

4.5.2 Related Regulations

Federal

U.S. Bureau of Reclamation

Established in 1902, the U.S. Bureau of Reclamation is an agency under the U.S. Department of the Interior, which oversees water resource management, specifically as it applies to the oversight and/or operation of numerous diversion, delivery and storage projects it built throughout the western United States for irrigation, water supply, and attendant hydroelectric power generation. Basins with embankments over 25 feet high or with an impounding capacity of 50 acre-feet or more, or that are over 6 feet in height and impound over 15 acre-feet of water, are considered to be dams (DSOD 2012, Water Code Sections 6002 and 6003). Some of the basins within the Project boundary are considered to be dams and will be designed in compliance with the U.S. Bureau of Reclamation's *Design of Small Dams* (BOR 1987).

State

California Department of Water Resources, Division of Safety of Dams

Since 1929, the State of California has supervised the construction and operation of dams to prevent failure, safeguard life, and protect property. The California Department of Water Resources, Division of Safety and Dams (DSOD) oversees the construction of dams that are over 25 feet high or have an impounding capacity of 50 acre-feet or more, or that are over 6 feet in height and impound over 15 acre-feet of water (DSOD 2012, Water Code Sections 6002 and 6003).

The DSOD reviews and approves permit applications to evaluate the safety of dams and reservoirs. DSOD staff provides independent review of facilities design and safety calculations. The DSOD may require the following: "data concerning subsoil and foundation conditions and the materials entering into construction of the dam or reservoir; investigations of, and reports on, subsurface conditions, involving such matters as exploratory pits, trenches and adits, drilling, coring, geophysical surveys, test to determine leakage rates, and physical tests to measure in place the properties and behavior of foundation materials at the dam or reservoir site; investigations of, and reports on, the geology of the dam or reservoir site and its vicinity, possible geologic hazards, availability and quality of construction materials, and other pertinent features; and/or other appropriate information as may be necessary" (DSOD 2012, Water Code Sections 6200 and 6203).

Seismic Hazards Mapping Act (1990)

The Seismic Hazards Mapping Act (SHMA) of 1990 (California Public Resources Code, Section 2690 et seq.) directs the Department of Conservation, California Geological Survey, to identify and map

areas prone to liquefaction, earthquake-induced landslides, and amplified ground shaking. The purpose of the SHMA is to minimize loss of life and property through the identification, evaluation, and mitigation of seismic hazards.

The SHMA provides a statewide seismic hazard mapping and technical advisory program to assist cities and counties in fulfilling their responsibilities for protecting the public health and safety from the effects of strong ground shaking, liquefaction, landslides, or other ground failure, and other seismic hazards caused by earthquakes. Mapping and other information generated pursuant to the SHMA is to be made available to local governments for planning and development purposes. The state requires (1) local governments to incorporate site-specific geotechnical hazard investigations and associated hazard mitigation as part of the local construction permit approval process and (2) the agent for a property seller, or the seller if acting without an agent, to disclose to any prospective buyer if the property is located within a Seismic Hazard Zone. The State Geologist is responsible for compiling seismic hazard zone maps. The SHMA specifies that the lead agency for a project may withhold development permits until geologic or soils investigations are conducted for specific sites and mitigation measures are incorporated into plans to reduce hazards associated with seismicity and unstable soils.

Local

Standard Specifications for Public Works Construction

The *Standard Specifications for Public Works Construction*, known as the “Greenbook,” was originally published in 1967. The 2012 Edition is the most recent Greenbook edition, which is updated every 3 years (Public Works Standards Inc. 2012). The Greenbook provides specifications that have general applicability to public works projects. Specifically, Section 300-6, Earthwork for Debris Dams and Basins, and Section 306, Underground Conduit Construction, pertains to the Project. Section 300-6 of the Greenbook includes discussion of protocols during earthwork for debris dams and basins including clearing and grubbing; stripping; basin excavation; compacted fills; and payment. Section 306 of the Greenbook includes discussion of protocols for underground conduit construction, including trench excavation, jacking operations, tunneling operations, cast-in-place non-reinforced concrete pipe, abandonment of conduits and structures, remodeling existing sewer facilities, curb drains, and microtunneling. The proposed MDP facilities specifications will be consistent with Sections 300-6 and 306 of the Greenbook.

Riverside County, City of Lake Elsinore, and City of Wildomar General Plans

Riverside County’s General Plan, along with those of the Cities of Lake Elsinore and Wildomar, includes a section on seismic hazards and provides policies regarding the protection of people and structures from seismic activities and soil instability for development projects. None of these policies were deemed appropriate or applicable to the Project since these policies relate to future development proposals in those various jurisdictions that are not related to construction of flood control infrastructure.

4.5.3 **Comments Received in Response to the Notice of Preparation**

No comment letters were received during the NOP public comment period related to geology and soils.

4.5.4 **Significance Threshold Criteria**

The Riverside County Flood Control and Water Conservation District (District) has not established local California Environmental Quality Act (CEQA) significance thresholds as described in Section 15064.7 of the CEQA Guidelines (14 CCR 15000 et seq.). The NOP for the PEIR included the IS (Environmental Checklist) to show the areas being analyzed in the PEIR (refer to Appendix A of this PEIR). Accordingly, and based on the IS, the Project would have a significant impact on geology and soils if the Project would:

- Expose people or structures to potential substantial adverse effects, including the risk of loss, injury or death involving seismic-related ground failure, including liquefaction.
- Expose people or structures to potential substantial adverse effects, including the risk of loss, injury or death involving landslides or mudflows.
- 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.

4.5.5 **Environmental Impacts Before Mitigation**

Would the Project expose people or structures to potential substantial adverse effects, including the risk of loss, injury or death involving seismic-related ground failure, including liquefaction?

One of the most common seismic-related ground failure events that most likely would occur within the Project boundary is liquefaction. According to Figure S-3 in Chapter 6: Safety Element of the Riverside County General Plan (County of Riverside 2003), potential for liquefaction is considered very high within portions of the Project boundary. The phenomenon of liquefaction may produce lateral spreading of soils adjacent to a body of water or water course (Lake Elsinore). Construction and/or improvements of the proposed MDP facilities include storm drains, concrete channels, water quality basins, and debris basins. The Project does not contain structures that would be inhabited by humans and therefore will not expose persons directly to substantial adverse effects from seismic-related ground failure such as liquefaction. However, the proposed debris and water quality basins, and the embankments associated with these features, could fail as a result of ground shaking and could indirectly expose humans and structures to adverse effects such as flooding if it were to occur during periods of high water levels in the basins. Most of the MDP facilities (i.e., storm drains) will be underground within road rights-of-way; therefore, seismic-related ground failure would not adversely affect their function and is not expected to

incur the risk of loss, injury, or death. Additionally, grading and earthwork construction for the proposed MDP facilities will comply with the Greenbook (Mitigation Measure **(MM) GEO-1**) and the DSOD regulations and policies for the basins over 25 feet high or that have an impounding capacity of 50 acre-feet or more, or over 6 feet in height and that impound over 15 acre-feet of water, as they are considered dams by the DSOD. Per Water Code Section 6200, construction of any new dam or reservoir or the enlargement of any dam or reservoir shall not be commenced until the owner has applied for and obtained from the DSOD written approval of plans and specifications.

Also, per Water Code Section 6120 and 6203, submittal of studies, data, tests, and investigations are required to address the failure of the dam structure for seismic and other loading conditions. For future basins that are considered dams and under the jurisdiction of DSOD, the District will be required to apply for and obtain from DSOD written approval of plans and specifications. The DSOD engineers and engineering geologists will review and approve plans and specifications for the design of dams and oversee their construction in order to ensure compliance with the approved plans and specifications as to reduce the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction. Furthermore, the U.S. Bureau of Reclamation includes an engineering manual for *Design of Small Dams* (BOR 1987), which includes criteria that must be met for earthfill dams. The proposed dams on future water quality or debris basins would be required to comply with the earthfill dam criteria outlined in the *Design of Small Dams* to ensure that the dam is safe and stable during all phases of construction and operation (**MM GEO-2**). Since this is a PEIR, no geotechnical specific studies have been done at this time since specific alignments are unknown and will be proposed in the future. A geotechnical report (field exploration and borings) will be prepared for future MDP facilities during the design phase of flood control facilities (**MM GEO-3**). Recommendations for remedial actions related to geotechnical concerns, if needed, that may be identified in a project-specific geotechnical report prepared in the future must be implemented by the District, the County of Riverside, the City of Lake Elsinore or the City of Wildomar. Therefore, since future basins will be designed in compliance with the Greenbook and DSOD regulations per **MM GEO-1** and **MM GEO-2**, and since the liquefaction and seismic risk will be assessed and remediated prior to construction per **MM GEO-3** and compliance with DSOD requirements for dams, impacts to seismic-related ground failure including liquefaction are considered to be **less than significant with mitigation incorporated**.

Would the Project expose people or structures to potential substantial adverse effects, including the risk of loss, injury or death involving landslides or mudflows?

According to Figure S-5 in Chapter 6: Safety Element of the Riverside County General Plan (County of Riverside 2003), portions of the Project boundary are located within an area of steep slopes (30% and greater) and within an area with documented subsidence. Portions of the Project boundary known to be at risk from landslides, rockfalls, subsidence, and ground fissuring have been mapped and are shown on Figure 4.5-3. The Project does not contain structures that would be inhabited by humans and therefore will not expose persons directly to substantial adverse effects, including the risk of loss,

injury, or death involving landslides or mudflows. However, the proposed debris and water quality basins, and the embankments associated with these features, could fail as a result of ground shaking, and could indirectly expose humans and structures to adverse effects such as landslides or mudflows. Most of the MDP facilities (i.e., storm drains) will be underground within road rights-of-way and do not pose a risk of causing landslides and mudflows.

As discussed above, some of the future water quality and debris basin embankments may qualify as dams per the DSOD regulations.

Per Water Code Section 6200, construction of any new dam or reservoir or the enlargement of any dam or reservoir shall not commence until the owner has applied for and obtained from the DSOD written approval of plans and specifications. Also, per Water Code Sections 6120 and 6203, submittal of studies, data, tests, and investigations are required to address the failure of the dam structure for seismic and other loading conditions.

For future basins that are considered dams and under the jurisdiction of DSOD, the District will be required to apply for and obtain from DSOD written approval of plans and specifications. The DSOD engineers and engineering geologists will review and approve plans and specifications for the design of dams and oversee their construction in order to ensure compliance with the approved plans and specifications as to reduce the risk of loss, injury, or death involving landslides or mudflows to less than significant levels. Furthermore, the U.S. Bureau of Reclamation includes an engineering manual for *Design of Small Dams* (BOR 1987), which includes criteria that must be met for earthfill dams. The proposed dam basins would be required to comply with the earthfill dam criteria outlined in the *Design of Small Dams* to ensure that the dam is safe and stable during all phases of construction and operation (**MM GEO-2**). The proposed expansion of existing facilities and proposed storm drains, open channels, and basins will serve to decrease the potential adverse impacts from landslides or mudflows by providing a conduit within which these types of flows could be conveyed. Site-specific geologic review will also be performed to determine whether the potential for landsliding or slope instability exists for any future MDP facility (**MM GEO-3**). The dams will be designed in accordance with DSOD guidelines. The MDP facilities will be designed in accordance with the Greenbook, and the District will assess each MDP facility, especially those in the sloped areas of the Project boundary, by preparing a project-specific geotechnical analysis. Therefore, with incorporation of **MM GEO-2** (requiring compliance with DSOD requirements for dams) and **MM GEO-3**, impacts would be considered **less than significant with mitigation incorporated**.

Would the Project 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?

As discussed above, the Project will most likely decrease the potential adverse impacts from landslides or mudflows by providing a conduit within which storm flows, which are typically the cause of landslides or

collapse, could be conveyed. However, according to Figure S-5 in Chapter 6: Safety Element of the Riverside County General Plan (County of Riverside 2003), portions of the Project are located within an area with steep slopes (30% and greater) and within an area with documented subsidence. Lateral spreading is also a risk within the Project boundary, given the seismic constraints. Areas of the Project area known to be at risk from landslides, rock falls, subsidence, and ground fissuring have been mapped and are shown on Figure 4.5-3. In accordance with **MM GEO-3**, site-specific geologic review and remediation, if necessary, will be conducted prior to final design to determine whether the potential for landsliding or slope instability exists for any future facility. Potentially significant construction-related impacts associated with the Project include encountering unstable soil and rock conditions and exposure of oversize rock material during grading on undeveloped lands. Grading and earthwork construction for future MDP facilities will be required to conform to the Greenbook as outlined by a qualified geotechnical consultant, as required by **MM GEO-I**. Additionally, basins that meet the requirements to be considered a dam would fall under the jurisdiction of the DSOD. Per Water Code Section 6200, construction of any new dam or reservoir or the enlargement of any dam or reservoir shall not commence until the owner has applied for and obtained from the DSOD written approval of plans and specifications. Also, per Water Code Sections 6120 and 6203, submittal of studies, data, tests, and investigations are required to address the failure of the dam structure for seismic and other loading conditions. For future basins that are considered dams and under the jurisdiction of DSOD, the District will be required to apply for and obtain from DSOD written approval of plans and specifications. The DSOD engineers and engineering geologists will review and approve plans and specifications for the design of dams and oversee their construction in order to ensure compliance with the approved plans and specifications. Furthermore, the U.S. Bureau of Reclamation includes an engineering manual for *Design of Small Dams* (BOR 1987), which includes criteria that must be met for earthfill dams. The proposed dam basins would be required to comply with the earthfill dam criteria outlined in the *Design of Small Dams* to ensure that the dam is safe and stable during all phases of construction and operation (**MM GEO-2**). Each MDP facility would be required to adhere to the recommendations of the project-specific geological study and comply with the Greenbook in order to reduce potentially significant impacts. Future dams under the jurisdiction of the DSOD would be required to comply with the DSOD statutes and regulations. Therefore, with incorporation of **MM GEO-I**, **MM GEO-2** (requiring compliance with DSOD requirements for dams), and **MM GEO-3**, impacts related to risk of being located on an unstable unit would be considered **less than significant with mitigation incorporated**.

4.5.6 Mitigation Measures

The CEQA Guidelines require an EIR to describe feasible mitigation measures that could minimize significant adverse impacts (14 CCR 15126.4). Mitigation measures were evaluated for their ability to reduce or eliminate impacts related to unstable geologic conditions.

MM GEO-1 In order to ensure individual MDP facilities are placed on the least unstable areas, or designed in a way to address any unstable geologic conditions (i.e., liquefaction), grading and earthwork construction shall conform to *Standard Specifications for Public Works Construction* (the “Greenbook”) and grading specifications shall be developed by a geotechnical consultant hired by the Riverside County Flood Control and Water Conservation District (District), the City of Lake Elsinore, or the City of Wildomar. Typical earthwork considerations include:

- Remedial grading requirements for any given site are determined based on a site-specific geotechnical investigation to provide stable ground for any proposed structures. Generally, the upper weathered formational materials or loose soils are removed until dense, relatively “non-compressible” soils (alluvium or Formation materials) are encountered.
- Topsoil and vegetation layers, root zones, and similar surface materials are typically not suitable for reuse as engineered fill and are normally stripped and either stockpiled for reuse in landscape areas or removed from the site. Most alluvial materials and bedrock materials are considered suitable for reuse as compacted engineer fills. However, excavations in the bedrock materials may generate oversize materials that are difficult to handle in engineered fills. Typically, cobbles and boulders larger than 6 inches in diameter are not placed in structural fill under settlement-sensitive improvements and may require special handling and grading procedures.

MM-GEO-2 In order to provide a safe and stable earthfill dam that would be associated with debris basins or water quality basins, during all phases of construction and operation, the following criteria must be met in accordance with the U.S. Department of the Interior, Bureau of Reclamation, *Design of Small Dams* (BOR 1987):

- a. The embankment, foundation, abutments, and reservoir rim must be stable and must not develop unacceptable deformations under all loading conditions brought about by construction of the embankment, reservoir operation, and earthquake.
- b. Seepage flow through the embankment, foundation, abutments, and reservoir rim must be controlled to prevent excessive uplift pressures; piping; instability; sloughing; removal of material by solutioning; or erosion of material into cracks, joints, or cavities. The amount of water lost through seepage must be controlled so that it does not interfere with planned Project functions.
- c. The reservoir rim must be stable under all operating conditions to prevent the triggering of a landslide into the reservoir that could cause a large wave to overtop the dam.

- d. The embankment must be safe against overtopping or encroachment of freeboard during occurrence of the IDF (inflow design flood) by the provision of sufficient spillway and outlet works capacity.
- e. Freeboard must be sufficient to prevent overtopping by waves.
- f. Camber should be sufficient to allow for settlement of the foundation and embankment, but not included as part of the freeboard.
- g. The upstream slope must be protected against wave erosion, and the crest and downstream slope must be protected against wind and rain erosion.

MM GEO-3 In order to address risk of seismic activities such as land spreading or slope instability, future proposed MDP facilities will be assessed by the District, the City of Lake Elsinore, or the City of Wildomar through a qualified geologist to determine whether they are located in areas prone to these types of seismic activities. If so, a geotechnical report (field exploration and borings) shall be prepared during the design phase. The geotechnical report shall include a site-specific seismic evaluation to determine the intensity of ground shaking on the specific MDP facility. MDP facilities within a liquefaction hazard zone per the Riverside County General Plan shall also be evaluated for liquefaction-induced settlement. An analysis of lateral spreading affects to properties adjacent to the lake edge and where future MDP facilities are proposed as well as a review to determine whether the potential for landsliding or slope instability exists shall be performed by a qualified geologist and provided to the District during the design phase.

Additionally, future site-specific geologic review shall be performed to determine whether the potential for land sliding or slope instability exist, especially for MDP facilities located on the higher elevations of the Project boundary.

4.5.7 Summary of Environmental Effects After Mitigation Measures Are Implemented

Implementation of the mitigation measures outlined in Section 4.5.6 will reduce potentially significant impacts related to geology and soils to a less than significant level.

4.5.8 References

BOR (U.S. Bureau of Reclamation). 1987. *Design of Small Dams*. U.S. Department of the Interior, BOR. Accessed May 1, 2012.
http://www.usbr.gov/pmts/hydraulics_lab/pubs/manuals_monographs.html.

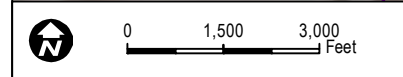
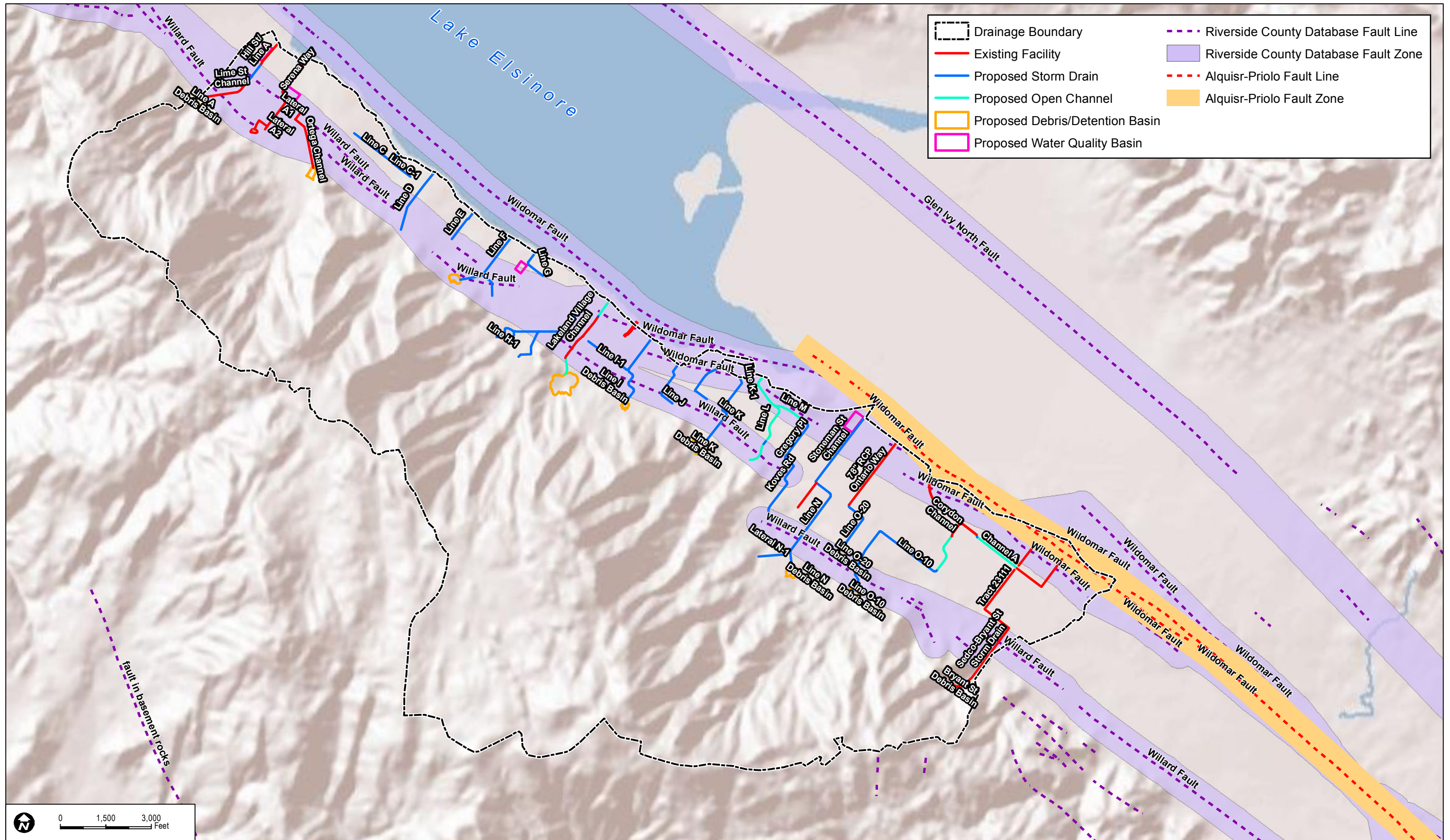
County of Riverside. 2003. *Riverside County General Plan*.

DSOD (Division of Safety and Dams). *Statutes and Regulations Pertaining to Supervision of Dams and Reservoirs*. 2012. California Department of Water Resources, DSOD. Accessed April 23, 2012. <http://www.water.ca.gov/damsafety/docs/statutes-regulations.pdf>.

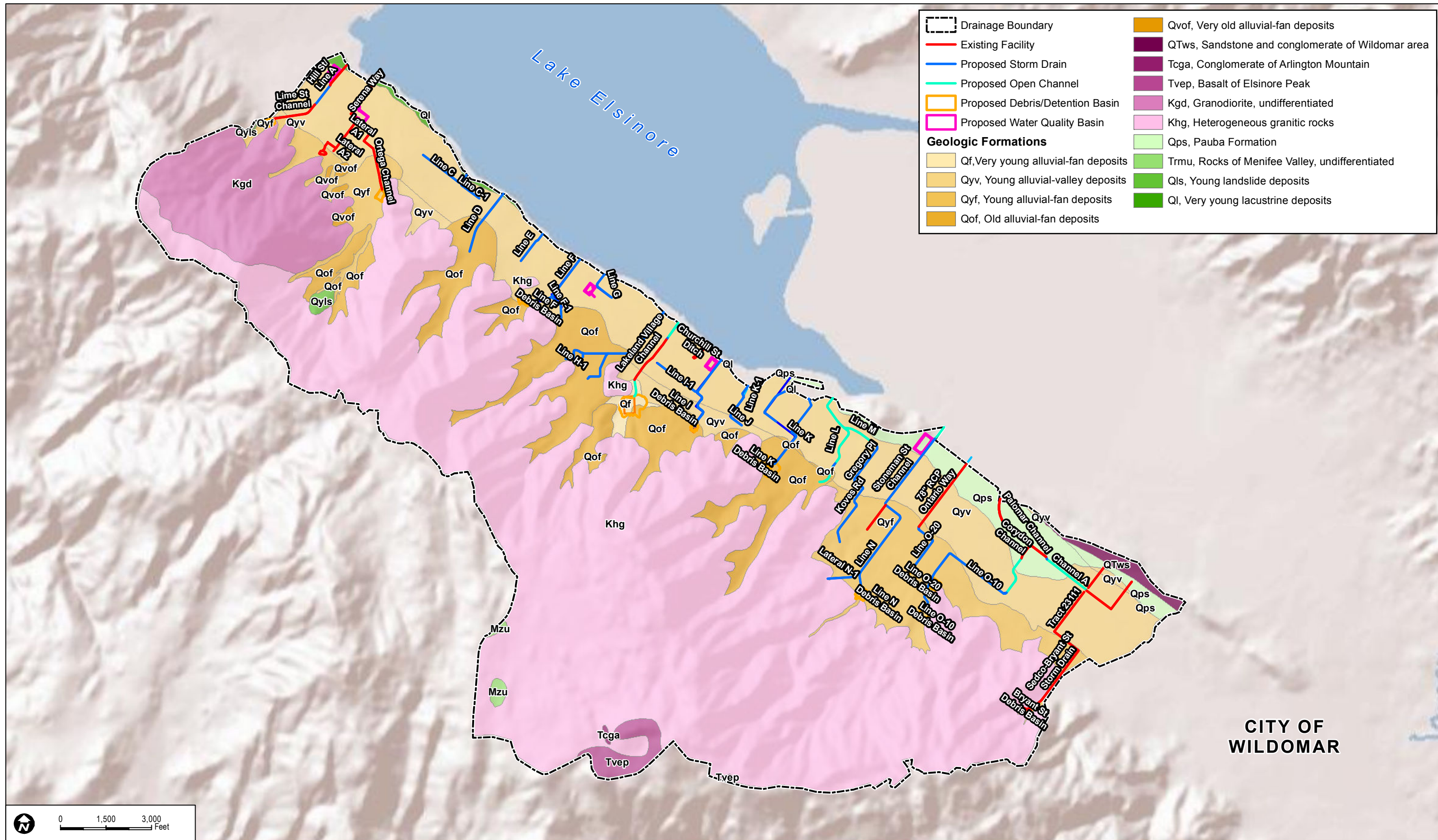
Leighton Consulting Inc. 2011. *Seismic and Geologic Hazards Review*. March 22, 2011.

Public Works Standards Inc. 2012. *The “Greenbook”: Standard Specifications for Public Works Construction*. BNI Publications Incorporated. January 20, 2012.

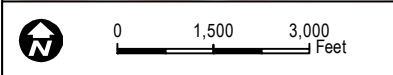
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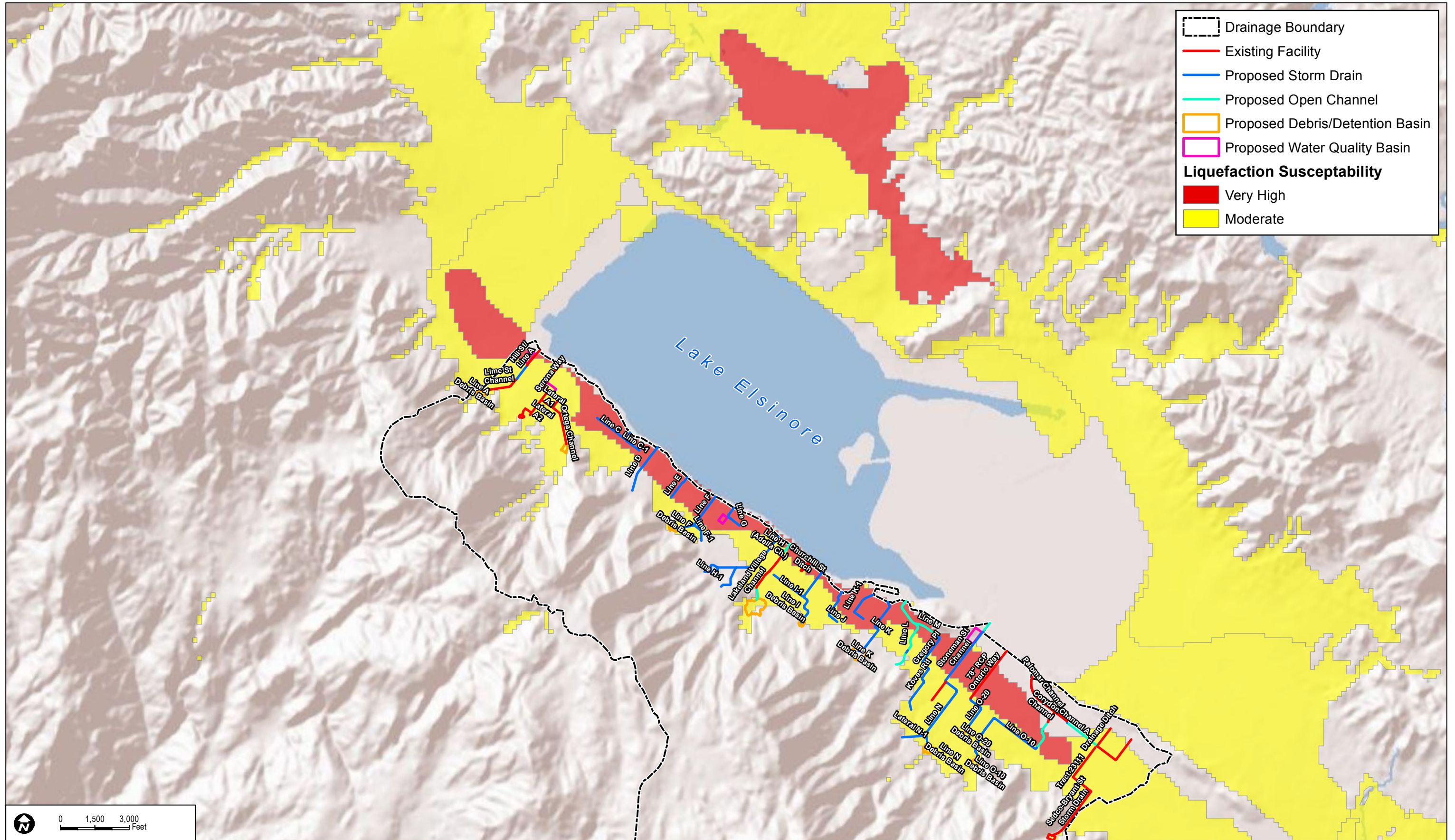
SOURCE: Leighton Consulting, Inc. (2011)

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LAKELAND VILLAGE MDP DRAFT PROGRAM EIR

FIGURE 4.5-2
Regional Geology

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Drainage Boundary
— Existing Facility
— Proposed Storm Drain
— Proposed Open Channel
 Proposed Debris/Detention Basin
 Proposed Water Quality Basin
Liquefaction Susceptibility
■ Very High
■ Moderate

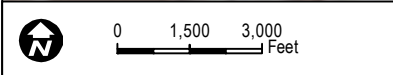


FIGURE 4.5-3
Liquefaction Hazard

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4.6 Greenhouse Gas Emissions

The focus of the following discussion and analysis, based on the initial study (IS), public scoping session, and comments received during the public comment period, is related to the Project's potential impacts resulting from generation of greenhouse gas (GHG) emissions and potential conflicts with an applicable plan, policy, or regulation adopted for the purpose of reducing the GHG emissions as a result of implementation of the Project.

Potential Project-generated emissions were estimated using the California Emissions Estimator Model (CalEEMod), Version 2011.1.1, available online (<http://www.caleemod.com>). Model results are included in this Draft PEIR as Appendix C.

4.6.1 Setting and Project Baseline

4.6.1.1 Physical Setting

Climate change refers to any significant change in measures of climate, such as temperature, precipitation, or wind, lasting for an extended period (decades or longer) (EPA 2011). Gases that trap heat in the atmosphere are often called greenhouse gases (GHGs). The greenhouse effect traps heat in the troposphere through a threefold process: short-wave radiation emitted by the Sun is absorbed by the Earth; the Earth emits a portion of this energy in the form of long-wave radiation; and GHGs in the upper atmosphere absorb this long-wave radiation and emit this long-wave radiation into space and toward the Earth. This "trapping" of the long-wave (thermal) radiation emitted back toward the Earth is the underlying process of the greenhouse effect.

Principal GHGs include carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), ozone (O₃), and water vapor (H₂O). Some GHGs, such as CO₂, CH₄, and N₂O, occur naturally and are emitted to the atmosphere through natural processes and human activities. Of these gases, CO₂ and CH₄ are emitted in the greatest quantities from human activities. Emissions of CO₂ are largely by-products of fossil-fuel combustion, whereas CH₄ results mostly from off-gassing associated with agricultural practices and landfills. Man-made GHGs, which have a much greater heat-absorption potential than CO₂, include fluorinated gases, such as hydrofluorocarbons (HFCs), perfluorocarbons (PFC), sulfur hexafluoride (SF₆), and nitrogen trifluoride (NF₃), which are associated with certain industrial products and processes (CAT 2006).

The effect each GHG has on climate change is measured as a combination of the volume or mass of its emissions and the potential of a gas or aerosol to trap heat in the atmosphere, known as its global warming potential (GWP). The GWP varies between GHGs; for example, the GWP of CH₄ is 21, and the GWP of N₂O is 310. Total GHG emissions are expressed as a function of how much warming

would be caused by the same mass of CO₂. Thus, GHG gas emissions are typically measured in terms of pounds or tons of “CO₂ equivalent” (CO₂E).¹

According to the California Air Resources Board (CARB), some of the potential impacts in California of global warming may include loss in snow pack, sea level rise, more extreme heat days per year, more high O₃ days, more large forest fires, and more drought years (CARB 2006). Several recent studies have attempted to explore the possible negative consequences that climate change, left unchecked, could have in California. These reports acknowledge that climate scientists’ understanding of the complex global climate system, and the interplay of the various internal and external factors that affect climate change, remains too limited to yield scientifically valid conclusions on such a localized scale. Substantial work has been done at the international and national level to evaluate climatic impacts, but far less information is available on regional and local impacts.

The primary effect of global climate change has been a rise in average global tropospheric temperature of 0.2 degrees Celsius (°C) per decade, determined from meteorological measurements worldwide between 1990 and 2005. Climate change modeling using 2000 emission rates shows that further warming would occur, which would induce further changes in the global climate system during the current century. Changes to the global climate system and ecosystems and to California would include, but would not be limited to:

- The loss of sea ice and mountain snowpack resulting in higher sea levels and higher sea surface evaporation rates with a corresponding increase in tropospheric water vapor due to the atmosphere’s ability to hold more water vapor at higher temperatures (IPCC 2007)
- Rise in global average sea level primarily due to thermal expansion and melting of glaciers and ice caps, the Greenland and Antarctic ice sheets (IPCC 2007)
- Changes in weather that includes, widespread changes in precipitation, ocean salinity, and wind patterns, and more energetic and aspects of extreme weather including droughts, heavy precipitation, heat waves, extreme cold, and the intensity of tropical cyclones (IPCC 2007)
- Decline of Sierra snowpack, which accounts for approximately half of the surface water storage in California, by 70% to as much as 90% over the next 100 years (CAT 2006)
- Increase in the number of days conducive to O₃ formation by 25% to 85% (depending on the future temperature scenario) in high O₃ areas of Los Angeles and the San Joaquin Valley by the end of the 21st century (CAT 2006)
- High potential for erosion of California’s coastlines and sea water intrusion into the Delta and levee systems due to the rise in sea level (CAT 2006).

¹ The CO₂ equivalent for a gas is derived by multiplying the mass of the gas by the associated GWP, such that metric tons CO₂E = (metric tons of a GHG) × (GWP of the GHG). For example, the GWP for CH₄ is 21. This means that emissions of 1 metric ton of methane is equivalent to emissions of 21 metric tons of CO₂.

4.6.1.2 Contributions to Greenhouse Gas Emissions

In 2008, the United States produced 6,957 million metric tons of CO₂E (MMT CO₂E) (EPA 2010a). The primary GHG emitted by human activities in the United States was CO₂, representing approximately 85% of total GHG emissions. The largest source of CO₂, and of overall GHG emissions, was fossil-fuel combustion, which accounted for approximately 94% of the CO₂ emissions.

According to the 2008 GHG inventory data compiled by CARB for the California Greenhouse Gas Inventory for 2000–2008, California emitted 478 MMT CO₂E of GHGs, including emission resulting from out-of-state electrical generation (CARB 2010). The primary contributors to GHG emissions in California are transportation, electric power production from both in-state and out-of-state sources, industry, agriculture and forestry, and other sources, which include commercial and residential activities. These primary contributors to California’s GHG emissions and their relative contributions in 2008 are presented in Table 4.6-I, Greenhouse Gas Sources in California.

**Table 4.6-I
Greenhouse Gas Sources in California**

Source Category	Annual GHG Emissions (MMT CO ₂ E)	% of Total
Agriculture	28.06	5.9%
Commercial uses	14.68	3.1%
Electricity generation	116.35 ^a	24.3%
Forestry (excluding sinks)	0.19	0.0%
Industrial uses	92.66	19.4%
Recycling and waste	6.71	1.4%
Residential uses	28.45	6.0%
Transportation	174.99	36.6%
High GWP substances	15.65	3.3%
Totals	477.74	100.0%

Source: CARB 2010.

^a Includes emissions associated with imported electricity, which account for 61.24 MMT CO₂E annually.

4.6.2 Related Regulations

Regulation of GHGs in the United States and California is relatively recent, beginning mid-decade. In the absence of major federal efforts, California’s former governor, Arnold Schwarzenegger, and the legislature took initiatives to establish goals for reductions of GHG emissions in California and to prescribe a regulatory approach to ensuring that the goals would be met. While not as comprehensive, the federal government, primarily through actions of the U.S. Environmental Protection Agency (EPA), has also begun to regulate GHG emissions. Key federal and state regulatory efforts that could apply to implementation of the improvements under the Project are provided below.

While the state has adopted other legislation and regulatory measures that apply to electricity (e.g., Renewable Portfolio Standard under Senate Bill XI 2) and measures focused on specific sources of GHGs, they would not apply directly to the Project because the proposed Master Drainage Plan (MDP) facilities would not provide or consume electricity. The description of key measures and motor-vehicle-related measures discussed above focuses on those that are of a general nature (e.g., Assembly Bill (AB) 32) or could apply to some extent, although generally in a minor way.

Federal

Massachusetts v. EPA. On April 2, 2007, in *Massachusetts v. EPA*, 549 U.S. 497, the Supreme Court found that GHGs are air pollutants covered by the Clean Air Act. The court held that the EPA Administrator must determine whether or not emissions of GHGs from new motor vehicles cause or contribute to air pollution that may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision. In making these decisions, the EPA Administrator is required to follow the language of Section 202(a) of the Clean Air Act. On December 7, 2009, the Administrator signed a final rule with two distinct findings regarding GHGs under Section 202(a) of the Clean Air Act:

- The Administrator found that elevated concentrations of GHGs—CO₂, CH₄, N₂O, HFCs, PFCs, and SF₆—in the atmosphere threaten the public health and welfare of current and future generations. This is referred to as the endangerment finding.
- The Administrator further found the combined emissions of GHGs—CO₂, CH₄, N₂O, and HFCs— from new motor vehicles and new motor vehicle engines contribute to the GHG air pollution that endangers public health and welfare. This is referred to as the cause or contribute finding.

These two findings were necessary to establish the foundation for regulation of GHGs from new motor vehicles as air pollutants under the Clean Air Act.

Energy Independence and Security Act of 2007. Signed on December 19, 2007, the act includes the following measures to aid in the reduction of national GHG emissions: (1) increase the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard; (2) set a target of 35.5 miles per gallon for the combined fleet of cars and light trucks by model year 2016 and direct the National Highway Traffic Safety Administration (NHTSA) to establish a fuel economy program for medium- and heavy-duty trucks; and (3) prescribe or revise standards affecting regional efficiency, energy conservation, energy efficiency labeling for consumer electronic products, and efficiencies for residential boiler and heating/cooling products/home appliances.

EPA and NHTSA Joint Final Rule for Vehicle Standards. On April 1, 2010, the EPA and the Department of Transportation's NHTSA announced a joint final rule to establish a national program consisting of new standards for light-duty vehicles model years 2012 through 2016. The joint rule is intended

to reduce GHG emissions and improve fuel economy. The EPA finalized the first-ever national GHG emissions standards under the Clean Air Act, and the NHTSA finalized corporate average fuel economy (CAFE) standards under the Energy Policy and Conservation Act (EPA 2010b). This final rule follows the EPA and Department of Transportation's joint proposal on September 15, 2009, and is the result of President Obama's May 2009 announcement of a national program to reduce GHGs and improve fuel economy. This final rule became effective on July 6, 2010 (EPA and NHTSA 2010).

The EPA's GHG standards require new passenger cars, light-duty trucks, and medium-duty passenger vehicles to meet an estimated combined average emissions level of 250 grams of CO₂ per mile in model year 2016, equivalent to 35.5 miles per gallon (mpg) if the automotive industry were to meet this CO₂ level all through fuel economy improvements. The CAFE standards for passenger cars and light trucks will be phased in between 2012 and 2016, with the final standards equivalent to 37.8 mpg for passenger cars and 28.8 mpg for light trucks, resulting in an estimated combined average of 34.1 mpg. Together, these standards will cut GHG emissions by an estimated 960 MMT and 1.8 billion barrels of oil over the lifetime of the vehicles sold under the program. The rules will simultaneously reduce GHG emissions, improve energy security, increase fuel savings, and provide clarity and predictability for manufacturers (EPA 2010b).

In August 2012, the EPA and NHTSA approved a second round of GHG and CAFE standards for model years 2017 and beyond (EPA and NHTSA 2012). These standards will reduce motor vehicle GHG emissions to 163 grams of CO₂ per mile, which is equivalent to 54.5 mpg if this level were achieved solely through improvements in fuel efficiency, for cars and light-duty trucks by model year 2025. A portion of these improvements, however, will likely be made through improvements in air conditioning leakage and through use of alternative refrigerants, which would not contribute to fuel economy. The first phase of the CAFE standards, for model year 2017 to 2021, are projected to require, on an average industry fleet wide basis, a range from 40.3 to 41.0 mpg in model year 2021. The second phase of the CAFE program, for model years 2022 to 2025, includes standards, which are not final due to the statutory requirement that NHTSA set average fuel economy standards not more than five model years at a time, projected to require, on an average industry-fleet-wide basis, a range from 48.7 to 49.7 mpg in model year 2025. The regulations also include targeted incentives to encourage early adoption and introduction into the marketplace of advanced technologies to dramatically improve vehicle performance, including:

- Incentives for electric vehicles, plug-in hybrid electric vehicles, and fuel cell vehicles
- Incentives for hybrid technologies for large pickups and for other technologies that achieve high fuel economy levels on large pickups
- Incentives for natural gas vehicles
- Credits for technologies with potential to achieve real-world GHG reductions and fuel economy improvements that are not captured by the standard test procedures.

State

Assembly Bill 1493. In a response to the transportation sector accounting for more than half of California's CO₂ emissions, AB 1493 (Pavley) was enacted on July 22, 2002. AB 1493 required CARB to set GHG emission standards for passenger vehicles, light-duty trucks, and other vehicles determined by the state board to be vehicles whose primary use is noncommercial personal transportation in the state. The bill required that CARB set the GHG emission standards for motor vehicles manufactured in 2009 and all subsequent model years. CARB adopted the standards in September 2004. When fully phased in, the near-term (2009–2012) standards will result in a reduction of about 22% in GHG emissions compared to the emissions from the 2002 fleet, while the mid-term (2013–2016) standards will result in a reduction of about 30%. The EPA granted California a waiver under the federal Clean Air Act, which ordinarily preempts state regulation of motor vehicle emission standards, on June 30, 2009. On March 29, 2010, the CARB Executive Officer approved revisions to the motor vehicle GHG standards to harmonize the state program with the national program for 2012 to 2016 model years (see "EPA and NHTSA Joint Final Rule for Vehicle Standards"). The revised regulations became effective on April 1, 2010.

Assembly Bill 32. In furtherance of the goals established in Executive Order S-3-05, the legislature enacted AB 32 (Núñez and Pavley), the California Global Warming Solutions Act of 2006, which former governor Schwarzenegger signed on September 27, 2006. The statewide GHG emissions limit is equivalent to the 1990 levels, which are to be achieved by 2020.

CARB has been assigned to carry out and develop the programs and requirements necessary to achieve the goals of AB 32. Under AB 32, CARB must adopt regulations requiring the reporting and verification of statewide GHG emissions. This program will be used to monitor and enforce compliance with the established standards. CARB is also required to adopt rules and regulations to achieve the maximum technologically feasible and cost-effective GHG emission reductions. AB 32 allows CARB to adopt market-based compliance mechanisms to meet the specified requirements. Finally, CARB is ultimately responsible for monitoring compliance and enforcing any adopted rule, regulation, order, emission limitation, emission reduction measure, or market-based compliance mechanism adopted.

On December 11, 2008, CARB approved the Climate Change Scoping Plan (Scoping Plan) (CARB 2008) to achieve the goals of AB 32. The Scoping Plan establishes an overall framework for the measures that will be adopted to reduce California's GHG emissions. The Scoping Plan evaluates opportunities for sector-specific reductions, integrates all CARB and CAT early actions and additional GHG reduction measures by both entities, identifies additional measures to be pursued as regulations, and outlines the role of a cap-and-trade program. These measures are being developed and adopted; they will become effective by January 1, 2012.

The key elements of the Scoping Plan (CARB 2008) include the following:

- Expanding and strengthening existing energy-efficiency programs as well as building and appliance standards
- Achieving a statewide renewables energy mix of 33%
- Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system and caps sources contributing 85% of California's GHG emissions
- Establishing targets for transportation-related GHG emissions for regions throughout California, and pursuing policies and incentives to achieve those targets
- Adopting and implementing measures pursuant to existing state laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard
- Creating targeted fees, including a public goods charge on water use, fees on high GWP gases, and a fee to fund the administrative costs of the State of California's long-term commitment to AB 32 implementation.

Executive Order S-1-07. Issued on January 18, 2007, Executive Order S-1-07 sets a declining Low Carbon Fuel Standard for GHG emissions measured in CO₂E gram per unit of fuel energy sold in California. The target of the Low Carbon Fuel Standard is to reduce the carbon intensity of California passenger vehicle fuels by at least 10% by 2020. CARB adopted the implementing regulation in April 2009. The regulation is expected to increase the production of biofuels, including those from alternative sources such as algae, wood, and agricultural waste. In addition, the Low Carbon Fuel Standard would drive the availability of plug-in hybrid, battery electric, and fuel-cell power motor vehicles. The Low Carbon Fuel Standard is anticipated to replace 20% of the fuel used in motor vehicles with alternative fuels by 2020.

Senate Bill 97. In August 2007, the legislature enacted Senate Bill (SB) 97 (Dutton), which directs the Governor's Office of Planning and Research (OPR) to develop guidelines under the California Environmental Quality Act (CEQA) for the mitigation of GHG emissions. OPR was to develop proposed guidelines by July 1, 2009, and the Natural Resources Agency was directed to adopt guidelines by January 1, 2010. On June 19, 2008, OPR issued a technical advisory as interim guidance regarding the analysis of GHG emissions in CEQA documents (OPR 2008). The advisory indicated that a project's GHG emissions, including those associated with vehicular traffic, energy consumption, water usage, and construction activities, should be identified and estimated. The advisory further recommended that the lead agency determine significance of the impacts and impose all mitigation measures that are necessary to reduce GHG emissions to a less than significant level.

The California Natural Resources Agency (CNRA) adopted the CEQA Guidelines amendments on December 30, 2009, and transmitted them to the Office of Administrative Law on December 31, 2009.

On February 16, 2010, the Office of Administrative law completed its review and filed the amendments with the Secretary of State. The amendments became effective on March 18, 2010.

Senate Bill 375. Signed by former governor Schwarzenegger on September 30, 2008, SB 375 (Steinberg) addresses GHG emissions associated with the transportation section through regional transportation and sustainability plans. By September 30, 2010, CARB was required to assign regional GHG reduction targets for emissions from automobiles and light trucks within each region of California that has a metropolitan planning organization. The targets are set for years 2020 and 2035. Regional metropolitan planning organizations will be responsible for preparing a Sustainable Communities Strategy within the Regional Transportation Plan. The goal of the Sustainable Communities Strategy is to establish a development plan for the region, which, after considering transportation measures and policies, will achieve, if feasible, the GHG reduction targets. SB 375 provides incentives for streamlining CEQA requirements by substantially reducing the requirements for “transit priority projects.” On September 23, 2010, CARB adopted the SB 375 targets for the regional metropolitan planning organizations. The targets for the Southern California Association of Governments are an 8% reduction in emissions per capita by 2020 and a 13% reduction by 2035. Achieving these goals through adoption of a Sustainable Communities Strategy will be the responsibility of the metropolitan planning organizations.

Executive Order B-16-12. Governor Brown issued Executive Order S-16-12 on March 23, 2012. The Executive Order requires that state entities under the governor’s direction and control support and facilitate the rapid commercialization of zero-emission vehicles. It orders CARB, the CEC, the CPUC, and other relevant agencies work with the Plug-In Electric Vehicle Collaborative and the California Fuel Cell Partnership to establish goals and benchmarks for 2015, 2020, and 2025. On a statewide basis, the executive order establishes a target reduction of GHG emissions from the transportation sector equaling 80% less than 1990 levels by 2050.

4.6.3 Comments Received in Response to the Notice of Preparation

No comments relating to GHG emissions or climate change were received in response to the NOP.

4.6.4 Significance Threshold Criteria

The District has not established local CEQA significance thresholds as described in Section 15064.7 of the CEQA Guidelines. The NOP for the PEIR included the IS (Environmental Checklist) to show the areas being analyzed in the PEIR (refer to Appendix A of this PEIR). Accordingly, and based on the IS, the Project would have a significant impact on GHG emissions if the Project would:

- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.
- Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

Neither the State of California nor the South Coast Air Quality Management District (SCAQMD) has adopted emission-based thresholds for GHG emissions under CEQA. The OPR issued a technical advisory titled *CEQA and Climate Change: Addressing Climate Change through California Environmental Quality Act (CEQA) Review*, which states that “public agencies are encouraged but not required to adopt thresholds of significance for environmental impacts. Even in the absence of clearly defined thresholds for GHG emissions, the law requires that such emissions from CEQA projects must be disclosed and mitigated to the extent feasible whenever the lead agency determines that the project contributes to a significant, cumulative climate change impact” (OPR 2008, 4). Furthermore, the advisory document indicates that “in the absence of regulatory standards for GHG emissions or other scientific data to clearly define what constitutes a ‘significant impact,’ individual lead agencies may undertake a project-by-project analysis, consistent with available guidance and current CEQA practice” (OPR 2008, 6).

Global climate change is a cumulative impact; a project participates in this potential impact through its incremental contribution combined with the cumulative increase of all other sources of GHGs. Thus, GHG impacts are recognized as exclusively cumulative impacts; there are no non-cumulative GHG emission impacts from a climate change perspective (CAPCOA 2008). This approach is consistent with that recommended by the CNRA, which noted in its Public Notice for the proposed CEQA amendments that the evidence before it indicates that in most cases, the impact of GHG emissions should be considered in the context of a cumulative impact, rather than a project-level impact (CNRA 2009a). Similarly, the Final Statement of Reasons for Regulatory Action on the CEQA Amendments confirm that an EIR or other environmental documents must analyze the incremental contribution of a project to GHG levels and determine whether those emissions are cumulatively considerable (CNRA 2009b).

The SCAQMD has not established emission-based thresholds for assessing whether the GHG emissions of a project in the South Coast Air Basin, such as the Project, would be considered a cumulatively considerable contribution to global climate change; however, all reasonable efforts should be made to minimize a project’s contribution to global climate change.

While implementation of the Project would result in emissions of GHGs during construction, no guidance exists to indicate what level of GHG emissions from an individual project would be considered substantial enough to result in a significant adverse impact on global climate. However, it is generally believed that an individual project is of insufficient magnitude by itself to influence climate change or result in a substantial contribution to the global GHG inventory as scientific uncertainty regarding the significance a project’s individual and cumulative effects on global climate change remains.

The California Air Pollution Control Officers Association (CAPCOA) published a white paper in January 2008 evaluating and addressing GHG emissions from projects subject to CEQA. The CAPCOA CEQA & Climate Change white paper is intended as a resource and not a guidance document. The white paper studied non-zero quantitative thresholds, which were based on capture of 90% or more of likely future discretionary developments. The objective of the CAPCOA white paper was to set the emission threshold

low enough to capture a substantial fraction of future residential and non-residential development that will be constructed to accommodate future statewide population and job growth, while setting the emission threshold high enough to exclude small development projects that would contribute a relatively small fraction of the cumulative statewide GHG emissions. A significance threshold of 900 MT CO₂E per year, which was the lowest non-zero threshold evaluated, was based on an analysis that included data from four diverse cities (Los Angeles, Pleasanton, Dublin, and Livermore). This threshold would apply to industrial, residential, and commercial projects, but it is noted in the white paper that any adoption of such a threshold would require further investigation. The CAPCOA document also looked at other possible thresholds, including zero thresholds, thresholds tied to the goals of AB 32 and Executive Order S-3-05, CARB GHG reporting thresholds, and efficiency-based thresholds, among others. The District has concluded that a zero threshold would be overly restrictive and set an unwarranted precedent for future District projects. Recommended thresholds related to achieving the goals of AB 32 and/or Executive Order S-3-05 are based on the premise that a project would reduce its potential GHG emissions relative to a “business-as-usual” scenario that would have occurred in the absence of the mandated reductions or project features sufficiently to be consistent with the reduction required to achieve the statewide goals (e.g., approximately 30% under AB 32). Typically, this type of threshold is applied to a development project that would be directly or indirectly subject to statewide measures (e.g., low carbon fuel standard for motor vehicle fuels or Renewable Portfolio Standard for electricity) and would incorporate project features to conserve energy and water usage. Because the Project’s GHG emissions are associated primarily with construction of the Project drainage infrastructure improvements with no long-term GHG-producing structures or equipment, there is little to no opportunity to demonstrate a substantial reduction in GHG emissions through the effectiveness of statewide measures or project features. The CARB GHG reporting threshold—25,000 MT CO₂E for specific stationary sources—would not be applicable to the Project, which does not involve stationary sources, and would be much higher than the more restrictive threshold of 900 MT CO₂E. The efficiency-based thresholds use a “service population” (i.e., population plus employment for a project), which does not apply to the Project because it would not generate new population or long-term increases in employment.

Based on the reasons cited above, the District has determined that a demonstration that the Project would not result in a cumulatively considerable contribution to GHG emissions through the use of relatively restrictive, emission-based threshold is the appropriate approach for this PEIR. For purposes of this assessment, therefore, a threshold of 900 MT CO₂E will be used to evaluate the significance of the Project’s GHG emissions during construction. As stated in Section 4.2 (Air Quality) and Section 4.6.5, the Project would involve minor activity for maintenance and operation of the MDP facilities. Accordingly, operational emissions were not evaluated quantitatively in this assessment.

4.6.5 Environmental Impacts Before Mitigation

Would the Project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Construction Emissions

As discussed in Section 4.2, Air Quality, and listed in Section 3.0, Project Description, Table 3.0-1, the Project consists of multiple drainage infrastructure improvements required to alleviate and control flooding within the Project boundary. The Project identifies the approximate location, size and type of facilities, such as concrete-lined rectangular channels, storm drains, debris basins, and water quality basins, necessary to meet the goals of the Project; however, these plan components could change. Consistent with the nature of a program level assessment, project details and construction specifics are currently unknown. A representative project was identified to analyze potential impacts associated with implementation of future MDP facilities under the Project. The representative project was developed consistent with maximum funding that the District may have available for construction of MDP facilities to conservatively estimate potential construction-related emissions and associated impacts. This representative project would consist of excavation; backfill and/or compaction during construction of a storm drain, concrete-lined rectangular channel, debris basin, and water quality basin; and paving construction activities.

GHG emissions, estimated using CalEEMod Version 2011.1.1, would be generated during construction of the representative project. Modeled construction would consist of the following phases, which are assumed to be constructed sequentially for purposes of this analysis:

- Storm drain Installation (2.1 acres)
 - Excavation – 11 weeks
 - Concrete for reinforced concrete box (RCB) installation – 3 days
 - Backfill – 11 weeks
- Paving – 2 weeks (1.82 acres)
- Concrete rectangular channel (0.64 acres)
 - Excavation – 0.5 week
 - Concrete for channel installation – 3 days
 - Backfill/compaction – 0.5 week
- Debris basin (2.9 acres)
 - Excavation – 3.5 weeks
 - Backfill/compaction – 5 weeks

- Water quality basin (3.7 acres)
 - Excavation – 2 weeks.

The Project envisions construction of 21 new storm drains, five new open channels, nine new debris basins, and four new water quality basins, in addition to upsizing of existing facilities. Construction would likely occur over several years and could occur intermittently over the next 10 to 50 years depending on availability of funds. Accordingly, potential GHG emissions associated with buildout of all MDP facilities would not occur entirely within 1 year.

The representative project was assumed to be constructed within a 9-month period from spring (April) 2013 to winter (December) 2013. It is reasonable to assume that with time, emissions generated by construction equipment and haul and vendor trucks and worker vehicle trips would be reduced due to advances in equipment technology, increased vehicle fuel economy, and more stringent emission standards than in 2013. Thus, this approach would generate a conservative estimate of the construction emissions.

Construction of the MDP facilities would result in GHG emissions, which are primarily associated with use of off-road construction equipment and on-road construction and worker vehicles. CalEEMod was used to calculate the annual GHG emissions, expressed in units of CO₂E, based on the representative project construction scenario described in detail in Section 4.2, Air Quality. Table 4.6-2, Estimated Annual Construction Greenhouse Gas Emissions, presents construction emissions for the representative project in 2013. Total emissions from on-site sources (off-road equipment) and off-site sources (hauling and vendor trucks and worker vehicles) are provided for each improvement type identified for the representative project in the table below.

**Table 4.6-2
Estimated Annual Construction Greenhouse Gas Emissions (2013)**

	MT CO ₂	MT CH ₄	MT N ₂ O	MT CO ₂ E
Storm drain installation	185	0.02	0.00	186
Paving	5	0.00	0.00	5
Rectangular concrete channel	15	0.00	0.00	15
Debris basin	88	0.01	0.00	88
Water quality basin	63	0.00	0.00	63
2013 Total	356	0.03	0.00	357

Notes: See Appendix C for complete results.

MT CO₂ = metric tons carbon dioxide; MT CH₄ = metric tons methane; MT N₂O = metric tons nitrous oxide; MT CO₂E = metric tons carbon dioxide equivalent

As shown in Table 4.6-2, the estimated total GHG emissions during construction of the representative project would be 357 MT CO₂E in 2013, which would be generated over a 1-year period. Additional details regarding these calculations are found in Appendix C.

As discussed above, estimated emissions are for a representative project, which was identified to conservatively represent a reasonable construction scenario for a storm drain, concrete rectangular channel, debris basin, and water quality basin. Because this is a programmatic project, estimated emissions shown in Table 4.6-2 do not comprehensively represent the proposed development under the Project. Construction of additional improvements as envisioned in the Project would result in emissions additional to those presented in Table 4.6-2, although the emissions are not anticipated to exceed those associated with the representative project analysis above, since conservative assumptions were made for the representative project.

Based on the worst-case analysis presented above, Project-generated annual GHG emissions are anticipated to be well below the annual threshold value of 900 MT CO₂E evaluated by CAPCOA. While the CAPCOA threshold has not been adopted by CARB, SCAQMD, or other air quality agencies, it is the lowest non-zero GHG significance threshold that has been evaluated in California. As of the date that this report was prepared, the State of California, the SCAQMD, and the Riverside County Flood Control and Water Conservation District have yet to adopt screening criteria and/or numeric significance thresholds for GHG emissions. Therefore, construction of the proposed MDP facilities would not result in a cumulatively considerable contribution to GHG emissions that would significantly impact global climate, and no mitigation is necessary.

Operational Emissions

Once an MDP facility is constructed it would require maintenance in order to retain flood control capacity. Operational GHG emissions would not be greater than those generated during construction as they would be temporary and would involve utilization of construction equipment and operation of a light-duty truck used by maintenance workers. However, routine maintenance activities would be far less intensive than construction assumed for newly developed improvements and facilities. Furthermore, routine maintenance would not likely require operation of multiple pieces of equipment for 8 hours a day.

Maintenance of storm drains and concrete channels would typically consist of keeping those facilities and their side drains clear of debris and sediment, as well as repairing access roads and fences, which would be accomplished using a small tractor or loader, paving equipment, and/or hand tools. In addition to maintenance activities required for the proposed storm drains and concrete channels, the routine maintenance of the concrete channels and basins would likely require the removal of deposition, repair of eroded slopes, and reduction of fire hazard by annual mowing and application of herbicides, which would not require the use of heavy construction equipment. Vegetation would be removed or mowed

annually, or as necessary, to provide the designed hydraulic capacity; this activity would also not require the use of heavy construction equipment.

Major repairs may be required following damaging storm events; however, these occasions are considered to be rare. In the event that major repairs would be required, GHG emissions would be similar to those identified in Table 4.6-2 for those types of improvements. Major grading is not expected to routinely occur while maintaining the underground storm drains and concrete channels. Furthermore, operation of equipment and worker vehicles associated with major repairs would be temporary in nature as with routine maintenance activities. GHG emissions generated by off-road equipment and maintenance vehicles would be temporary and would not generate daily GHG emissions typically associated with long-term, operational land uses, such as residential and commercial development. Furthermore, the Project would not increase population or result in an increase in vehicle trips over existing conditions. As the Project does not propose long-term, operational uses that would continuously generate GHG emissions, impacts associated with operational GHG emissions would be **less than cumulatively considerable**, and no mitigation measures are necessary.

Would the Project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

As discussed in Section 4.6.2, the Climate Change Scoping Plan approved by CARB on December 12, 2008, provides an outline for actions to reduce California's GHG emissions and achieve the goals of AB 32. The Scoping Plan requires CARB and other state agencies to adopt regulations and other initiatives to reduce the state's GHG emissions. As such, the Scoping Plan is not directly applicable to specific projects. Moreover, the Final Statement of Reasons for the amendments to the CEQA Guidelines reiterates the statement in the Initial Statement of Reasons that "[t]he Scoping Plan may not be appropriate for use in determining the significance of individual projects ... because it is conceptual at this stage and relies on the future development of regulations to implement the strategies identified in the Scoping Plan" (CNRA 2009b). There are several federal and state regulatory measures aimed at the identification and reduction of GHG emissions; most of these measures focus on area source emissions (e.g., energy usage) and changes to the vehicle fleet (hybrid, electric, and more fuel-efficient vehicles). While federal and state legislation will ultimately reduce some of the GHG emissions associated with the Project, no statewide plan, policy, or regulation would be directly applicable to the Project. Furthermore, neither the Riverside County Flood Control and Water Conservation District, the County of Riverside, nor the SCAQMD has adopted any GHG reduction plans or measures that would apply directly to the GHG emissions associated with the proposed Project. At this time, therefore, no mandatory GHG regulations or finalized agency guidelines would apply to implementation of this Project, and no conflict would occur. Therefore, the Project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs and no mitigation measures are necessary.

4.6.6 Mitigation Measures

The Project would not result in cumulatively considerable GHG impacts that would require mitigation. The Project must adhere to SCAQMD rules during construction-related activities, which could assist in minimizing less than significant GHG emissions generated during construction. In addition, mitigation measures presented in Section 4.2, Air Quality, of this Draft PEIR, specifically Mitigation Measure (MM) AIR-2, would reduce GHG emissions in addition to reducing criteria air pollutant emissions associated with construction equipment and vehicles. Please see Section 4.2, Air Quality, for mitigation measure specifics.

4.6.7 Summary of Environmental Effects After Mitigation Measures Are Implemented

Construction and operation of MDP facilities will not contribute GHG emissions that would significantly contribute to climate change. Implementation of MM AIR-2 from Section 4.2 of this Draft PEIR, Air Quality, would further reduce less than cumulatively considerable impacts related GHG emissions.

4.6.8 References

CAPCOA (California Air Pollution Control Officers Association). 2008. *CEQA & Climate Change: Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act*. January 2008.

CARB (California Air Resources Board). 2006. Public Workshop to Discuss Establishing the 1990 Emissions Level and the California 2020 Limit and Developing Regulations to Require Reporting of Greenhouse Gas Emissions. PowerPoint Slides. Sacramento, California: CARB. December 1, 2006.

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4.7 Hazards and Hazardous Materials

The focus of the following discussion and analysis, based on the initial study (IS), public scoping session, and comments received during the Notice of Preparation (NOP) public comment period, is related to the Project's potential impacts to the creation of a significant hazard to the public or environment resulting from the Master Drainage Plan (MDP) facilities being located on a site that is included on a list of hazardous materials site. Potential impacts from the Project on hazards to the public or environment through the routine transport, use, or disposal of hazardous materials; release of hazardous materials into the environment; emission or handling of hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school; potential impacts to public and private airport-related safety hazards for people residing or working in the project area; interference with an adopted emergency response plan or emergency evacuation plan; and exposure to people or structures to a significant risk of loss, injury, or death involving wildland fires were all found to be less than significant or have no impact in the IS/NOP prepared for the Project and therefore are not further discussed in the Draft Program Environmental Impact Report (PEIR) (see Appendix A).

4.7.1 Setting and Project Baseline

Hazardous materials are defined as those that pose a potential threat to human health, having the capacity to cause serious illness or death. Hazardous materials include radioactive waste and explosives as well as substances such as gasoline, herbicides and rodenticides, and household cleaning products. There are businesses (e.g., gas stations, laundry facilities) and activities (e.g., vehicle fuel leaks) within the Project boundary that involve the transport, storage, or use of toxic or hazardous materials (e.g., pesticides, herbicides, household cleaning products). Future maintenance activities may involve the occasional limited use of herbicides and rodenticides in accordance with federal, state, and local regulations.

A review of the U.S. Environmental Protection Agency's (EPA's) Enviromapper database indicates that there are 10 waste sites within the Project boundary (see Table 4.7-1, Figure 4.7-1a, and Figure 4.7-1b). The Enviromapper is a tool used to map various types of environmental information, including hazardous wastes sites. The businesses that were identified in the Enviromapper, listed in Table 4.7-1, are identified by the EPA, but there is no report of releases, except for the Circle K Store No. 837.

The State Water Resources Control Board's (SWRCB's) GeoTracker and the Department of Toxic Substances Control (DTSC) EnviroStor were also used to identify whether the businesses listed in the Enviromapper database were in violation for unauthorized discharges of waste to land, or unauthorized releases of hazardous substances from underground storage tanks (USTs), and to identify other reported releases.

**Table 4.7-1
Existing Hazardous Sites**

Figure 4.7-1a and Figure 4.7-1b ID	Business Name	Address	Adjacent Project Alignment	Reported Releases
HZ4	Bridge Creek Development	15410 Grand Avenue Lake Elsinore, CA 92530	Proposed Water Quality Basin at Line A	LUST (Case Closed)
HZ12	Texaco Aston's	15883 Grand Avenue Lake Elsinore, CA 92530	None	LUST (Case Closed)
HZ3	B & B Metrology Inc.	17504 Grand Avenue Lake Elsinore, CA 92530	None	None
HZ9	Le Blanc's Village	17595 Grand Avenue Lake Elsinore, CA 92530	Line H	UST LUST (Case Closed)
HZ10	Middle School No. 5	18690 & 18730 Grand Avenue	Line L and Line M	School Cleanup
HZ8	GTE California Elsinore Grand Central	33064 Blackwell Boulevard Lake Elsinore, CA 92530	Line H	UST
HZ13	United Satellite Network Inc. DBA United Satellite Svc	17319 Grand Avenue Lake Elsinore, CA 92530	Line G	None
HZ15	Wh James Truck and Auto	16817 Grand Avenue Lake Elsinore, CA 92530	Line E	None
HZ5	Circle K Store #837	17671 Grand Avenue Lake Elsinore, CA 92530	Lakeland Village Channel	UST LUST (Open – Remediation)
HZ14	Village Cleaners	17693 Grand Avenue Lake Elsinore, CA 92530	None	None
HZ1	Academy Geotechnical Engineers	18040 Grand Avenue Lake Elsinore, CA 92530	None	None
HZ2	Associated Equip Co	18319 Grand Avenue Lake Elsinore, CA 92530	Line K-1	None
HZ6	Culhanes Racing Transm	18273 Grand Avenue Lake Elsinore, CA 92530	None	None
HZ11	Smooth Transport	18228 Brightman Avenue Lake Elsinore, CA 92530	Line J	None
HZ7	G and R Mufflers	19065 Grand Avenue Lake Elsinore, CA 92530	None	None

Sources: EPA 2011; SWRCB 2011; DTSC 2011.

The County of Riverside established a Hazardous Waste Management Plan for the management of hazardous substances. The City of Wildomar also uses Riverside County's Hazardous Waste Management Plan standards.

The City of Lake Elsinore Fire Department provides oversight of hazardous materials and regulates permits for the handling, storage, and use of any explosive or other hazardous materials.

Existing drainage facilities that currently provide some level of flood protection within the study area are as follows: Lime Street Channel, Ortega Channel Lateral A-1, Ortega Channel, Ortega Channel Lateral A, Ortega Channel Lateral A-1 Debris Basin, Ortega Channel Lateral A-2, Lakeland Village Channel, Churchill Street Drainage Ditch, Stoneman Street Channel, Corydon Channel, Palomar Channel, Ontario Way Storm Drain, Tract 23111 Drainage Ditch, Sedco–Bryant Street Storm Drain Stage I, and Sedco-Bryant Street Storm Drain and Debris Basin. The MDP facilities, once constructed, will not be generators or users of hazardous wastes or materials. The use of herbicides or rodenticides will be used in accordance with manufacturer's, state, local, and federal regulations.

4.7.2 Related Regulations

Federal

Several federal agencies regulate hazardous materials. These include the EPA, the Occupational Safety and Health Administration (OSHA), and the Department of Transportation (DOT). Applicable federal regulations are contained primarily in Titles 10, 29, 40, and 49 of the Code of Federal Regulations (CFR). In particular, Title 49 of the CFR governs the manufacture of packaging and transport containers, packing and repacking, labeling, and the marking of hazardous material transport. Some of the major federal laws and issue areas include the following statutes:

- Resource Conservation and Recovery Act (RCRA) – hazardous waste management
- Hazardous and Solid Waste Amendments Act (HSWA) – hazardous waste management
- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) – cleanup of contamination
- Superfund Amendments and Reauthorization Act (SARA) – cleanup of contamination
- Emergency Planning and Community Right-to-Know (SARA Title III) – business inventories and emergency response planning
- Hazardous Substances Act – (Codified at 15 U.S.C. 1261–1278) requires that certain hazardous household products ("hazardous substances") bear cautionary labeling to alert consumers to the potential hazards that those products present and to inform them of the measures they need to protect themselves from those hazards.

The EPA is the primary federal agency responsible for the implementation and enforcement of hazardous materials regulations. In most cases, enforcement of environmental laws and regulations established at the federal level is delegated to state and local environmental regulatory agencies.

State

Primary state agencies with jurisdiction over hazardous chemical materials management are the DTSC and the Regional Water Quality Control Board (RWQCB). Other state agencies involved in hazardous materials management are the Department of Industrial Relations (State OSHA implementation), Office of Emergency Services (OES–California Accidental Release Prevention Implementation), California Department of Fish and Wildlife (CDFW), California Air Resources Board (CARB), California Department of Transportation (Caltrans), State Office of Environmental Health Hazard Assessment (OEHHA–Proposition 65 implementation), and the California Integrated Waste Management Board (CIWMB).

The enforcement agencies for hazardous materials transportation regulations are the California Highway Patrol (CHP) and Caltrans. Hazardous materials and waste transporters are responsible for complying with all applicable packaging, labeling, and shipping regulations. South Coast Air Quality Management District (SCAQMD) Rules and Regulations pertain to asbestos abatement (including rule 1403), Construction Safety Orders 1529 (pertaining to asbestos), and 1532.1 (pertaining to lead) from Title 8 of the California Code of Regulations (CCR). Hazardous chemical and bio-hazardous materials management laws in California include the following statutes:

- Hazardous Materials Management Act – requires that businesses handling or storing certain amounts of hazardous materials prepare a Hazardous Materials Business Plan, which includes an inventory of hazardous materials stored on site (above specified quantities), an emergency response plan, and an employee training program.
- Hazardous Waste Control Act – (California Health and Safety Code, Division 20, Chapter 6.5, Article 2, Section 25100 et seq.) authorizes the DTSC and local certified unified program agencies to regulate facilities that generate or treat hazardous waste.
- Safe Drinking Water and Toxic Enforcement Act of 1986 – (Proposition 65) requires the governor to publish and update, at least annually, a list of chemicals known to the state to cause cancer, birth defects, or other reproductive harm, and to inform citizens about exposures to such chemicals.
- Hazardous Waste Management Planning and Facility Siting – also known as the Tanner Act (Assembly Bill (AB) 2948, 1986), requires counties to prepare, for California DTSC approval, hazardous waste management plans, and prescribes specific public participation activities, which must be carried out during the local land use permit process for siting new or expanding off-site commercial treatment, storage, and disposal facilities.
- Hazardous Materials Storage and Emergency Response – (AB 2185) requires the immediate reporting to local fire departments and OES of any release or threatened release of a hazardous material, regardless of the amount handled by the business.

- California Medical Waste Management Act – (California Health and Safety Code, Sections 117600–118360) establishes procedures for the proper handling, storage, treatment, and transportation of medical waste.
- Land Disposal Restrictions – (22 CCR 18) set up by Congress in 1984 for the EPA; ensures that toxic constituents present in hazardous waste are properly treated before hazardous waste is land disposed.

State regulations and agencies pertaining to hazardous materials management and worker safety are described as follows:

California Environmental Protection Agency

The California Environmental Protection Agency (CalEPA) has broad jurisdiction over hazardous materials management in the state. Within CalEPA, DTSC has primary regulatory responsibility for hazardous waste management and cleanup. Enforcement of regulations has been delegated to local jurisdictions that enter into agreements with DTSC for the generation, transport, and disposal of hazardous materials under the authority of the Hazardous Waste Control Law.

Along with the DTSC, the RWQCB is responsible for implementing regulations pertaining to management of soil and groundwater investigation and cleanup. RWQCB regulations are contained in Title 27 of the CCR. Additional state regulations applicable to hazardous materials are contained in Title 22 of the CCR. Title 26 of the CCR is a compilation of those sections or titles of the CCR that are applicable to hazardous materials.

Investigation and Cleanup of Contaminated Sites

The oversight of hazardous materials release sites often involves several different agencies that may have overlapping authority and jurisdiction. The DTSC and RWQCB are the two primary state agencies responsible for issues pertaining to hazardous materials release sites. Air quality issues related to remediation and construction at contaminated sites are also subject to federal and state laws and regulations that are administered at the local level.

Investigation and remediation activities that would involve potential disturbance or release of hazardous materials must comply with applicable federal, state, and local hazardous materials laws and regulations. DTSC has developed standards for the investigation of sites where hazardous materials contamination has been identified or could exist based on current or past uses. The standards identify approaches to determine if a release of hazardous wastes/substances exists at a site and delineates the general extent of contamination; estimates the potential threat to public health and/or the environment from the release and provides an indicator of relative risk; determines if an expedited response action is required to reduce an

existing or potential threat; completes preliminary project scoping activities to determine data gaps; and identifies possible remedial action strategies to form the basis for development of a site strategy.

California Government Code Section 65962.5

Pursuant to California Government Code 65962.5, environmental regulatory database lists were reviewed to identify and locate properties with known hazardous substance contamination within the proposed project area (California Government Code, Section 65960 et seq.). Four state agencies are required to provide lists of facilities that have contributed, harbor, or are responsible for environmental contamination within their jurisdiction. The four state agencies that are required to provide these lists to the Secretary for Environmental Protection include the DTSC, the State Department for Health Services (DHS), the SWRCB, and the CIWMB. The Secretary for Environmental Protection then takes each of the four respective agency lists and forms one list, referred to as the Hazardous Waste and Substances Site List – Site Cleanup (Cortese List), which is made available to every city and/or county in California (DTSC 2007).

The DTSC maintains lists of: hazardous waste facilities subject to corrective action pursuant to the Section 25187.5 of the Health and Safety Code, land designated as hazardous waste property or border zone property pursuant to Article 11 of Chapter 6.5 of Division 20 of the Health and Safety Code, information received by DTSC pursuant to Section 25242 of the Health and Safety Code on hazardous waste disposal on public land, sites listed pursuant to Section 25356 of the Health and Safety Code, and sites on the Abandoned Site Assessment Program. DTSC also maintains records of hazardous waste disposals on public land.

The DHS maintains lists of all public drinking water wells that contain detectable levels of organic contaminants and wells that are subject to special water analysis. The SWRCB maintains lists of unauthorized release reports for USTs pursuant to Section 25295 of the Health and Safety Code, solid waste disposal facilities from which there are migrations of hazardous waste, and all cease-and-desist orders issued after January 1, 1986, concerning hazardous waste discharges. The CIWMB maintains lists of solid waste disposal facilities from which there is a known migration of hazardous waste. The Hazardous Waste and Substances List has been reviewed to identify hazardous sites that may affect the Project and is discussed in Section 4.7.5.

Local

Riverside County

Ordinance No. 615

Riverside County Ordinance No. 615 has been implemented for the purpose of regulating various aspects of establishments which generate, handle, and/or store hazardous materials and wastes. This

ordinance designates the Riverside County Department of Environmental Health to enforce the provisions of the California Health and Safety Code, Chapter 6.5, Division 20, Sections 25100 et seq., and the Environmental Health Standards for the Management of Hazardous Waste as specific in Title 22 of the California Code of Regulations, Division 4.5 pertaining to the generation, storage, handling, disposal, treatment, and recycling of hazardous waste.

Riverside County Hazardous Waste Management Plan

The Riverside County Hazardous Waste Management Plan (CHWMP) was adopted by the Board of Supervisors on September 12, 1989. Using a framework of 24 existing and recommended programs, the CHWMP serves as the County's primary planning document for the management of hazardous substances. Although the title refers only to hazardous waste, the CHWMP is a comprehensive document containing all of the County programs for managing both hazardous materials and waste.

Riverside County General Plan

Riverside County's General Plan (County of Riverside 2003) includes a section on hazardous waste and materials and provides policies regarding the storage, transport, and disposal of hazardous waste within the County. The following policies are applicable to the MDP facilities:

Policy S-6.1: Enforce the policies and siting criteria and implement the programs identified in the County of Riverside Hazardous Waste Management plan, which includes the following:

- Comply with federal and state laws pertaining to the management of hazardous wastes and materials.
- Ensure active public participation in hazardous waste and hazardous materials management decisions in Riverside County.
- Coordinate hazardous waste facility responsibilities on a regional basis through the Southern California Hazardous Waste Management Authority.
- Encourage and promote the programs, practices, and recommendations contained in the County Hazardous Waste Management Plan, giving the highest waste management priority to the reduction of hazardous waste at its source.

Policy S-7.7: Strengthen the project permit and review process to ensure that proper actions are taken to reduce hazard impacts and to encourage structural and nonstructural design and construction. Damage must be minimized for critical facilities, and susceptibility to structural collapse must be minimized, if not eliminated.

- Require mitigation measures to reduce potential damage caused by ground failure for sites determined to have potential for liquefaction. Such measures shall apply to

critical facilities, utilities, and large commercial and industrial projects as a condition of project approval.

- Review proposed uses of fault setback areas closely to ensure that County infrastructure (roads, utilities, drains) are not unduly placed at risk by the developer. Insurance, bonding, or compensation plans should be used to compensate the County for the potential costs of repair.

Policy S-7.8: Promote strengthening of planned and existing utilities and lifelines, the retrofit and rehabilitation of existing weak structures, and the relocation of certain critical facilities.

Policy S-7.10: Discourage development of critical facilities that are proposed in dam failure inundation areas, and apply hazardous materials safety guidelines within such zones.

City of Wildomar

The City of Wildomar has incorporated Riverside County's General Plan. Therefore, the above policies related to the Riverside County Hazardous Waste Management Plan also applies to the City of Wildomar.

City of Lake Elsinore

There are no policies in the City of Lake Elsinore's General Plan policies that are applicable to the Project.

4.7.3 Comments Received in Response to the Notice of Preparation

No comment letters were received during the NOP public comment period related to hazards.

4.7.4 Significance Threshold Criteria

The Riverside County Flood Control and Water Conservation District (District) has not established local California Environmental Quality Act (CEQA) significance thresholds as described in Section 15064.7 of the CEQA Guidelines (14 CCR 15000 et seq.). The NOP for the PEIR included the IS (Environmental Checklist) to show the areas being analyzed in the PEIR (refer to Appendix A of this PEIR). Accordingly, and based on the IS, the Project would have a significant impact on hazards and hazardous materials if the Project would:

- 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.

4.7.5 Environmental Impacts Before Mitigation

Would the project 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?

Pursuant to California Government Code 65962.5, environmental regulatory database lists were reviewed to identify and locate properties within known hazardous substance contamination within the Project boundary (California Government Code, Section 65960 et seq.). Four state agencies are required to provide lists of facilities that have contributed, harbor, or are responsible for environmental contamination within their jurisdiction.

A review of the DTSC's Hazardous Waste and Substances List – Site Cleanup (Cortese List) indicates that identified hazardous material sites are not located within the Project boundary; therefore, there are no known sites with contamination that would affect the MDP facilities as of this writing.

As discussed above, a review of the EPA's Enviromapper database indicates that there are 10 waste sites within the Project boundary (see Table 4.7-1, Figure 4.7-1a, and Figure 4.7-1b). The businesses that were identified in the Enviromapper, listed in Table 4.7-1, are identified by the EPA, but there is no report of releases, except for the Circle K Store No. 837.

The SWRCB's GeoTracker and the DTSC EnviroStor was also used to identify whether the businesses listed in the Enviromapper database were in violation for unauthorized discharges of waste to land, or unauthorized releases of hazardous substances from USTs and to identify other reported releases.

No significant impacts related to hazards and hazardous materials are anticipated from the sites listed in Table 4.7-1, to the construction and operations/maintenance of the MDP facilities since most of the MDP facilities will be constructed within road rights-of-way or on undeveloped lands. Common types of unanticipated existing contamination resulting from prior leaking underground storage tanks, poor chemical handling or accidental/intentional unauthorized chemical releases could be encountered during the construction of the proposed MDP facilities. Given the review of the databases mentioned above, it does not appear that any nearby sites have posed a threat to the MDP facility alignments. However, since this is a PEIR and individual MDP facilities may not be constructed for years, status of hazardous sites and current hazardous permit holders may change. Through implementation of Mitigation Measures **(MM) HAZ-1** through **MM HAZ-5**, potential impacts will be reduced to **less than significant** levels. Also, all work on MDP facilities shall be performed under a site-specific health and safety plan and in compliance with applicable OSHA regulations, particularly those in 29 CFR 1910.120, and other applicable federal, state, and local laws, regulations, and statutes. Future subcontractors are responsible for developing, maintaining, and implementing their own health and safety programs, policies, procedures, and equipment as necessary to protect their workers, and others, from their activities.

4.7.6 Mitigation Measures

The CEQA Guidelines require an EIR to describe feasible mitigation measures that could minimize significant adverse impacts (14 CCR 15126.4). Mitigation measures were evaluated for their ability to eliminate or reduce the potential significant adverse impacts from hazards to below the level of significance.

MM HAZ-1 As part of the final design of each Master Drainage Plan (MDP) facility, the design engineer or designee shall check the MDP facility alignments for any properties or nearby properties listing on the most recent Hazardous Waste and Substance List provided by the Riverside County Department of Environmental Health pursuant to Section 65962.5 of the Government Code. Also, before proposed MDP facilities are constructed, the proponent should generate a report from Enviromapper, GeoTracker, and EnviroStor to ensure no new waste sites with reported releases have been documented within proximity to the facilities. If the location of said MDP facility is on the Hazardous Waste and Substances List, Enviromapper, GeoTracker, or EnviroStor, avoidance of that property or properties will be the first consideration; if avoidance is infeasible, **MM HAZ-2** shall be implemented.

MM HAZ-2 If the selected MDP facility traverses a site listed on the Hazardous Waste and Substances List, Enviromapper, GeoTracker, or EnviroStor, and avoidance is not feasible or if there are other indications that a site could be contaminated, a Phase I Environmental Site Assessment (ESA) for the MDP facility will be prepared by a consultant hired by the Riverside County Flood Control and Water Conservation District (District), the City of Lake Elsinore, or the City of Wildomar. If the Phase I ESA prepared pursuant to the current ASTM standards identifies possible contamination along the MDP facility alignment, then all recommended subsurface investigation measures listed in the Phase I ESA will be implemented by the District, the City of Lake Elsinore, or the City of Wildomar. Based on subsurface investigations characterizing subsurface contamination, remediation measures (such as excavation of contaminated soil, bioremediation, or soil-vapor extraction), shall be implemented for the applicable MDP facility or an alternative facility alignment will be chosen. The District, the City of Lake Elsinore, or the City of Wildomar shall be responsible for reviewing and complying with the recommendations of the Phase I ESA.

MM HAZ-3 All environmental investigation and/or remediation shall be conducted under a work plan approved by jurisdictional regulatory agencies overseeing hazardous waste cleanups until the applicable regulatory standard is met.

- MM HAZ-4** Prior to any excavation, grading activities, or soil removal on known contaminated sites, or if contaminated soil (i.e., soil with visible sheen or detectable odor) is encountered during construction, a complete characterization of the soil will be conducted by qualified personnel hired by the District, the City of Lake Elsinore, or the City of Wildomar. Prior to the disposal of excavated materials, soil sampling shall be conducted in accordance with the County of Riverside Department of Environmental Health Site Assessment and Cleanup, Corrective Action Guidelines document (County of Riverside 2007). The guidelines set forth the number of samples to be collected per volume of stockpiled soil (i.e., two random samples from stockpiles less than 10 cubic yards); sample analytical methods depend on the current and historical property use and known contamination. If the soil is contaminated, it shall be properly disposed of according to California's Land Disposal restrictions (22 CCR 19). If site remediation involves the removal of contamination, then contaminated material shall be transported off site by a licensed handler/hauler to a licensed hazardous waste disposal facility.
- MM HAZ-5** If during construction of a specific MDP facility, soil and/or groundwater contamination is suspected, construction in the area of the suspected contamination shall cease and appropriate health and safety measure shall be implemented. The construction contractor shall contact the respective jurisdictional enforcement agency (i.e., City of Lake Elsinore, City of Wildomar, County of Riverside) to obtain the necessary information on appropriate measures and their implementation. The measures recommended by the applicable enforcement agency will be implemented.

4.7.7 Summary of Environmental Effects After Mitigation Measures Are Implemented

With adherence to local, state, and federal regulations and the mitigation measures listed in Section 4.7.6, potential significant environmental effects related to hazards and hazardous materials will be reduced to **less than significant** levels.

4.7.8 References

California Government Code, Section 65960–65964. Accessed September 13, 2011.

<http://leginfo.public.ca.gov/cgi-bin/displaycode?section=gov&group=65001-66000&file=65960-65964>.

County of Riverside. 2003. *General Plan Final Program Environmental Impact Report*. Volume I. October 2003.

County of Riverside. 2007. *Site Assessment and Cleanup – Corrective Action Guidelines*.

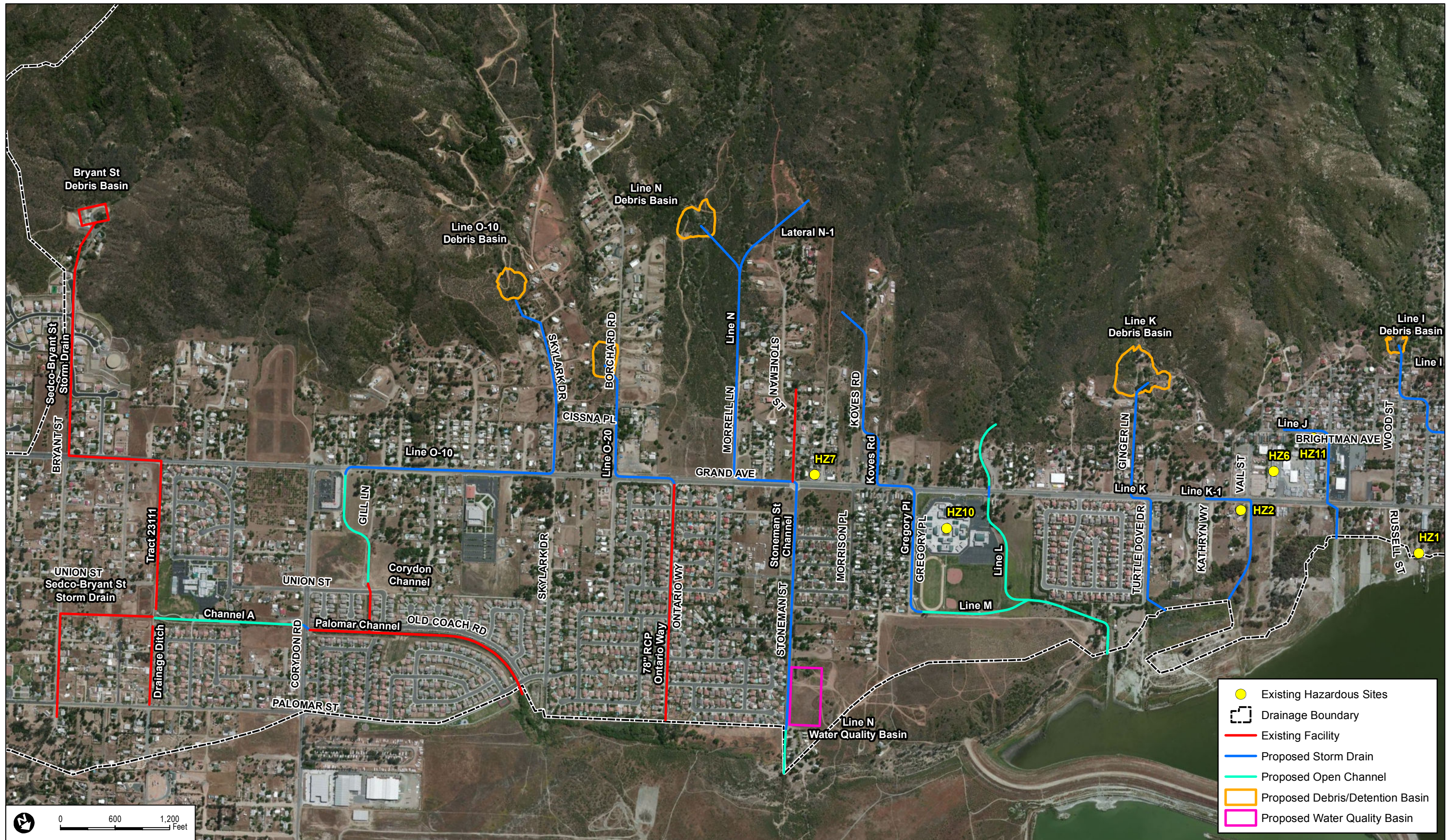
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http://www.dtsc.ca.gov/SiteCleanup/Cortese_List.cfm

DTSC. 2011. EnviroStor database. Accessed December 2, 2011. <http://www.envirostor.dtsc.ca.gov/public/>.

EPA (U.S. Environmental Protection Agency). EnviroMapper. Accessed September 13, 2011. <http://www.epa.gov/emefdata/em4ef.home>.

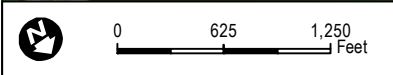
X SWRCB (State Water Resources Control Board). 2011. Geotracker database. Accessed December 2, 2011.



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Lake Elsinore



- Existing Hazardous Sites
- Drainage Boundary
- Existing Facility
- Proposed Storm Drain
- Proposed Open Channel
- Proposed Debris/Detention Basin
- Proposed Water Quality Basin

DUDEK SOURCE: Riverside County Flood Control and Water Conservation District 2010; County of Riverside MSHCP; Digital Globe 2008

FIGURE 4.7-1b Existing Hazardous Sites (Right)

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4.8 Hydrology and Water Quality

The focus of the following discussion and analysis, based on the initial study (IS), public scoping session, and comments received during the Notice of Preparation (NOP) public comment period, is related to the Project's potential impacts to water quality standards or waste discharge requirements; discharges of stormwater pollutants, or substantial changes to surface water quality, including but not limited to, temperature, dissolved oxygen, pH, or turbidity; substantial depletion of groundwater supplies, or substantial interference with groundwater recharge such that there would be net deficit in aquifer volume or a lowering of the local groundwater table level; substantial alteration to the existing drainage patterns that would result in substantial erosion or siltation on- or off-site; substantial alteration to the existing drainage pattern that would result in flood on- or off-site, creation or contribution to runoff water, which would exceed the capacity of the existing or planned stormwater drainage systems; exposure of 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; and exposure of people or structures to a significant risk of loss, injury, or death involving inundation by seiche, tsunami, or mudflow from implementation of the Project. Potential impacts from the Project on placing housing within a 100-year flood hazard area and placing structures or fill within a 100-year flood hazard area which would impede or redirect flood flows were found to have no impact in the IS for the Project and therefore are not further discussed in the Draft Program Environmental Impact Report (PEIR) (see Appendix A).

4.8.1 Setting and Project Baseline

Hydrology

The Project boundary is within the Santa Ana regional watershed, which is drained by the Santa Ana River. The primary natural surface water features within proximity to the Project boundary is Lake Elsinore. Lake Elsinore is a natural lake measuring approximately 5 miles long by 2 miles wide. The lake varies widely in size as it responds to hydrologic conditions, ranging from 6,000 acres in very wet years to a dry lakebed in drought years. In an effort to maintain a more constant lake level, a levee was constructed in 1995. The levee also provides flood protection up to an elevation of 1,262 feet for the southern end of the lake, known as the Back Basin.

Lake Elsinore is fed by three primary sources of water: runoff from local tributaries (8% of total input to the lake), direct precipitation inputs to the lake (20%), and inflows from the San Jacinto River (72%). Groundwater does not play a major role in lake levels due to the presence of a relatively impermeable layer of clay soil beneath the lake.

Groundwater

The Elsinore Groundwater Basin underlies the Elsinore Valley. The basin is bounded on the southwest by the Santa Ana and Elsinore Mountains along the Willard Fault and active Elsinore Fault. The Elsinore

Groundwater basin is primarily supplied by infiltration of precipitation in the surrounding watershed. Other sources of inflow include infiltration along the San Jacinto River channel upstream of Lake Elsinore and agricultural and residential return flows. Municipal pumping for potable water is the only major outflow from the Elsinore Groundwater Basin. Some additional groundwater pumping is performed as necessary to maintain the elevation of the lake at 1,240 feet above mean sea level.

Under natural conditions, groundwater should generally flow from the northwest to the southeast beneath Lake Elsinore. However, because faults cutting the sediments impede groundwater movement, groundwater flow is dominantly contained within fault blocks in the basin. The difference between groundwater levels on the northwest side and the southeast side is more than 300 feet. Groundwater depths in the lake currently range from about 250 feet in the northwest to more than 600 feet in the southeast.

The Elsinore Valley Municipal Water District (EVMWD) Groundwater Management Plan includes a groundwater budget analysis of the Elsinore basin for 1990–2001. The results of the analysis indicate that the basin experienced an average annual deficit of approximately 1,800 acre-feet per year over the 11-year period studied. Eight of the 11 years analyzed had a deficit, while the remaining 3 years corresponded to above-average annual precipitation totals. In addition, water levels in wells in the southern portion of the basin dropped more than 200 feet in the same 11-year period, providing further evidence of a groundwater overdraft condition. Continuing overdraft may lead to ground subsidence as soils compact over long periods of time, although no clear evidence of subsidence has currently been identified around Lake Elsinore.

Flooding

Some areas within the Project boundary are within a 100-year floodplain (see Figure 4.8-1). Presently, flooding occurs over portions of the Project boundary, which in most areas of the floodplain extend into currently developed urban areas. The existing channels do not provide adequate upstream control at the mouths of the mountains, thus only picking up a portion of the floodwaters, and the remaining runoff takes the form of sheet flooding towards the lake. The Riverside County Flood Control and Water Conservation District (District) is responsible for the maintenance and operation for flood control facilities including debris dams, storm channels, and storm drains.

Water Quality

Water pollutant sources within the Project boundary have historically been caused by agricultural operations that use chemicals and fertilizers on their land. The State Water Resources Control Board (SWRCB), in compliance with the Clean Water Act (CWA) Section 303(d), maintains a list of impaired water bodies in the state. Lake Elsinore is included on this list due to the presence of four pollutants or stressors: high nutrient levels from unknown point sources, organic enrichment/low dissolved oxygen from unknown point sources, sedimentation/siltation from local urban runoff and storm drains, and toxicity from unknown non-point

sources. Fluctuating water levels in Lake Elsinore and algal blooms triggered by excess nutrients have also caused significant impairment of the ecology and recreational use of Lake Elsinore.

Lake Elsinore

On December 20, 2004, the Santa Ana Regional Water Quality Control Board (RWQCB) adopted Resolution R8-2004-0037 amending the Basin Plan to incorporate the Lake Elsinore and Canyon Lake Nutrient Total Maximum Daily Loads (TMDLs). These TMDLs were subsequently approved by the State Board on May 19, 2005, by the Office of Administrative Law on July 26, 2005, and by the U.S. Environmental Protection Agency (EPA) on September 30, 2005. These TMDLs include urban WLAs that are now incorporated into Chapter 5 of the Basin Plan. For both Canyon Lake and Lake Elsinore, the TMDLs specify causal numeric targets (nitrogen and phosphorus) and response numeric targets (chlorophyll a, dissolved oxygen and un-ionized ammonia). The TMDLs also specify nitrogen and phosphorus WLAs (point source discharges) and LAs (nonpoint source discharges) for each lake. Compliance with interim dissolved oxygen and chlorophyll a numeric targets is to be achieved by December 31, 2015. Compliance with the final numeric targets and WLAs and LAs is to be achieved by December 31, 2020. The LAs and WLAs are specified as 10-year running average.

Lake Elsinore is an impaired water body due to the impacts of nutrients, organic enrichment/low dissolved oxygen, polychlorinated biphenyls (PCBs) and unknown toxicity. The eutrophic impairment in Lake Elsinore is attributable to increased nutrient loading (phosphorus and nitrogen) and the resulting increased growth of biota, phytoplankton and other aquatic plants. Nutrients washed off from source areas are transported to Lake Elsinore by a variety of drainage courses, but during wet years the vast majority of nutrients come from stormflows through Canyon Lake and not the Project watershed.

The TMDL specifies the allowable amounts of nitrogen and phosphorus in Lake Elsinore. According to the Lake Elsinore TMDL Staff Report to Resolution R8-2004-0037, approximately 172 kilograms of excess nitrogen is delivered to Lake Elsinore from existing urban land uses within the local watershed. Existing urban phosphorus loads met waste load allocation requirements and required no further reduction (presuming operation of the aeration system and compliance with TMDL requirements for Canyon Lake).

In response to the TMDL requirement, Riverside County developed a Comprehensive Nutrient Reduction Plan (CNRP). The CNRP is designed to achieve compliance with the allowable amounts of Nitrogen and Phosphorous by 2020. The CNRP includes the following elements: watershed-based best management practices (BMPs) to reduce nutrient loading in urban runoff during wet weather; the operation of an in-lake aeration system; and monitoring activities to assess compliance with the TMDL. The CNRP would achieve the water quality objectives primarily through the implementation of the aeration system because reducing the amount of pollutants generated in the watershed to meet the compliance standards would be nearly impossible and extremely costly. However, watershed-based BMPs are required to supplement the aeration system, particularly to address increased nitrogen loads associated with existing and future land use.

The CNRP estimates that urban areas generate 0.08 kg/acre/year of Total Phosphorous and 0.42 kg/acre/year of Total Nitrogen. Reduction of nutrient loads within conveyance systems is generally the result of settling of suspended solids and stormwater infiltration within channels and upstream lakes. According to the CNRP, only 25% of the Total Phosphorous generated in the local Lake Elsinore watershed settles out before it reaches the lake, and just 17% of the Nitrogen settles out. The low reduction percentages are due to the close proximity of urban development to the lake.

The RWQCB sets water quality standards for all ground and surface waters within its region. Water quality standards are defined under the CWA to include the beneficial uses of specific water bodies, the levels of water quality that must be met and maintained to protect those uses, and the state's anti-degradation policy.

Water quality standards for all ground and surface waters overseen by the RWQCB are documented in the Basin Plan (2008). Beneficial uses consist of all the various ways that water can be used for the benefit of people and/or wildlife. Five beneficial uses are recognized within the Santa Ana Region pertaining to the Project. All of the beneficial uses have been designated for surface water bodies and groundwater in the vicinity of the Project as summarized in Table 4.8-1, Beneficial Uses for Receiving Waters in Proximity to the Project.

**Table 4.8-1
Beneficial Uses for Receiving Waters in Proximity to the Project**

Receiving Waters		303(d) List Impairments	Designated Beneficial Uses
Lake Elsinore		Nutrients, Organic Enrichment/Low Dissolved Oxygen, PCBs, and Unknown Toxicity	MUN [^] , REC1, REC2, WARM, WILD
Definitions of Beneficial Uses			
MUN	Waters used for community, military, municipal or individual water supply systems. Uses may also include drinking water supply.		
REC 1	Water contact recreation waters, used for recreational activities involving body contact with water where ingestion of water is reasonably possible. Uses may include swimming, wading, water-skiing, skin and scuba diving, surfing, whitewater activities, fishing, and use of natural hot springs.		
REC 2	Non-contact water recreation waters, used for recreational activities involving proximity to water, but not normally involving body contact with water where ingestion of water would be reasonably possible. These uses may include picnicking, sunbathing, hiking, beachcombing, and camping, boating, sightseeing, and aesthetic enjoyment in conjunction of the above activities.		
WARM	Warm freshwater habitat waters support warm water ecosystems that may include preservation and enhancement of aquatic habitats, vegetation, fish, and wildlife, including invertebrates.		
WILD	Wildlife habitat waters support wildlife habitats that may include the preservation and enhancement of vegetation and prey species used by waterfowl and other wildlife.		

Source: SWRCB 2008.

* Intermittent beneficial use for Reaches 3 and 4.

[^] Excepted from MUN.

In 1994, the Regional Board listed Lake Elsinore as water quality limited and as an impaired water body in accordance with Section 303(d) of the CWA due to the impact of nutrients, polychlorinated biphenyls (PCBs) and unknown toxicity to the beneficial uses the lake provides (warm freshwater aquatic habitat (WARM), body contact recreation (RECI), non-body contact recreation (REC2), and wildlife habitat (WILD)). Municipal and Domestic Supply (MUN) indicates that the water body has been specifically accepted from the MUN designation in accordance with the criteria specified in the “Sources of Drinking Water Policy.” As reported by the RWQCB, the narrative water quality objectives pertaining to excessive algae growth and dissolved oxygen are not being met in Lake Elsinore, as demonstrated by a history of significant algae blooms and low dissolved oxygen concentrations. Lake Elsinore beneficial uses adversely impacted include WARM, RECI, REC2, and WILD. Per Section 303(d) of the CWA, the RWQCB established a Total Maximum Daily Load (TMDL) for phosphorus and nitrogen loading to Lake Elsinore. Table 4.8-2 outlines the both “casual” and “response” interim and final TMDL numeric targets for Lake Elsinore. Casual targets are those for phosphorous and nitrogen. Response targets include chlorophyll a and dissolved oxygen. These targets are specified to assess water quality improvements in the lake. Ammonia targets are specified to prevent un-ionized ammonia toxicity to aquatic life.

Table 4.8-2
Lake Elsinore TMDL Numeric Targets

Indicator	Lake Elsinore
Total Phosphorus concentration (Final)	Annual average no greater than 0.1 mg/L; to be attained no later than 2020
Total Nitrogen concentration (Final)	Annual average no greater than 0.75 mg/L; to be attained no later than 2020
Ammonia nitrogen concentration (Final)	Calculated concentrations to be attained no later than 2020 Accute: 1-hour average concentration of total ammonia nitrogen (mg/L) not to exceed, more than once every three years on the average, the CMC (acute criteria), where $CMC = 0.4111(1+10^{(7.204-pH)} + 58.4/(1+10^{(pH-7.204)}))$ Chronic: thirty-day average concentration of total ammonia nitrogen (mg/L) not to exceed, more than once every three years on the average, the CCC (chronic criteria) $CCC = (0.0577/(1+10^{(7.688-pH)}) + 2.487/(1+10^{(pH-7.688)})) \times \min(2.85, 1.45 \times 10^{(0.028(25-T))})$
Chlorophyll a concentration (Interim)	Summer average no greater than 40 µg/L; to be attained no later than 2015
Chlorophyll a concentration (Final)	Summer average no greater than 25 µg/L; to be attained no later than 2020
Dissolved oxygen concentration (Interim)	Depth average no less than 5 mg/L; to be attained no later than 2015
Dissolved oxygen concentration (Final)	No less than 5 µg/L 1 meter above lake bottom, to be attained no later than 2020

Source: RWQCB 2004.

Note: Compliance with targets to be achieved as soon as possible, but no later than the date specified.

Phosphorus and nitrogen TMDLs for Lake Elsinore are shown in Table 4.8-3. The TMDLs, expressed as 10-year running averages, will implement the numeric targets and thereby attain water quality standards.

**Table 4.8-3
Nutrient TMDLs and Compliance Dates for Lake Elsinore**

TMDL	Final Total Phosphorous TMDL (kg/yr)	Final Total Nitrogen TMDL (kg/yr)
Lake Elsinore	28,584	239,025

Source: RWQCB 2004.

Note: Final compliance to be achieved as soon as possible, but no later than December 31, 2020. TMDL specified as 10-year running average.

The dominant application of phosphorous and nitrogen is in agricultural use (i.e., fertilizers). PCBs are used as coolants and insulating fluids for transformers and capacitors as well as plasticizers in paints and cements, pesticides extenders, flame retardants, lubricating oils, sealants, etc.

4.8.2 Related Regulations

Federal

Clean Water Act

The CWA is the primary federal law that protects the quality of the nation's surface waters, including lakes, rivers, and coastal wetlands. It operates on the principle that all discharges into the nation's waters are unlawful unless specifically authorized by a permit; permit review is the CWA's primary regulatory tool. The following paragraphs provide additional details on specific sections of the CWA.

Section 404

CWA Section 404 regulates the discharge of dredged and fill materials into "waters of the United States," which include oceans, bays, rivers, streams, lakes, ponds, and wetlands. Project proponents must obtain a permit from the U.S. Army Corps of Engineers (ACOE) for all discharges of dredged or fill material into Waters of the United States, including wetlands, before proceeding with a proposed activity. Before any actions that may impact surface waters are carried out, a delineation of jurisdictional waters of the United States must be completed, following ACOE protocols, in order to determine whether the project study area encompasses wetlands or other waters of the United States that qualify for CWA protection.

Section 404 permits may be issued only for the least environmentally damaging practicable alternative. That is, authorization of a proposed discharge is prohibited if there is a practicable alternative that would have less adverse impacts and lacks other significant adverse consequences.

Section 402

CWA Section 402 regulates discharges to surface waters through the National Pollutant Discharge Elimination System (NPDES) program, administered by the EPA. In California, the SWRCB is authorized by the EPA to oversee the NPDES program through the Regional Water Quality Control Boards (RWQCBs). The NPDES program provides for both general permits (those that cover a number of similar or related activities) and individual permits. Activities covered by Section 402 include the following:

Construction General Permit

Pursuant to CWA Section 402(p), which requires regulations for permitting of certain stormwater discharges, the SWRCB has issued statewide general NPDES Permit and Waste Discharge Requirements for stormwater discharges from construction sites.

Under this Construction General Permit, discharges of stormwater from construction sites of one or more acres are required to obtain individual NPDES permits for stormwater discharges or be covered under the General Permit for Discharges of Storm Water Associated with Construction Activity. Effective July 1, 2010, the updated Construction General Permit requires several additional items in order to be eligible for coverage under the Construction General Permit. The permit requires a risk-based permitting approach, dependent upon the likely level of risk imparted by a project. The permit also contains several compliance items, including:

- Additional mandatory Best Management Practices (BMPs) to reduce erosion and sedimentation, which may include incorporation of vegetated swales, setbacks and buffers, rooftop and impervious surface disconnection, bioretention cells, rain gardens, rain cisterns, implementation of pollution/sediment/spill control plans, training, and other structural and non-structural actions;
- Sampling and monitoring for non-visible pollutants;
- Soil characteristics monitoring and reporting at the project site;
- Effluent monitoring and annual compliance reports;
- Monitor receiving waters and conduct bioassessments;
- Development and adherence to a Rain Event Action Plan that must be designed to protect all exposed portions of the site within 48 hours prior to any likely precipitation event;
- Requirements for Post-Construction Storm Water Performance Standards;
- Technology-Based Numeric Action Levels for pH and turbidity;

- Technology-Based Numeric Effluent Limitations for pH and turbidity (when applicable);
- Mandatory training/certification requirements under a specific curriculum. Under the permit, monitoring, reporting, and training requirements for management of stormwater pollutants are also required.

Coverage under the Construction General Permit is accomplished by completing and filing a Notice of Intent with the SWRCB. Each applicant under the Construction General Permit must ensure that a Stormwater Pollution Prevention Plan (SWPPP) is prepared prior to grading and implemented during construction. The primary objective of the SWPPP is to identify, construct, implement, and maintain BMPs to reduce or eliminate pollutants in stormwater discharges and authorized non-stormwater discharges from the site during construction. The Construction General Permit requires the control of pollutants to meet Best Available Technology Economically Achievable and Best Conventional Pollutant Control Technology (BAT/BCT) standards.¹ Compliance with the requirements of the Construction General Permit is used as one method to evaluate project construction–related impacts on surface water quality.

The municipal separate storm sewer system (MS4) permits issued to the Riverside County Co-Permittees by the Santa Ana RWQCB regulate stormwater quality in the Project area. The fourth MS4 permits have been issued by each RWQCB and are referred to as the Fourth-Term MS4 Permits. The District and the Cities of Lake Elsinore and Wildomar are Permittees under the Fourth-Term MS4 Permits. Under these permits, the District, the County of Riverside, and the Cities of Lake Elsinore and Wildomar² (Co-Permittees) are required to enforce and comply with stormwater discharge requirements outlined in Order No. R8-2010-0033 (NPDES No. CAS 618033). It should be noted that Order No. R8-2010-0033 (NPDES No. CAS 618033), approved in January 2010, superseded Order No. R8-2002-0011 except for enforcement purposes and in order to meet the provisions contained in Division 7 of the California Water Code and provisions of the federal CWA.

¹ BAT/BCT are CWA, technology-based standards that are applicable to construction site stormwater discharges. Federal law specifies factors relating to the assessment of BAT, including age of the equipment and facilities involved; the process employed; the engineering aspects of the application of various types of control techniques; process changes; the cost of achieving effluent reduction; non-water quality environmental impacts (including energy requirements); and other factors as the administrator of the EPA deems appropriate. Factors relating to the assessment of BCT include reasonableness of the relationship between the costs of attaining a reduction in effluent and the effluent reduction benefits derived; comparison of the cost and level of reduction of such pollutants from the discharge from publicly owned treatment works to the cost and level of reduction of such pollutants from a class or category of industrial sources; the age of the equipment and facilities involved; the process changes; non-water quality environmental impact (including energy requirements); and other factors as the administrator deems appropriate. The administrator has not issued regulations specifying BAT or BCT for construction site discharges.

² Urban runoff from City of Wildomar discharges into watersheds within the Santa Ana RWQCB and the San Diego RWQCB jurisdictions. Since the Project area is only located in the Santa Ana River Region, the San Diego Region Santa Margarita Drainage Area is not discussed herein.

The following list highlights requirements, plans and topics of discussion resulting from the MS4 Permit:

- Illegal Discharges
- Allowable Discharges
- Total Maximum Daily Load (TMDL)
- Riverside County Water Quality Management Plan for Urban Runoff
- Drainage Area Management Plan (DAMP)
- Water Quality Management Plan (WQMP)
- Low Impact Development (LID)
- Basin Plan

Section 401

Under CWA Section 401, applicants for a federal license or permit to conduct activities that may result in the discharge of a pollutant into waters of the United States must obtain certification from the state in which the discharge would originate, or, if appropriate, from the interstate water pollution control agency with jurisdiction over the affected waters at the point where the discharge would originate. Therefore, all projects that have a federal component and that may affect the quality of the state's waters (including projects that require federal agency approval, such as issuance of a Section 404 permit) must also comply with CWA Section 401. Section 401 certification or waiver is under the jurisdiction of the Santa Ana RWQCB.

State

California Toxics Rule

Because of gaps in California's regulations, the EPA promulgated the California Toxics Rule (40 CFR 131.38), which established numeric water quality criteria for certain toxic substances in California surface waters. The California Toxics Rule establishes acute (i.e., short-term) and chronic (i.e., long-term) standards for water bodies that are designated by the Santa Ana RWQCB as having beneficial uses protective of aquatic life or human health. The California Toxics Rule criteria are applicable to the receiving waters from the Project area.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Porter-Cologne Act) established the principal California legal and regulatory framework for water quality control. The Porter-Cologne Act is

embodied in the California Water Code. The California Water Code authorizes the State Water Resources Control Board (SWRCB) to implement the provisions of the federal CWA.

The State of California is divided into nine regions governed by RWQCBs. The RWQCBs implement and enforce provisions of the California Water Code and the CWA under the oversight of the SWRCB. The MDP area is located within the purview of the Santa Ana RWQCB (Region 8) and San Diego Regional Water Quality Control Board (Region 9), and must comply with applicable elements of the region's Basin Plan, as well as the Porter-Cologne Act.

Each RWQCB must formulate and adopt a water quality control plan for its region. The Santa Ana RWQCB has adopted and periodically amends a water quality control plan titled Water Quality Control Plan for the Santa Ana River Basin. The Santa Ana RWQCB Basin Plan must conform to the policies set forth in the Porter-Cologne Act as established by the SWRCB in its state water policy. The Porter-Cologne Act also provides the RWQCBs with authority to include within its basin plan water discharge prohibitions applicable to particular conditions, areas, or types of waste.

California Department of Fish and Wildlife Section 1600 et seq. (Lake or Streambed Alteration Agreement Program)

Under Sections 1600–1616 of the California Fish and Game Code, the CDFW regulates projects that affect the flow, channel, or banks of rivers, streams, and lakes. Section 1602 requires public agencies and private individuals respectively to notify and enter into a streambed or lakebed alteration agreement with CDFW before beginning construction of a project that will divert, obstruct, or change the natural flow or the bed, channel, or bank of any river, stream, or lake, or use materials from a streambed.

State Watershed Management Initiative

In 2004, the SWRCB and the Regional Boards developed the Watershed Management Initiative (WMI) to address water quality improvements of impaired water bodies. The WMI is an integrated planning process in part designed to more effectively direct State and Federal funds to the highest priority water quality activities. Its distinguishing feature is the integration of the various regional, state, and EPA programs on a watershed basis. The participating agencies in the WMI are the nine RWQCBs, the SWRCB, and the EPA. The Integrated Plan is composed of individual chapters written by each of the nine RWQCBs, as well as chapters prepared by the SWRCB and the EPA.

Local

Riverside County General Plan

The multipurpose open space element of the Riverside County General Plan (County of Riverside 2003) provides policies regarding water conservation, water quality, and groundwater recharge within the County of Riverside. The following policies are applicable to the proposed MDP facilities:

Open Space Policy 2.2: Where feasible, decrease stormwater runoff by reducing pavement in development areas, and by design practices, such as permeable parking bays, and porous parking lots with bermed storage areas for rainwater detention.

Open Space Policy 3.3: Minimize pollutant discharge into storm drainage systems and natural drainage and aquifers.

Open Space Policy 4.3: Ensure that adequate aquifer water recharge areas are preserved and protected.

Open Space Policy 4.4: Incorporate natural drainage systems into developments where appropriate and feasible.

Open Space Policy 4.5 Retain stormwater at or near the site of generation for percolation into the groundwater to conserve it for future uses and to mitigate adjacent flooding.

Open Space Policy 5.3: Based upon site, specific study, all development shall be set back from the floodway boundary a distance adequate to address the following issues:

- Public safety;
- Erosion;
- Riparian or wetland buffer;
- Wildlife movement corridor or linkage; and
- Slopes.

Open Space Policy 6.1: During the development review process, ensure compliance with the Clean Water Act's Section 404 in terms of wetlands mitigation policies and policies concerning fill material in jurisdictional wetlands.

City of Wildomar

The City of Wildomar has incorporated Riverside County's General Plan. Therefore, the above policies related to water conservation, water quality, and groundwater recharge also applies to the City of Wildomar.

City of Lake Elsinore General Plan

The hydrology and water quality section of the City of Lake Elsinore General Plan (City of Lake Elsinore 2011) provides policies to address potential flood hazards and water quality from implementation of the MDP facilities. The following policies are applicable to future proposed MDP facilities:

- Policy 4.3:** Require Best Management Practices through project conditions of approval development to meet the Federal NPDES permit requirements.
- Policy 5.1:** Continue to ensure that new construction in floodways and floodplains conforms to all applicable provisions of the National Flood Insurance Program in order to protect buildings and property from flooding.
- Policy 5.2:** Utilize the Capital Improvement Program for storm drainage projects and maintenance and improvement of local storm drain systems including channels, pipes, and inlets to ensure capacity for maximum runoff flows.

Lake Elsinore Municipal Code (LEMC) – Title 14, Chapter 14.08

Chapter 14.08 of the LEMC is the “City of Lake Elsinore Stormwater/Urban Runoff Management and Discharge Controls Ordinance”. The purpose of this chapter is to ensure the future health, safety, and general welfare of City citizens by reducing pollutants in stormwater discharges to the maximum extent practicable, regulating illegal connections and discharges to the storm drain system, and regulating non-stormwater discharges to the storm drain system. The intent of this chapter is to protect and enhance the water quality of City watercourses, water bodies, groundwater, and wetlands in a manner pursuant to and consistent with the federal CWA (33 U.S.C. 1342). This chapter requires compliance with LEMC erosion and sediment control requirements, the identification of BMPs and compliance with the Municipal NPDES Permit and the NPDES Permit for Industrial/Commercial and Construction Activity.

Lake Elsinore Municipal Code (LEMC) – Chapter 15, Chapter 15.64

The purpose of Chapter 15.64 (Flood Damage Prevention) of the LEMC is to promote the public health, safety, and general welfare, and to minimize public and private losses due to flood conditions in specific areas by legally enforceable regulations applied uniformly throughout the community to all publicly and privately owned land within flood-prone, mudslide (i.e., mudflow) or flood-related erosion areas. This chapter includes regulations to:

- Restrict or prohibit uses which are dangerous to health, safety, and property due to water or erosion hazards, or which result in damaging increases in erosion or flood heights or velocities;
- Require that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction;

- Control the alteration of natural floodplains, stream channels, and natural protective barriers, which help accommodate or channel floodwaters;
- Control filling, grading, dredging, and other development which may increase flood damage; and
- Prevent or regulate the construction of flood barriers which will unnaturally divert floodwaters or which may increase flood hazards in other areas.

Elsinore Valley Municipal Water District

The EVMWD is a public nonprofit agency that was created on December 23, 1950, under the Municipal Water District Act of 1911. EVMWD provides water, wastewater, and reclaimed water service to the City of Lake Elsinore, the cities of Canyon Lake and Wildomar, portions of the city of Murrieta, and unincorporated portions of Riverside County. EVMWD is a special district, whose powers include provision of public water service, water supply development and planning, wastewater treatment and disposal, and recycling. Currently, EVMWD has more than 35,000 water, wastewater, and agricultural service connections. EVMWD is a subagency of the Western Municipal Water District, a member agency of the Metropolitan Water District of Southern California (Metropolitan).

Lake Elsinore and San Jacinto Watersheds Authority

The LESJWA is a joint powers authority created by the Safe Drinking Water, Clean Water, Watershed Protection, and Flood Protection Bond Act of 2000 funding (also known as Proposition 13) and entrusted with state and local funds to improve water quality in the region and satisfy other water resources protection needs. Its jurisdiction covers a 700-square mile area running from the San Jacinto Mountains west through Canyon Lake and ends in Lake Elsinore. Members of LESJWA include EVMWD, the cities of Lake Elsinore and Canyon Lake, the County of Riverside, and SAWPA.

4.8.3 Comments Received in Response to the Notice of Preparation

Comment letters were received from the Department of Transportation on September 27, 2011, and by Linda Ridenour on October 11, 2011, in response to the NOP. The contents of these letters are included in Appendix A.

4.8.4 Significance Threshold Criteria

The District has not established local CEQA significance thresholds as described in Section 15064.7 of the CEQA Guidelines. The NOP for the PEIR included the IS (Environmental Checklist) to show the areas being analyzed in the PEIR (refer to Appendix A of this PEIR). Accordingly, and based on the IS, the Project would have a significant impact on hydrology and water quality if the Project would:

- Violate or conflict with any adopted water quality standards or waste discharge requirements.
- Result in substantial discharges of typical stormwater pollutants (e.g. *sediment from construction activities, hydrocarbons, and metals from motor vehicles, nutrients and pesticides from landscape*

maintenance activities, metals of other pollutants from industrial operation,) or substantial changes to surface water quality including, but not limited to, temperature, dissolved oxygen, pH, or turbidity.

- 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 which would not support existing land uses or planned uses for which permits have been granted*).
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of a watercourse or wetland, in a manner which would result in substantial erosion or siltation on or off site.
- 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 flooding on- or off-site.
- Create or contribute runoff water, which would exceed the capacity of existing or planned stormwater drainage systems.
- 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.
- Expose people or structures to a significant risk of loss, injury or death involving inundation by seiche, tsunami, or mudflow.

4.8.5 Environmental Impacts Before Mitigation

Would the Project violate or conflict with any adopted water quality standards or waste discharge requirements?

Currently, stormwater runoff follows the natural drainage pattern of taking water from the mountains/foothills and into Lake Elsinore. The Project will do the same for stormwater; the water will be confined to channels and underground pipes to reduce the risk of flooding, erosion and siltation in the Project area to below the 100-year level. The Project would establish a comprehensive drainage system within the Project boundary, to provide flood protection to existing development and future buildout in accordance with land uses identified in Riverside County, City of Lake Elsinore, and City of Wildomar General Plans. MDP facilities would convey existing stormwater emanating from foothill/mountains, residential, commercial, and industrial areas into Lake Elsinore, the MDP facilities will not generate new sources of stormwater. MDP facilities will be constructed by the District, County of Riverside, City of Lake Elsinore, City of Wildomar, or by future development projects within the Project boundary.

The RWQCB has established water quality standards for all surface waters within its region. Water quality standards are defined under the CWA to include both the beneficial uses of specific water bodies and the levels of water quality that must be met and maintained to protect those uses. Water quality

standards for all surface waters overseen by the RWQCB are documented in the Basin Plan (2008). Beneficial uses consist of all the various ways that water can be used for the benefit of people and/or wildlife. Five beneficial uses have been designated for surface water bodies in the vicinity of the Project (refer to Table 4.8-1, Beneficial Uses for Receiving Waters in Proximity to the Project).

Meeting the water quality standards is the responsibility of development projects in the County and cities of Lake Elsinore and Wildomar, as required by the MS4 Permits. The proposed MDP facilities will reduce flooding from stormwater and urban runoff currently experienced within the Project boundary. The proposed drainage facilities themselves will not generate or create a significant increase in runoff or stormwater pollutants. Proposed detention basins will allow for some sediment transported in stormwater runoff to settle out over time, and will attenuate peak-flow rates from storm events. Proposed water quality basins will reduce stormwater pollutant discharges by reducing peak flows, allowing for settlement, infiltration and/or use of filter media. Proposed storm drains and channels would route stormwater from the canyons around potential pollutant sources in residential and commercial areas. Activities relating to the construction of the MDP facilities will be regulated by the RWQCB under the NPDES MS4 permit program at the time future development projects are approved within the Project boundary (Mitigation Measure (**MM**) **HYDRO-I**). The District is the Principal Permittee, the County of Riverside and cities of Lake Elsinore and Wildomar are Co-Permittees in the NPDES program, which is designed to reduce pollutant loads in urban runoff. According to the NPDES permit requirements, all new development projects and substantial rehabilitation efforts are required to incorporate BMPs (**MM** **HYDRO-I**). Implementation of BMPs in accordance with NPDES Municipal Stormwater Management Program helps to protect surface water quality in Lake Elsinore.

The MDP may result in the transport of sediment and pollutants into local drainage systems during construction. These impacts are considered short-term. In particular, MDP facilities built during the rainy season could impact water quality as a result of runoff and sediment transport during construction activities. Construction and operation of a number of MDP facilities may require dewatering of pipeline trenches in order to place infrastructure underground. Dewatering of groundwater may result in potential impacts to surface water quality if not performed in accordance with applicable discharge permits. In order to reduce the discharge of expected pollutants into receiving waters during construction of the proposed MDP facilities, project proponents (i.e., the District or City of Lake Elsinore or City of Wildomar) may be required to prepare a Stormwater Pollution Prevention Plan (SWPPP) in accordance with the SWRCB Construction General Permit (**MM** **HYDRO-I**). The Construction General Permit requires the development and implementation of a SWPPP to identify an effective combination of erosion control and sediment control BMPs to minimize or eliminate the discharge of pollutants into receiving waters during construction. In addition, BMPs for managing sources of non-stormwater discharges and waste are required to be identified in the SWPPP (**MM** **HYDRO-I**). Example of construction BMPs includes silt fencing, gravel bag berms, fiber rolls, and street sweeping.

In the long term, the MDP facilities may require maintenance to remove vegetation that could clog or hamper stormwater flow. Herbicides could be used in maintenance activities to control vegetation that might grow in open channels. **MM HYDRO-2** shall be implemented to ensure additional sources of pollution (i.e. nitrogen and phosphorus) are not introduced into Lake Elsinore, which would affect the ability of the Beneficial Uses and TMDLs to be met for Lake Elsinore.

Overall, there are several regulations that are already in place that regulate the water quality of the stormwater that will be conveyed by the Project, but not generated by the Project. The RWQCB could regulate portions of the Project under the Porter-Cologne Act or Section 401 of the CWA related to impacts that might occur to existing resources during construction of the MDP facilities. Stormwater pollution prevention measures may be identified and must be followed to reduce or eliminate discharge of pollutants to surface water from stormwater and non-stormwater discharges from, not only the construction of the MDP facilities, but the implementation of future approved development projects within the Project boundary, as well.

The MS4 Permits require the District to conduct public education, monitoring, illicit connection/illegal discharge detection and removal, maintenance activities, and coordination with other MS4 operators to ensure that pollutants discharging from MS4 systems are mitigated to the maximum extent practicable. Future MDP facilities constructed would be required to comply with this permit.

In addition, any proposed facilities that impact waters of the United States or waters of the state will be regulated by the RWQCB under Section 401 of the CWA or the Porter-Cologne Act (**MM HYDRO-3**). The Project also incorporates channels, storm drains, and basins, which can serve to attenuate peak-flow rates and allow for infiltration of stormwater. Additional water quality control measures may be implemented at the time of construction in order to comply with TMDL requirements established by the RWQCB within the watershed.

In light of the above water quality regulatory programs already in place, which the proposed MDP and future development projects within the Project boundary will have to comply with, impacts to water quality are anticipated to be **less than significant with mitigation incorporated**.

Additionally, since future MDP facilities within the Project boundary will be required to comply with **MM HYDRO-1** through **MM HYDRO-3**, water quality standards and waste discharge requirements are expected to be **less than significant with mitigation incorporated**.

Would the Project result in substantial discharges of typical stormwater pollutants (e.g., sediment from construction activities, hydrocarbons and metals from motor vehicles, nutrients and pesticides from landscape maintenance activities, metals or other pollutants from industrial operation) or substantial changes to surface water quality including, but not limited to, temperature, dissolved oxygen, pH, or turbidity?

There are four extended detention basins proposed within the Project boundary. The purpose of these basins is to mitigate the water quality impact of the runoff from the existing urban areas to Lake Elsinore. About 348 acres, or roughly 20% of the existing urban area within the Project watershed, would be routed through these basins. According to the CNRP, the approximate pollutant removal efficiency of extended detention basins is 75 percent for total phosphorus and 24 percent for total nitrogen. Given the factors listed above, when constructed, these basins would prevent 21 kg/year of Total Phosphorous and 35 kg/year of Total Nitrogen, on average, from reaching Lake Elsinore. These basins, plus the 9 debris basins in the MDP, would also reduce turbidity in Lake Elsinore. Although not calculated, these basins would also treat runoff from open space and forest land uses, further increasing nutrient load reduction benefit. These reductions will assist in offsetting impacts of phosphorus and nitrogen loads from existing and future development; both within and outside of the Project boundary.

The MDP facilities in and of themselves would not create pollutants, but would merely convey surface waters that already discharge into Lake Elsinore due to the close proximity of the drainage areas to Lake Elsinore. The time it takes for stormwater to be conveyed through the system would be relatively short, just a matter of minutes, and would not increase the temperature of the water above ambient levels, nor change the pH values to any level of significance. Although stormwater runoff typically has a high dissolved oxygen content, it is likely to be of negligible benefit to Lake Elsinore.

Other potential impacts to surface water quality within the Project boundary are mitigated through existing compliance programs and plans (e.g., TMDL Task Force projects, MS4 Permit compliance programs, and CNRP), of which the District is a participating member (**MM HYDRO-I**). The compliance programs will ensure that a broad range of BMPs are implemented to reduce the discharge of stormwater pollutants to the maximum extent practicable.

Based on the information provided above, potential impacts to discharge of pollutants are considered to be **less than significant with mitigation incorporated**.

Would the Project 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 which would not support existing land uses or planned uses for which permits have been granted)?

Groundwater within the Project boundary is generally controlled by the overall Lake Elsinore Groundwater Basin which lies in a closed basin formed between strands of the Elsinore fault zone (see Figure 4.8-1). The MDP is not a development project; it will not require an increase the demands on groundwater supply. The MDP is designed to collect and convey stormwater through the Project boundary. The proposed open, concrete channels will introduce approximately 2.5 acres of new impervious areas where the existing condition is mostly open, pervious lands. The debris basins will encompass a total of approximately 28 acres; most of this area is considered still permeable, as these areas will not be paved, and will be removed of sediment/silt as part of MDP maintenance. The water quality basins will introduce approximately 13 acres of still pervious surfaces, allowing for infiltration.

Per Elsinore Valley Municipal Water District (EVMWD), the Elsinore Basin Groundwater Management Plan (2005) estimated that the increased urbanization around Lake Elsinore will diminish groundwater recharge due to infiltration of runoff from 900 to 700 acre-feet per year between 2005 to 2020, but considered this a relatively small amount that is not considered a significant issue. EVMWD is instituting conjunctive use and artificial recharge programs in past several years and will do so in the future, there such programs are expected to result in satisfactory management of the Elsinore Groundwater Basin.

Since future proposed concrete channels would only be a small fraction of area (approximately 2.5 acres of the approximately 44.61 acres of the MDP facilities) not providing groundwater recharge as compared to development projects, the conversion would be considered less than significant. Furthermore, the 13 acres of water quality basins are designed to allow water to infiltrate and thus may offset loss of 2.5 acres of recharge from proposed impervious concrete-lined facilities listed above. The water quality basins will also be designed to settle out pollutants before the stormwater is discharged to Lake Elsinore.

Would the Project substantially alter the existing drainage pattern of the site or area, including through the alteration of a watercourse or wetland, in a manner which would result in substantial erosion or siltation on- or off-site?

The Project is designed to respect and improve existing drainage patterns, and will not result in substantial erosion or siltation on or off site. The proposed MDP facilities will generally follow the existing drainage pattern of the area; the existing general drainage pattern is for stormwater to be discharged from the canyon mouths, then flows overland across natural and urban landscapes into Lake Elsinore. In order to provide flood protection to existing development, the drainage pattern in the watersheds making up the Project boundary, would be altered by constructing debris basins in many of the canyon mouths and then conveying the stormwater in channels and underground storm drains

instead of overland. The altered drainage pattern would result in collecting siltation that normally occurs as flows move from the canyons overland to Lake Elsinore, into the debris basins. The debris basin will serve as the collection points to remove siltation, which is by design, making it more economical and efficient to remove siltation at a known point where the facility is open and access is relatively easy.

Most of the proposed MDP facilities will be constructed primarily within existing and proposed road rights-of-way. Some of the existing facilities will be expanded and storm drains will be placed underground. The open channels are all planned to be concrete-lined. The concrete-lined channels will add impervious area to the Project area (approximately 10 acres); however, implementation of the MDP facilities will improve stormwater drainage within the Project boundary by safely collecting, conveying and discharging flows within the Project boundary.

As discussed in Section 4.3, Biological Resources, as well as above, there will be altering and fill that may occur with MDP implementation to existing drainage features, there will also be impacts associated with the transition of currently unlined ditches and open areas conveying stormwater to lined, concrete facilities which do not allow any infiltration or natural conditions to occur in the drainage systems. These impacts will be evaluated on a case by case basis, depending on the resources and conditions present when the specific MDP facility is proposed for regulatory permitting. Mitigation for the fill that may occur within existing drainage features will be coordinated with the regulatory agencies and could include off-site mitigation, conservation or restoration/creation. Typical mitigation for impacts to natural drainages that may be considered jurisdictional by the regulatory agencies, for the type of MDP facilities proposed, would most likely include a combination of the following: creation of riparian or wetland habitat, restoration of riparian or wetland habitat, enhancement of habitat, and/or payment of in lieu fees to an established mitigation bank. With implementation of **MM HYDRO-4** (same as **MM BIO-6**), potential impacts to federally-protected wetlands are reduced to **less than significant** levels.

SWPPPs and BMPs may be incorporated into the construction and operation of the MDP facilities to reduce the potential for erosion or siltation (**MM HYDRO-1**).

Impervious surfaces, including paved areas such as parking lots, roadways, and building rooftops decrease the area in which stormwater runoff can infiltrate, potentially resulting in decreased absorption and increased runoff. Future development projects in the MDP area may be conditioned to comply with the provisions of the NPDES programs to include SWPPPs and WQMPs which includes site design requirements to minimize directly connected impervious areas. The SWPPP includes provisions to identify potential on-site pollutants, identify and implement an effective combination of erosion control and sediment control measures to reduce or eliminate discharge of pollutants to surface water from stormwater and non-stormwater discharges during construction activities. The site-specific WQMP must describe the BMPs that will be implemented and maintained throughout the life of the project, and is used by property owners, facility operators, tenants, facility employees, maintenance contractors, etc., to prevent and minimize water pollution that can be caused by stormwater or urban runoff. BMP selection includes site design measures to minimize directly connected impervious areas, source control

measures to minimize urban runoff potential, and/or treatment control measures to minimize urban runoff pollutant loads. This SWPPP and WQMP requirement will reduce the overall impervious areas within the Project boundary, and thus reduce the overall amount of surface runoff from urban areas.

Through compliance with regulatory permits associated with modifications to any natural drainages or wetlands that may be considered jurisdictional, compliance with the NPDES permitting program and incorporation of appropriate BMPs (**MM HYDRO-I**), impacts are expected to be **less than significant with mitigation incorporated**.

Would the Project 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 flooding on- or off-site?

As explained above, the proposed MDP facilities will generally follow the existing drainage pattern of the area; the existing general drainage pattern is for stormwater to be discharged from the canyon mouths, then flows overland across natural and urban landscapes into Lake Elsinore. The proposed MDP facilities will generally follow the existing drainage pattern of the area. The MDP facilities would be constructed to improve flow conveyance conditions in order to reduce the potential for flooding. Sediment removal during maintenance activities of the debris basins would also restore the flow conveyance. Proposed sediment removal activities would include ground-disturbing activities that would occur primarily during the dry-season, avoiding or minimizing the potential for flooding.

The MDP will act as a guide for the location and size of drainage facilities and basins needed to resolve existing flooding problems within the developed areas. The implementation of the MDP will mitigate for existing flooding issues occurring in the Lakeland Village area; the Project will not create flooding.

As discussed above, any modifications to natural drainages that are considered jurisdictional will be addressed by compliance with **MM HYDRO-4**.

Also, during construction of the MDP facilities, SWPPPs and BMPs may be incorporated to the MDP facilities to minimize the potential for flooding (**MM HYDRO-I**). The proposed MDP facilities will be designed to accommodate 100-year stormwater flows from the MDP area; therefore, the MDP will not result in peak flows exiting the site that would result in flooding on- or off-site.

Therefore, since the Project will improve the flooding issues in the Project area and with implementation of **MM HYDRO-I** and **MM HYDRO-4** will mitigate any construction impacts to natural drainages, impacts are considered to be **less than significant with mitigation incorporated**.

Would the Project create or contribute runoff water, which would exceed the capacity of existing or planned stormwater drainage systems?

The Project is intended to collect and convey stormwater through the Project boundary; the Project will not be a generator of runoff water that can exceed existing or planned stormwater drainage systems. Some of the MDP facilities will drain/connect to existing downstream drainage systems. The Project proposes to retrofit or upsize existing facilities whose capacity will be compromised by construction of the MDP or were not designed to convey the tributary runoff. Therefore, since the Project will not create or contribute runoff, and it will require the upsizing of existing facilities so that they can accommodate flows that will be conveyed through the new MDP facilities, impacts are considered to be **less than significant**.

Would the Project 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?

Portions of the Project area lie within the boundaries of the FEMA 100-year flood plain (see Figure 4.8-1). However, one of the objectives of the Project is to control flooding associated with stormwater runoff within the Project boundary. The Project does not include the construction of a levee. However, MDP facilities do include debris basins. Table 4.8-4 provides a list of debris basins within the Project boundary and whether they fall under the jurisdiction of the Division of Safety of Dams (DSOD) criteria.

The following criteria will be applied to every basin, even if the facility is not within the jurisdiction of the DSOD.

- a. The embankment, foundation, abutments, and reservoir rim must be stable and must not develop unacceptable deformations under all loading conditions brought about by construction of the embankment, reservoir operation, and earthquake.
- b. Seepage flow through the embankment, foundation, abutments, and reservoir rim must be controlled to prevent excessive uplift pressures; piping; instability; sloughing; removal of material by solutioning; or erosion of material into cracks, joints, or cavities. The amount of water lost through seepage must be controlled so that it does not interfere with planned project functions.
- c. The reservoir rim must be stable under all operating conditions to prevent the triggering of a landslide into the reservoir that could cause a large wave to overtop the dam.
- d. The embankment must be safe against overtopping or encroachment of freeboard during occurrence of the IDF (inflow design flood) by the provision of sufficient spillway and outlet works capacity.
- e. Freeboard must be sufficient to prevent overtopping by waves.
- f. Camber should be sufficient to allow for settlement of the foundation and embankment, but not included as part of the freeboard.
- g. The upstream slope must be protected against wave erosion, and the crest and downstream slope must be protected against wind and rain erosion.

An earthfill dam designed to meet the above criteria will prove permanently safe, provided proper construction methods and control are achieved.

Would the Project expose people or structures to a significant risk of loss, injury or death involving inundation by seiche, tsunami, or mudflow?

A seiche is an oscillation of a landlocked body of water that can cause water damage to buildings, roads, and other facilities that surround the body of water (Lake Elsinore), typically caused by earthquakes. According to the Seismic and Geologic Hazards Review report (Leighton Consulting Inc. 2011; see Appendix D of this PEIR), some areas within the Project boundary are located within an area that could be subject to inundation by seiches from Lake Elsinore. However, as stated in the City of Lake Elsinore's Draft General Plan EIR, although there is the potential for a seiche to occur in Lake Elsinore during an earthquake, it would take a geologically substantial earthquake to cause a seiche. Seiche potential is highest in large, deep, steep reservoirs or water bodies. Lake Elsinore lacks significant potential for a damaging seiche because it is shallow, and because of the flood control infrastructure constructed by the ACOE, including the berm fill at the southern end of the lake. No water is being stored in the water quality or debris basins that would constitute bodies of water that could create a seiche. The MDP facilities will convey stormwater and runoff that would reduce the likelihood of mudflow from the area.

The potential for the occurrence of a tsunami is very low because the Pacific Ocean is the closest tsunami-producing open body of water and is located approximately 25 miles from the Project boundary.

The construction and operation and maintenance of the Project facilities will not increase exposure of land uses to a seiche, mudflow, or tsunami. Therefore, impacts from all three hazards are considered to be **less than significant**.

**Table 4.8-4
Debris Basins within the MDP under California Division of Safety of Dams Jurisdiction**

Watershed	Downstream Condition	Approximate Embankment Height (ft.)	Structure Classification	Division of Safety of Dams (DSOD) Jurisdiction?	Approximate Debris Volume (ac-ft.)	Approximate Area Footprint (ac)
A	Outlets to existing channel	20	Dam	No	9	2
B	Outlets to existing channel	27	Dam	Yes	16	2
F	Will outlet to proposed storm drain	10	Dam	No	3	1
H	Will outlet to proposed rectangular channel	58	Dam	Yes	97	11
I	Will outlet to proposed storm drain	24	Dam	No	3	1
K	Will outlet into proposed storm drain	7	Dam	No	6	2
N (Line N)	Will outlet into proposed storm drain	10	Dam	No	11	2
O (Line O-10)	Will outlet into proposed storm drain	10	Dam	No	8	2
O (Line O-20)	Will outlet into proposed storm drain	10	Dam	No	6	1

Source: District.

The proposed basins embankments will be designed and constructed in accordance with standard engineering and seismic criteria to minimize the risk of failures. Dams under the jurisdiction of DSOD undergo a thorough review by the Department of Water Resources to ensure that the dam is designed to meet minimum requirements and that the design is appropriate for the known geologic conditions. DSOD also oversees the construction of the dam to ensure the work is done in accordance with approved plans and specifications. Following construction, DSOD inspects each dam on an annual basis to ensure the dam is safe, performing as intended, and is not developing problems. Therefore, impacts are considered **less than significant**.

4.8.6 Mitigation Measures

The CEQA Guidelines require an EIR to describe feasible mitigation measures that could minimize significant adverse impacts (14 CCR 15126.4). Mitigation measures were evaluated for their ability to reduce or eliminate impacts.

MM HYDRO-1 During any construction or maintenance activities that require ground disturbance for future Master Drainage Plan (MDP) facilities, the Riverside County Flood Control and Water Conservation District (District), County of Riverside, and Cities of Lake Elsinore and Wildomar shall comply with the current statewide Construction General Permit for projects resulting in land disturbances of 1 acre. Where projects result in disturbance to less than 1 acre of land, the District, County of Riverside, and Cities of Lake Elsinore and Wildomar shall comply with the local grading ordinance and install best management practices (BMPs) to ensure that sediment is not transported beyond the Project limits or into sensitive areas such as wetlands and water bodies. A De Minimus discharge shall be obtained from the Regional Water Quality Control Board (RWQCB) when required for dewatering activities.

MM HYDRO-2 Future landscape maintenance activities using pesticides (i.e., herbicides or rodenticides) around the MDP facilities shall be phosphorus and nitrogen free or be in conformance with the phosphorus and nitrogen Total Maximum Daily Loads (TMDLs) outlined in the 303(d) list for Lake Elsinore.

MM HYDRO-3 Prior to construction of future MDP facilities that may be located in waters of the United States or waters of the state, the District, County of Riverside, and Cities of Lake Elsinore and Wildomar shall obtain all necessary permits to comply with the federal Clean Water Act (CWA) state discharge permitting requirements, 404 Permits, 401 Permits, 1602 Permits, and California Porter-Cologne Water Quality Control Act permit. Restoration, enhancement, or creation may be required as a result of these regulatory permits and could include such activities on MDP facilities (such as within basins) or could occur off site, but within the same watershed. Mitigation ratios shall be determined at the time specific MDP facilities are proposed for construction in the future.

MM HYDRO-4 Project-specific jurisdictional delineations will be required to determine the limits of the U.S. Army Corps of Engineers (ACOE), RWQCB, and California Department of Fish and Wildlife (CDFW) jurisdiction for the MDP facilities listed in Table 4.3-5. Impacts to jurisdictional waters will need to be verified by the corresponding regulatory agency. If impacts are anticipated, then either a) jurisdictional water will be completely avoided or

b) necessary permits from requisite jurisdictions will be obtained. Obtaining permits may include mitigation for impacts, which would most likely include similar mitigation to that offered in a Determination of Biologically Equivalent or Superior Preservation (DBESP) such as restoration, creation and enhancement of resources in exchange for impacts from the project (same as **MM BIO-5**).

4.8.7 Summary of Environmental Effects After Mitigation Measures Are Implemented

Implementation of these mitigation measures will reduce potentially significant impacts related to hydrology and water quality to a less than significant level.

4.8.8 References

Santa Ana RWQCB (Regional Water Quality Control Board). 2005. Resolution No. R8-2004-0037. Accessed December 13, 2011. http://www.swrcb.ca.gov/rwqcb8/board_decisions/adopted_orders/orders/2004/04_037.pdf.

City of Lake Elsinore. 2011. *Draft General Plan Program EIR*.

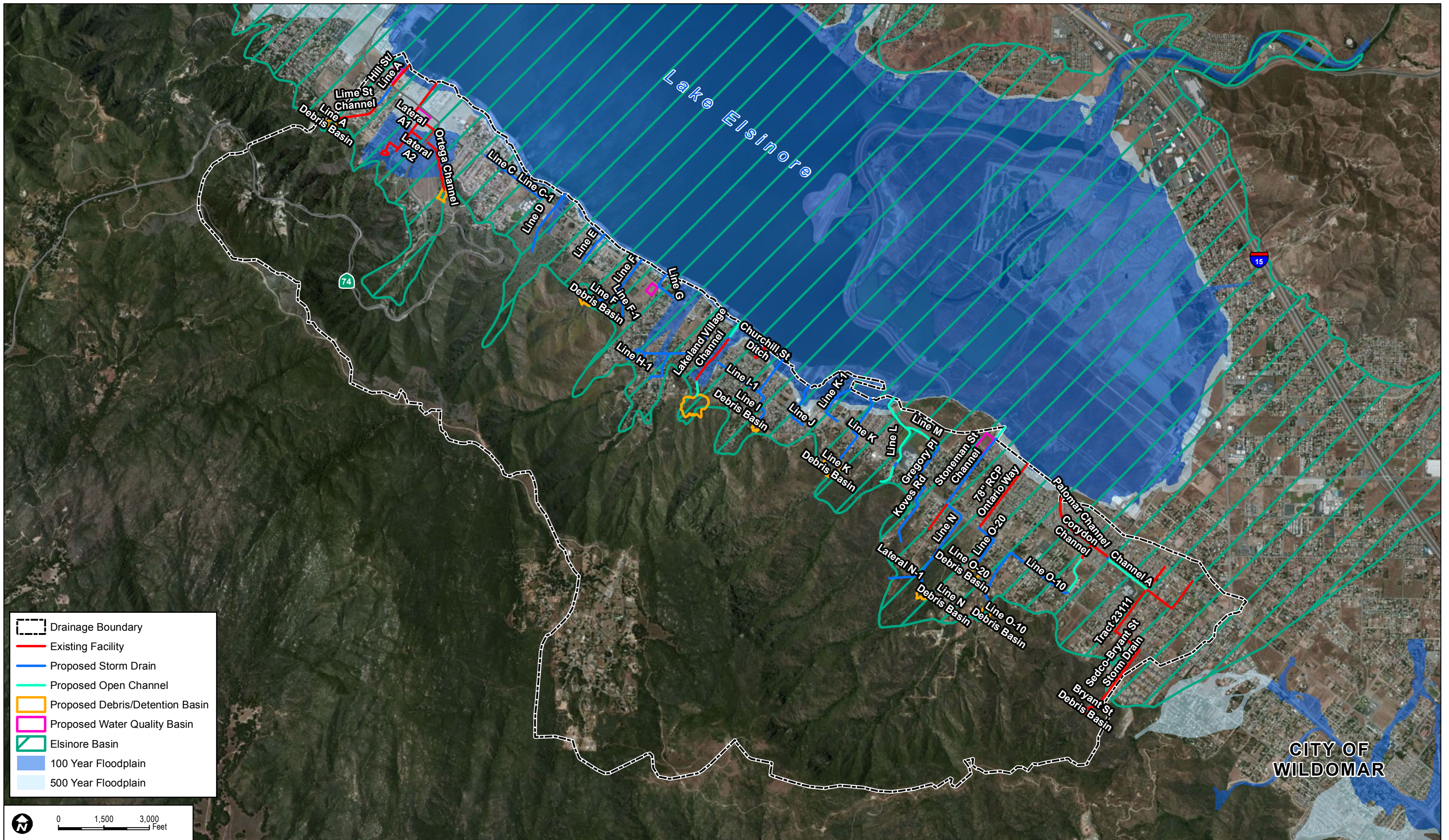
EVMWD (Eastern Valley Municipal Water District). 2005. *Groundwater Management Plan*. Accessed December 15, 2011. <http://evmwd.com/civica/filebank/blobdload.asp?BlobID=2096>.

Leighton Consulting Inc. March 22, 2011. *Seismic and Geologic Hazards Review*.

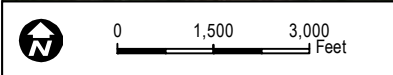
County of Riverside. 2003. *Riverside County General Plan*.

Santa Ana RWQCB (Regional Water Quality Control Board). 2008. *Santa Ana River Basin Water Quality Control Plan*. Chapter 3, Beneficial Uses. Accessed December 15, 2011. http://www.swrcb.ca.gov/rwqcb8/water_issues/programs/basin_plan/docs/chapter3.pdf.

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CITY OF WILDOMAR



DUDEK

SOURCE: Riverside County Flood Control and Water Conservation District 2010, 2012; Bing Maps

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LAKELAND VILLAGE MDP DRAFT PROGRAM EIR

FIGURE 4.8-1
Groundwater Basin and 100-Year Floodplain

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4.9 Noise

The focus of the following discussion and analysis, based on the initial study (IS), public scoping session, and comments received during the Notice of Preparation (NOP) public comment period, is related to the Project's potential impacts to exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies; excessive ground-borne vibration or ground-borne noise levels; and substantial temporary or periodic increase in ambient noise levels in the Project vicinity above levels existing without the Project.

Potential impacts from the Project on substantial permanent increase in ambient noise levels within the Project boundary above levels existing without the Project, the Project being located within an airport land use plan, and the Project being located within 2 miles of a public airport or public use airport or within the vicinity of a private airstrip such that the Project would expose people residing or working in the Project boundary to excessive noise levels, were all found to be less than significant or no impact in the IS for the Project and are therefore not further discussed in the Draft Program Environmental Impact Report (PEIR) (see Appendix A).

4.9.1 Setting and Project Baseline

General Characteristics of Community Noise

Noise is most often defined as unwanted sound. Although sound can be easily measured, the perceptibility is subjective, and the physical response to sound complicates the analysis to its impact on people. People judge the relative magnitude of sound sensation in subjective terms such as "noisiness" or "loudness." Sound pressure magnitude is measured and quantified using a logarithmic ratio of pressures, the scale of which gives the level of sound in decibels (dB). The human hearing system is not equally sensitive to sound at all frequencies. Therefore, to approximate this human, frequency-dependent response, the A-weighting filter system is used to adjust measured sound levels and is expressed as dBA.

To describe environmental noise and to assess project impacts on areas that are sensitive to community noise, a measurement scale that simulates human perception is customarily used. The basic terminology and concepts of noise are described below. Technical terms are defined in Table 4.9-1.

**Table 4.9-1
Noise Definitions**

Term	Definition
Ambient noise level	The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.
Community noise equivalent level (CNEL)	The average equivalent A-weighted sound level during a 24-hour day, calculated by adding 5 dB to sound levels in the evening (7 p.m. to 10 p.m.) and adding 10 dB to sound levels in the night (10 p.m. to 7 a.m.).

**Table 4.9-1
Noise Definitions**

Term	Definition
Decibel (dB)	The unit of measure that denotes the ratio between two quantities that are proportional to power; the number of decibels corresponding to the ratio of the two amounts of power is based on a logarithmic scale.
A-weighted decibel (dBA)	The A-weighted decibel scale discriminates upper and lower frequencies in a manner approximating the sensitivity of the human ear. The scale is based on a reference pressure level of 20 micropascals.
Intrusive noise	That noise which intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency and time of occurrence, and tonal or informational content as well as the prevailing noise level.
L ₁₀	L ₁₀ : The A-weighted sound level exceeded 10% of the sample time. Similarly, L ₅₀ , L ₉₀ , etc.
L _{eq} (equivalent energy level)	The average acoustic energy content of noise during the time it lasts. The L _{eq} of a time-varying noise and that of a steady noise are the same if they deliver the same acoustic energy to the ear during exposure, no matter what time of day they occur. The County of Riverside uses a 10-minute L _{eq} measurement.
L _{dn} (day-night average level)	The average equivalent A-weighted sound level during a 24-hour day, obtained after addition of 10 decibels to sound levels in the night from 10:00 p.m. to 7:00 a.m. Note: CNEL and L _{dn} represent daily levels of noise exposure averaged on an annual or daily basis, while L _{eq} represents the equivalent energy noise exposure for a shorter time period, typically one hour.
Micropascal	The international unit for pressure, similar to pounds per square inch. 20 micropascals is the human hearing threshold. The scale ranges from zero for the average least perceptible sound to about 130 for the average pain level.
Noise contours	Lines drawn around a noise source indicating equal levels of noise exposure. CNEL and L _{dn} are the metrics used in this document to describe annoyance due to noise and to establish land use planning criteria for noise.

Source: County of Riverside 2003.

Sound (noise) levels are measured in decibels (dB). Community noise levels are measured in terms of A-weighted sound level. Table 4.9-2 depicts common sound levels for various noise sources. The A-weighted scale of frequency sensitivity accounts for the sensitivity of the human ear, which is less sensitive to low frequencies, and correlates well with human perceptions of the annoying aspects of noise. The A-weighted decibel scale (dBA) is cited in most noise criteria.

**Table 4.9-2
Common Noise Sources and Noise Levels**

Noise Source	Sound Level dBA	Subjective Impression
Military jet take-off (50 feet)	140	Threshold of pain
Turbo-fan aircraft take-off (200 feet)	130	—
	120	Deafening
Rock band	110	—
DC-10 (6,080 on approach)	100	Very loud
Motorcycle (25 ft)	90	—
Busy street	80	Loud
Interior of department store	70	—
Conversation (3 ft)	60	Moderate
Quiet auto (low speed)	50	—
City dwelling (indoor)	40	Faint
Rustle of leaves	30	—
Country dwelling (indoor)	20	Very faint
—	10	—
	0	Threshold of hearing

Source: County of Riverside 2003.

People are generally more sensitive to and annoyed by noise during the evening and nighttime hours. Thus, another noise descriptor used in community noise assessments, termed the community noise equivalent level (CNEL), was introduced. As defined in Table 4.9-1, CNEL is the average A-weighted sound level during a 24-hour day. A 5 dB penalty is added during the evening hours of 7:00 p.m. to 10:00 p.m., and a 10 dB penalty is added during the nighttime hours of 10:00 p.m. to 7:00 a.m. The 5 and 10 dB penalties are applied to account for increased noise sensitivity during the evening and nighttime hours.

Another community annoyance related to noise is vibration. As with noise, vibration can be described by both its amplitude and frequency. Amplitude may be characterized by displacement, velocity, and/or acceleration. Typically, particle velocity (measured in inches or millimeters per second) and/or acceleration (measured in gravities) are used to describe vibration.

Vibration can be felt outdoors, but the perceived intensity of vibration impacts are much greater indoors, due to the shaking of the structure. Some of the most common sources of vibration come from transit vehicles, construction equipment, and large vehicles. Several land uses are especially sensitive to vibration and therefore have a lower vibration threshold. These land uses includes but are not limited to residential areas, libraries, schools, and offices.

Existing Conditions

Noise amplitude and attenuation characteristics are key factors in the establishment of noise conditions and vary considerably according to natural climate and topographical features. Meteorological factors affecting noise characteristics within the Project boundary include temperature changes, Santa Ana winds, and the amount and duration of rainfall. Topographical features within the Project boundary include the steep Santa Ana Mountains to the south and the low-lying Lake Elsinore and the surrounding local valley. Man-made features within the Project boundary, such as buildings, structures, and roadways, also affect noise amplitude and attenuation.

The areas within the Project boundary are subject to typical noises such as noise generated by traffic, heavy machinery, and day-to-day outdoor activities associated with residential, institutional (i.e., schools) and commercial uses. Noise within the Project boundary is the cumulative effect of noise from transportation activities and stationary sources. Transportation noise refers to noise from automobile use, trucking, airport operations, and rail operations. Roadway traffic is one of the more prevalent sources of noise within the Project boundary. State Route 74 traverses the western portion of the Project boundary. Traffic noise varies in how it affects land uses depending upon the type of roadway, distance of the land use from that roadway, topographical setting, and other physical land features such as landscaping, walls, buildings, and other structures. Some variables that affect the amount of noise emitted from a road are speed of traffic, flow of traffic, and type of traffic (i.e., tractor trailers versus cars).

Non-transportation noise typically refers to noise from stationary sources such as commercial establishments, machinery, air-conditioning systems, compressors, and landscape maintenance equipment. Regardless of the type of noise, the noise levels are highest near the source and decrease with distance.

Operation of the Master Drainage Plan (MDP) facilities would not generate additional noise as most facilities will be underground. Only temporary noise would occur during construction and maintenance of these facilities. Typical vibrations from traffic and construction sources that would be expected from the Project fall in the 10 to 30 hertz (Hz) range and usually occur around 15 Hz (Caltrans 2004).

Construction Noise

The following are typical types of construction equipment with typical noise levels that would be expected at a distance of 50 feet from the source:

- Excavators (85 dBA)
- Dozers (85 dBA)
- Dump trucks (84 dBA)
- Tractors/loaders/backhoes (80 to 85 dBA)
- Water trucks (88 dBA)

- Off highway trucks (88 dBA)
- Graders (85 dBA)
- Concrete mixer truck (85 dBA)
- Rollers (74 dBA)
- Paving equipment (89 dBA)
- Scrapers (89 dBA) (FTA 2006; FHWA 2006).

The noise levels generated by construction equipment vary greatly depending upon factors such as the type and specific model of the equipment, the operation being performed, and the condition of the equipment. The highest noise levels associated with construction typically occur with earth moving equipment which includes excavating machinery (backhoes, bulldozers, excavators, etc.) and road building equipment (scrapers, graders, etc.). The average sound level of the construction activity also depends upon the amount of time that the equipment operates and the intensity of the construction during the time period.

4.9.2 Related Regulations

Federal

There are no applicable federal regulations related to noise.

State

Government Code Section 65302 (f)

California Government Code Section 65302(f) requires the preparation of a general plan that includes, among other things, a Noise Element, which shall identify and appraise the noise problems in the community. The Noise Element shall recognize the guidelines adopted by the Office of Noise Control in the State Department of Health Services and shall quantify to the extent practicable, current and projected noise levels for the following sources:

- Highways and Freeways
- Primary Arterials and major local streets
- Passenger and freight on-line railroad operations and ground rapid transit systems
- Aviation and airport related operations
- Local industrial plants
- Other ground stationary noise sources contributing to community noise environment.

Local

Riverside County General Plan

Riverside County's General Plan (County of Riverside 2003) includes a section on noise and provides policies regarding the protection of noise-sensitive land uses from noise and vibration emitted by outside sources, and prevents new projects from generating adverse noise levels on adjacent properties within the County of Riverside. The following policies are applicable to the proposed MDP facilities:

Policy N-I.3: Consider the following uses noise-sensitive and discourage these uses in areas in excess of 65 CNEL:

- Schools;
- Hospitals;
- Rest Homes;
- Long Term Care Facilities;
- Mental Care Facilities;
- Residential Uses;
- Libraries;
- Passive Recreation Uses; and
- Place of worship.

Policy N-I.8: Limit the maximum permitted noise levels that cross property lines and impact adjacent land uses, except when dealing with noise emissions from wind turbines.

Policy N-2.3: Mitigate exterior and interior noises to the levels listed in Table 4.9-3 to the extent feasible, for stationary sources:

**Table 4.9-3
Stationary Source Land Use Noise Standards**

Land Use	Interior Standards	Exterior Standards
Residential		
10:00 p.m. to 7:00 a.m.	40 L_{eq} (10 minute)	45 L_{eq} (10 minute)
7:00 a.m. to 10:00 p.m.	55 L_{eq} (10 minute)	65 L_{eq} (10 minute)

Source: Riverside County 2003.

Note: These are only preferred standards; final decision will be made by the Riverside County Planning Department and office of Public Health.

Policy N-4.2: Develop measures to control non-transportation noise impacts.

Policy N-8.1: Enforce all noise sections of the State Motor Vehicle Code.

Policy N-12.1: Minimize the impacts of construction noise on adjacent uses within acceptable practices.

Policy N-12.2: Ensure that construction activities are regulated to established hours of operation in order to prevent and/or mitigate the generation of excessive or adverse noise impacts on surrounding areas.

Policy N-12.4: Require that all construction equipment utilizes noise reduction features (i.e., mufflers and engine shrouds) that are no less effective than those originally installed by the manufacturer.

Policy N-13.8: Review all development applications for consistency with the standards and policies of the Noise Element of the General Plan.

Policy N-18.1: Provide information to the public regarding the health effects of high noise levels and means of mitigating such levels.

Ordinance No. 847

The County of Riverside has an adopted Noise Ordinance (Ordinance No. 847; County of Riverside 2007) that establishes County-wide standards to regulate noise. The ordinance allows for different levels of acceptable noise depending on land use. For open space and residential areas, the acceptable level is much lower than for areas used for commercial and industrial areas. Activities in any area that surpass applicable levels would be in violation of the ordinance and thus subject to sanction.

Ordinance No. 847 also provides a list of activities that are exempt from the Ordinance's requirements. For purposes of the Project, those exemptions include noise produced by facilities owned or operated by or for a governmental agency, and noise generated in the construction of capital improvement projects of a governmental agency.

City of Wildomar

The City of Wildomar has incorporated Riverside County's General Plan. Therefore, the above policies related to noise also applies to the City of Wildomar.

The City of Wildomar adopted the County of Riverside's Noise Ordinance No. 847.

City of Lake Elsinore

The noise section of the City of Lake Elsinore General Plan (City of Lake Elsinore 2011a) provides policies to address potential noise impacts from implementation of the MDP facilities. The following policies are applicable to future proposed MDP facilities:

Policy 7.1: Apply the noise standards set forth in the Lake Elsinore Noise and Land Use Compatibility Matrix and Interior and Exterior Noise Standards when considering all new development and redevelopment proposed within the City.

Chapter 17.176 – Noise Control for the City of Lake Elsinore

The City of Lake Elsinore adopted a Noise Control policy to control unnecessary, excessive and annoying noise and vibration in the City and to prohibit such noise and vibration generated from or by all sources as specified in Chapter 17.176.

The City of Lake Elsinore’s construction noise limits are outlined in Table 4.9-4.

Table 4.9-4
City of Lake Elsinore Construction Noise Limits

Land Use	Time Period	Noise Level (dBA)
<i>Short-Term Mobile Equipment (less than 10 days)</i>		
Single-family residential	7:00 a.m. to 7:00 p.m.	75
	7:00 p.m. to 7:00 a.m.	60
Multiple-dwelling residential	7:00 a.m. to 7:00 p.m.	80
	7:00 p.m. to 7:00 a.m.	65
Semi-residential/commercial	7:00 a.m. to 7:00 p.m.	85
	7:00 p.m. to 7:00 a.m.	70
Long Term Stationary Equipment (10 days or more)		
Single-family residential	7:00 a.m. to 7:00 p.m.	60
	7:00 p.m. to 7:00 a.m.	50
Multiple-dwelling residential	7:00 a.m. to 7:00 p.m.	65
	7:00 p.m. to 7:00 a.m.	55
Semi-residential/commercial	7:00 a.m. to 7:00 p.m.	70
	7:00 p.m. to 7:00 a.m.	60

Source: City of Lake Elsinore 2011b, Chapter 17.176. Ord. 772, Section 17.78.060, 1986; Code 1987, Section 17.78.060.

Additionally, the following construction/demolition activities within the City of Lake Elsinore would be in violation of Chapter 17.176.080 (F):

- “Operating or causing the operation of any tools or equipment used in construction, drilling, repair, alteration, or demolition work between weekday hours of 7:00 p.m. and 7:00 a.m., or at any time on weekends or holidays, such that the sound therefrom creates a noise disturbance across a residential or commercial real property line, except for emergency work of public service utilities or by variance issued by the City.”

4.9.3 Comments Received in Response to the Notice of Preparation

No comment letters were received during the NOP public comment period related to noise.

4.9.4 Significance Threshold Criteria

The District has not established local California Environmental Quality Act (CEQA) significance thresholds as described in Section 15064.7 of the CEQA Guidelines. The NOP for the PEIR included the IS (Environmental Checklist) to show the areas being analyzed in the PEIR (refer to Appendix A of this PEIR). Accordingly, and based on the IS, the Project would have a significant impact on Noise if the Project would:

- Expose people to or generate noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.
- Expose people to or generate excessive ground-borne vibration or ground-borne noise levels.
- Cause a substantial temporary or periodic increase in ambient noise levels in the Project vicinity above levels existing without the Project.

4.9.5 Environmental Impacts Before Mitigation

Would the Project expose people to or generate noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

The Project will not result in permanent sources of noise, nor would there be significant noise generated from operation and maintenance of the MDP facilities, as most of them are underground.

Construction activities generate short-term noise impacts; the noise impacts from construction will last either a few weeks or a few months at the longest. Construction noise from the MDP facilities will not be a permanent source of noise within the Project boundary. Associated noise levels would be higher than the existing ambient noise levels, but would subside once construction is completed. Two types of noise impacts should be considered during the construction phase. First, the transport of workers and equipment to the

construction areas would incrementally increase noise levels along the roadways leading to and from the Project areas. Second, noise would be generated by the actual on-site construction activities.

Construction equipment anticipated for MDP facilities includes only standard equipment, listed above, that would be employed for any routine construction project of this scale; construction equipment with substantially higher noise-generation characteristics (such as pile drivers, rock drills, blasting equipment, etc.) is not anticipated for development of the MDP facilities. Construction noise is difficult to quantify because of the many variables involved, including the size of equipment used, percentage of time, and number of pieces of equipment that will actually operate on the site.

The maximum temporary construction noise levels from construction equipment would range up to approximately 90 dB for the type of equipment expected to be used for the proposed MDP facilities.

The County of Riverside Noise Ordinance No. 847 provides a list of activities that are exempt from the Ordinance's requirements. For purposes of this Project, those exemptions include noise produced by facilities owned or operated by or for a governmental agency, and noise generated in the construction of capital improvement projects of a governmental agency (Sections 2 (a) and 2 (b), respectively). These two exemptions have direct application to the Project. The MDP facilities will be owned and operated by a governmental agency (Riverside County Flood Control and Water Conservation District), and the build out of the Project could be part of a capital improvement plan either from the County, City of Lake Elsinore or City of Wildomar. The City of Wildomar adopted the County of Riverside's Noise Ordinance.

For the MDP facilities located within the City of Lake Elsinore, the City of Lake Elsinore's municipal code would apply (see Figure 4.3-1 for MDP facilities located in the City limits). Based on Table 4.9-4, the City of Lake Elsinore's noise standards range from 50 dBA to 85 dBA, depending on the land use and time of day. Construction noise levels from construction equipment may exceed the noise standard range in the City of Lake Elsinore. Mitigation Measure (**MM**) **NOISE-I** will be incorporated in order to reduce noise impacts from construction within the City of Lake Elsinore.

The City of Lake Elsinore Chapter 17.176 (Noise Control) of the Municipal Code prohibits construction, drilling, repair, alteration, or demolition work between the weekday hours of 7:00 p.m. and 7:00 a.m. or at any time on the weekends or holidays except for emergency work of public service utilities or by variance issued by the City of Lake Elsinore. There are no exemptions for government facilities such as those allowed by the County of Riverside's Noise Ordinance in the City's municipal code. The hours of construction limits will be complied with for any MDP facility located in the City of Lake Elsinore.

Exemptions from the County of Riverside Noise Ordinance apply to the Project, specifically the exemption that applies to facilities operated by or for a governmental agency. The City of Wildomar adopted the County of Riverside's Ordinance. Although **MM NOISE-I** has been incorporated to reduce impacts associated with noise within the City of Lake Elsinore, given the typical noise levels from

typical construction equipment are above 80 dBA, and given the City of Lake Elsinore's low noise standards, future proposed MDP facilities within the City of Lake Elsinore would most likely exceed the City of Lake Elsinore's Noise Control policy. Therefore, Project noise levels are not expected to conflict with or exceed noise limits in the established noise standards from the County of Riverside and the City of Wildomar. However, noise levels could exceed noise standards in the City of Lake Elsinore; therefore, impacts related to noise in that City would be considered **significant**, and a Statement of Overriding Considerations would be required.

Would the Project expose people to or generate excessive ground-borne vibration or ground-borne noise levels?

The Project would involve the temporary and intermittent use of construction equipment for various construction and maintenance activities over the life of the Project. There are no operational noise sources that would include vibration. Sometimes during construction, vibrational noise may occur from equipment movement. Vibrational noise is a concern when sensitive receptors, such as homes, schools, or hospitals are in proximity to the vibration sources. For the Project, the proposed alignments are within proximity of residences, as most of the MDP facilities lie within or adjacent to existing roads. The heavier pieces of construction equipment used within the Project boundary could include dozers, graders, loaded trucks, water trucks, and pavers. Ground-borne vibration information related to construction activities has been collected by California Department of Transportation (Caltrans) (Caltrans 2004). Information from Caltrans indicates that continuous vibrations with a peak particle velocity of approximately 0.1 inch/second begin to annoy people. However, according to the American Society of Civil Engineers (ASCE 1974), this annoyance threshold is approximately half of the magnitude which is typically used for protection of "fragile buildings." The ASCE recommends the use of a 0.2 inches/second particle velocity to ensure the avoidance of damage to older existing structures within the Project boundary. Since this is a program level EIR, the specific alignment of the facilities is not determined at this time. As a worse-case scenario, an approximate 25-foot distance from the construction area to the closest home was assumed. The heavier pieces of construction equipment such as large bulldozers and loaded trucks would have peak particle velocities of approximately 0.089 or less at a distance of 25 feet (FTA 2006). At these distances and with the anticipated construction equipment, the peak particle velocity would be below 0.1 inches/second at the adjacent homes. As such, even older homes which may exist adjacent to the Project site would not be anticipated to be damaged from the ground vibration created during site preparation activities; the greatest sources of ground vibration from construction are associated with pile driving, rock drills, and blasting, none of which are expected during construction of the MDP facilities. Vibration is very subjective, and some people may be annoyed at continuous vibration levels near the level of perception (or approximately a peak particle velocity of 0.01 inches/second). However, construction activities are not anticipated to result in continuous vibration levels that typically annoy people, and the vibration impact would be considered **less than significant** and no mitigation measures are necessary.

Would the Project cause a substantial temporary or periodic increase in ambient noise levels in the Project vicinity above levels existing without the Project?

The Project includes the construction, maintenance and operation of MDP facilities, which will generate noise on a temporary basis. The Project's temporary noise increases will result from future construction and maintenance activities; except for the periodic maintenance vehicle traveling to the various MDP facilities over time, there is essentially no operational noise from the Project. Temporary construction noise impacts could occur during construction activities either from the noise impacts created from the transport of workers and movement of construction materials to and from the Project sites, or from the noise generated onsite during ground clearing, grading, and construction activities. Construction activities are carried out in discrete steps, each of which has a unique mix of equipment and, consequently, unique noise characteristics. These various sequential phases would change the character of the noise levels surrounding the construction sites as work progresses.

Construction traffic associated with the Project would generally involve the export of dirt and concrete debris. Construction traffic is anticipated to be minimal.

Construction efforts for the MDP facilities would result in noise impacts to various types of sensitive receptors including, residences and schools. The associated construction activities would increase the ambient noise levels above existing conditions, which could be perceived as annoying to sensitive receptors in the area. However, this impact is temporary and would disappear once construction is completed. Most construction activities are limited to the County and City of Wildomar will comply with the allowable construction hours and days, and various measures are incorporated to reduce Project-specific noise levels (**MM NOISE-1**); less than significant impacts would result from construction noise in the County of Riverside and City of Wildomar. However, due to the City of Lake Elsinore's low noise standards, and the typical construction equipment noise levels exceeding 80 dBA, for the short term, construction noise in the City of Lake Elsinore is considered **significant** and a Statement of Overriding Considerations would be required.

4.9.6 Mitigation Measures

The CEQA Guidelines require an EIR to describe feasible mitigation measures that could minimize significant adverse impacts (14 CCR 15126.4). Mitigation measures were evaluated for their ability to reduce or eliminate impacts. Although impacts related to operational and construction noise in the City of Lake Elsinore were found to be significant because of the low noise standards within that jurisdiction, the following mitigation measures shall be applied to the Project within the City of Lake Elsinore so that noise levels can be reduced to the extent feasible.

MM NOISE-I In order to mitigate the noise impact associated with construction noise in the City of Lake Elsinore, and in order to address the City of Lake Elsinore's noise criteria related to construction noise, the Riverside County Flood Control and Water Conservation District (District) or entity constructing a Master Drainage Plan (MDP) facility within the City of Lake Elsinore shall ensure or require prior to grading or demolition permit issuance that:

- All construction equipment, fixed or mobile, shall be equipped with properly operating and maintained mufflers.
- Construction noise reduction methods such as shutting off idling equipment, installing temporary acoustic barriers around stationary construction noise sources and use of electric air compressors and similar power tools, rather than diesel equipment, shall be used where feasible. Unattended construction vehicles shall not idle for more than 5 minutes when located within 200 feet from residential properties.
- During construction, stationary construction equipment shall be placed such that emitted noise is directed away from or shielded from the residences.
- During construction, stockpiling and vehicle staging areas shall be located as far as practical from noise sensitive receptors. A plan should be provided to the City of Lake Elsinore identifying the staging areas prior to issuance of a construction permit.

Construction hours, allowable workdays, and the phone number of the job superintendent shall be clearly posted at all construction entrances to allow surrounding property owners and residents to contact the job superintendent if necessary.

4.9.7 Summary of Environmental Effects After Mitigation Measures Are Implemented

Implementation of **MM NOISE-I** will reduce noise levels associated from construction equipment. However, given that the City of Lake Elsinore's noise limits are lower than what is typically expected from construction equipment, the potential to exceed the City's noise standards is high. Therefore, impacts are considered significant even with the above mitigation measure incorporated.

4.9.8 References

ASCE (American Society of Civil Engineers. 1974. "Vibrations During Construction Operations." *Journal of Construction Division* 100(CO3): 239-246.

Caltrans (California Department of Transportation). 2004. *Transportation- and Construction-Induced Vibration Guidance Manual*. June 2004.

City of Lake Elsinore. 2011a. *City of Lake Elsinore General Plan*. Adopted December 13, 2011.

City of Lake Elsinore. 2011b. Chapter 17.176 – Noise Control. Accessed on December 9, 2011.
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County of Riverside. 2003. *Riverside County General Plan*.

County of Riverside. 2007. Ordinance No. 847. Accessed December 9, 2011.
<http://rivcocob.com/ords/800/847.pdf>.

FHWA (Federal Highway Administration). 2006. *Construction Noise Handbook*. Accessed November 28, 2012. http://www.fhwa.dot.gov/environment/noise/construction_noise/handbook/handbook09.cfm.

FTA (Federal Transit Administration). 2006. *Transit Noise and Vibration Impact Assessment*. May 2006.

4.10 Transportation and Traffic

The focus of the following discussion and analysis, based on the initial study (IS), public scoping session, and comments received during the Notice of Preparation (NOP) public comment period, is related to the Project's potential impacts to conflict with adopted plans, ordinances, or policies regarding the performance of the circulation system including all modes of transportation and components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit; the potential conflict with an adopted congestion management programs; and the potential conflict with adopted policies, plans, or programs regarding public transit, bicycle, pedestrian facilities, or other alternative transportation. Potential impacts from the Project on substantial increase of hazards due to design features or incompatible uses, inadequacy of emergency access, and inadequacy of parking capacity were all found to be less than significant or have no impact in the IS for the Project and are therefore not further discussed in the Draft Program Environmental Impact Report (PEIR) (see Appendix A).

4.10.1 Setting and Project Baseline

Roadways

Interstate 15 (I-15) provides regional access to the Project boundary. The I-15 freeway, located northeast of the Project boundary, is an interstate highway that extends throughout Riverside County to San Diego County to the south and San Bernardino County to the north (see Figure 3.0-2, Vicinity Map).

State Route 74 (SR 74) (Ortega Highway), an eligible State Scenic Highway, traverses through the westerly portion of the City of Lake Elsinore into the Cleveland National Forest where it connects with I-5 in Orange County. SR 74 is a divided collector designed for up to two lanes of traffic with potential augmented intersections. Specifically, the segment north of I-15 toward Riverside Street has been widened to a four-lane divided roadway to accommodate the recent development in the Project area.

The only street going all the way through the Project boundary, in a north–south direction is Grand Avenue. Grand Avenue within the Project boundary is a two-lane undivided roadway that provides an important connection to SR 74 from the Project area south of the lake (Lake Elsinore). In the City of Lake Elsinore General Plan, Grand Avenue is an urban arterial designed for up to six lanes and 120-foot right-of-way.

The County of Riverside and Cities of Lake Elsinore and Wildomar use level of service standards to assess the performance of a street or highway system and the capacity of the roadway. Levels of service are not expected to change as a result of construction from future proposed MDP facilities as roadways or highways are not being proposed for widening as part of the Project. Only temporary street lane closures and sidewalks could occur during construction and/or maintenance of future MDP facilities.

Public Transportation

The Riverside Transit Agency (RTA) provides public bus service to the Lakeland Village area. The RTA Route 8 that runs along Grand Avenue provides alternate intra-City and regional transportation options.

Pedestrian and Bicycle Trails

Currently, some of the areas within the Project boundary do not have paved pedestrian facilities. In the City of Lake Elsinore's General Plan, Grand Avenue has a bikeway designation for Class I and Class II. Class I Bikeway includes bike paths or trails with a completely separated right-of-way for the exclusive use of bicycles. Class II Bikeway includes bike lanes that provide a restricted right-of-way for the exclusive or semi-exclusive use of bicycles with the permitting of vehicle parking and vehicle/pedestrian cross flows. Stoneman Street and SR 74 are also designated for Class II Bikeway.

In the Lake Elsinore Trail System, Grand Avenue is designated as a regional trail while the County of Riverside Trail System has designated this roadway has a combination of regional trail and Class I Bikeway. The Lake Elsinore Trail System has also laid out community trails along portions of Line D, Line G, Line I, Line I-I, Line J, Line K, Line K-I, Line M, Line N, Line O-20, and Line O-10 as well as all facilities crossing Grand Avenue. No City of Wildomar trail system is located within the Project boundary.

4.10.2 Related Regulations

Federal

There are no federal related regulations pertaining to the Project.

State

California Department of Transportation

The California Department of Transportation (Caltrans) is responsible for the design, construction, maintenance, and operation of the California State Highway System, as well as the portion of the Interstate Highway System within the state's boundaries.

SR 74, traversing the westerly portion of the Project area, is owned and operated by Caltrans.

Local

County of Riverside General Plan Circulation Element

The Circulation Element of the County of Riverside General Plan (County of Riverside 2003) contains policies for the management of circulation and mobility in the County. The following General Plan

policies are applicable to the Project and aim to minimize adverse conditions to traffic and transportation within the Project boundary during construction and maintenance activities.

Policy C-3.8: Restrict heavy duty truck through-traffic in residential and community center areas and plan land uses so that trucks do not need to traverse these areas.

Policy C-3.28: Reduce transportation noise through proper roadway design and coordination of truck and vehicle routing.

Policy C-20.2: Provide all roadways located within identified flood areas with adequate flood control measures.

Policy C-20.4: Control dust and mitigate other environmental impacts during all stages of roadway construction.

Policy C-20.13: Implement National Pollutant Discharge Elimination System Best Management Practices relating to construction of roadways to control runoff contamination from affecting the groundwater supply.

Policy C-23.10: Limit truck traffic in residential and commercial areas in the County and truck routes; limit construction, delivery, and truck through-traffic to designated routes; and distribute maps of approved truck routes to County traffic officers.

Regional Transportation Plan

The Regional Transportation Plan (RTP) is a multi-modal, long-range planning document prepared by the Southern California Association of Governments, in coordination with federal, state, and other regional, subregional, and local agencies in Southern California. The RTP includes programs and policies for congestion management, transit, bicycles, and pedestrians, roadways, freight, and finances. The RTP is prepared every three years and reflects the current future horizon based on a 20-year projection of needs. The RTP's primary use is as a regional long-range plan for federally funded transportation projects. It also serves as a comprehensive, coordinated transportation plan for all governmental jurisdictions within the region.

City of Wildomar General Plan

The City of Wildomar has incorporated Riverside County's General Plan. Therefore, the above policies related to the Riverside County General Plan also apply to the City of Wildomar.

City of Lake Elsinore General Plan

The circulation section of the City of Lake Elsinore GP (City of Lake Elsinore 2011) provides goals and policies to address effects of prospective development on transportation, traffic, and the circulation system. The following policies are applicable to the Project:

Policy 6.5: The City will monitor traffic and congestion on Grand Avenue and Corydon Street through the review of project-specific traffic studies, and apply mitigation measures to ensure that projected traffic does not exceed daily capacities as new development occurs in the area.

4.10.3 Comments Received in Response to the Notice of Preparation

Comment letters were received from Caltrans on September 27, 2011, in response to the NOP. The contents of these letters are included in Appendix A.

4.10.4 Significance Threshold Criteria

The District has not established local California Environmental Quality Act (CEQA) significance thresholds as described in Section 15064.7 of the CEQA Guidelines. The NOP for the PEIR included the IS (Environmental Checklist) to show the areas being analyzed in the PEIR (refer to Appendix A of this PEIR). Accordingly, and based on the IS, the Project would have a significant impact on transportation and traffic if the Project would:

- Conflict with an adopted plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit.
- Conflict with an adopted congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the appropriate congestion management agency for designated roads or highways.
- Conflict with adopted policies, plans, or programs regarding public transit, bicycle, pedestrian facilities, or other alternate transportation or otherwise decrease the performance or safety of such facilities.

4.10.5 Environmental Impacts Before Mitigation

Would the Project conflict with an adopted plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

The Project is not a traffic-generating project, like a residential development would be. The effectiveness of the local circulation system will not be affected by the Project; instead, the Project makes local

circulation work better, as it relieves flooding within the Project boundary, which under the current conditions causes havoc on the local circulation system.

The proposed MDP facilities include underground storm drains which will be constructed mostly within existing road rights-of-ways and will require temporary lane closures to construct. The street and lane closures during construction will be kept to a minimum and will be coordinated with the Riverside County Transportation Department and Caltrans to ensure that traffic flow is not adversely affected. Any traffic impacts will be limited to the construction period and possibly during maintenance activities of the MDP facilities located in roadways. Construction of the water quality and debris basins should not require lane closures, as those MDP facilities will be located on discrete sites, not within roadways.

Standard District Traffic Control requirements that would be implemented during Project construction and maintenance activities include:

- Labor, flagmen, lights, barricades, signs, materials, temporary bridges, and equipment;
- Contractor shall notify applicable agencies (i.e., Riverside County Transportation, Riverside County Sheriff's Department; Cities of Lake Elsinore and Wildomar Public Works Department and Police Department; Southern California Edison, The Gas Company; phone and cable companies; school districts; United States Postal Service; Eastern Municipal Water District; public transit; Waste Disposal Service) a minimum of 48 hours in advance of start of any street work and proposed/changes to construction schedule and provide any additional pertinent information they may request;
- Contractor shall notify the public a minimum of 10 working days prior to start of road closure.

Two Facilities, Line A and the Ortega Channel could have potential impacts to State Route 74, which is owned and operated by Caltrans. A Traffic Control Plan will be required when future MDP facilities are proposed that will require lane closures or significant rerouting of traffic. The Traffic Control Plan will outline and coordinate traffic movement including construction vehicles, and identify temporary street and lane closures that will be implemented during construction and maintenance activities, as required by Mitigation Measure **(MM) TRANS-1** in Section 4.10.6.

An encroachment permit for improvements and construction along Line A and Ortega Channel within SR 74 will be required prior to construction **(MM TRANS-2)**. Obtaining the encroachment permit will ensure that Caltrans has reviewed and approved the construction plans and Traffic Control Plan so that significant impacts and delays are avoided. The Traffic Control Plan submitted with the Caltrans encroachment permit application shall be prepared in accordance with the Caltrans *Manual of Traffic Controls for Construction and Maintenance Work Zones*. The Traffic Control Plan shall also consider traffic restrictions and pedestrian/bicycle detours. All work proposed within State right-of-way requires lane and shoulder closure charts. Also, all roadway features such as signs, pavement

delineation, roadway surface, etc. within the state right-of-way must be protected, maintained in a temporary condition, and/or restored.

Prior to future encroachment permit issuance, street, grading and drainage construction plans will be submitted to Caltrans for review and approval to ensure that construction activities within SR 74 conform to current Caltrans design standards and construction practices (**MM TRANS-3**). At all times during construction and maintenance activities, emergency fire or medical vehicles will be able to access all adjacent areas. Proposed debris and water quality basins and most open channels are located outside of existing road rights-of-way and will not require street or lane closures. In accordance with **MM TRANS-1**, if street and lane closures are necessary, proper traffic control and signage will be provided to facilitate traffic flow. Therefore, impacts will be considered **less than significant with mitigation incorporated**.

Would the Project conflict with an adopted congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the appropriate congestion management agency for designated roads or highways?

Riverside County Congestion Management Program (CMP) is updated every two years in accordance with Proposition III. The CMP is intended to directly link land use, transportation and air quality. The adopted CMP includes a Travel Demand Management (TDM) element, which consists of programs and strategies that are intended to reduce and reshape use of the transportation systems. By promoting alternative modes of transportation, increasing vehicle occupancy, maximizing the efficient use of parking, reducing travel distances, and easing peak-hour congestion, these strategies and programs help to increase the efficiency and effectiveness of the transportation system (RCTC 2011).

The Project could temporarily increase traffic levels during construction and maintenance activities of the MDP facilities with the use of construction vehicles and temporary street, shoulder, bike lanes and sidewalk closures. As previously mentioned, future proposed MDP facilities will be required to submit a Traffic Control Plan addressing potential congestion, traffic flows, and detours to the lead agency and the Caltrans (if within a State Highway System) (**MM TRANS-1**). The MDP will be in compliance with the County of Riverside's CMP and Caltrans design standards and guidelines. Therefore, although future proposed MDP facilities will temporarily disrupt traffic flow, with implementation of a Traffic Control Plan per **MM TRANS-1** and compliance with the County of Riverside's CMP, impacts will be considered **less than significant with mitigation incorporated**.

Would the Project conflict with adopted policies, plans, or programs regarding public transit, bicycle, pedestrian facilities, or other alternate transportation or otherwise decrease the performance or safety of such facilities?

The RTA operates bus service throughout Riverside County, including through the Project area via Route 8 along Grand Avenue. There is only one bus stop within the Project boundary, which is located at Grand Avenue and Baldwin Boulevard. Future proposed MDP facilities would involve construction and maintenance along roadways, specifically Grand Avenue, traveled by RTA buses. As such, temporary impacts to the existing bus routes may occur due to temporary street and lane closures/detour. Temporary impacts to bicycle routes and pedestrian walkways could also occur during construction and maintenance activities, due to temporary street, shoulder, and sidewalk closures/detour. As previously mentioned, a Traffic Control Plan will be provided for future proposed MDP facility and this plan will also have to address bus routes or other transportation modes in the affected area (**MM TRANS-1**). Therefore, with implementation of a Traffic Control Plan per **MM TRANS-1**, potential conflicts to alternative transportation would be avoided and impacts would be **less than significant with mitigation incorporated**. Once constructed, the MDP facilities would not impact RTA's ability to continue service within the Project boundary and all bicycles and pedestrian pathways would be returned to pre-construction conditions.

4.10.6 Mitigation Measures

The CEQA Guidelines require an EIR to describe feasible mitigation measures that could minimize significant adverse impacts (14 CCR 15126.4). Mitigation measures were evaluated for their ability to reduce or eliminate impacts. The following measures shall be implemented to eliminate or reduce potentially significant impacts to traffic and transportation elements to below the level of significance.

MM TRANS-1 To reduce traffic congestion or disruption that may occur during individual Master Drainage Plan (MDP) facility construction or maintenance activities, especially the MDP facilities located within existing road alignments, prior to construction, the Riverside County Flood Control and Water Conservation District (District), City of Lake Elsinore, City of Wildomar, or developers shall prepare a Traffic Control Plan. The Traffic Control Plan will detail and coordinate all traffic movement through the project area and will be implemented throughout project construction. The Traffic Control Plan will also ensure that private property and emergency access will be maintained at all times. Methods to maintain access may include, but are not limited to: temporary bridge crossings (i.e., steel plates or structural design bridges) for all driveway entrances to be closed to vehicular access for any period exceeding 4 hours; use of construction signs, barricades and delineators; and the use of flaggers during construction. All work proposed by the District, City of Lake Elsinore, City of Wildomar, or developers, within state right-of-way requires lane and shoulder

closure charts. Also, all roadway features such as signs, pavement delineation, roadway surface, etc. within the State right-of-way must be protected, maintained in a temporary condition, and/or restored by the District, City of Lake Elsinore, City of Wildomar, or developers. The Traffic Control Plan shall be prepared in accordance with the California Department of Transportation (Caltrans) *Manual of Traffic Controls for Construction and Maintenance Work Zones*. If work requires complete road closure, then the public shall be notified within 10 days of that closure.

MM TRANS-2 In order to address potential impacts along State Route (SR) 74, the District, City of Lake Elsinore, City of Wildomar, or developer shall obtain an Encroachment Permit from Caltrans for any project activities within SR 74 including but not limited to alterations to existing improvements and conform to current Caltrans design standards and construction practices.

MM TRANS-3 In order to ensure that construction activities within SR 74 conform to current Caltrans design standards and construction practices, prior to encroachment permit issuance, the District, City of Lake Elsinore, City of Wildomar, or developers shall submit street, grading and drainage construction plans to Caltrans for review and approval.

4.10.7 Summary of Environmental Effects After Mitigation Measures Are Implemented

Potential traffic and transportation impacts would be less than significant with implementation of mitigation measures outlined in Section 4.10.6 when future project specific MDP facilities are proposed. A traffic control plan or traffic impact study and encroachment permits will be required to be submitted to respective local and state authorities.

4.10.8 References

City of Lake Elsinore. 2011. Draft General Plan. Accessed December 2, 2011.

http://issuu.com/cityoflakeelsinore/docs/chapter_2.0_-_community_form_-_september_2011?mode=window&backgroundcolor=%23222222.

County of Riverside. 2003. *Riverside County General Plan*.

RCTC (Riverside County Transportation Commission). 2011. *Riverside County Congestion Management Program*. December 14, 2011.

4.11 Utilities and Service Systems

The focus of the following discussion and analysis, based on the initial study (IS), public scoping session, and comments received during the Notice of Preparation (NOP) public comment period, is related to the Project's potential impacts to utilities and service systems, including stormwater drainage facilities, from implementation of the Project. Potential impacts from the Project on whether new or expanded electrical lines, natural gas lines, communication systems, street lighting, or public facilities, including roads and bridges, are required; having sufficient water supplies to serve the Project; whether wastewater/water demand will be adequately served; whether the Project's solid waste disposal needs will be sufficiently served; and compliance with federal, state, and local statutes and regulations related to solid waste were found to be less than significant or have no impact in the IS for the Project and therefore are not further discussed in the Draft Program Environmental Impact Report (PEIR) (see Appendix A).

4.11.1 Setting and Project Baseline

The Project area sits within the narrow canyons of the Cleveland National Forest and empties into Lake Elsinore in a very short distance. The Project area currently drains these canyons through a very narrow sliver of development along the lakeshore and the mountains known as Lakeland Village. During storm events, high velocities of water move through the canyons into the developed area of Lakeland Village, which mostly does not contain curb and gutter; therefore, erosion and flooding is common in the area. Additionally, the stormwater does not move through many existing storm drain systems that are equipped with water quality treatment devices or design; Lake Elsinore receives a large amount of untreated stormwater from the undeveloped storm drain system that currently supports Lakeland Village. During rain events, the area within the Project boundary floods, which makes it difficult for pedestrians to walk on the sidewalks and for vehicles to exit driveways and drive through streets. The rain events have also resulted in uneven dirt roads from erosion incurred during these events.

There are currently existing drainage facilities along portions of Hill Street/Line A, Lime Street Channel, Line B/Ortega Channel, Lateral A, Lateral A-1, Lateral A-2, Lakeland Village Channel, Churchill Street Ditch, Stoneman Street, Ontario Way, Palomar Channel, Corydon Channel, Sedco-Bryant Street, and Tract 23111 (see Figure 3.0-3a and Figure 3.0-3b). There are existing debris basins at Lateral A-2 and Bryant Street (see Figure 3.0-3a and Figure 3.0-3b).

The Project area is located in the Santa Ana River Region which is within the Riverside County Drainage Area Management Plan (County of Riverside 2006). The climate of the Santa Ana River Region is Mediterranean, with hot, dry summers and cooler, wetter winters. Most of the precipitation in the Santa Ana Region occurs between November and March in the form of rain, with variable amounts of snow at higher elevations. The Drainage Area Management Plan addresses the requirement of the municipal separate storm sewer system (MS4) permits issued to the Riverside County Co-Permittees by the Santa Ana Regional Water

Quality Control Board (RWQCB). These are the fourth MS4 permits issued by each RWQCB and are referred to as the Fourth-Term MS4 Permits. The Riverside County Flood Control and Water Conservation District (District), County of Riverside, and the Cities of Lake Elsinore and Wildomar¹ are Permittees under the Fourth-Term MS4 Permits. Under these permits, the District and the Cities of Lake Elsinore and Wildomar are required to enforce and comply with stormwater discharge requirements outlined in Order No. R8-2002-0011 (NPDES No. CAS 618033). It should be noted that Order No. R8-2010-0033 (NPDES No. CAS 618033), approved in January 2010, superseded Order No. R8-2002-0011 except for enforcement purposes and, in order to meet the provisions contained in Division 7 of the California Water Code and provisions of the federal Clean Water Act (CWA). Projects such as the construction of the Master Drainage Plan (MDP) facilities, although benefiting stormwater management in the Project area, will still be required to address pollution at the construction stage. Pollution prevention measures are part of the stormwater pollution prevention plan (SWPPP) requirements and may require the implementation of best management practices (BMPs) to meet or exceed minimum treatment levels, as discussed in more detail below.

4.11.2 Related Regulations

Federal

Clean Water Act

In 1972, the federal Water Pollution Control Act (Clean Water Act (CWA)) was amended to prohibit the discharge of pollutants to waters of the United States unless the discharge is in compliance with a National Pollutant Discharge Elimination System (NPDES) permit. The CWA focused on tracking point sources, primarily from waste water treatment facilities and industrial waste dischargers, and required implementation of control measures to minimize pollutant discharges. The CWA was amended again in 1987, adding Section 402(p), to provide a framework for regulating municipal and industrial storm water discharges. In November 1990, the U.S. Environmental Protection Agency (EPA) published final regulations that establish application requirements for specific categories of industries, including construction projects that encompass greater than or equal to 5 acres of land. The Phase II Rule became final in December 1999, expanding regulated construction sites to those greater than or equal to 1 acre. The regulations require that stormwater and non-stormwater runoff associated with construction activity, which discharges either directly to surface waters or indirectly through MS4s, must be regulated by an NPDES permit.

¹ Urban runoff from the City of Wildomar discharges into watersheds within the Santa Ana RWQCB and the San Diego RWQCB jurisdictions. Since the Project area is only located in the Santa Ana River Region, the San Diego Region Santa Margarita Drainage Area is not discussed herein.