2.7 Hydrology and Water Quality

This section evaluates existing hydrology and water quality within the County, relative to the Project areas addressed in this SEIR, and the potential effects that implementation of the proposed Project may have on such resources. Water resources or characteristics considered in this section are the same as those addressed in the General Plan Update PEIR and include groundwater, surface water, stormwater, water quality, and flooding conditions.

2.7.1 Existing Conditions

This section provides new existing conditions information that has come to light since adoption of the General Plan in August 2011 with regard to hydrology and water quality within the unincorporated County as relates to the Project areas addressed in this SEIR. The remaining information in the General Plan Update PEIR relative to this section applies equally to the Project areas addressed in this SEIR, and is therefore not repeated here.

2.7.1.1 *Water Quality*

Surface Water Quality

Preparation of the General Plan Update PEIR began after the U.S. Environmental Protection Agency (EPA) approved the 2008-2010 Clean Water Act (CWA) Section 303(d) List, and therefore did not include the most recent updates to the list of 303(d) water bodies for the San Diego Region. As a result, Table 2.8-1 from the General Plan Update PEIR (*Water Bodies Identified as Impaired under the Clean Water Act*) is incorporated as Table 2.7-1 herein and the relevant information with respect to constituents of concern and water bodies has been updated for the watershed management areas (WMA) included in this table.

2.7.2 Regulatory Framework

Chapter 2.8 of the EIR, pages 2.8-25 through 2.8-30 describe the Regulatory Framework related to hydrology and water quality and is hereby incorporated by reference. Applicable Federal regulations include: Clean Water Act (CWA); National Flood Insurance Act; and National Flood Insurance Reform Act. Applicable State regulations include: Porter-Cologne Water Quality Control Act; Cobey-Alquist Floodplain Management Act of 1965; National Pollution Discharge Elimination System (NPDES) Permits; California Groundwater Rights; California Water Code; and Assembly Bill 3030 - Groundwater Management Act. Applicable Local regulations include: San Diego Basin Plan; Colorado River Basin Plan; San Diego County BOS Policy I-45, Definition of Watercourses in the Subject of Flood Control; San Diego County BOS Policy I-68, Proposed Projects in Floodplains with Defined Floodways; San Diego County BOS Policy I-73, Hillside Development Policy; County of San Diego Code of Regulatory Ordinances Section 91.1.105.10, Flood Damage Prevention Ordinance, Sections 86.601-86.608, Resource Protection Ordinance (RPO), Sections 67.801-67.814, Watershed Protection, Stormwater Management, and

Discharge Control Ordinance (WPO), and Sections 67.701-67.703, 67.710-67.711, 67.720-67.722, Groundwater Ordinance;

The regulatory framework discussion in the General Plan Update PEIR, with the exception of the following regulatory documents, as pertains to hydrology and water quality has not changed since adoption of the General Plan in August 2011 and applies equally to the Project areas addressed in this SEIR, and is hereby incorporated by reference.

2.7.2.1 *Regional/Local*

San Diego Basin Plan

Although preparation of the General Plan Update PEIR began after adoption of the San Diego Basin Plan amendments by the Regional Water Quality Control Board (RWQCB), and therefore did not address the most recent updates to the Plan, the overall Basin Plan objectives as stated in the General Plan Update PEIR did not change and apply equally to the proposed Project.

2.7.3 Analysis of Project Effects and Cumulative Impacts

The cumulative impact analysis study area for hydrology and water quality in the General Plan Update PEIR was identified as the entire San Diego Region (Chapter 2.8). As the proposed Project is applying 2011 General Plan principles to assign land use designations for the FCI lands throughout the unincorporated area, the cumulative study area for hydrology and water quality is the same as the General Plan Update EIR and is hereby incorporated by reference. In addition, Section 1.9 of this SEIR (Cumulative Project Assessment Overview), provides an update of new projects since adoption of the 2011 General Plan that are considered in the cumulative analysis in order to make the analysis complete.

2.7.3.1 *Water Quality Standards and Requirements*

This section describes potential direct and cumulative impacts on water quality standards and requirements as pertains to the Project areas addressed in this SEIR.

Guidelines for the Determination of Significance

Based on Appendix G of the CEQA Guidelines, the proposed Project would have a significant impact if it would violate any water quality standards or waste discharge requirements, or if it would degrade water quality. Groundwater impacts may be potentially significant in areas of the County where pollutants exceed their respective Primary State or Federal Maximum Contaminant Level (MCL).

Analysis

The General Plan Update PEIR evaluated impacts from the adoption of the goals and policies of the 2011 General Plan countywide, including FCI lands. In addition, the General Plan Update PEIR evaluated buildout of the land use designations applied throughout the unincorporated area

with the exception of former FCI lands. The General Plan Update PEIR determined that buildout under the 2011 General Plan would result in potentially significant direct and cumulative impacts. Pollutants associated with construction activities that would substantially degrade water quality include soils, debris, other materials generated during demolition and clearing, fuels and other fluids associated with the equipment used for construction, paints, other hazardous materials, concrete slurries, and asphalt materials. There are also multiple constituents that have the potential to degrade surface water quality which are associated with land use operations after development is constructed. These would include sediment discharge due to construction activities and post-construction areas left bare; nutrients from fertilizers; household hazardous waste that is improperly disposed of, including heavy metals and organic compounds; trash and debris deposited in drain inlets by new residents; oil and grease; by products resulting from vehicle use, including heavy metals; bacteria and viruses; and pesticides from landscaping, agriculture or home use. Within both the incorporated and unincorporated County, over 70 water bodies are in violation of water quality standards. The 2011 General Plan would allow land uses and development that would contribute additional point and non-point source pollutants within WMAs that are in violation of water quality requirements.

The 2011 General Plan would result in potentially significant impacts to water quality from proposing land uses in groundwater dependent areas that are currently experiencing groundwater contamination. Areas with existing contamination would not be able to support new development due to the non-potable (contaminated) water supply in the area. Groundwater that has contaminants that exceed the federal and State primary MCLs is not considered potable. Therefore, any land uses or development allowable under the 2011 General Plan and dependent on areas with existing contaminated groundwater would not have a viable source of water. The 2011 General Plan would designate land uses in unincorporated areas that are currently experiencing nitrate groundwater quality problems which would be susceptible to concentrations of nitrates that violate water quality standards.

These impacts would be reduced through the implementation of a combination of federal, State, and local regulations; existing County regulatory processes; the adopted 2011 General Plan goals and policies; and, specific mitigation measures and implementation programs identified in the General Plan Update PEIR; however, impacts would not be reduced to below a level of significance because the full suite of these and other mitigation measures considered and addressed in the General Plan Update PEIR were found to be infeasible by the County for the reasons given in Section 2.8.4.1 of that EIR (and repeated in Section 2.7.4.1 below).

Similar direct and cumulative effects would occur with future development of the Project areas addressed in this SEIR, which could result in substantial degradation of surface water or groundwater quality from grading/soil disturbance. Such activities would have the potential to increase erosion, slope runoff, and/or the release of other pollutants (e.g. hydrocarbons, hazardous materials, nutrients from fertilizers, oil and grease, heavy metals) in quantities that may exceed water quality standards or waste discharge requirements, and otherwise degrade

water quality. The proposed Project would designate residential land uses on land in unincorporated areas that have been identified as having radionuclide contamination (Mountain Empire Subregion, Central Mountain Subregion, Julian CPA, and Ramona CPA). Although it is unlikely that the proposed Project would exacerbate radionuclide contamination (as this is naturally occurring contaminant), new wells constructed to support development in the above identified areas would be susceptible to concentrations of radionuclides that violate water quality standards. This would be considered a potentially significant impact associated with groundwater quality. Additionally, when compared to existing conditions, implementation of the proposed Project would accommodate an increase in County population, thereby potentially increasing the chance of localized areas of elevated bacteria in groundwater that is attributable to humans.

Such impacts would also be cumulative in nature as they would contribute to water quality degradation on a regional level, when combined with other development allowed under the 2011 General Plan. The proposed Project would contribute both non-point and point source pollutants in quantities that have the potential to violate water quality standards or waste discharge requirements. Therefore, the proposed Project, in combination with the identified cumulative projects, would have the potential to result in a significant cumulative impact associated with water quality standards and requirements.

The potential significant impacts on water quality standards, waste discharge requirements and water quality degradation resulting from implementation of the proposed Project would be reduced by the same regulations, implementation programs (2011 General Plan goals/policies) and mitigation measures from the General Plan Update PEIR and repeated in Section 2.7.4.1 (Mitigation for Water Quality Standards and Requirements) below; however, even with these programs in place, the impacts would not be reduced to below a level of significance due to the infeasibility of mitigation measures as discussed in Section 2.7.4.1. As such, implementation of the proposed Project would result in significant and unavoidable direct and cumulative impacts related to water quality standards, waste discharge requirements and water quality degradation.

2.7.3.2 *Groundwater Supplies and Recharge*

This section describes potential direct and cumulative impacts on groundwater supplies and recharge as pertains to the Project areas addressed in this SEIR.

Guidelines for the Determination of Significance

Based on Appendix G of the CEQA Guidelines, the proposed Project would have a significant impact if it would 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).

Analysis

The General Plan Update PEIR evaluated impacts from the adoption of the goals and policies of the 2011 General Plan countywide, including FCI lands. In addition, the General Plan Update PEIR evaluated buildout of the land use designations applied throughout the unincorporated area with the exception of former FCI lands. The General Plan Update PEIR determined that buildout under the 2011 General Plan would result in potentially significant direct and cumulative impacts related to groundwater supplies and recharge. These impacts would be reduced through implementation of a combination of federal, State, and local regulations; existing County regulatory processes; the adopted 2011 General Plan goals and policies; and, specific mitigation measures and implementation programs identified in the General Plan Update PEIR; however, impacts would not be reduced to below a level of significance because the full suite of these and other mitigation measures considered and addressed in the General Plan Update PEIR were found to be infeasible by the County for the reasons given in Section 2.8.6.2 of that EIR (and in Section 2.7.4.2 below).

Similar direct and cumulative effects would occur with future development of the Project areas addressed in this SEIR, which could result in substantial depletion of groundwater supplies/ recharge from installation and use of wells. The proposed Project includes areas located over groundwater basins that are currently experiencing groundwater supply impacts, including: 1) areas that experience a 50 percent reduction of groundwater in storage; 2) areas that may be currently impacted by the combined drawdown of existing wells; 3) areas that experience a high frequency of low well yield; and, 4) Borrego Valley (not affected by the FCI); refer to also to Table 2.7-3 Aquifer Types within FCI Lands, Figure 2.7-1, Aquifer Types within the County, and Figure 2.7-2, Potential for Low Well Yield. The proposed Project would allow future development to occur in these areas (with exception of Borrego Valley), thereby increasing demand on groundwater supplies that are already depleted. Additionally, areas potentially affected by the proposed Project and identified in the General Plan Update PEIR as being impacted by large quantity groundwater users (thereby straining the local groundwater supply) include portions of the Ramona CPA, Central Mountain CPA, and Mountain Empire Subregion. Furthermore, areas with a high frequency of wells with low well yields that could potentially be affected by the proposed Project include portions of Ramona CPA and Mountain Empire Subregion. Such impacts would also be cumulative in nature as they would contribute to the depletion of the underlying aquifers on a regional level, when combined with other development allowed under the 2011 General Plan.

The potential significant impacts on groundwater supplies and recharge resulting from implementation of the proposed Project would be reduced by the same regulations, implementation programs (2011 General Plan goals/policies) and mitigation measures from the General Plan Update PEIR and repeated in Section 2.7.4.2 (Mitigation for Groundwater Supplies and Recharge) below; however, even with these programs in place, the impacts would not be reduced to below a level of significance due to the infeasibility of mitigation measures as

discussed in Section 2.7.4.2. As such, implementation of the proposed Project would result in significant and unavoidable direct and cumulative impacts related to groundwater supplies and recharge.

2.7.3.3 *Erosion or Siltation*

This section describes potential direct and cumulative impacts on erosion or siltation as pertains to the Project areas addressed in this SEIR.

Guidelines for the Determination of Significance

Based on Appendix G of the CEQA Guidelines, the proposed Project would have a significant impact if it would substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on or offsite.

Analysis

The General Plan Update PEIR evaluated impacts from the adoption of the goals and policies of the 2011 General Plan countywide, including FCI lands. In addition, the General Plan Update PEIR evaluated buildout of the land use designations applied throughout the unincorporated area with the exception of former FCI lands. The General Plan Update PEIR determined that buildout under the 2011 General Plan would result in potentially significant direct and cumulative impacts related to excessive erosion or siltation, despite compliance with the National Pollutant Discharge Elimination System (NPDES) permit program which requires implementation of stormwater pollution protection plans (SWPPP) and best management practices (BMPs), as well as conformance with the County Water Protection Ordinance (WPO). These impacts would be reduced to below a level of significance through implementation of a combination of federal, State, and local regulations; existing County regulatory processes; the adopted 2011 General Plan goals and policies; and, specific mitigation measures and implementation programs identified in the General Plan Update PEIR.

Similar direct and cumulative effects on erosion or siltation would occur with future development of the Project areas addressed in this SEIR. Land-disturbing construction activities such as the grading and excavation of land for construction of new building foundations, roads, driveways, and trenches for utilities, has the potential to result in localized temporary or permanent alteration of drainage patterns, or hydromodification. Hydromodification refers to changes in the magnitude and frequency of stream flows as a result of urbanization, and the resulting impacts on the receiving channels in terms of erosion, sedimentation, and degradation of in-stream habitat. This can lead to indirect effects on communities and sensitive biological resources downstream in the watershed, including: the deposition of pollutants and sediment to the watershed outlets; an increase in polluted runoff to surface and groundwater receiving bodies, and an increase in the flood potential downstream. Allowing the permanent development of

impervious surfaces within the unincorporated County would increase runoff and potentially result in new erosion problems or the worsening of existing erosion problems.

Such impacts would also be cumulative in nature as they would contribute to erosion or siltation effects on a regional level, when combined with other development allowed under the 2011 General Plan. Cumulative projects such as regional transportation projects, development consistent with general plans, and tribal developments would be expected to increase impervious surfaces within the region and, therefore, increase the potential for runoff to occur that would lead to erosion and siltation impacts. The proposed Project, in combination with cumulative projects, would have the potential to result in a significant cumulative impact associated with erosion or siltation.

Therefore, the potentially significant direct and cumulative effects on erosion or siltation resulting from implementation of the proposed Project would be significant and would be reduced to below a level of significance by the same regulations, implementation programs (2011 General Plan goals/policies) and mitigation measures from the General Plan Update PEIR and repeated in Section 2.8.4.3 (Mitigation for Erosion or Siltation) below. No additional measures would be required and impacts would be less than significant after mitigation.

2.7.3.4 *Flooding*

This section describes potential direct and cumulative impacts on flooding as pertains to the Project areas addressed in this SEIR.

Guidelines for the Determination of Significance

Based on Appendix G of the CEQA Guidelines, the proposed Project would have a significant impact if it would substantially alter the existing drainage pattern of the site or area, including 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 offsite.

Analysis

The General Plan Update PEIR evaluated impacts from the adoption of the goals and policies of the 2011 General Plan countywide, including FCI lands. In addition, the General Plan Update PEIR evaluated buildout of the land use designations applied throughout the unincorporated area with the exception of former FCI lands. The General Plan Update PEIR determined that buildout under the 2011 General Plan would result in potentially significant direct and cumulative (i.e., watersheds that border U.S./Mexico) impacts related to flooding, despite compliance with the NPDES permit program and conformance with the County WPO. These impacts would be reduced to below a level of significance through the implementation of a combination of federal, State and local regulations; existing County regulatory processes; the adopted 2011 General Plan goals and policies; and, specific mitigation measures/ implementation programs identified in the General Plan Update PEIR.

Similar direct and cumulative effects would occur with future development of the Project areas addressed in this SEIR, which could result in substantial temporary or permanent alteration of existing drainage patterns or stream flows (due to grading), and/or contribute to an increase in impervious surfaces. Land-disturbing construction activities associated with the development of future land uses as designated by the proposed Project, such as grading and excavation, construction of new building foundations, roads, driveways, and trenches for utilities, would result in the localized alteration of drainage patterns. Temporary ponding and/or flooding could result from such activities, from temporary alterations of the drainage system (reducing its capacity of carrying runoff), or from the temporary creation of a sump condition due to grading. Such activities would ultimately have the potential to increase the rate or amount of surface runoff that may in turn result in flooding onsite or offsite.

Such impacts would also be cumulative in nature as they would contribute to erosion or siltation effects on a regional level, when combined with other development allowed under the 2011 General Plan. Cumulative projects would result in land uses and development that would convert permeable surfaces to impermeable surfaces, such as through the construction of buildings, parking lots, and roadways.

Therefore, the potentially significant direct and cumulative effects on flooding resulting from implementation of the proposed Project would be significant and would be reduced to below a level of significance by the same regulations, implementation programs (2011 General Plan goals/policies) and mitigation measures from the General Plan Update PEIR and repeated in Section 2.8.4.4 (Mitigation for Flooding) below. No additional measures would be required.

2.7.3.5 *Exceed Capacity of Stormwater Systems*

This section describes potential direct and cumulative impacts on the capacity of stormwater systems as pertains to the Project areas addressed in this SEIR.

Guidelines for the Determination of Significance

Based on Appendix G of the CEQA Guidelines, the proposed Project would have a significant impact if it would create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems.

Analysis

Drainage facilities including storm drains, culverts, inlets, channels, curbs, roads, or other such structures are designed to prevent flooding by collecting stormwater runoff and directing flows to either the natural drainage course and/or away from urban development. If drainage facilities are not adequately designed, built, or properly maintained, the capacity of the existing facilities can be exceeded resulting in flooding and increased sources of polluted runoff.

The General Plan Update PEIR evaluated impacts from the adoption of the goals and policies of the 2011 General Plan countywide, including FCI lands. In addition, the General Plan Update

PEIR evaluated buildout of the land use designations applied throughout the unincorporated area with the exception of former FCI lands. The General Plan Update PEIR determined that buildout under the 2011 General Plan would result in significant direct impacts with regard to the potential to exceed the capacity of the County's stormwater systems. These impacts would be reduced to below a level of significance through the implementation of a combination of federal, State and local regulations; existing County regulatory processes; the adopted 2011 General Plan goals and policies; and, specific mitigation measures/implementation programs identified in the General Plan Update PEIR. With respect to cumulative impacts, the General Plan Update PEIR concluded that buildout under the 2011 General Plan would not contribute to a cumulative impact relative to this issue because all projects within the County would be required to conform with applicable regulations that require new development to construct or retrofit stormwater drainage systems so that they would not cause flooding.

Similar direct effects would occur with future development of the Project areas addressed in this SEIR, which could exceed the capacity of the County's existing or planned stormwater drainage facilities. Construction and/or post-construction activities would have the potential to substantially alter existing drainages and hydrology, or increase the amount of impermeable surfaces within the County, thereby increasing the volume or rate of runoff. Although new development would be required to incorporate such design elements as storm drains, ditches, swales, or other means of conveying runoff, if drainage facilities are not adequate to accommodate a potential increase in stormwater flows, overflow or failure of such systems may occur, causing an exceedance in the capacity of the County's stormwater systems. Additionally, similar to the analysis in the General Plan Update PEIR, as projects within the County would be required to conform with applicable regulations pertaining to the construction/ retrofit of stormwater drainage systems to avoid flooding, when considered in combination with other cumulative projects, the proposed Project, would not contribute to a cumulative impact relative to an exceedance in the capacity of the County's stormwater systems.

Therefore, the potentially significant direct effects on the County's stormwater systems resulting from implementation of the proposed Project would be reduced to below a level of significance by the same regulations, implementation programs (2011 General Plan goals/policies) and mitigation measures from the General Plan Update PEIR and repeated in Section 2.7.4.5 (Mitigation for (the Potential to) Exceed Capacity of Stormwater Systems). No additional mitigation measures would be required.

2.7.3.6 *Housing within a 100-Year Flood Hazard Area*

This section describes potential direct and cumulative impacts of the proposed Project on housing within 100-year flood hazard areas, as pertains to the Project areas addressed in this SEIR.

Guidelines for the Determination of Significance

Based on Appendix G of the CEQA Guidelines, the proposed Project would have a significant impact if it would place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map, or other flood hazard delineation map.

Analysis

The General Plan Update PEIR evaluated impacts from the adoption of the goals and policies of the 2011 General Plan countywide, including FCI lands. In addition, the General Plan Update PEIR evaluated buildout of the land use designations applied throughout the unincorporated area with the exception of former FCI lands. The General Plan Update PEIR determined that buildout under the 2011 General Plan would result in potentially significant direct impacts related to the placement of housing within 100-year flood hazard areas. These impacts would be reduced to below a level of significance through the implementation of a combination of federal, State and local regulations; existing County regulatory processes; the adopted 2011 General Plan goals and policies; and, specific mitigation measures/implementation programs identified in the General Plan Update PEIR. With respect to cumulative impacts, the General Plan Update PEIR concluded that buildout under the 2011 General Plan would not contribute to a cumulative impact relative to this issue because all projects within the County would be required to conform with applicable regulations pertaining to the prohibition of structures within floodways.

Similar direct effects would occur with future development of the Project areas addressed in this SEIR if it would involve the placement of housing within 100-year flood hazard areas. Flood events in such areas could result in structural damage or loss, adverse effects on public health and safety, loss of public services (e.g., electricity or water service) or damage to infrastructure, or loss of the potential use on a property. Table 2.8-7 of the General Plan Update PEIR identified areas subject to the proposed residential land use designations (i.e., village residential, village core mixed-use, semi-rural residential, and rural residential) that are within a Federal Emergency Management Agency (FEMA) 100-year floodway or floodplain or alluvial fan; however, none of the former FCI lands are located within a FEMA 100-year flood hazard area. Refer to Figure 2.7-3, County Floodplains and Floodways. Therefore, the development of residential land uses within these areas as a result of the proposed Project would not occur. The proposed Project would therefore not increase the potential for significant direct impacts with regard to the placement of housing within a 100-year flood hazard area. Additionally, future projects within the County would be required to conform with applicable regulations pertaining to the prohibition of structures within floodways. When considered in combination with other cumulative projects, the proposed Project would not contribute to a cumulative impact relative to housing within a flood hazard area, as no former FCI lands are located within a 100-year flood hazard area.

As described above, implementation of the proposed Project would not result in the construction of any housing within a 100-year flood hazard area. Therefore, it is not anticipated that the

proposed Project would result in a potentially significant direct or cumulative impact associated with the placement of such structures in areas subject to flood hazards. The implementation of any federal, State, and local regulations; existing County regulatory processes; adopted 2011 General Plan goals and policies; or, specific mitigation measures/implementation programs identified in the General Plan Update PEIR would therefore not be required, nor would any additional measures not identified in the PEIR be required. Proposed Project impacts with regard to the placement of housing within a 100-year flood hazard area would be below a level of significance.

2.7.3.7 *Impeding or Redirecting Flood Flows*

This section describes potential direct and cumulative impacts resulting from activities that would impede or redirect flood flows as pertains to the Project areas addressed in this SEIR.

Guidelines for the Determination of Significance

Based on Appendix G of the CEQA Guidelines, the proposed Project would have a significant impact if it would place within a 100-year flood hazard area structures which would impede or redirect flood flows.

Analysis

Development along stream channels and floodplains can alter the capacity of a channel to convey water and can increase the height of the water surface corresponding to a given discharge. In particular, structures that encroach on a floodplain, such as bridges, can increase upstream flooding by narrowing the width of the channel and increasing the channel's resistance to flow. As a result, the water is at a higher level as it flows past the obstruction, creating a backwater that could inundate a larger area upstream.

The General Plan Update PEIR evaluated impacts from the adoption of the goals and policies of the 2011 General Plan countywide, including FCI lands. In addition, the General Plan Update PEIR evaluated buildout of the land use designations applied throughout the unincorporated area with the exception of former FCI lands. The General Plan Update PEIR determined that buildout under the 2011 General Plan would result in potentially significant direct impacts related to impeding or redirecting flood flows. Under buildout of the 2011 General Plan the following land uses designations would include areas located within a floodplain or floodplain fringe: village residential, 2,824 acres; village core mixed use, less than one acre; neighborhood commercial, 4 acres; general commercial, 285 acres; limited impact industrial, 161 acres; medium impact industrial, 230 acres; and high impact industrial, 71 acres. These land uses have the potential to contain structures that would impede or redirect flood flows. Potential impacts would be reduced with implementation of mitigation. It is expected that most cumulative projects in California would be required to comply with applicable regulations that would prevent the construction of structures in floodways, such as the National Flood Insurance Act, National Flood Insurance

Reform Act, Cobey-Alquist Floodplain Management. Therefore, it is expected that through regulation, a cumulative impact would not occur.

Similar to the evaluation of residential land uses in Section 2.7.3.6 above, the proposed Project would not increase the potential for additional development to occur within 100-year flood hazard areas or the placement of structures that could impede or redirect flood flows, as no former FCI lands are located within a 100-year flood hazard area; refer to Figure 2.7-3, County Floodplains and Floodways. Similar to the analysis in the General Plan Update PEIR, future projects within the County would be required to conform with applicable regulations pertaining to the prohibition of structures within floodways. When considered in combination with other cumulative projects, the proposed Project would not contribute to a cumulative impact with regard to impeding or redirecting flood flows, as no former FCI lands are located within 100-year flood hazard areas.

As described above, implementation of the proposed Project would not result in the placement of any structures within a 100-year flood hazard area. Therefore, it is not anticipated that the proposed Project would result in a potentially significant direct or cumulative impact associated with the placement of structures that would impede or redirect flood flows in areas subject to flood hazards. The implementation of any federal, State, and local regulations; existing County regulatory processes; adopted 2011 General Plan goals and policies; or, specific mitigation measures/implementation programs identified in the General Plan Update PEIR would therefore not be required, nor would any additional measures not identified in the PEIR be required. Project impacts with regard to the placement of structures within a 100-year flood hazard area that would impede or redirect flood flows would be below a level of significance.

2.7.3.8 *Dam Inundation and Flood Hazards*

This section describes potential direct and cumulative impacts on dam inundation and flood hazards as pertains to the Project areas addressed in this SEIR.

Guidelines for the Determination of Significance

Based on Appendix G of the CEQA Guidelines, the proposed Project would have a significant impact if it would 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.

Analysis

The General Plan Update PEIR evaluated impacts from the adoption of the goals and policies of the 2011 General Plan countywide, including FCI lands. In addition, the General Plan Update PEIR evaluated buildout of the land use designations applied throughout the unincorporated area with the exception of former FCI lands. The General Plan Update PEIR determined that buildout under the 2011 General Plan would result in potentially significant direct impacts related to risk of loss, injury, or death involving flooding from the failure of a levee or dam. These impacts

would be reduced to below a level of significance through the implementation of a combination of federal, State and local regulations; existing County regulatory processes; the adopted 2011 General Plan goals and policies; and, specific mitigation measures/implementation programs identified in the General Plan Update PEIR. With respect to cumulative impacts, the General Plan Update PEIR concluded that buildout under the 2011 General Plan would not contribute to a cumulative impact relative to this issue because all projects within the County would be required to conform with applicable regulations pertaining to the prohibition of structures within floodways.

Similar direct effects would occur with future development of the Project areas addressed in this SEIR, where it would involve the placement of structures within areas subject to dam inundation and flood hazards. Flood events in such areas from dam failure could result in structural damage or loss, adverse effects on public health and safety, loss of public services (e.g., electricity or water service) or damage to infrastructure, or loss of the potential use on a property. Table 2.7-2 identifies dams within the Project area where inundation from dam failure may occur. Any additional development within these areas as a result of the proposed Project would increase the potential for significant direct impacts with regard to the risk of loss, injury, or death involving flooding from the failure of a levee or dam. Additionally, similar to the analysis in the General Plan Update PEIR, as projects within the County would be required to conform with applicable regulations pertaining to the prohibition of structures within floodways, when considered in combination with other cumulative projects, the proposed Project would not contribute to a cumulative impact with regard to the risk of loss, injury, or death involving flooding from the failure of a levee or dam.

Therefore, the potentially significant direct impacts of the proposed Project with regard to the risk of loss, injury, or death involving flooding from the failure of a levee or dam would be reduced to below a level of significance by the same regulations, implementation programs (2011 General Plan goals/policies) and mitigation measures from the General Plan Update PEIR and repeated in Section 2.7.4.8 (Mitigation for Dam Inundation and Flood Hazards) below. No additional measures would be required.

2.7.3.9 *Seiche, Tsunami, and Mudflow Hazards*

This section describes potential direct and cumulative impacts with regard to seiche, tsunami, and mudflow hazards as pertains to the Project areas addressed in this SEIR.

Guidelines for the Determination of Significance

Based on Appendix G of the CEQA Guidelines, the proposed Project would have a significant impact if it would expose people or structures to a significant risk of loss, injury, or death involving inundation by seiche, tsunami, or mudflow.

Analysis

The General Plan Update PEIR evaluated impacts from the adoption of the goals and policies of the 2011 General Plan countywide, including FCI lands. In addition, the General Plan Update PEIR evaluated buildout of the land use designations applied throughout the unincorporated area with the exception of former FCI lands. The General Plan Update PEIR determined that buildout under the 2011 General Plan would not result in potentially significant direct or cumulative impacts with regard to tsunamis or seiches (standing wave in a partially closed body of water generally due to atmospheric changes, high winds, or seismic activity) for the following reasons:

1. As the unincorporated County is located inland and only minor tsunami events have been experienced in San Diego's history, buildout under the 2011 General Plan would not expose people or structures to significant hazards associated with inundation by a tsunami.
2. Impacts from a seiche would be less than significant, as implementation of the 2011 General Plan would not result in land uses or development within areas subject to inundation from a seiche.

These same findings would apply to the proposed Project; therefore, future development of the Project areas addressed in this SEIR would not result in potentially significant direct or cumulative impacts with regard to tsunamis or seiches.

The General Plan Update PEIR determined that buildout under the 2011 General Plan would result in potentially significant direct impacts with regard to mudflows because future development would occur in areas where steep slopes or unvegetated hillsides are present. These impacts would be reduced to below a level of significance through the implementation of a combination of federal, State and local regulations; existing County regulatory processes; the adopted 2011 General Plan goals and policies; and, specific mitigation measures/implementation programs identified in the General Plan Update PEIR. With respect to cumulative impacts, the General Plan Update PEIR concluded that buildout under the 2011 General Plan would not contribute to a cumulative impact relative to this issue because impacts from tsunamis are not anticipated and all projects within the County are required to conform with applicable regulations that protect new development from impacts related to seiches and mudslides.

Similar direct effects would occur with future development of the Project areas addressed in this SEIR, where it would involve the placement of structures within areas subject to mudflow events. Mudflow events in such areas could result in structural damage or loss, adverse effects on public health and safety, loss of public services (e.g., electricity or water service) or damage to infrastructure, or loss of the potential use on a property. Additionally, similar to the analysis in the General Plan Update PEIR, as projects within the County would be required to conform with applicable regulations pertaining to protection from conditions associated with seiches and mudflows, when considered in combination with other cumulative projects, the proposed Project

would not result in a significant impact with regard to the potential for significant risk of loss, injury, or death involving seiches and mudflows.

Therefore, the potentially significant direct impacts resulting from implementation of the proposed Project with regard to the risk of loss, injury, or death involving flooding from mudflows would be reduced to below a level of significance by the same regulations, implementation programs (2011 General Plan goals/policies) and mitigation measures from the General Plan Update PEIR and repeated in Section 2.7.4.9 (Mitigation for Seiche, Tsunami and Mudflow Hazards) below. No additional measures would be required.

2.7.4 Mitigation

2.7.4.1 *Water Quality Standards and Requirements*

Direct and cumulative impacts associated with water quality standards and requirements resulting from the proposed Project would be reduced to below a level of significance with implementation of the same applicable 2011 General Plan policies and mitigation measures as identified in the General Plan Update PEIR, and repeated below; however, the County determined that implementation of the additional measures listed below would be infeasible for the following reasons:

- Provide a water treatment system that reduces constituents to below the MCL in all groundwater impaired areas. This measure would require treatment plants in many areas of the County, which would potentially result in numerous environmental impacts and conflict with the project objective to minimize public costs and infrastructure.
- In groundwater quality impaired areas, require water to be imported from other sources. This measure would not be feasible based on the existing lack of infrastructure needed to import water to impaired areas. To provide such infrastructure would conflict with the project objectives to minimize public costs of infrastructure and services and correlate their timing with new development.
- In groundwater quality impaired areas, place a moratorium on building permits and development applications. This measure would be inconsistent with the land use designations proposed for the project. It would also conflict with goals of the Housing Element to provide sufficient housing stock and would not achieve one of the primary objectives of the proposed project which is to accommodate a reasonable amount of growth.

Because the measures listed above have been found to be infeasible by the County and would not be implemented, impacts would remain significant and unavoidable.

Adopted 2011 General Plan Policies

Policy LU-6.5: Sustainable Stormwater Management. Ensure that development minimizes the use of impervious surfaces and incorporates other Low Impact Development (LID) techniques as well as a combination of site design, source control, and stormwater best management practices, where applicable and consistent with the County's LID Handbook.

Policy LU-6.9: Development Conformance with Topography. Require development to conform to the natural topography to limit grading; incorporate and not significantly alter the dominant physical characteristics of a site; and to utilize natural drainage and topography in conveying stormwater to the maximum extent practicable.

Policy LU-14.1: Wastewater Facility Plans. Coordinate with wastewater agencies and districts during the preparation or update of wastewater facility master plans and/or capital improvement plans to provide adequate capacity and assure consistency with the County's land use plans.

Policy LU-14.2: Wastewater Disposal. Require that development provide for the adequate disposal of wastewater concurrent with the development and that the infrastructure is designed and sized appropriately to meet reasonably expected demands.

Policy LU-14.3: Wastewater Treatment Facilities. Require wastewater treatment facilities serving more than one private property owner to be operated and maintained by a public agency. Coordinate the planning and design of such facilities with the appropriate agency to be consistent with applicable sewer master plans.

Policy LU-14.4: Sewer Facilities. Prohibit sewer facilities that would induce unplanned growth. Require sewer systems to be planned, developed, and sized to serve the land use pattern and densities depicted on the Land Use Map. Sewer systems and services shall not be extended beyond either Village boundaries or extant Urban Limit Lines, whichever is more restrictive, except:

- When necessary for public health, safety, or welfare;
- When within existing sewer district boundaries;
- When necessary for a conservation subdivision adjacent to existing sewer facilities; or,
- Where specifically allowed in the Community Plan.

Policy COS-4.2: Drought-Efficient Landscaping. Require efficient irrigation systems and in new development encourage the use of native plant species and non-invasive drought tolerant/low water use plants in landscaping.

Policy COS-4.3: Stormwater Filtration. Maximize stormwater filtration and/or infiltration in areas that are not subject to high groundwater by maximizing the natural drainage patterns and

the retention of natural vegetation and other pervious surfaces. This policy shall not apply in areas with high groundwater, where raising the water table could cause septic system failures, moisture damage to building slabs, and/or other problems.

Policy COS-4.4: Groundwater Contamination. Require land uses with a high potential to contaminate groundwater to take appropriate measures to protect water supply sources.

Policy COS-5.2: Impervious Surfaces. Impervious Surfaces. Require development to minimize the use of directly connected impervious surfaces and to retain stormwater run-off caused from the development footprint at or near the site of generation.

Policy COS-5.3: Downslope Protection. Require development to be appropriately sited and to incorporate measures to retain natural flow regimes, thereby protecting downslope areas from erosion, capturing runoff to adequately allow for filtration and/or infiltration, and protecting downstream biological resources.

Policy COS-5.5: **Impacts of Development to Water Quality.** Require development projects to avoid impacts to the water quality in local reservoirs, groundwater resources, and recharge areas, watersheds, and other local water sources.

These policies will require that future development implement sustainable stormwater management techniques and conform with topography, require coordination with wastewater agencies or districts, require adequate disposal of wastewater, require wastewater treatment facilities serving more than one private property owner to be operated and maintained by a public agency, prohibit sewer facilities that would induce unplanned growth, require drought efficient landscaping for certain use types, and require minimization of impervious surfaces. Adherence to these policies will further reduce impacts associated with water quality standards and waste discharge requirements from future development. However, even with implementation of the above Policies and the Mitigation Measures listed below, impacts to water quality standards and requirements would remain significant and unavoidable.

Mitigation Measures

Hyd-1.1 Update and implement the County of San Diego's Jurisdictional Urban Runoff Management Program (JURMP).

Hyd-1.2 Implement and revise as necessary the Watershed Protection Ordinance to reduce the adverse effects of polluted runoff discharges on waters and to encourage the removal of invasive species and restore natural drainage systems.

Hyd-1.3 Establish and implement LID standards for new development to minimize runoff and maximize infiltration.

Hyd-1.4 Revise and implement the Stormwater Standards Manual requiring appropriate measures for land use with a high potential to contaminate surface water or groundwater resources.

Hyd-1.5 Utilize the County Guidelines for Determining Significance for Surface Water Quality, Hydrology, and Groundwater Resources to identify adverse environmental effects.

Hyd-1.6 Implement, and revise as necessary, Board Policy I-84 requiring that discretionary project applications include commitments from available water and sanitation districts.

Hyd-1.7 Ensure County planning staff participation in the review of wastewater facility long range and capital improvement plans.

Hyd-1.8 Allow wastewater facilities contingent upon approval of Major Use Permit to ensure facilities are adequately sized.

Hyd-1.9 Review septic system design, construction, and maintenance in cooperation with the Regional Water Quality Control Board through the Septic Tank Permit Process.

Hyd-1.10 Coordinate with the State Water Resources Control Board to develop statewide performance and design standards for conventional and alternative On-site Wastewater Treatment Systems.

Hyd-1.1 ensures the County's compliance with the Municipal Stormwater Permit, thereby minimizing potential violation of standards or degradation of water quality. Hyd-1.2 reduces potential adverse effects of polluted runoff discharges on waters. Hyd-1.3 will reduce potential impacts to the quality of surface or groundwater. Hyd-1.4 will reduce potential contribution to any violations of water quality standards from land use projects permitted by the County. Application of the guidelines, as identified in Hyd-1.5, help County staff to identify and mitigate potential water quality impacts associated with public or private projects in the County. Hyd-1.6 ensures early coordination with utility providers and helps identify water quality standards and regulations that must be met. Hyd-1.7 will reduce potential violation of water quality standards in place or being updated by planning staff and will also allow for identification of land use conflicts that may result in water quality impacts. Hyd-1.8 will ensure that such facilities are adequately sized and that they meet applicable standards and regulations for waste discharge. Hyd-1.9 will minimize potential violation of water quality standards or waste discharge requirements since the RWQCP oversees the County's permitting process. When alternative OWTS are permitted, Hyd-1.10 will help prevent potential conflicts with applicable standards and regulations.

2.7.4.2 *Groundwater Supplies and Recharge*

Direct and cumulative impacts associated with groundwater supplies and recharge resulting from the proposed Project would be reduced to below a level of significance with implementation of the same applicable 2011 General Plan policies and mitigation measures as identified in the General Plan Update PEIR, and repeated below; however, the County determined that the implementation of the additional measures listed below would be infeasible for the reasons stated below:

- In areas with potentially impacted groundwater supplies, require all proposed discretionary projects to share well water through a well sharing agreement. This mitigation measure would prove infeasible or enforceable because such agreements would only apply to current landowners and would not be binding on future owners of the affected properties.
- In areas with inadequate groundwater supply, project proponents shall be required to secure water contracts with other groundwater providers to import water through the construction of new infrastructure from another groundwater basin that is not impacted, prior to the issuance of discretionary permits. This mitigation measure is considered to be infeasible because piping in groundwater from an off-site source would be a complex and costly process which would involve any number of issues, including: 1) water rights issues; 2) need to obtain proper permits to encroach on public roadways or other private properties to convey the water; 3) potential need to the create a new water district/water company; and, 4) accelerated deterioration of the groundwater basin that is providing the imported water. Additionally, requiring complex piping to import groundwater from an alternative location has the potential to result in multiple secondary environmental impacts, including cultural resources, biological resources, and hydrology/water quality. Although some water districts within the unincorporated County have imported water from another groundwater basin in the past, requiring that all development obtain water contracts, as described above, would put an undue burden on both the developer and water district. Implementing this mitigation measure would also contradict the Project objective to promote environmental stewardship that protects the range of natural resources and habitats that uniquely define the County's character and ecological importance because it would result in multiple secondary environmental impacts to both unincorporated County groundwater and surface resources. In addition, this solution may not be sustainable for all projects in the long-term. Implementation of this mitigation measure would also conflict with the project objective to minimize costs of infrastructure and services because this mitigation measure would require extensive infrastructure costs to implement. Therefore, for the reasons listed above, this measure is considered infeasible.
- In groundwater dependent areas with inadequate groundwater supply, project proponents shall be required to secure water contracts with other water providers to truck in water

from local water districts or other sources such as an off-site well, prior to the issuance of discretionary permits. This mitigation measure is considered to be infeasible because trucked water is not a guaranteed, sustainable, long-term source of water since a water district can rescind or preclude the selling of trucked water in times of drought and limited water supplies. Additionally, implementation of this mitigation measure would conflict with the Project objective to maintain environmentally sustainable communities and reduce greenhouse gas emissions that contribute to climate change because it would require extensive vehicle travel and is not a sustainable solution. Therefore, this would not be a feasible mitigation measure.

- In groundwater dependent areas with inadequate groundwater supply, project proponents shall be required to secure water contracts with the SDCWA in order to import water from SDCWA facilities. This mitigation measure is considered to be infeasible due to the lack of infrastructure in place to convey the water, the limited availability of water within the desert southwest, the cost of providing these services, and the discretionary approval to extend the SDCWA boundary, which is outside of the County's jurisdiction. Implementation of this mitigation measure would also conflict with the Project objective to minimize costs of infrastructure and services because the implementation of this mitigation measure would result in extensive infrastructure costs.
- Implement a Countywide moratorium on building permits and development applications in any areas of the County that would have the potential to adversely impact groundwater supplies and recharge. This would effectively result in no new impacts to groundwater supplies and recharge within the unincorporated County; however, due to the size and complexity of the groundwater dependent portion of the County, it is not possible to specifically identify at a parcel by parcel scale where significant impacts to groundwater resources would occur. Site-specific groundwater investigations are necessary to provide details of impacts that cannot be provided at the scale in which the 2011General Plan Groundwater Study was conducted. Therefore, there is not enough technical evidence in which to impose a moratorium. This mitigation measure would also conflict with the Project objective to support a reasonable share of projected regional population growth. Therefore, for the reasons listed above, this mitigation measure would not be implemented.

Because the measures listed above have been found to be infeasible by the County and would not be implemented, impacts would remain significant and unavoidable.

Adopted 2011 General Plan Policies

In addition to the policies COS-4.2, COS-4.3, COS-4.4, and COS-5.2 listed in Section 2.7.4.1 above, the following policies would further reduce impacts associated with groundwater supplies and recharge, although not to below a level of significance for the reasons stated above.

Policy LU-8.1: Density Relationship to Groundwater Sustainability. Require land use densities in groundwater dependent areas to be consistent with the long-term sustainability of groundwater supplies, except in the Borrego Valley.

Policy LU-8.2: Groundwater Resources. Require development to identify adequate groundwater resources in groundwater dependent areas, as follows:

- In areas dependent on currently identified groundwater overdrafted basins, prohibit new development from exacerbating overdraft conditions. Encourage programs to alleviate overdraft conditions in Borrego Valley.
- In areas without current overdraft groundwater conditions, evaluate new groundwater-dependent development to assure a sustainable long-term supply of groundwater is available that will not adversely impact existing groundwater users.

Policy LU-13.1: Adequacy of Water Supply. Coordinate water infrastructure planning with land use planning to maintain an acceptable availability of a high quality sustainable water supply. Ensure that new development includes both indoor and outdoor water conservation measures to reduce demand.

Policy LU-13.2: Commitment of Water Supply. Require new development to identify adequate water resources, in accordance with State law, to support the development prior to approval.

Policy COS-4.1: Water Conservation. Require development to reduce the waste of potable water through use of efficient technologies and conservation efforts that minimize the County's dependence on imported water and conserve groundwater resources.

These policies require that land use densities relate to groundwater sustainability and resources, facilitate coordination between land use planning and water infrastructure planning, require water-supply commitments for new development, and encourage water conservation and groundwater recharge. Adherence to these policies will further reduce impacts associated with groundwater supply from future development. However, even with implementation of the above Policies and the Mitigation Measures listed below, impacts to water quality standards and requirements would remain significant and unavoidable.

Mitigation Measures

In addition to Mitigation Measures Hyd-1.1, Hyd-1.2, Hyd-1.3, Hyd-1.4, and Hyd-1.5 listed above, implementation of the following mitigation measures would further reduce direct and cumulative Project impacts associated with groundwater supplies and recharge, although not to below a level of significance for the reasons stated above.

Hyd-2.1 Implement, and revise as necessary, Board Policy I-84 requiring that discretionary project applications include commitments from available water districts. Also

implement and revise as necessary Board Policy G-15 to conserve water at County facilities.

Hyd-2.2 Implement the Groundwater Ordinance to balance groundwater resources with new development. Also revise the Ordinance Relating to Water Conservation for Landscaping (currently Zoning Ordinance Sections 6712 through 6725) to further water conservation through the use of recycled water.

Hyd-2.3 Establish a water credits program between the County and the Borrego Water District to provide a streamlined and consistent process for the permanent cessation of outdoor water intensive uses such as irrigated agricultural or golf course land.

Hyd-2.4 Coordinate with the San Diego County Water Authority and other water agencies to coordinate land use planning with water supply planning and implementation and enhancement of water conservation programs.

Hyd-2.5 Implement and revise as necessary the Resource Protection Ordinance and Policy I-68 Proposed Projects in Flood Plains / Floodways to restrict development in flood plains / floodways.

Hyd-1.1 will minimize impervious surfaces that may interfere with groundwater recharge. Hyd-1.2 reduces potential impervious area which would interfere with groundwater recharge. Hyd-1.3 will reduce potential impacts to groundwater recharge. Hyd-1.4 requires the County to implement, and revise as necessary, the Stormwater Standards Manual. This manual requires application of appropriate measures to facilitate infiltration of stormwater and allow groundwater recharge. As identified in Hyd-1.5, application of the County Guidelines for Determining Significance for Surface Water Quality, Hydrology, and Groundwater Resources help County staff to identify and mitigate potential groundwater impacts associated with public or private projects in the County. Hyd-2.1 helps reduce unnecessary reliance on groundwater for land use projects. Hyd-2.1 also requires implementation of Board Policy G-15, which directs the conservation of water at County facilities. Hyd-2.2 minimizes impacts to groundwater supplies from applicable projects. Hyd-2.2 also includes revision of the Ordinance Relating to Water Conservation for Landscaping (currently Zoning Ordinance Sections 6712 through 6725) to further water conservation through the use of recycled water. Hyd-2.3 will help reduce impacts to groundwater supplies in the Borrego community. Hyd-2.4 can help minimize adverse effects of future development on water supplies. Hyd-2.5 is the implementation, and revision when necessary, of the Resource Protection Ordinance and Policy I-68 Proposed Projects in Flood Plains / Floodways to restrict development in flood plains / floodways. Such development could otherwise substantially interfere with groundwater recharge.

2.7.4.3 *Erosion or Siltation*

Direct and cumulative impacts relative to erosion or siltation associated with the proposed Project would be reduced to below a level of significance with implementation of the same applicable 2011 General Plan policies and mitigation measures as identified in the General Plan Update PEIR, and repeated below.

Adopted 2011 General Plan Policies

The policies LU-6.5, LU-6.9, and COS-5.3 listed in Section 2.7.4.1 above would reduce the proposed Project's direct and cumulative impacts relative to erosion or siltation to below a level of significance. These policies ensure that development minimize the use of impervious surfaces, use Low Impact Development techniques, incorporate best management practices, require new development to conform to the natural topography of the site to utilize natural drainage and topography in conveying stormwater, ensure the protection and maintenance of local watersheds, and require new development to protect downslope areas from erosion. Adherence to these policies will reduce erosion/siltation impacts from future development.

Mitigation Measures

In addition to Mitigation Measures Hyd-1.2, Hyd-1.3, and Hyd-1.5 listed above, implementation of the following mitigation measures would further reduce direct and cumulative Project impacts associated with erosion and siltation to below a level of significance.

Hyd-3.1 Implement and revise, as necessary, ordinances to require new development to be located down and away from ridgelines, conform to the natural topography, not significantly alter dominant physical characteristics of the site, and maximize natural drainage and topography when conveying stormwater.

Hyd-3.2 Implement and revise as necessary the RPO to limit development on steep slopes.

Hyd-3.3 Implement the Grading, Clearing and Watercourses Ordinance to protect development sites against erosion and instability.

Hyd-1.2 encourages the removal of invasive species in natural drainages, and help to restore drainage systems to their natural composition and flow rates, thus lowering the amount of erosion and siltation in watersheds. Hyd-1.3 minimizes runoff and maximize infiltration. Hyd-1.5 is the utilization of County Guidelines for Determining Significance for Surface Water Quality, Hydrology, and Groundwater Resources to identify adverse environmental effects. If such impacts are identified, appropriate mitigation measures are then included in the action.

Application of the restrictions as identified in Hyd-3.1 will ensure that drainage patterns will not be adversely affected in ways that lead to erosion and siltation. Hyd-3.2 will allow for one comprehensive approach to steep-slope protections. By minimizing development on steep slopes, erosion and siltation impacts will be avoided. Hyd-3.3 is the implementation the Grading,

Clearing and Watercourses Ordinance to protect development sites against erosion and instability. This ordinance includes many requirements to avoid erosion and siltation, such as: removal of loose dirt; installation of erosion control or drainage devices; inclusion and maintenance of sedimentation basins; planting requirements; slope stabilization measures; provision of drainage calculations; proper irrigation systems; etc.

2.7.4.4 *Flooding*

Direct and cumulative impacts relative to flooding associated with the proposed Project would be reduced to below a level of significance with implementation of the same applicable 2011 General Plan policies and mitigation measures as identified in the General Plan Update PEIR, and repeated below.

Adopted 2011 General Plan Policies

In addition to Policy LU-6.5 listed in Section 2.7.4.1 above, the following policies would further reduce impacts associated with flooding to below a level of significance:

Policy LU-6.10: Protection from Hazards. Require that development be located and designed to protect property and residents from the risks of natural and man-induced hazards.

Policy S-9.2: Development in Floodplains. Limit development in designated floodplains to decrease the potential for property damage and loss of life from flooding and to avoid the need for engineered channels, channel improvements, and other flood control facilities. Require development to conform to federal flood proofing standards and siting criteria to prevent flow obstruction.

Policy S-10.2: Use of Natural Channels. Require the use of natural channels for County flood control facilities except where necessary to protect existing structures from a current flooding problem and where natural channel use is deemed infeasible. The alternative must achieve the same level of biological and other environmental protection, such as water quality, hydrology, and public safety.

Policy S-10.3: Flood Control Facilities. Require flood control facilities to be adequately sized, constructed, and maintained to operate effectively.

Policy S-10.4: Stormwater Management. Require development to incorporate low impact design, hydromodification management, and other measures to minimize stormwater impacts on drainage and flood control facilities.

Policy S-10.6: Stormwater Hydrology. Ensure development avoids diverting drainages, increasing velocities, and altering flow rates to off-site areas to minimize adverse impacts to the area's existing hydrology.

These policies ensure that development minimizes the use of impervious surfaces, apply Low Impact Development techniques and best management practices, require new development to be located and designed to protect property and residents from hazard risks, require minimization of new development in floodplains require the use of natural channels for County flood control facilities, require flood control facilities to be adequately sized and maintained to operate effectively, require new development to incorporate measures to minimize storm water impacts, and ensure new development maintains the existing area's hydrology. Adherence to these policies will reduce flooding impacts from future development.

Mitigation Measures

In addition to Mitigation Measures Hyd-1.1, Hyd-1.2, Hyd-1.3, Hyd-1.4, Hyd-1.5, and Hyd-2.5 listed above, implementation of the following mitigation measures would further reduce direct and cumulative proposed Project impacts with regard to flooding to below a level of significance.

Hyd-4.1 Implement the Flood Damage Prevention Ordinance to reduce flood losses in specified areas.

Hyd-4.2 Implement the Grading, Clearing and Watercourses Ordinance to limit activities affecting watercourses.

Hyd-4.3 Implement and revise as necessary Board Policies such as: Policy I-68, which establishes procedures for projects that impact floodways; Policy I-45, which defines watercourses that are subject to flood control; and Policy I-56, which permits, and establishes criteria for, staged construction of off-site flood control and drainage facilities by the private sector when there is a demonstrated and substantial public, private or environmental benefit.

Hyd-1.1 requires the County to update and implement the County of San Diego's JURMP. This program addresses discharge volumes as well as pollutants to help minimize flooding problems. Hyd-1.2 will reduce polluted runoff, encourage the removal of invasive species in natural drainages, and help to restore drainage systems to their natural composition and flow rates. Hyd-1.3 will minimize runoff and maximize infiltration, thereby avoiding potential flooding issues. Hyd-1.4 will help reduce flooding as well as improve water quality. Hyd-1.5 is the utilization of County Guidelines for Determining Significance for Surface Water Quality, Hydrology, and Groundwater Resources to identify adverse environmental effects. If such impacts are identified, appropriate mitigation measures are then included in the action to avoid alteration of existing drainage patterns and/or to alleviate potential flooding on or near project sites. Hyd-2.5 will help prevent potential flooding issues from development activities that would otherwise alter existing drainage patterns. Hyd-4.1 regulates development within all areas of special flood hazards and areas of flood-related erosion hazards, and establishes policies that minimize public and private losses due to flood conditions. Hyd-4.2 will minimize any alteration of drainage patterns and

prevent flooding associated with development projects. Compliance with the policies identified in Hyd-4 will further minimize potential impacts from flooding by regulating activities in flood-prone areas.

2.7.4.5 *Exceed Capacity of Stormwater Systems*

Direct and cumulative impacts pertaining to exceeding the capacity of stormwater systems associated with the proposed Project would be reduced to below a level of significance with implementation of the same applicable 2011 General Plan policies and mitigation measures as identified in the General Plan Update PEIR, and repeated below.

Adopted 2011 General Plan Policies

In addition to the policies LU-6.5, LU-6.9, COS-4.3, COS-5.2, S-9.2, S-10.2, S-10.3, S-10.4, and S-10.6 listed in Section 2.7.4.1 and Section 2.7.4.4 above, the following policies would further reduce proposed Project impacts relative to exceedance of the capacity of stormwater systems to below a level of significance.

Policy S-10.5: Development Site Improvements. Require development to provide necessary on-site and off-site improvements to stormwater runoff and drainage facilities.

These policies ensure that development minimizes the use of impervious surfaces, apply Low Impact Development techniques and best management practices, require new development to utilize natural drainage and topography in conveying stormwater, require development to maximize stormwater filtration and the natural drainage patterns, require new development to minimize the use of directly connected impervious surfaces, require minimization of new development in floodplains, require the use of natural channels for County flood control facilities, require flood control facilities to be adequately sized and maintained to operate effectively, require new development to minimize storm water impacts, require new development to provide necessary on-site and off-site improvements to storm water runoff and drainage facilities, and ensure that new development maintains the existing area's hydrology. Adherence to these policies will reduce direct impacts to stormwater systems from future development.

Mitigation Measures

Implementation of Mitigation Measures Hyd-1.1, Hyd-1.2, Hyd-1.3, Hyd-1.4, Hyd-1.5, Hyd-2.5, Hyd-3.1, Hydr-4.1, Hyd-4.2, and Hyd-4.3 listed above would reduce direct and cumulative Project impacts with regard to exceeding the capacity of stormwater systems to below a level of significance.

Hyd-1.1 requires the County to update and implement the County of San Diego's JURMP. This program addresses discharge volumes as well as pollutants to help minimize impacts to stormwater systems and avoid flooding problems. Hyd-1.2 will reduce polluted runoff and help to restore drainage systems to their natural composition and flow rates. As such, the capacity of

stormwater drainage systems will not be exceeded. Hyd-1.3 will minimize runoff and maximize infiltration, which will further alleviate impacts on stormwater drainage facilities. Hyd-1.4 will alleviate burdens on existing stormwater systems and minimize sources of polluted runoff. Hyd-1.5 is the utilization of County Guidelines for Determining Significance for Surface Water Quality, Hydrology, and Groundwater Resources to identify adverse environmental effects. If such impacts are identified, appropriate mitigation measures are then included in the action to reduce runoff volumes and improve water quality.

Hyd-2.5 will help prevent potential flooding or increased flow in drainage systems. Hyd-3.1 will minimize stormwater runoff volumes and pollutant sources caused by new development. The ordinance as identified in Hyd-4.1 regulates development within flood-prone areas, thereby reducing potential overloading of stormwater systems. The ordinance as identified in Hyd-4.2 includes requirements to minimize runoff and improve water quality. Hyd-4.3 requires the County to update and implement the following Board Policies: Policy I-68, Policy I-45, and Policy I-56. These policies work to minimize impacts to floodways, apply flood-control measures, and regulate flood control and drainage facilities, respectively. As such, exceedance of stormwater systems from increased runoff would be further reduced or avoided.

2.7.4.6 *Housing within a 100-year Flood Hazard Area*

The proposed Project would not result in the placement of any structures within a 100-year flood hazard area. Therefore, it is not anticipated that the proposed Project would result in a potentially significant direct or cumulative impact associated with the placement of structures that would impede or redirect flood flows in areas subject to flood hazards. The implementation of any federal, State, and local regulations; existing County regulatory processes; adopted 2011 General Plan goals and policies; or, specific mitigation measures/implementation programs identified in the General Plan Update PEIR would therefore not be required, nor would any additional measures not identified in the PEIR be required. Project impacts with regard to the placement of structures within a 100-year flood hazard area that would impede or redirect flood flows would be below a level of significance. However, the following 2011 General Plan Policies are applicable to this issue: LU-6.12, COS-5.1, S-9.1 through S-9.5, and S-10.1.

2.8.4.7 *Impeding or Redirecting Flood Flows*

The proposed Project would not result in the placement of any structures within a 100-year flood hazard area. Therefore, it is not anticipated that the proposed Project would result in a potentially significant direct or cumulative impact associated with the placement of structures that would impede or redirect flood flows in areas subject to flood hazards. The implementation of any federal, State, and local regulations; existing County regulatory processes; adopted 2011 General Plan goals and policies; or, specific mitigation measures/implementation programs identified in the General Plan Update PEIR would therefore not be required, nor would any additional measures not identified in the PEIR be required. Project impacts with regard to the placement of structures within a 100-year flood hazard area that would impede or redirect flood flows would

be below a level of significance. However, the following 2011 General Plan Policies are applicable to this issue: LU-6.12, COS-5.1, S-9.1 through S-9.5, and S-10.1.

2.7.4.8 *Dam Inundation and Flood Hazards*

Direct and cumulative impacts pertaining to dam inundation and flood hazards associated with the proposed Project would be reduced to below a level of significance with implementation of the same applicable 2011 General Plan policies and mitigation measures as identified in the General Plan Update PEIR, and repeated below.

Adopted 2011 General Plan Policies

In addition to the policies COS-5.1, S-9.1, and S-10.1 listed above, the following policy would reduce direct and cumulative proposed Project impacts associated with dam inundation and flood hazards to below a level of significance.

Policy S-9.6: Development in Dam Inundation Areas. Prohibit development in dam inundation areas that may interfere with the County's emergency response and evacuation plans.

These policies restrict development in floodways and floodplains, manage development based on Federal floodplain maps, require minimization of new development in floodplains, require new development within mapped flood hazard areas be sited and designed to minimize on-site and off-site hazards, prohibit development in dam inundation areas that may interfere with the County's emergency response and evacuation plans, and limit new or expanded land uses within floodways. Adherence to these policies will reduce potential impacts from the placement of future development in flood hazard areas and/or dam inundation areas.

Mitigation Measures

In addition to Mitigation Measures Hyd-1.2, Hyd-1.5, Hyd-2.5, Hyd-4.1, Hyd-4.2, Hyd-4.3, and Hyd-6.1 listed above, implementation of the following mitigation measures would reduce direct and cumulative proposed Project impacts associated with dam inundation and flood hazards to below a level of significance.

Hyd-8.1 Perform regular inspections and maintenance of County reservoirs to prevent dam failure.

Hyd-8.2 Review discretionary projects for dam inundation hazards through application of the County's Guidelines for Determining Significance for Hydrology and Guidelines for Determining Significance for Emergency Response Plans.

Hyd-1.2 would minimize potential exposure of people or structures to flood hazards. Hyd-1.5 is the utilization of County Guidelines for Determining Significance for Surface Water Quality, Hydrology, and Groundwater Resources to identify adverse environmental effects. This would include the identification of potential exposure of people or structures to floods or inundation. If such a situation were identified, appropriate mitigation measures would then be included in the

action to avoid potential risk of loss. Hyd-2.5 will minimize potential exposure of people or structures to flooding and inundation. Hyd-4.1 regulates development within flood-prone areas and minimizes potential risks to people and structures from flooding or inundation hazards. Hyd-4.2 would further minimize exposure of people or structures to flooding and inundation. Hyd-4.3 includes provisions to minimize impacts to floodways, apply flood-control measures, and regulate flood control and drainage facilities, respectively. Continuation of these policies will further minimize potential flooding and dam inundation hazards. Hyd-6.1 requires that the County implement the Resource Protection Ordinance to prohibit development of permanent structures for human habitation or employment in a floodway and require planning of hillside developments to minimize potential soil, geological and drainage problems. As such, this ordinance limits development that would expose people or structures to flooding or inundation. Hyd-8.1 would minimize the potential for inundation of the surrounding area or zone and prevent losses or injuries. Hyd-8.2 includes guidelines to help identify potential flooding and inundation hazards, and apply methods for avoiding or mitigating those hazards.

2.7.4.9 Seiche, Tsunami and Mudflow Hazards

Direct and cumulative impacts pertaining to seiche, tsunami, and mudflow hazards associated with the proposed Project would be reduced to below a level of significance with implementation of the same applicable 2011 General Plan policies and mitigation measures as identified in the General Plan Update PEIR, and repeated below.

2011 General Plan Policies

Implementation of Policies COS-5.1, S-8.1, S-8.2, S-9.3, and S-9.6 listed above would reduce direct and cumulative proposed Project impacts associated with seiches, tsunamis, and mudflow hazards to below a level of significance. These policies restrict development in floodways and floodplains, reduce landslide risks to development, prohibit development from contributing or causing slope instability, require minimization of development in flood hazard areas, and prohibit development in dam inundation areas. Adherence to these policies will reduce impacts to people or structures from mudflows.

Mitigation Measures

Implementation of Mitigation Measures Hyd-3.1, Hyd-3.2, and Hyd-3.3 listed above would reduce direct and cumulative proposed Project impacts with regard to seiches, tsunamis, and mudflows to below a level of significance.

Hyd-3.1 will minimize development that exposes people and property to mudflow hazards. Hyd-3.2 will allow for one comprehensive approach to steep-slope protections. By minimizing development on steep slopes, risks of loss, injury or death from mudflows will be prevented. Hyd-3.3 will reduce potential mudflows around people and structures.

TABLE 2.7-1. WATER BODIES IDENTIFIED AS IMPAIRED UNDER THE CLEAN WATER ACT[1]

Watershed Management Area (WMA)	Water Body Name	Pollutant/Stressor[2]
San Juan WMA	Pacific Ocean, Aliso	Elevated coliform bacteria levels
	Lower San Juan Creek, Mouth	Bacterial Indicators
	Aliso Creek	Bacterial Indicators, Phosphorus, Selenium, Total Nitrogen as N, Toxicity
	San Juan Creek	DDE, Bacterial Indicators, Phosphorus, Selenium, Total Nitrogen as N, Toxicity
Santa Margarita WMA	Santa Margarita Lagoon	Eutrophic
	De Luz Creek	Iron, Manganese, Nitrogen, Sulfates
	Rainbow Creek	Iron, Nitrogen, Phosphorus, Sulfates, Total Dissolved Solids (TDS)
	Upper Santa Margarita River	Phosphorus, Toxicity
	Sandia Creek	Iron, Sulfates, TDS
	Temecula Creek	Chlorpyrifos, Copper, Phosphorus, TDS, Toxicity
	Murrieta Creek	Chlorpyrifos, Iron, Manganese, Nitrogen, Phosphorus, Toxicity
	Long Canyon Creek	Chlorpyrifos, E. Coli, Fecal Coliform, Iron, Manganese
San Luis Rey WMA	Pacific Ocean Shoreline	Bacterial Indicators
	San Luis Rey River	Chloride, Enterococcus, Fecal Coliform, Phosphorus, TDS, Total Nitrogen as N, Toxicity,
	Guajome Lake	Eutrophic
Carlsbad WMA	Pacific Ocean Shoreline	Bacterial Indicators
	Loma Alta Slough	Bacterial Indicators, Eutrophic
	Buena Vista Lagoon (202 acres)	Bacterial Indicators, Nutrients, Sedimentation/Siltation
	Buena Vista Creek	Sediment toxicity, Selenium
	Pacific Ocean Shoreline	Bacterial Indicators
	Aqua Hedionda Lagoon (7 acres)	Bacterial Indicators
	Agua Hedionda Creek	Enterococcus, Fecal Coliform, TDS, Manganese, Phosphorus, Selenium, Sulfates, Total Nitrogen as N, Toxicity
	Lake San Marcos	Ammonia as Nitrogen, Nutrients, Phosphorus
	San Marcos Creek	DDE, Phosphorus, Sediment toxicity, Selenium,
	Buena Creek	DDT, Nitrate and Nitrite, Phosphate
San Dieguito WMA	Pacific Ocean Shoreline	Bacterial Indicators
	Green Valley Creek	Sulfates, Chloride, Manganese, PCP
	Lake Hodges	Color, Mercury, Nitrogen, Phosphorus, Turbidity, Manganese, pH

TABLE 2.7-1, CONTINUED

Watershed Management Area (WMA)	Water Body Name	Pollutant/Stressor[2]
San Dieguito WMA (continued)	Kit Carson Creek	TDS, PCP
	Felicita Creek	TDS, Aluminum
	Cloverdale Creek	Phosphorus, TDS
	Sutherland Reservoir	Color, Manganese, Total Nitrogen as N, pH
Los Penasquitos WMA	Los Penasquitos Lagoon	Sediment/Siltation
	Los Penasquitos Creek	Enterococcus, Fecal Coliform, Selenium, TDS, Total Nitrogen as N, Toxicity
San Diego River WMA	Famosa Slough and Channel	Eutrophic
	Pacific Ocean Shoreline	Bacterial Indicators
	Lower San Diego River	Enterococcus, Fecal Coliform, Low Dissolved Oxygen, Nitrogen, Phosphorus, TDS, Toxicity,
	Forrester Creek	Fecal Coliform, pH, TDS, Phosphorus, Selenium
	El Capitan Lake	Color, Manganese, Phosphorus, Total Nitrogen as N, pH
	Murray Reservoir	Nitrogen, pH
	San Vicente Reservoir	Chloride, Color, pH, Sulfates, Total Nitrogen as N, pH
San Diego Bay WMA	San Diego Bay Shoreline, at Harbor Island (West Basin)	Copper
	San Diego Bay Shoreline, G St. Pier	Bacterial Indicators, Enterococcus, Fecal Coliform, Total Coliform
	San Diego Bay Shoreline, Near Switzer Creek	Chlordane, PAHs
	San Diego Bay Shoreline, Vicinity of B St. and Broadway Piers	Benthic Community Effects, Sediment Toxicity
	San Diego Bay Shoreline, Downtown Anchorage	Benthic Community Effects, Sediment Toxicity
	San Diego Bay Shoreline, at Harbor Island (East Basin)	Copper
	San Diego Bay Shoreline, at Marriott Marina	Copper
	San Diego Bay Shoreline, at America's Cup Harbor	Copper
	Chollas Creek	Bacterial Indicators, Copper, Diazinon, Lead, Phosphorus, Total Nitrogen as N, Trash, Zinc
	San Diego Bay Shoreline, Near Chollas Creek	Benthic Community Effects, Sediment Toxicity
	San Diego Bay Shoreline, 32nd St. Naval Station	Benthic Community Effects, Sediment Toxicity

TABLE 2.7-1, CONTINUED

Watershed Management Area (WMA)	Water Body Name	Pollutant/Stressor[2]
San Diego Bay WMA (continued)	San Diego Bay Shoreline, Between Sampson and 28th Streets	Copper, Mercury, PAHs, PCBs, Zinc
	San Diego Bay Shoreline, Near Coronado Bridge	Benthic Community Effects, Sediment Toxicity
	San Diego Shoreline, Seventh St. Channel	Benthic Community Effects, Sediment Toxicity
	San Diego Bay Shoreline, North of 24th St. Marine Terminal	Benthic Community Effects, Sediment Toxicity
	San Diego Bay Shoreline, at Bayside Park (J Street)	Enterococcus
	San Diego Bay Shoreline, at Chula Vista Marina	Copper
	Sweetwater Reservoir	Dissolved Oxygen
	Loveland Reservoir	Aluminum, Manganese, Dissolved Oxygen, pH
	Pacific Ocean Shoreline, Imperial Beach Pier	Enterococcus, Fecal Coliform, PCBs, Total Coliform
	San Diego Bay	PCBs
	San Diego Bay Shoreline, and Coronado Cays	Copper
	San Diego Bay Shoreline, at Glorietta Bay	Copper
	Poggi Canyon Creek	DDT, Toxicity
	Otay Reservoir, Lower	Color, Iron, Manganese, Ammonia, Nitrogen, pH (high)
Tijuana River WMA	Tijuana River	Bacterial Indicators, Eutrophic conditions, Low Dissolved Oxygen, Pesticides, Phosphorus, Sedimentation/Siltation, Selenium, Solids, Surfactants (MBAS), Synthetic Organics, Total Nitrogen as N, Toxicity, Trace Elements, Trash
	Tijuana River Estuary	Bacterial Indicators, Eutrophic conditions, Lead, Low Dissolved Oxygen, Nickel, Pesticides, Thallium, Trash, Turbidity
	Pacific Ocean Shoreline, Tijuana Hydrologic Unit	Bacterial Indicators
	Barrett Lake	Color, Manganese, Perchlorate, pH, Total Nitrogen as N
	Pine Valley Creek (Upper)	Turbidity
	Morena Reservoir	Ammonia as Nitrogen, Color, Manganese, Phosphorus, pH

Source: California Environmental Protection Agency – San Diego Regional Water Quality Control Board. October 2012.

TABLE 2.7-1, CONTINUED

[1] The above table has been revised to update information found in Table 2.8-1 of the General Plan Update PEIR. As noted in Section 2.7.1, Existing Conditions, on December 16, 2009, the San Diego RWQCB adopted the 2008 CWA Sections 305(b) and 303(d) Integrated Report on Evaluation of Surface Water Quality and Listing of Impaired Water Body Segments for the San Diego Region, with the U.S. Environmental Protection Agency (EPA) approving the 2008-2010 CWA Section 303(d) List (which includes the list of the 303(d) water bodies for the San Diego Region) in November 2010. As such, the information above has been updated for the watershed management areas (WMA) considered in the General Plan Update PEIR in order to provide an accurate description of the existing water quality conditions for the proposed Project.

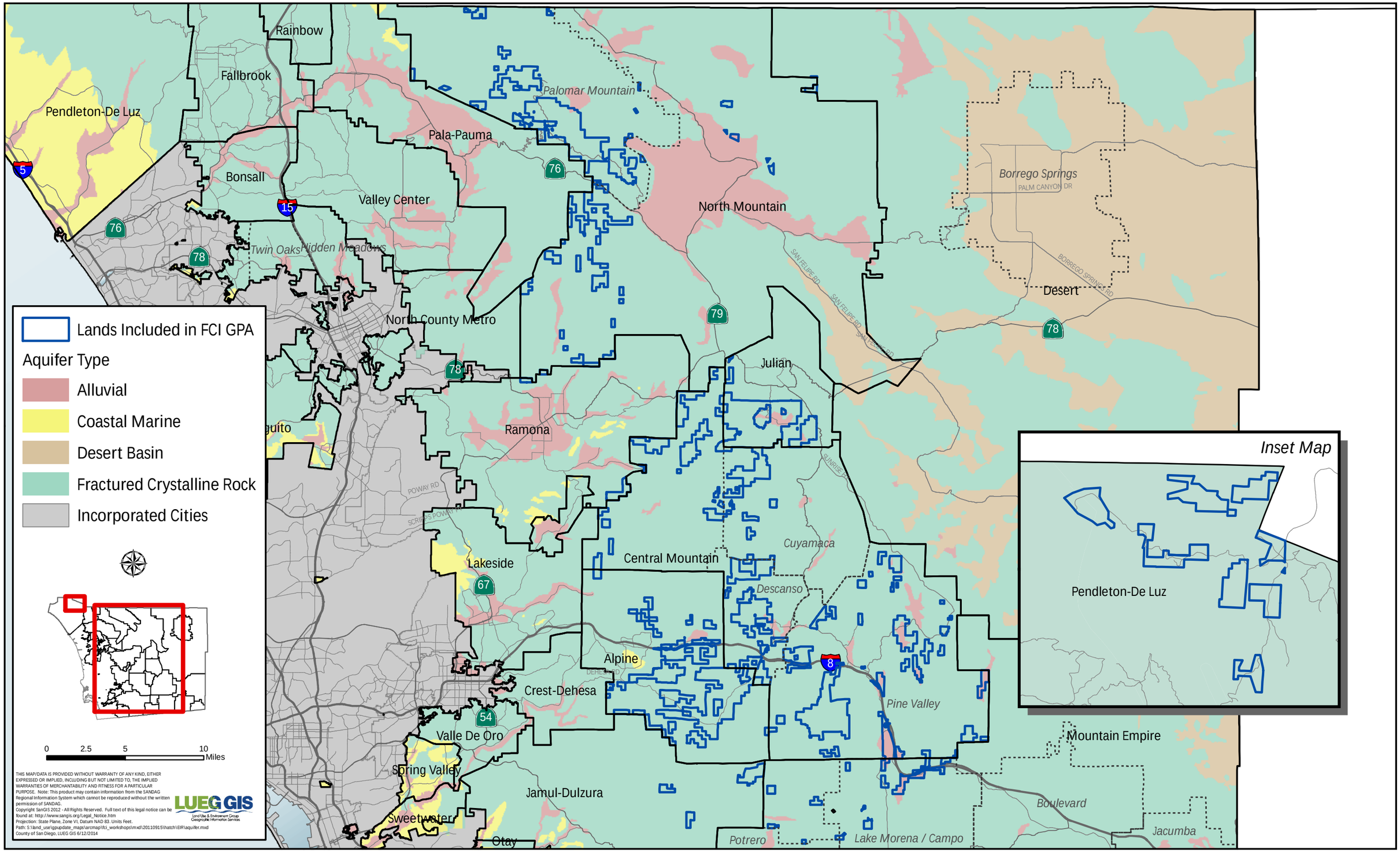
[2] DDE - Dichlorodiphenyldichloroethylene; DDT - Dichlorodiphenyltrichloroethane; PCP – Pentachlorophenol; PAH - Polycyclic aromatic hydrocarbons; PCB - Polychlorinated biphenyl

TABLE 2.7-2. DAM INUNDATION AREAS AFFECTING THE UNINCORPORATED COUNTY

Dam	CPAs Affected	Inundation Acreage	Existing Use
Agua Tibia	North Mountain, Pala Pauma	491	Open Space, agriculture
Cuyamaca	Alpine, Central Mountain, Lakeside	2,736	Parks, vacant, some residential
El Capitan	Alpine, Lakeside	3,447	Residential, commercial, parks
Henshaw	Bonsall, Fallbrook, North Mountain, Pala-Pauma, Pendleton/De Luz, Valley Center	12,176	Agriculture, vacant lands, open space
Lake Loveland	Alpine, County Islands, Crest-Dehesa, Jamul-Dulzura, Spring Valley, Sweetwater, Valle de Oro	6,992	Parks, vacant
Lake Skinner	Fallbrook, Pendleton/De Luz	201	Other
Lake Skinner Finished Water Reservoir	Fallbrook, Pendleton/De Luz	259	Other
Morena Overtopping Barrett	Jamul-Dulzura, Mountain Empire	1,268	Parks, vacant
Palo Verde	Alpine	62	Open space, vacant
Ramona	Ramona	153	Vacant, parks
Sutherland	North Mountain, North County Metro, Ramona	136	Parks, agriculture, vacant
Sutherland (Overtopping Hodges)	North Mountain, North County Metro, San Dieguito	960	Residential, agriculture
Vail	Pendleton/De Luz, Fallbrook	5,061	Undeveloped, other
	Total	**33,942**	

TABLE 2.7-3. AQUIFER TYPE WITHIN FCI LANDS

CPAs	Alluvial	Fractured Crystal
Alpine	0.7	13,722.4
Central Mountain		5,287.0
Crest - Dehesa		0.0
Cuyamaca		2,888.6
Descanso	85.4	5,666.8
Desert		169.8
Jamul		1,279.9
Julian	688.5	7,644.2
Lake Morena / Campo	537.1	1,012.0
Lakeside		2.3
Mountain Empire	0.0	484.9
North Mountain	109.2	5,029.9
Pala - Pauma		2.0
Palomar Mountain	93.7	1,1913.6
Pendleton - De Luz		1,015.7
Pine Valley	2,042.6	10,792.1
Potrero		0.0
Ramona		822.4
Total	**3,557.3**	**67,733.7**



Source: SanGIS, County of San Diego, 2014

Aquifer Types within the County

Figure 2.7-1

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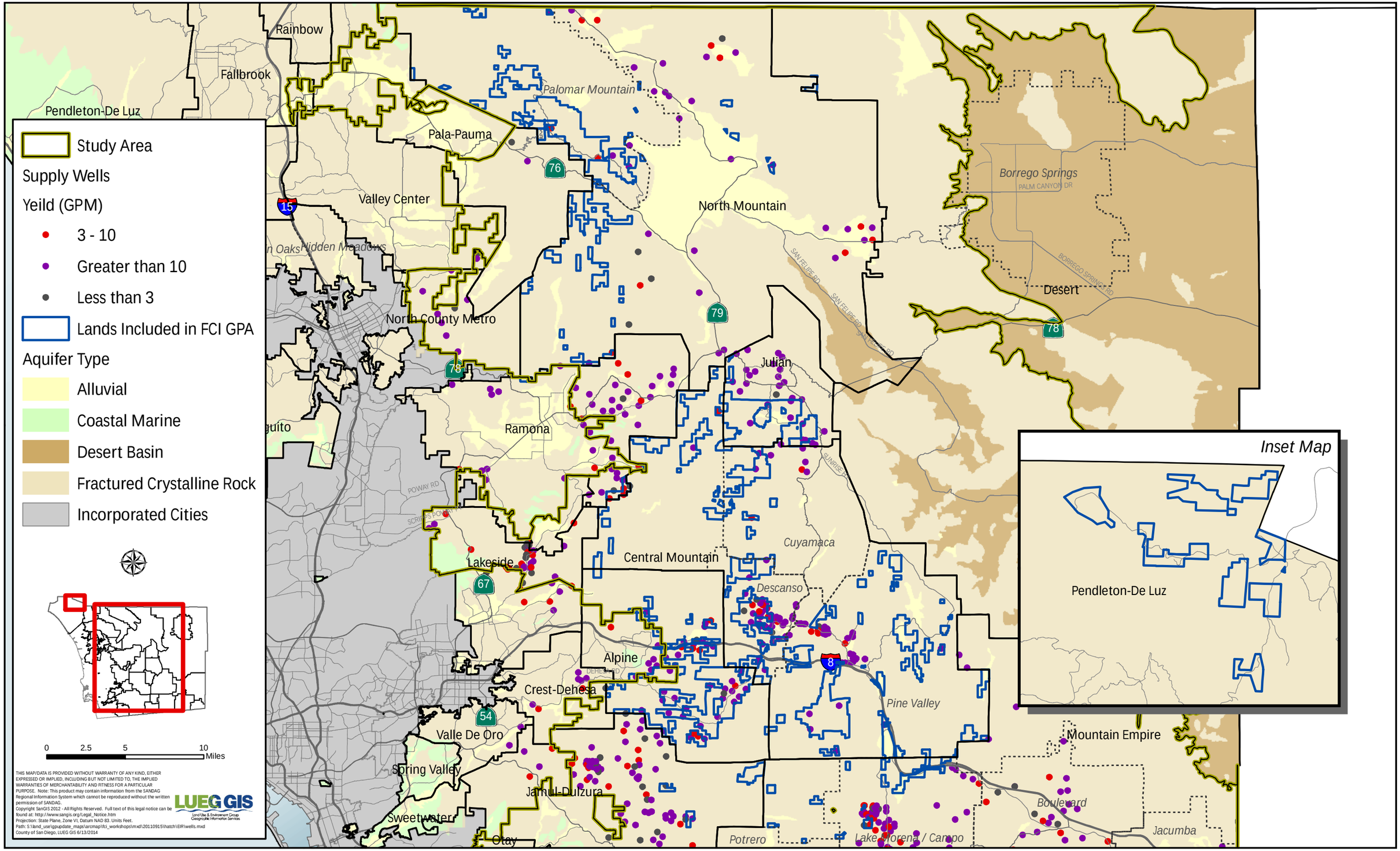

Source: SanGIS, County of San Diego, 2014

Potential Low Well Yield

Figure 2.7-2

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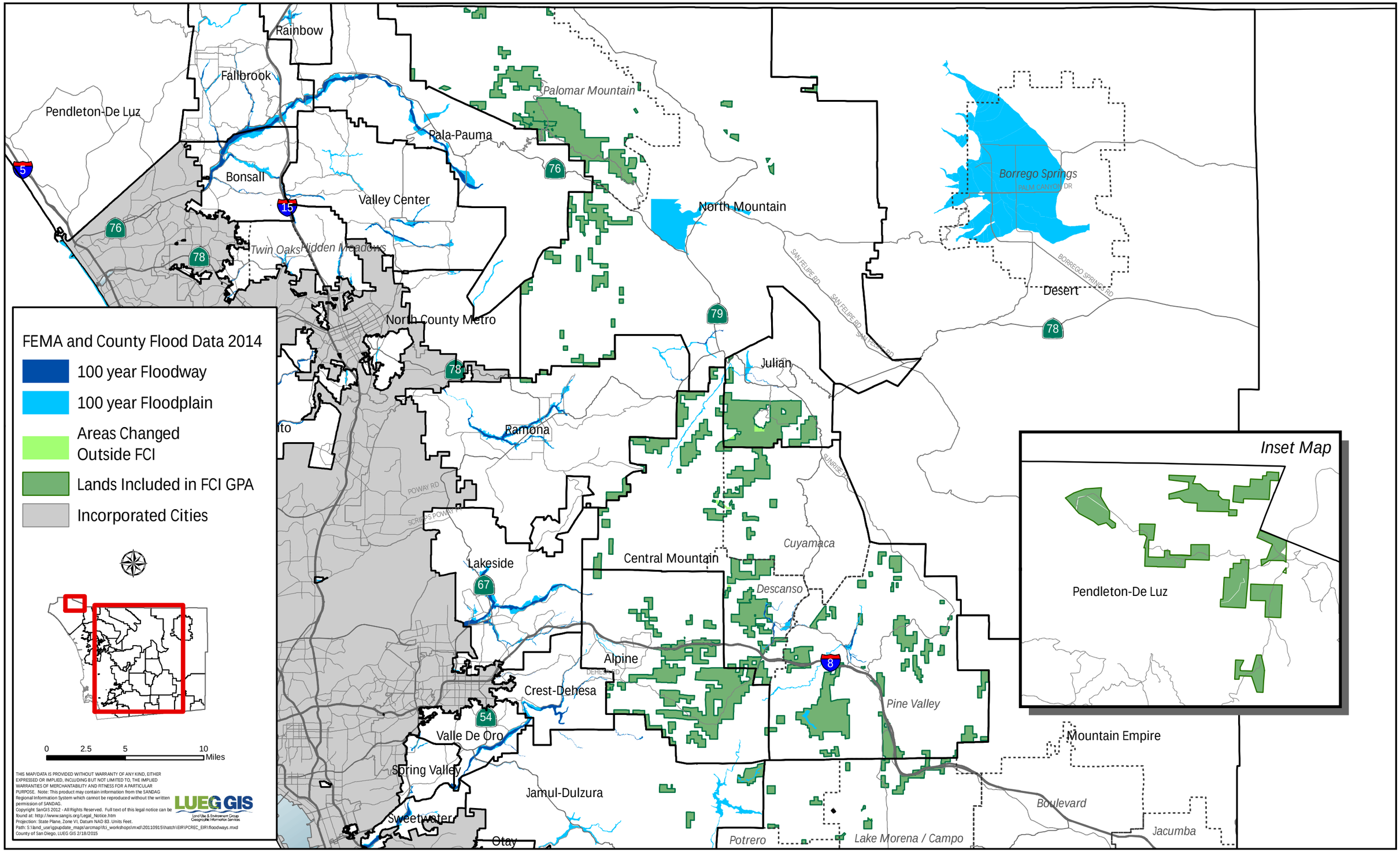

Source: SanGIS, County of San Diego, 2015

COUNTY AND FEMA FLOODPLAINS AND FLOODWAYS

Figure 2.7-3

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