas for Alternative 1 would only include staging areas 1 and 3. Staging area 2 would not be used under Alternative 1.

SWPPP

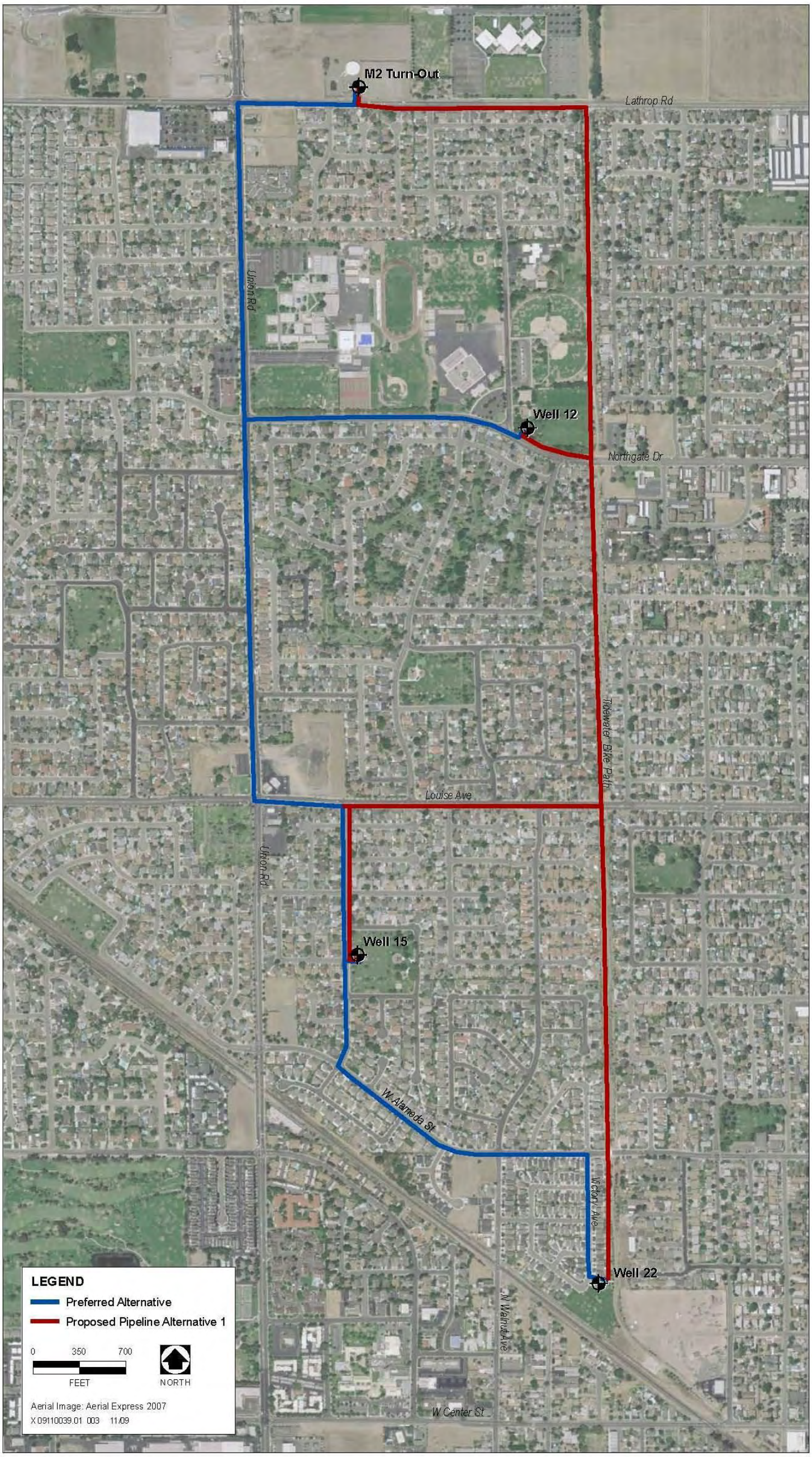
The City of Manteca's selected contractor will be requested to prepare the SWPPP. It is not anticipated that this plan will be available until February/March 2010.

We hope the above information meets your needs. We look forward to meeting with you at the project site on November 19, 2009. Should you have any questions in the meantime, please do not hesitate to contact me at (916) 414-5800.

Sincerely,

Amanda Olekszulin
Associate Principal

cc: 09110039.01.01 / Chron
Document2

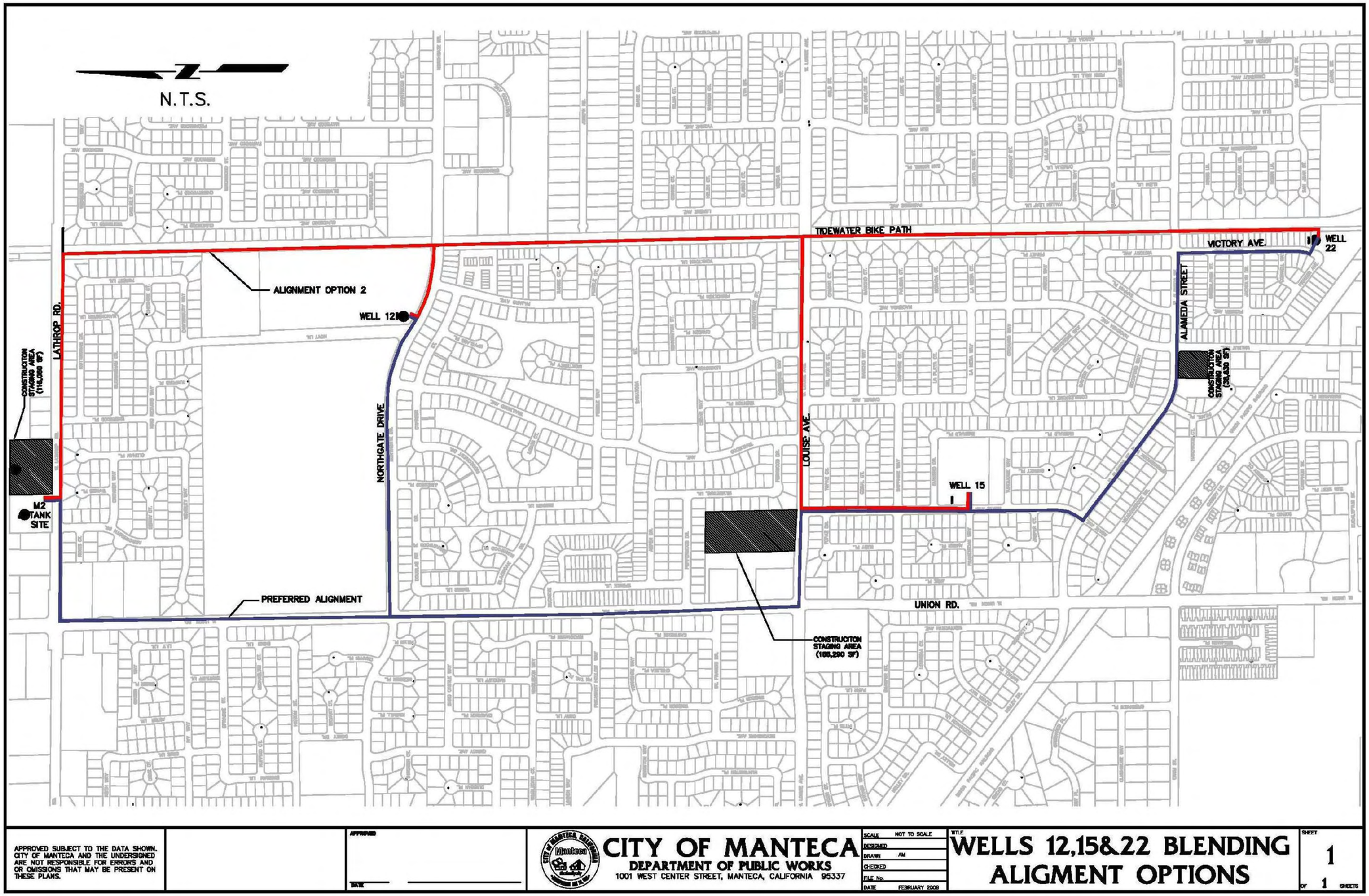


Source: Nolte 2006

DRAFT - Not for Public Review

Alternative Pipeline Routes

Exhibit 1



APPROVED SUBJECT TO THE DATA SHOWN. CITY OF MANTECA AND THE UNDERSIGNED ARE NOT RESPONSIBLE FOR ERRORS AND OR OMISSIONS THAT MAY BE PRESENT ON THESE PLANS.

APPROVED

DATE

CITY OF MANTECA
DEPARTMENT OF PUBLIC WORKS
1001 WEST CENTER STREET, MANTECA, CALIFORNIA 95337

SCALE NOT TO SCALE
DESIGNED
DRAWN AM
CHECKED
FILE No.
DATE FEBRUARY 2009

TITLE
WELLS 12,15&22 BLENDING ALIGMENT OPTIONS

SHEET 1 OF 1 SHEETS

These buttons will not appear on your list.

Revise Selection

Print this page

Make Official Letter

U.S. Fish & Wildlife Service

Sacramento Fish & Wildlife Office

Federal Endangered and Threatened Species that Occur in or may be Affected by Projects in the Counties and/or U.S.G.S. 7 1/2 Minute Quads you requested

Document Number: 091027105252

Database Last Updated: January 29, 2009

Quad Lists

Listed Species

Invertebrates

- Branchinecta lynchi
  - vernal pool fairy shrimp (T)
- Desmocerus californicus dimorphus
  - valley elderberry longhorn beetle (T)
- Lepidurus packardi
  - vernal pool tadpole shrimp (E)

Fish

- Acipenser medirostris
  - green sturgeon (T) (NMFS)
- Hypomesus transpacificus
  - Critical habitat, delta smelt (X)
  - delta smelt (T)
- Oncorhynchus mykiss
  - Central Valley steelhead (T) (NMFS)
- Oncorhynchus tshawytscha
  - Central Valley spring-run chinook salmon (T) (NMFS)

- winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

- Ambystoma californiense
  - California tiger salamander, central population (T)
- Rana aurora draytonii
  - California red-legged frog (T)

Reptiles

- Thamnophis gigas
  - giant garter snake (T)

Mammals

- Vulpes macrotis mutica
  - San Joaquin kit fox (E)

Quads Containing Listed, Proposed or Candidate Species:

MANTECA (461C)

County Lists

No county species lists requested.

Key:

- (E) Endangered - Listed as being in danger of extinction.
- (T) Threatened - Listed as likely to become endangered within the foreseeable future.
- (P) Proposed - Officially proposed in the Federal Register for listing as endangered or threatened.
- (NMFS) Species under the Jurisdiction of the National Oceanic & Atmospheric Administration Fisheries Service. Consult with them directly about these species.
- Critical Habitat - Area essential to the conservation of a species.
- (PX) Proposed Critical Habitat - The species is already listed. Critical habitat is being proposed for it.
- (C) Candidate - Candidate to become a proposed species.
- (V) Vacated by a court order. Not currently in effect. Being reviewed by the Service.
- (X) Critical Habitat designated for this species

Important Information About Your Species List

How We Make Species Lists

We store information about endangered and threatened species lists by U.S. Geological Survey 7½ minute quads. The United States is divided into these quads, which are about the size of San Francisco.

The animals on your species list are ones that occur within, or may be affected by projects within, the quads covered by the list.

- Fish and other aquatic species appear on your list if they are in the same watershed as your quad or if water use in your quad might affect them.
- Amphibians will be on the list for a quad or county if pesticides applied in that area may be carried to their habitat by air currents.
- Birds are shown regardless of whether they are resident or migratory. Relevant birds on the county list should be considered regardless of whether they appear on a quad list.

Plants

Any plants on your list are ones that have actually been observed in the area covered by the list. Plants may exist in an area without ever having been detected there. You can find out what's in the surrounding quads through the California Native Plant Society's online Inventory of Rare and Endangered Plants.

Surveying

Some of the species on your list may not be affected by your project. A trained biologist and/or botanist, familiar with the habitat requirements of the species on your list, should determine whether they or habitats suitable for them may be affected by your project. We recommend that your surveys include any proposed and candidate species on your list.
See our Protocol and Recovery Permits pages.

For plant surveys, we recommend using the Guidelines for Conducting and Reporting Botanical Inventories. The results of your surveys should be published in any environmental documents prepared for your project.

Your Responsibilities Under the Endangered Species Act

All animals identified as listed above are fully protected under the Endangered Species Act of 1973, as amended. Section 9 of the Act and its implementing regulations prohibit the take of a federally listed wildlife species. Take is defined by the Act as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect" any such animal.

> Take may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or shelter (50 CFR §17.3).

Take incidental to an otherwise lawful activity may be authorized by one of two procedures:

- If a Federal agency is involved with the permitting, funding, or carrying out of a project that may result in take, then that agency must engage in a formal consultation with the Service.
- During formal consultation, the Federal agency, the applicant and the Service work together to avoid or minimize the impact on listed species and their habitat. Such consultation would result in a biological opinion by the Service addressing the anticipated effect of the project on listed and proposed species. The opinion may authorize a limited level of incidental take.
- If no Federal agency is involved with the project, and federally listed species may be taken as part of the project, then you, the applicant, should apply for an incidental take permit. The Service may issue such a permit if you submit a satisfactory conservation plan for the species that would be affected by your project.
- Should your survey determine that federally listed or proposed species occur in the area and are likely to be affected by the project, we recommend that you work with this office and the California Department of Fish and Game to develop a plan that minimizes the project's direct and indirect impacts to listed species and compensates for project-related loss of habitat. You should include the plan in any environmental documents you file.

Critical Habitat

When a species is listed as endangered or threatened, areas of habitat considered essential to its conservation may be designated as critical habitat. These areas may require special management considerations or protection. They provide needed space for growth and normal behavior; food, water, air, light, other nutritional or physiological requirements; cover or shelter; and sites for breeding, reproduction, rearing of offspring, germination or seed dispersal.

Although critical habitat may be designated on private or State lands, activities on these lands are not restricted unless there is Federal involvement in the activities or direct harm to listed wildlife.

If any species has proposed or designated critical habitat within a quad, there will be a separate line for this on the species list. Boundary descriptions of the critical habitat may be found in the Federal Register. The information is also reprinted in the Code of Federal Regulations (50 CFR 17.95). See our Map Room page.

Candidate Species

We recommend that you address impacts to candidate species. We put plants and animals on our candidate list when we have enough scientific information to eventually propose them for listing as threatened or endangered. By considering these species early in your planning process you may be able to avoid the problems that could develop if one of these candidates was listed before the end of your project.

Species of Concern

The Sacramento Fish & Wildlife Office no longer maintains a list of species of concern. However, various other agencies and organizations maintain lists of at-risk species. These lists provide essential information for land management planning and conservation efforts. More info

Wetlands

If your project will impact wetlands, riparian habitat, or other jurisdictional waters as defined by section 404 of the Clean Water Act and/or section 10 of the Rivers and Harbors Act, you will need to obtain a permit from the U.S. Army Corps of Engineers. Impacts to wetland habitats require site specific mitigation and monitoring. For questions regarding wetlands, please contact Mark Littlefield of this office at (916) 414-6580.

Updates

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed and candidate species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be January 25, 2010.

From: Lathan, Joshua
To: Lathan, Joshua;
Subject: FW: RE: City of Manteca Arsenic Reduction Project
Date: Wednesday, February 10, 2010 5:14:12 PM

-----Forwarded by Howard Kahan/R9/USEPA/US on 02/10/2010 03:31PM -----

To: "Olekszulin, Amanda" <Amanda.Olekszulin@aecom.com>
From: Ellen_McBride@fws.gov
Date: 11/17/2009 12:14PM
cc: "Ulloa, Fernando" <fulloa@ci.manteca.ca.us>, Howard Kahan/R9/USEPA/US@EPA, "Edson, Leo" <leo.edson@aecom.com>, "Govea, Phil" <pgovea@ci.manteca.ca.us>
Subject: RE: City of Manteca Arsenic Reduction Project

Amanda,

Thank you very much for sending this so quickly. I'll look forward to meeting you in the parking lot, NE corner of Union Rd and Louise Ave at 9:30 on Thursday. I'll be out of the office tomorrow attending a conference.

Ellen

"Wildness reminds us what it means to be human, what we are connected to rather than what we are separate from." -- Terry Tempest Williams

****
Ellen R. McBride, M.S.
Wildlife Biologist
U.S. Fish and Wildlife Service
Endangered Species Division
San Joaquin Valley Branch
2800 Cottage Way, Room W-2605
Sacramento, CA 95825
(916) 414-6561 (w)
Ellen_McBride@fws.gov
****

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX Southern California Field Office
600 Wilshire Blvd. Suite 1460
Los Angeles, CA 90017

Ms. Susan Jones
U.S. Fish and Wildlife Service
Endangered Species Division
2800 Cottage Way, Suite W-2605
Sacramento, CA 95825-1846

Subject: City of Manteca Arsenic Reduction Project EPA Region 9 Grant Tracking # 08-047

Dear Ms. Jones:

The purpose of this letter is to request Fish and Wildlife Service (USFWS) concurrence with respect to the City of Manteca's (City) proposed water quality improvement project that would reduce the arsenic concentrations in groundwater pumped through the City's potable water system.

The City is experiencing high arsenic concentrations from some of its groundwater wells. These wells are generally located within the central urbanized area of the City. The project consists of the construction of a simple network of pipelines that would connect three City wells to a water storage tank owned by the South San Joaquin Irrigation District. Surface water from the water storage tank will travel along the pipelines to the wells. At the wells, mixing would occur to dilute arsenic concentrations prior to being delivered to customers.

In compliance with the National Environmental Policy Act, the EPA is preparing an Environmental Assessment (EA) to address the environmental and socioeconomic effects of conducting the Proposed Action. The EA has been prepared pursuant to the Council on Environmental Quality (CEQ) National Environmental Policy Act (NEPA) implementing regulations (40 CFR part 6 and part 1500-1508).

Description of the Proposed Activity

The project would be bounded by Lathrop Road to the north, West North Street to the south, North Union Road to the west, and the Tidewater bike path to the east (Exhibit 1). The project area is generally surrounded by single-family residential and recreational (i.e., public park) land uses. The City is considering two alternatives for the proposed actions. The Alternative 1 would be constructed along the existing Tidewater bike path, a

3.4 mile Class 1 bike and pedestrian path, and existing roadways. Alternative 2 would be constructed entirely within existing roadways (Exhibit 1).

Construction of the proposed pipeline would last approximately 90 days. The construction staging areas for Alternative 1 would be located along the Tidewater bike path. The construction staging area for Alternative 2 would likely be located on a vacant field along the Alternative 2 pipeline route. For either alternative, approximately 10 construction workers would commute to the site on a daily basis. Construction equipment would likely include backhoes, loaders, excavators, and compaction machines and would be operated approximately eight hours each day. Four one-way truck trips would occur each day for the delivery of materials. All construction activities would occur during daytime hours and no night lighting would be required. Pipeline construction within the roadway would likely require partial lane closures. Construction of the pipeline would be divided into three phases as described below.

► Phase 1: Pipelines would be installed. Pipeline construction within the roadway would likely require partial lane closures. This phase would last approximately 90 days.
► Phase 2: Static mixers, control valves, flow meters, and a water sampling system would be installed at each well location, and the surface water pipes and groundwater pipes would be connected to the static mixers. This phase would last approximately 14 days.
► Phase 3: The Supervisory Control and Data Acquisition (SCADA) system would be programmed to monitor and control the flow of well water and surface water at each well to achieve an arsenic-compliant blended product.

Potential Adverse Effects to Federally Listed Species

The proposed action is not expected to result in adverse effects to any federally listed species as no suitable habitat is present for any federally listed species known to occur in San Joaquin County. No natural plant communities are present and vegetation in the project area is limited to landscaped areas. Landscaped areas along the Tidewater Bike Path include some native plant species but these provide limited wildlife habitat and only wildlife species common in residential area are expected to occur. No federally listed species have been reported to the California Natural Diversity Database (CNDDB) for the Manteca quadrangle.

Conclusion

Pursuant to Section 7 of the Endangered Species Act, I have made a determination of no effect to threatened or endangered species or their habitat. Please inform us within 30 days if you concur with our proposed findings. If you do not reply within this 30 day period, EPA will consider the lack of reply to indicate USFWS agreement with the findings.

For further information, please call Howard Kahan at (213) 244-1819 or Howard Kahan, US EPA Southern California Field Office 600 Wilshire Blvd. Suite 1460 (WTR-4), Los Angeles, CA 90017.

Sincerely,

Howard Kahan
Environmental Scientist

From: Kahan.Howard@epamail.epa.gov
To: Joshua@mintra02.rtp.epa.gov; " <Joshua.Lathan@aecom.com/@epamail.epa.gov"@mintra02.rtp.epa.gov;
cc: Ulloa, Fernando; Govea, Phil;
Subject: Fw: City of Manteca Arsenic Reduction Project (Service No. 81420-2009-TA-1152)
Date: Tuesday, January 26, 2010 9:20:36 AM

Howard Kahan
Environmental Scientist
Phone (213) 244 - 1819
Fax (213) 244 - 1850
kahan.howard@epa.gov

US EPA Southern California Field Office
600 Wilshire Blvd Suite 1460
Los Angeles CA 90017

-----Forwarded by Howard Kahan/R9/USEPA/US on 01/26/2010 09:17AM -----

> To: Howard Kahan/R9/USEPA/US@EPA
> From: Ellen_McBride@fws.gov
> Date: 01/25/2010 03:52PM
> Subject: City of Manteca Arsenic Reduction Project (Service No. 81420-2009-TA-1152)
>
> Howard,
>
> This electronic mail is to notify you that, pursuant to our November 19, 2009, site visit, I plan to submit a No Effect determination letter for Service signature on the City of Manteca Arsenic Reduction Project, San Joaquin County. This determination has been made for the chosen Alternative 1 from Exhibit 1-2, which was incorrectly labeled on the Draft EA maps. As with all projects, this determination is not final until the letter is signed, however I do not anticipate any difficulties.
>
> Please let me know if you have any questions and thanks very much for your patience.

Best,
Ellen

"Wildness reminds us what it means to be human, what we are connected to rather than what we are separate from." -- Terry Tempest Williams

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