CHAPTER 8.0 – LIST OF MITIGATION MEASURES AND ENVIRONMENTAL DESIGN CONSIDERATIONS

8.1 Comprehensive Listing of Mitigation Measures

Mitigation for Transportation/Circulation Impacts

Roadway improvements that would reduce the impacts of the proposed project are identified below for the Existing plus Project Units 1-5 and Cumulative 2020 plus Project scenarios.

The need for roadway improvements and the project applicant's responsibility are a function of the timing of the development Units and the degree to which project traffic is responsible for creating the impact. Some mitigation measures may not be feasible and/or practical because the applicant and County would not be able to guarantee that improvements under the jurisdiction of the City/ would be completed. Therefore, traffic impacts wholly within the City (e.g., TI-14 and TI-16) would remain significant.

As the proposed project would not have a significant impact on traffic under 2030 conditions, no mitigation measures are required for 2030.

Direct Impacts

TM-1 Prior to recordation of final map for Unit 1 the applicant shall improve the segment of Otay Mesa Road between Sanyo Avenue and Enrico Fermi Drive to a provide a four-lane facility with two lanes in each direction. The segment of Otay Mesa Road between Sanyo Avenue (STA 532 + 00) and the future alignment of Vann Centre Boulevard (STA 549 + 00) will require widening on the north side of the road. The segment of Otay Mesa Road between the future alignment of Vann Centre Boulevard (STA 549 + 00) and Enrico Fermi Drive (STA 572 + 00) will require widening on the north and south side of the road. (Striping concepts for the proposed improvements are provided on Sheet 11 in the Preliminary Route Study prepared by Stevens Cresto Engineering, Inc. located in TIS Appendix Q. See TIS Figure 42.)

TM-2 Prior to recordation of final map for Unit 1 the applicant shall re-stripe the segment of Otay Mesa Road from Enrico Fermi Drive (STA 572 + 00) to approximately 1,290 feet west of Alta Road (STA 585 + 85) to provide a four-lane facility with two-lanes in each direction. Prior to recordation of the final map for Unit 1 the applicant shall widen the north and south side of Otay Mesa Road from approximately 1,290 feet west of Alta Road (STA 585 + 85) to Alta Road (STA 599 + 00) to provide a four-lane facility with two lanes in each direction and a painted median. (Striping concepts for the proposed improvements are provided on Sheet 11 in the Preliminary Route Study prepared by Stevens Cresto Engineering, Inc. located in TIS Appendix Q. See TIS Figure 42.)

TM-3 Prior to recordation of final map for Unit 2 the applicant shall re-stripe the segment of Airway Road between the SR-905 and Sanyo Avenue to provide a three-lane facility consisting of two eastbound travel lanes and one westbound travel lane within existing pavement width of the road. (Refer to TIS Figure P-27.)

TM-4 Delay recordation of final map for Unit 4 until SR-905 Phase 1B is open to traffic.

TM-5 Delay recordation of final map for Unit 4 until SR-905 Phase 1B is open to traffic.

TM-6a Prior to recordation of final map for Unit 1, the applicant shall signalize and widen the Otay Mesa Road/Alta Road intersection to provide the following lane configurations:

- Two eastbound left turn lanes;
- One eastbound shared through-right lane;
- One westbound shared left-through-right lane;
- Two northbound left turn lanes;
- One northbound shared through-right lane; and
- One southbound shared left-through-right lane.

(Refer to TIS Figure 42.)

TM-6b Prior to recordation of final map for Unit 2 the applicant shall widen the Otay Mesa Road/Alta Road intersection and modify the traffic signal (which was required to be installed to mitigate Unit 1 direct impacts) to provide the following lane configurations:

- Two eastbound left turn lanes;
- One eastbound through lane;
- One eastbound right turn lane;
- One westbound shared left-through lane;
- One westbound shared through-right lane;
- Two northbound left turn lanes;
- One northbound shared through-right lane;
- One southbound shared left-through-right lane; and
- One southbound right turn lane.

(Refer to TIS Figure 43.)

TM-7 Delay recordation of final maps for Unit 2 until Phase 1A of SR-905 is open to traffic.

TM-8 Prior to recordation of final map for Unit 2, the applicant shall widen the Otay Mesa Road/Sanyo Avenue intersection and modify the existing traffic signal to provide the following lane configurations:

- One eastbound through lane;
- One eastbound through-right lane;
- One westbound left turn lane;
- Two westbound through lanes;
- One northbound left turn lane; and
- One northbound left-right turn lane.

(Refer to TIS Figure 43.)

TM-9a Prior to recordation of final map for Unit 2, the applicant shall widen the Otay Mesa Road/Enrico Fermi Drive intersection modify the existing traffic signal to provide the following lane configurations:

- One eastbound through lane;
- One eastbound through-right lane;
- One westbound left turn lane;
- Two westbound through lanes;
- One northbound left turn lane; and
- One northbound right turn lane.

(Refer to TIS Figure 43.)

TM-9b Prior to recordation of final map for Unit 4, the applicant shall widen the Otay Mesa Road/Enrico Fermi Drive intersection and modify the existing traffic signal to provide the following lane configurations:

- Two eastbound through lanes;
- One eastbound right turn lane;
- One westbound left turn lane;
- Two westbound through lanes;
- Two northbound left turn lanes; and
- One northbound right turn lane.

(Refer to TIS Figure 45.)

TM-10 Delay recordation of final map for Unit 3 until SR-905 Phase 1B is open to traffic.

TM-11 Delay recordation of final map for Unit 4 until SR-905 Phase 1B is open to traffic.

Cumulative (2020)

Cumulative impacts TI-2 and TI-6 would be mitigated through the direct mitigation measures TM-2 and TM-6b indicated above.

TM-12 Prior to issuance of building permits for the proposed project, the applicant shall pay the County's TIF towards the improvement of Enrico Fermi Drive between Otay Mesa Road (Old Otay Mesa Road) and Airway Road to a four lane facility with two lanes in each direction. (Refer to TIS Figure 47.)

TM-13 Prior to issuance of building permits for the proposed project, the applicant shall pay the County's TIF towards the improvement of Otay Mesa Road (Old Otay Mesa Road)/Vann Centre Boulevard intersection and modifications to provide the following lane configurations:

- One eastbound left turn lane;
- Two eastbound through lanes;

- One westbound through lane;
- One westbound shared through-right lane; and
- One southbound shared left-right lane.

(Refer to TIS Figure 47.)

TM-14 Prior to recordation of the final map for Unit 1 of the proposed project, the applicant shall to the satisfaction of the Director of Public Works and the City of San Diego improve or agree to improve and provide security or identify and provide the appropriate fair-share contribution to construct for a traffic signal at the Airway Road/Sanyo Avenue intersection. The signalization of the intersection shall provide the following lane configurations:

- One eastbound shared left-through lane;
- One eastbound shared through-right lane;
- One westbound left turn lane;
- One westbound through lane;
- One westbound right turn lane;
- One northbound left turn lane;
- One northbound shared through-right lane;
- One southbound shared left through lane; and
- One southbound right turn lane.

(See TIS Figure 47.)

TM-15 Prior to issuance of building permits, the applicant shall pay the County's TIF towards the signalization and restriping of the Airway Road/Paseo de las Americas intersection to provide the following lane configurations:

- One eastbound left turn lane;
- One eastbound through lane;
- One eastbound shared through-right lane;
- One westbound left turn lane;
- One westbound through lane;
- One westbound shared through-right lane;
- One northbound shared left-through lane;
- One northbound right turn lane; and
- One southbound left-through-right turn lane.

(See TIS Figure 47.)

TM-16 Prior to recordation of the final map for Unit 1 of the proposed project, the applicant shall to the satisfaction of the Director of Public Works and the City of San Diego improve or agree to improve and provide security or identify and provide the appropriate fair-share contribution to construct a traffic signal at the Siempre Viva Road/Michael Faraday Drive intersection. The signalization of the intersection should provide the following lane configurations:

- One eastbound left turn lane;
- One eastbound through lane;
- One eastbound shared through right lane;
- One westbound left turn lane;
- One westbound through lane;
- One westbound shared through-right lane;
- One northbound shared left-through-right lane;
- One southbound shared left-through lane; and
- One southbound right turn lane.

(See TIS Figure 47.)

Mitigation for Air Quality Impacts

Beyond the implementation of transportation demand management measures, no feasible project-specific measures to mitigate for operation emissions exist. The following measure addresses construction emissions.

Construction Emissions

AQM-1 Ten percent of the construction fleet will be required to use any combination of diesel catalytic converters, diesel oxidation catalysts, diesel particulate filters and/or ARB certified Tier I, II, or III equipment.

Mitigation for Biological Resources Impacts

Upland Vegetation Communities

BM-1 Direct impacts to 1.9 acres of Diegan coastal sage scrub (including disturbed) shall be mitigated at a 1.5:1 ratio, for a total mitigation requirement of 2.9 acres. This mitigation shall be accomplished through the on-site preservation of 2.9 acres of coastal sage scrub. Because a total of 6.8 acres of Diegan coastal sage scrub would be available for mitigation, the remainder (3.9 acres) would be applied to the mitigation requirement of non-native grassland as described in BM-2. Prior to the on-set of grading, a Resource Management Plan (RMP) shall be prepared for both on-site and off-site open space and shall specify all stewardship measures, such as upkeep of fencing and signs, restricting trespassing, and removing debris, required to maintain habitat quality for preserved resources. A Property Analysis Record (PAR) and cost estimate will be prepared for long-term management of on-site and off-site

open space and incorporated into the RMP. The RMP shall be prepared to the satisfaction of the USFWS, CDFG and the County.

BM-2 Direct impacts to 263.1 acres of non-native grassland shall be mitigated at a 1:1 ratio, for a total mitigation requirement of 263.1 acres. Impacts to 263.1 acres of non-native grassland shall be partially offset with on-site preservation of 34.4 acres of non-native grassland, 6.4 acres of disturbed habitat to be restored to grassland, and the remaining 3.9 acres of Diegan coastal sage scrub for a total of 44.7 acres. Additional non-native grassland mitigation shall occur through off-site habitat preservation of five parcels totaling 206 acres, consisting of: 1) the 69-acre O'Neal Canyon parcel; 2) the 15-acre O'Neal Canyon parcel; 3) a 62-acre parcel at the Lonestar Ridge site; 4) 20 acres of a 40-acre parcel at the Lonestar Ridge site; and 5) 40 acres of the 63-acre Martz parcel in Ramona. The remaining 12.4 acres of mitigation shall be met through preservation of 9.2 acres of the Otay Business Park (Paragon) open space parcel on Lonestar Ridge and 3.2 acres at the Martz parcel in Ramona. If the Otay Crossings project goes forward concurrently with the Paragon project, the mitigation requirements will be revised based on Appendix D of the project Biological Technical Report.

Impacts to the additional 4.5 acres of non-native grassland associated with Sewer Option B-1 shall be mitigated through preservation of 4.5 acres of the Paragon open space parcel on the northern Lonestar Ridge parcel.

Impacts to the additional 3.9 acres of non-native grassland associated with Sewer Option B-2 shall be mitigated through preservation of 3.9 additional acres of the Paragon portion of the northern Lonestar Ridge parcel.

The RMP referenced in BM-1 shall also include management of both on- and off-site non-native grassland mitigation lands.

BM-3 Direct impacts to 0.1 acres of native grassland shall be mitigated at a 2:1 ratio, for a total mitigation requirement of 0.2 acre. This mitigation shall be accomplished through acquisition and management of land on the Lonestar Ridge parcel, of which 0.2 acre would be for impacts to native grassland. The RMP shall include management of off-site native grassland mitigation lands as noted in BM-1.

BM-4 If Sewer Option B-1 or B-2 is implemented, impacts to 0.056 acre of vernal pools would be mitigated by restoration of vernal pool habitat on the southern off-site Lonestar Ridge parcel at a 3:1 ratio, resulting in restoration of 0.168 acre of vernal pool surface area. The restoration plan should include San Diego button-celery in the seed mix and success criteria. A restoration plan shall be prepared and submitted for approval to the County and Wildlife Agencies prior to initiating impacts.

Wetland Vegetation Communities/Jurisdictional Areas

BM-5 Impacts to jurisdictional tamarisk scrub shall be mitigated at a 1:1 mitigation ratio through creation of 0.73 acre of riparian or mule fat scrub habitat. Impacts to jurisdictional non-wetland Waters of the U.S./CDFG streambeds shall be mitigated at a 1:1 ratio. This would require creation of 0.24 acre of drainages, of which 0.20 acre must be Corps

jurisdictional. All wetland mitigation shall occur on site within the open space along existing on-site drainages. Mitigation shall consist of realigning and widening portions of existing non-wetland Waters of the U.S./CDFG streambeds within the impact footprint and seeding/planting with a mix of native grasses and forbs as well as riparian shrubs such as mule fat and San Diego marsh-elder. The widening of the drainages shall satisfy the creation component of the mitigation, and seeding/planting shall partially satisfy the enhancement/restoration component. Additional enhancement/restoration shall occur along the drainage in the open space in the southeastern corner of the site. A wetland restoration plan shall be prepared and implemented to the satisfaction of the Corps, CDFG, and County.

If Sewer Option B-1 or B-2 is implemented, impacts to 0.012 acre of unvegetated Waters of the U.S./streambed will be mitigated by creation of vernal pool habitat at the southern off-site Lonestar Ridge parcel at a 1:1 ratio.

Sensitive Plants

BM-6 Direct impacts to 72 San Diego barrel cacti shall be mitigated at a 2:1 ratio through acquisition of habitat supporting a minimum of 144 barrel cacti. This mitigation may be met within lands acquired for mitigation of impacts to grassland and burrowing owls described above in BM-2. Although the project would impact approximately 37 percent of the on-site barrel cactus population, which is not consistent with the 20 percent impact threshold contained in the BMO, these impacts would be offset through mitigation. Mitigation shall consist of acquisition of off-site lands (i.e., O'Neal Canyon and Lonestar Ridge parcels as shown in Figure 3.1-5) which support barrel cactus populations. Mitigation would also consist of salvage of the 72 barrel cacti within the project footprint and relocation of these individuals to areas of appropriate habitat within the on-site open space easements. An On-site Grassland and San Diego Barrel Cactus Mitigation Plan shall be prepared by the applicant, and approved by the County prior to initiating impacts. Translocation of the barrel cacti shall occur prior to initiating impacts consistent with the On-site Grassland and San Diego Barrel Cactus Mitigation Plan. The RMP noted in BM-1 shall include measures to protect and enhance the preserved and relocated populations of San Diego barrel cactus.

BM-7 Direct impacts to 138 San Diego marsh-elder individuals would be mitigated at a 2:1 ratio through acquisition of habitat supporting at least 276 individuals in Marron Valley Mitigation Bank or through restoration of a minimum of 276 individuals within the off-site mitigation location for Corps and CDFG WUS/streambed as determined through the permitting process.

BM-8 If Sewer Option B-1 or B-2 is implemented, impacts to San Diego button-celery would be mitigated by restoration of vernal pool habitat on the southern off-site Lonestar Ridge parcel at a 3:1 ratio, resulting in restoration of 0.168 acre of vernal pool surface area. The restoration plan should include San Diego button-celery in the seed mix and success criteria. A San Diego button-celery restoration plan would be prepared and submitted for approval to the County and Wildlife Agencies prior to initiating impacts.

Sensitive Animals

BM-9 Direct impacts to 116 s.f. of road pool occupied by San Diego and Riverside fairy shrimp would be mitigated by creating 232 s.f. (2:1 ratio) of pool habitat that supports these species. Although it would not be a requirement to create vernal pools, vernal pool plant species should be incorporated into the restoration effort. The basin restoration would occur in the off-site open space proposed for the southeastern portion of the site on the southern Lonestar Ridge parcel. A basin restoration plan shall be prepared and implemented to the satisfaction of the USFWS and County that would modify the micro-topography of the site to provide for appropriate hydrology for pools and associated species. The basin restoration plan shall include restoration of appropriate habitat and hydrology and provide for propagation of San Diego and Riverside fairy shrimp. Management and monitoring specified in the basin restoration plan shall ensure that appropriate success criteria are met.

If Sewer Option B-1 or B-2 is implemented, impacts to 0.056 acre of vernal pools occupied by San Diego fairy shrimp would be mitigated by creating 0.168 acre (3:1 ratio) of vernal pool habitat that supports these species. The basin restoration effort would occur in the off-site open space proposed for the southeastern portion of the site on the southern Lonestar Ridge parcel. A vernal pool restoration plan shall be prepared and implemented to the satisfaction of the USFWS and County that would modify the micro-topography of the site to provide for appropriate hydrology for pools and associated species. The basin restoration plan shall include restoration of appropriate habitat and hydrology and provide for propagation of San Diego fairy shrimp. Management and monitoring specified in the basin restoration plan shall ensure that appropriate success criteria are met.

BM-10 Direct impacts to occupied burrowing owl habitat shall be mitigated at a 1:1 ratio with preservation of 263.1 acres of occupied burrowing owl habitat or habitat capable of supporting the burrowing owl. This mitigation would be met by the 44.7 acres of on-site preservation through an open space easement in Lots 57 through 59 and the off-site acquisition of 218.4 acres of occupied burrowing owl habitat or habitat capable of supporting the burrowing owl. The off-site acquisition parcels are identified as non-native grassland mitigation under BM-2 and detailed in the Biological Technical Report for the proposed project. If grading would occur during the burrowing owl breeding season (February 15 through August 31), a pre-construction survey of the known active burrows shall be conducted to avoid filling burrows or injuring the owls by burrow collapse. The survey shall take place 3 to 5 days prior to initiation of construction. Weed removal (by whacking, bush hogging, or mowing) shall be conducted, if necessary, to make all potential burrows in the relevant impact area more easily observed. This weed removal shall be monitored by a qualified biologist to ensure that burrows are not disturbed during the process. Cameras should be used to ensure that burrows are unoccupied by burrowing owls. If owls are present in the burrows during the breeding season, passive relocation or eviction shall not be allowed. No grading will occur during the breeding season for the burrowing owl without concurrence by the Wildlife Agencies that owls will not be affected by construction activities. If owls are present outside of the breeding season, passive relocation with the use of one-way doors would be implemented by a qualified biologist in accordance with the CDFG Staff Report on Burrowing Owl Mitigation. Once it is believed that the owls have vacated the burrows (this should take approximately 48 hours after installation of one-way doors), all burrows shall be

carefully excavated (to confirm they are empty) and then filled to prevent occupation or reoccupation. The excavation and filling shall also be carried out by a qualified biologist. The Wildlife Agencies shall review and approve any passive relocation or eviction plans prior to implementation. Construction materials (e.g., pipes, rubble piles, etc.) shall be closed off to prevent burrowing owls from reoccupying the site.

If Sewer Option B-1 or B-2 is selected, impacts to the additional 3.0 acres of non-native grassland supporting burrowing owls will be mitigated through preservation of 1.5 additional acres at the Paragon portion of the Lonestar Ridge site and 1.5 acres at the Martz parcel.

BM-11 Direct impacts to the Quino shall be mitigated on- and off-site preservation of occupied habitat as part of the mitigation for impacts to vegetation communities described above under BM-1 and BM-2. A total of seven Quino-occupied locations shall be included in the preserved habitat. On-site preservation shall conserve one previously recorded Quino location. The County is currently undergoing an MSCP amendment process with the USFWS to gain Quino take authorization for the entire County MSCP Subarea. The proposed MSCP amendment is distinct from the proposed project's MSCP Amendments. If the County's Quino amendment to the MSCP is processed before implementation of the proposed project, the project would be covered by the County's Quino take authority, but this cannot be assumed, so it is expected that the project would have to process an individual take authority for impacts to Quino, via a Section 7 consultation.

If Sewer Option B-1 or B-2 is selected, impacts to the additional 3.0 acres of non-native grassland supporting Quino will be mitigated through preservation of 1.5 acres of the Paragon open space parcel on Lonestar Ridge site and 1.5 acres at the Martz parcel.

Other Sensitive Species

BM-12 Direct impacts to the coastal western whiptail, California horned lark, northern harrier and raptor foraging habitat shall be mitigated through coastal sage scrub and grassland mitigation requirements outlined in BM-1 through BM-3. Potential direct impacts to bird species covered under the MBTA, including State Fully Protected Species (golden eagle and white-tailed kite), shall be avoided by restricting brushing and grading to outside of the breeding season of most bird species (general breeding season is February 15 to September 15). Grubbing, grading, or clearing during the breeding season of MBTA covered species could occur if it is determined via a pre-construction survey that no nesting birds (or birds displaying breeding or nesting behavior) are present immediately prior to grubbing, grading, or clearing and would require approval of the USFWS, CDFG, and County that no breeding or nesting avian species are present in the vicinity of the grubbing, grading, or clearing.

Construction Noise

BM-13 All brushing, grading, and clearing of vegetation shall take place outside of the bird-breeding season (February 15 through August 31). If construction activities are proposed to occur during the breeding season within 300 feet of burrowing owl burrows or gnatcatcher nest, within 500 feet for tree-dwelling raptor nests, or within 900 feet of ground dwelling raptor nests, a pre-construction survey shall be conducted to determine if nesting birds (or birds

displaying breeding or nesting behavior) are present. No construction activities shall occur within 300 feet of burrowing owl burrows or gnatcatcher nests, or within 500 feet of or tree-dwelling raptor nests, or within 900 feet of ground-dwelling raptor nests. No construction activities shall occur within those distances until a qualified biologist determines that they are no longer active or it is determined that noise levels would not exceed 60 dBA L_{eq} at the nest site. Alternatively, noise minimization measures developed by a County-certified noise consultant (such as noise barriers) could be constructed to bring noise levels to below 60 dBA L_{eq}.

Industrial Noise

BM-14 A Noise Protection Easement shall be dedicated and enforced on Lots 16 through 18 and 24. The Noise Protection Easement shall require future noise analysis within subsequent discretionary permits for the lots to ensure that noise levels would not exceed an hourly 60 dBA L_{eq} during the daytime and 50 dBA L_{eq} during the nighttime. Noise protection measures that could be integrated into future industrial site plans could include proper building orientation, selection of quieter equipment, or placement of noise-producing equipment behind buffer zones, noise enclosures or parapet walls.

Animal Behavioral Changes

BM-15 Impacts to animal behavior would be mitigated through implementation of **BM-13**.

Cumulative Impacts

BM-16 The project's contribution to cumulative impacts to non-native grassland and burrowing owl habitat would be mitigated through implementation of **BM-2**.

Mitigation for Cultural Resources Impacts

CM-1a To mitigate for direct impacts to CA-SDI-11,799H and CA-SDI-12,888H, the applicant shall implement a data recovery program prior to the approval of any grading permits or improvement plans, or prior to the recordation of the final map, whichever occurs first. The data recovery program shall include the following requirements:
Implement, to the satisfaction of the Director of the Department of Planning and Land Use, the research design detailed in the archaeological extended study, ARE prepared by Affinis for the proposed project, dated April 2010. The research design shall include, but is not limited to, the following performance standards:

a. The presence of a Native American monitor shall be required for the duration of the excavation portion of the data recovery program.

b. Phase I data recovery shall include mechanical trenching of sites CA-SDI-11,799H and CA-SDI-12,888H to identify cultural features such as privy pits, root cellars, building foundations, and trash deposits. All trench sidewalls shall be examined, as well as trench spoils as they are removed. Soil shall be screened through 1/8-inch mesh screen. Any

features encountered shall require the expansion of the trench to uncover the feature. The feature shall be documented, drawn, and photographed.

c. At the completion of Phase I, a letter report shall be submitted to the Director of the Department of Planning and Land Use. The letter report will evaluate the issues of site integrity, data redundancy, spatial and temporal patterning, features, and other relevant topics, in order to assess the adequacy of the initial mechanical trenching. Based on this assessment, the letter report shall recommend the need for and scope of a second phase of field investigations.

d. Implement Phase II of fieldwork, as necessary.

e. Conduct artifact analysis, using historical archaeological analytical techniques such as artifact function patterning, bottled products pattern analysis and ceramic economic indexing. Additional historic research shall be conducted as necessary to aid in analyzing and explaining the significance of patterns.

Prior to recordation of the final map, the applicant shall:

f. Complete and submit the Final Technical Report from the Principal Investigator to the satisfaction of the Director of Planning and Land Use.

CM-1b Provide evidence to the satisfaction of the Director of Planning and Land Use that all archaeological materials recovered during significance testing, data recovery, and grading monitoring phases have been curated at a San Diego facility that meets federal standards per 36 CFR Part 79, and therefore would be professionally curated and made available to other archaeologists/researchers for further study. The collections and associated records shall be transferred, including title, to an appropriate curation facility within San Diego County, to be accompanied by payment of the fees necessary for permanent curation. Evidence shall be in the form of a letter from the curation facility identifying that archaeological materials have been received and that all fees have been paid.

CM-2 To mitigate for direct impacts to CA-SDI-11,802H and to mitigate for the possible uncovering of buried archaeological and historical resources during the extensive grading of the on-site and off-site project areas prior to approval of grading or improvement plans, the subdivider shall take the following action related to the archaeological grading monitoring program to mitigate potential impacts to undiscovered buried archaeological resources to the satisfaction of the Director of the Department of Planning and Land Use:

Provide evidence to the satisfaction of the Director of the Department of Planning and Land Use that a County certified archaeologist has been contracted to implement an archaeological grading monitoring program. A letter from the Principal Investigator shall be submitted to the Director of Planning and Land Use. The letter shall include the following guidelines:

a. The project archaeologist shall contract with a Native American monitor to be involved with the grading monitoring program as outlined in the County of San Diego Report Format and Content Guidelines (2006).

b. The County certified archaeologist/historian and Native American monitor shall attend the pre-grading meeting with the contractors to explain and coordinate the requirements of the monitoring program as outlined in the County of San Diego Report Format and Content Guidelines (2006).

c. The project archaeologist shall monitor all areas identified for development including off-site improvements.

d. An adequate number of monitors (archaeological/historical/Native American) shall be present to ensure that all earth-moving activities are observed and shall be on site during all grading activities for areas to be monitored.

e. During the original cutting of previously undisturbed deposits, the archaeological monitor(s) and Native American monitor(s) shall be on site full time to perform full-time monitoring. Inspections will vary based on the rate of excavation, the materials excavated, and the presence and abundance of artifacts and features. The frequency and location of inspections will be determined by the Project Archaeologist in consultation with the Native American monitor. Monitoring of cutting of previously disturbed deposits will be determined by the Principal Investigator.

f. Isolates and clearly non-significant deposits shall be minimally documented in the field and the monitored grading can proceed.

g. In the event that previously unidentified potentially significant cultural resources are discovered, the archaeological monitor(s) shall have the authority to divert or temporarily halt ground disturbance operations in the area of discovery to allow evaluation of potentially significant cultural resources. The Principal Investigator shall contact the County Archaeologist at the time of discovery. The Principal Investigator, in consultation with County staff archaeologist, shall determine the significance of the discovered resources. The County Archaeologist must concur with the evaluation before construction activities will be allowed to resume in the affected area. For significant cultural resources, a Research Design and Data Recovery Program to mitigate impacts shall be prepared by the consulting archaeologist and approved by the County Archaeologist, then carried out using professional archaeological methods.

h. If any human bones are discovered, the Principal Investigator shall contact the County Coroner. In the event that the remains are determined to be of Native America origin, the Most Likely Descendant (MLD), as identified by the Native American Heritage Commission, shall be contacted by the Principal Investigator in order to determine proper treatment and disposition of the remains.

i. Before construction activities are allowed to resume in the affected area, the artifacts shall be recovered and features recorded using professional archaeological methods. The Principal Investigator shall determine the amount of material to be recovered for an adequate artifact sample for analysis.

j. In the event that previously unidentified cultural resources are discovered, all cultural material collected during the grading monitoring program shall be processed and curated at a San Diego facility that meets federal standards per 36 CFR Part 79 and, therefore, would be professionally curated and made available to other archaeologists/researchers for further study. The collections and associated records shall be transferred, including title, to an appropriate curation facility within San Diego County, to be accompanied by payment of the fees necessary for permanent curation. Evidence shall be in the form of a letter from the curation facility identifying that archaeological materials have been received and that all fees have been paid.

k. Monthly status reports shall be submitted to the Director of the Department of Planning and Land Use starting from the data of notice to proceed to termination of implementation of the grading monitoring program. The reports shall briefly summarize all activities during the period and the status of progress on overall plan implementation. Upon completion of the implementation phase, a final report shall be submitted describing the plan compliance procedures and site conditions before and after construction.

l. In the event that previously unidentified cultural resources are discovered, a report documenting the field and analysis results and interpreting the artifact and research data within the research context shall be completed and submitted to the satisfaction of the Director of Planning and Land Use prior to the issuance of any building permits. The report shall include Department of Parks and Recreation Primary and Archaeological Site forms.

m. In the event that no cultural resources are discovered, a brief letter to that effect shall be sent to the Director of the Department of Planning and Land Use by the consulting archaeologist that the grading monitoring activities have been completed.

Mitigation for Paleontological Resources Impacts

PM-1 The applicant is required to retain a Project Paleontologist who will implement a mitigation program for the proposed project. The program shall include monitoring for paleontological resources during excavation, salvaging potentially unique paleontological resources, cleaning and curating the found specimens and transferring the specimens to an accredited institution, and reporting the results of the mitigation program. The Project Paleontologist will also have responsibility for supervising and directing Paleontological Monitors, attending pre-grading meetings to consult with grading contractors, and writing the Paleontological Resources Mitigation Report.

Mitigation will be deemed complete when the County's Permit Compliance Coordinator, on behalf of the Director of DPLU, approves the final report, and a letter from the accredited institution stating that the collection has been received and approved.

Mitigation for Public Services and Utilities Impacts

PSUM-1 In order to provide adequate law enforcement services in compliance with the County General Plan and the Public Facilities Element (Section 2.4.7) of the East Otay Mesa Specific Plan, a Sheriff's Substation facility shall be established.

Description of Requirement: Annex into CFD #09-01 (East Otay Mesa) to fund the formation of the CFD and the construction of both the interim Sherriff's Substation and the permanent Sheriff's Substation, including, but not limited to, the land acquisition costs associated with the permanent Substation, development costs associated with both Substations, and land rental costs associated with the interim Substation, as described below:

a. Permanent Sheriff Substation. Either alone or in conjunction with other developers similarly conditioned,

(1) Acquire and dedicate to the County of San Diego, or obtain an irrevocable commitment for conveyance to the County, at no cost to the County, a parcel of land suitable in size, location and configuration for a Sheriff's Substation to satisfaction of the County of San Diego Sheriff's Department.

(2) At such time as the Sheriff's Department determines that the Permanent Sheriff Substation is needed, obtain all required discretionary and ministerial permits for and construct or provide a permanent building of approximately 6,000 s.f. and associated improvements determined to be necessary and adequate by the County of San Diego Sheriff's Department for a "turn key" Sheriff's Substation facility. The associated improvements include, but are not limited to, building and building fixtures, tenant improvements suitable for a Sheriff substation, signage, office furniture, security systems, parking, landscaping, lighting, fencing, and all utility and service connections. The associated improvements shall not include office equipment such as computers, printers, telephones, or radio equipment. Program requirements for the substation facility shall be provided by the County. Developer shall obtain County's approval of the design and specifications prior to construction of the substation facility.

b. Interim Sheriff Substation. Either alone or in conjunction with other developers similarly conditioned, until such time as a permanent facility, satisfactory to the Sheriff's Department, is ready for occupancy, provide a temporary site and facility (e.g., an office trailer or equivalent with appropriate fixtures and office furniture) suitable to accommodate Sheriff Department personnel, vehicles and equipment. The capital costs of this temporary facility shall be provided at no cost to the County of San Diego.

Documentation: The applicant shall provide documentation to the Department of Planning and Land Use that either alone or in conjunction with other developers similarly conditioned, the applicant has caused: 1) a financing mechanism to be in place and has

further committed to pay the applicant's project's fair share of the financing to fund and construct a turn-key, permanent Sheriff's Substation facility, and an interim, temporary Sheriff's Substation facility; 2) a parcel of land to be acquired and dedicated to the County of San Diego as the permanent site for the required Sheriff's Substation or a parcel of land to be under contract for conveyance to the County of San Diego at no cost to the County subject only to the payment of an agreed upon purchase price by the CFD; and 3) a permanent or temporary turn-key Sheriff's Substation facility to be available for use.

Timing: Prior to recordation of the Final Map for Unit 1, the Sheriff's Substation shall be available for use in accordance with the above requirements.

Monitoring: The DPLU and Sheriff's Department shall review the submitted documentation. If, upon review, DPLU and the Sheriff's Department determine the documentation demonstrates conformance with this condition, the DPLU and Sheriff's Department shall approve the documentation and deem the condition satisfied.

PSUM-2 Prior to recordation of Final Map for Unit 1, the developer shall execute a covenant, to be provided by the City, to participate in and not object to the formation of a Community Facilities District (CFD), or other financing mechanism, to fund or reimburse the construction of the improvement phases as identified in the Otay Mesa Trunk Sewer Infrastructure Upgrades Cost Estimate and Constructability Review (Brown and Caldwell) dated June 9, 2009. The developer shall secure performance of this obligation by recording the covenant with the County Recorder with a copy to the City.

Mitigation for Noise Impacts

NM-1 Prior to Final Map approval for Unit 2, the applicant shall dedicate a Noise Protection Easement on Lots 16, 17, and 18. This Noise Protection Easement shall require future noise analysis with subsequent discretionary permits (Site Plan or Major Use Permit) for lot development to verify noise levels do not exceed the one-hour hourly average of 60 dBA between the hours of 7 AM and 10PM and 57.5 dBA between the hours of 10 PM and 7 AM pursuant to County Noise Ordinance Section 36.404. Noise protection measures to meet these requirements could include proper building orientation, selection of quieter equipment, or placement of noise-producing equipment behind buffer zones, noise enclosures, or parapet walls.

8.2 Environmental Design Considerations/Conditions of Approval Required to Ensure Implementation of Design Features (Implemented Via Site Plan Review)

Standard measures are proposed during the grading and construction phase to reduce environmental effects and impacts to issues associated with air quality, biological resources, aesthetics, public services and utilities, noise, geology and soils, and hydrology and water quality. These measures are described below for the identified issue areas, with additional detail provided in associated technical appendices and summary versions of applicable design measures included in Subchapter 1.1.4 of this SEIR. These measures will be incorporated as applicable during review of future Site Plans to ensure compliance with CEQA pursuant to Site Plan processing requirements in Section 3.3 of the EOMSP (as amended by SPA 10-001).

Air Quality

Construction Emissions

The following design considerations will be incorporated into the project construction activities to reduce the potential for air quality impacts:

- Multiple applications of water during grading between dozer/scraper passes (a minimum of three times per day)
- Paving, chip sealing or chemical stabilization of internal roadways after completion of grading
- Use of sweepers or water trucks to remove "track-out" at any point of public street access
- Stabilization of dirt storage piles by chemical binders, tarps, fencing or other erosion control
- Halting of grading during periods of high winds (greater than 25 mph)
- Stabilization of graded areas (pave roads, hydroseed open areas, etc.) as soon as practical
- Limitation of vehicles speeds on unpaved surfaces to 10 mph
- Covering of trucks hauling dirt for cut and fill operations

In addition, measures to minimize equipment emissions during construction include use of low pollutant emitting construction equipment; minimization of simultaneous operation of multiple construction units; use of electrical construction equipment; use of catalytic reduction for gasoline-powered equipment; minimization of idling times; and use of injection timing retard for diesel-powered equipment. The above best management practices and emission-reducing measures would reduce construction equipment impacts.

Operational Emissions

- Facilities measures including bike storage facilities and shuttle services would be implemented during long-term project operations. In addition, transportation measures including transit funding, transportation control measures, and travel reduction programs would be incorporated into future site plans.
- Provide minimum amount of parking required. Once land uses are determined, the trip reduction factor associated with this measure can be determined by utilizing the ITE parking generation publication. The reduction in trips can be computed as shown below by the ratio of the difference of minimum parking required by code and ITE peak parking demand to ITE peak parking demand for the land uses multiplied by 50 percent. Percent trip reduction = 50 x [(minimum parking required by code – ITE peak parking demand)/ITE peak parking demand].
- Provide bicycle parking facilities that exceed the minimum required by the East Otay Mesa Specific Plan.

Greenhouse Gas Emissions

The following measures are feasible design features that may be proposed by future site plan applications to reduce energy consumption GHG emissions by 20 percent and water consumption by 10 percent, as described in Chapter 2.2 of this SEIR:

- Exceed Title 24 requirements (2005) by 15 percent.
- Achieve LEED Certification to further reduce GHG emissions by a minimum of an additional 5 percent in order to reduce overall energy and water consumption GHG emissions by 20 percent. LEED promotes a whole building approach to sustainability by recognizing performance in five key areas of human and environmental health: sustainable site development, water savings, energy efficiency, materials selection, and indoor environmental quality.
- Water consumption will be reduced by a minimum of 10 percent.
- Provide a site design that includes clearly marked and shaded pedestrian pathways between transit facilities and building entrances.
- Provide parking lot areas with 50 percent tree cover within 10 years of construction, in particular low emitting, low maintenance, native drought resistant trees. Reduce urban heat island effect and requirement for air conditioning, effective when combined with other measures (e.g., electrical maintenance equipment and reflective paving material).
- Have at least two of the following on site and/or off site within one-quarter mile: Retail Development, Park/Open Space, or Office.
- Use drought resistant native trees, trees with low emissions and high carbon sequestration potential. Evergreen trees on the north and west sides afford the best protection from the setting summer sun and winter winds. Additional considerations include the use of deciduous trees on the south side of the building to reduce summer sun.
- Install Energy Star labeled roof materials.
- Orient 75 percent or more of buildings to face either north or south (within 30 degrees of north/south). Building design includes roof overhangs that are sufficient to block the high summer sun, but not the lower winter sun from penetrating south facing windows. Trees, other landscaping features and other buildings are sited in such a way as to maximize shade in the summer and maximize solar access to walls and windows in the winter.
- Provide light-colored paving (e.g., increased albedo pavement).
- Provide cool roofs. Highly reflective, highly emissive roofing materials that stay 50-60°F cooler than a normal roof under a hot summer sun. California's Cool Savings Program provided rebates to building owners for installing roofing materials with high solar reflectance and thermal emittance. The highest rebate went to roofs on air conditioned buildings, while buildings with rooftop ducts and other nonresidential buildings were eligible for slightly less. The program aimed to reduce peak summer electricity demand and was administered by the California Energy Commission.
- Provide solar water heaters.
- Provide electrical outlets at building exterior areas.
- Use energy efficient appliances and equipment (e.g., Energy Star).
- Use materials which are resource efficient, recycled, with long life cycles and manufactured in an environmentally friendly way.

- Install energy-reducing programmable thermostats that automatically adjust temperature settings.
- Install energy-reducing passive heating and cooling systems (e.g., insulation and ventilation).
- Install energy-reducing day lighting systems (e.g., skylights, light shelves and interior transom windows).
- Use premium T8 lamps for indoor lighting/optimizing lighting design.
- Increase roof and exterior wall insulation.
- Install low energy traffic signals and energy efficient (sodium) street lighting.
- Design buildings utilizing double-paned windows.
- Design buildings to utilize door sweeps and weather stripping.
- Design buildings utilizing electric light dimming controls where feasible.
- Design buildings to utilize high efficiency heating and cooling systems.
- Install water-saving irrigation systems.
- Install drought resistant plants in lieu of turn where feasible and appropriate.
- Use recycled water for irrigation where available.
- Provide electrical connections for transport refrigeration units as opposed to diesel power.
- Install the photovoltaic cells (solar panels) or "thin film" on roofs and parking lots (which can provide added benefits of shading) as specified by LEED Energy & Atmosphere Credit 2 to off-set the Project's energy consumption.

Biological Resources

The following design considerations will be incorporated into the project construction and operation activities to avoid or reduce the potential for impacts related to biological resources:

- Resource Management Plans (RMPs) that includes all stewardship measures, such as upkeep of fencing and signs, restricting trespassing, and removing debris, shall be provided and implemented for the site and off-site improvement areas.

- A landscape plan that incorporates native species, is appropriate to the area and is without invasives, shall be used for slope and pad stabilization.

- The landscape plan shall be designed to comply with the County's Landscape Water Conservation Manual, the County's Grading Ordinance, the EOMSP Subarea 2 Plan, and the East Otay Mesa Subarea 2 Site Planning and Design Guidelines.

- All graded slopes three or more feet in vertical height, including slopes associated with detention basins, shall be landscaped to prevent erosion of soils. Steeper graded slopes (over 15 feet in height) shall be planted with 100 percent ground cover and one shrub or tree per 100 s.f. of slope surface.

- Hydro-seeding shall be applied to all graded and un-graded slopes and all building pad areas not scheduled for improvements within six months of completion of rough grading.

- Planting adjacent to open space easements shall be limited to non-invasive native species.

- Vegetated and rock-lined drainage channels shall be planted with non-invasive native grasses.

- Landscaped areas shall be irrigated with automatic irrigation systems, with individual property owners and the business park association responsible for the long-term maintenance of the landscaping, including public ROW. Non-irrigated areas (hydroseeded pads and non-graded areas) will depend on natural rainfall for germination.

- The proposed project shall provide 100-foot Limited Building Zones setback adjacent to on-site open space areas, pursuant to the Consolidated Fire Code, and the Public Resources Code for Minimum Statewide Clearance of Brush.

- The proposed project shall comply with the County Grading Ordinance and implementation proposed best management practices outlined in the Stormwater Management Plan.

- Prior to construction, orange construction fencing shall be installed within the proposed limits of grading to clearly define the grading limits and biological monitoring of on-site open space shall be conducted during grading and construction to prevent unintended impacts to sensitive vegetation.

- The project applicant shall be required to obtain wetland permits and approvals for impacts to Corps and CDFG jurisdictional areas.

- All project-associated construction and security lighting will be shielded or directed away from the open space areas.

- The proposed open space areas will provide a minimum 100-foot setback from development for Otay tarplant and 300-foot setback for variegated dudleya, as indicated on Figure 3.1-3.

Noise

The following design considerations will be incorporated into the project construction activities to reduce the potential for noise impacts:

- Compliance with the County Noise Ordinance, which restricts hours of construction to the period from 7 AM to 7 PM, Monday through Saturday, excluding legal holidays

The following design considerations will be incorporated into the sewer pump station design for Sewer Service Option A to reduce potential for industrial noise impacts:

- The sewer pump station will consist of a three-level, 485 s.f. facility with two of the levels below grade, and a wet well of approximately 700 s.f. in area.

- Three 25-horsepower pumps will be located at bottom level, with pump motors located below grade.

- All equipment, including electrical switchgear, except the emergency generator would be inside the facility.

- The pump station would be built in phases, but the initial building would be designed to provide attenuation for the ultimate facility.

- Noise attenuation to be provided to achieve sound levels of less than 70 dBA at the adjacent industrial lot boundaries.

- Emergency generator to be Cummins Onan 125 kw with Quiet Site II with sound attenuation enclosure to achieve sound level of no more than 69 dBA at 25 feet, or similar equipment with same or better sound levels.

- Sound level measurements would be required for the SPS prior to final certification of the pump station. The applicant would be required to submit to the satisfaction of the Director of DPLU a letter prepared by a County-certified acoustical consultant that verifies compliance with the property line sound level limits.

To verify that noise produced by the regional sewer pump station (SPS) would not reach unacceptable levels, Sewer Service Option B would entail the same design features and noise level verification measures testing, as described above.

Aesthetics

The following design considerations will be incorporated into the project construction and operation activities to avoid or reduce the potential for impacts related to aesthetics and landform alteration.

A comprehensive landscape plan, consistent with the grading and landscaping requirements of the EOMSP Design Guidelines, would be implemented in phases along all public streets and across all graded lots in conjunction with project grading operations. Landscaping along major public roads would consist of ornamental evergreen street trees and landscaped berms, featuring trees and groundcover. Slopes internal to the project site would be planted with ornamental trees, shrubs and ground cover, while slopes adjacent to open space easements would be planted with trees, shrubs and groundcover of the native variety. The drainage channels would be rock-lined and vegetated with sedge, grasses and shrubs. A hydroseed mix would be applied on the individual lots to stabilize them for erosion control and to provide temporary cover until the individual lots are developed. Hydroseeding would be applied to all graded and un-graded slopes and all building pad areas not scheduled for improvements within six months of completion of rough grading. Future property owners/applicants would be responsible for implementing more specific landscaping in conjunction with individual site plans and building permits.

All utility lines would be underground, and above-grade facilities, such as traffic signal vaults, would be screened with landscaping pursuant to EOMSP Policy UD-7.

Site plans submitted after TM/Preliminary Grading Plan approval also would be required to comply with the Design Guidelines related to lot and building development.

Public Services and Utilities

Fire Protection

A Fire Protection Plan (Appendix M) was prepared for the proposed project that addresses the potential threat from wildland fires. Fuel management for the proposed project would include four main components:

1. A limited building zone easement of 100 feet would be required adjacent to any proposed open space (i.e., Lots 57, 58 and 59) to ensure that structures requiring fuel management would not be placed too close to open space so as to result in a need for fuel management within open space areas.

2. A Conceptual Landscape Plan for the proposed project would be required, consistent with the County's Landscape Water Conservation Design Manual, Grading Ordinance, and EOMSP Subarea 2 Specific Plan and Site Planning and Design Guidelines.

3. Fuel management zones would be established within 100 feet of structures to ensure appropriate management of flammable vegetation. Zone A, established within the first 30 feet of structures, would include more restrictions with regard to the permissible type, density, and location of plantings, as well as requirements for landscape maintenance. Management of Zone B, established within the remaining 70 feet of structures (between 30 feet and 100 feet), would be less restrictive and, in some instances, may not be necessary, but would include clearing of fuel materials similar to the requirements within Zone A, or selectively cleared and modified as described in the Fire Protection Plan. In addition, noxious weed species would not be permitted for planting within Zone B.

4. Additional miscellaneous requirements and recommendations would be necessary, as noted in the Fire Protection Plan, to include a prohibition on the location of propane tanks within 10 feet of a structure; 10 feet of fire cleaning around propane tanks; and the clearing of flammable vegetation from any water detention basin within 100 feet of structures.

The risk of structural fire on the project site would be attributed to several sources, including hazardous materials and building construction. Implementation of measures specific to these issues, as detailed in Section 4.0 of the Fire Protection Plan, would ensure that the risk of structural fire would not be significant.

Sufficient water supply would be available to serve the project site in the event of a fire. Additional requirements of the proposed project relating to water supply include specific provisions for the location of fire hydrants, water service to individual lots, fire sprinklers, and fire monitoring systems, are detailed in Section 5.0 of the Fire Protection Plan.

The Fire Protection Plan includes specific requirements for fire department access to the project site and individual lots. The Fire Protection Plan also requires that building addresses and unit numbers be placed in appropriate locations, plainly visible and legible from the street fronting the property. Address numbers must contrast with their background and be at least 12 inches in height with a one-inch stroke. Directories would be required at entrances to multiple building developments.

Water

The proposed project would comply with 7 of the 14 Otay Water District Water Conservation Program BMP water conservation measures, as follows:

- Water Audits, Leak Detection and Repair (BMP03)
- Metering with Commodity Rates for all New Connections and Retrofit of Existing (BMP04)
- Large Landscape Conservation Programs and Incentives (BMP05)
- Public Information Programs (BMP07)
- Conservation Programs for CII Accounts (BMP09)
- Conservation Pricing (BMP11)
- Water Waste Prohibition (BMP13)

Geology and Soils

As noted in Subchapter 4.1.2 of this SEIR, the following design considerations are summarized from the project Geotechnical Investigation (GEOCON 2004, refer to Appendix K). These measures will be incorporated into the project construction and operation activities to avoid or reduce the potential for geologic impacts:

- Prior to and/or during site development, the project geotechnical engineer shall attend a pre-construction meeting, review project plans to ensure compatibility with geotechnical conclusions, and review (and test/modify as appropriate) applicable field activities (e.g., grading, fill placement and manufactured slope construction) to ensure conformance with appropriate regulatory guidelines and industry standards.

- Project construction and design shall incorporate peak ground acceleration levels of 0.2g as identified in the project Geotechnical Investigation (Appendix K), as well as applicable UBC and County Building Code seismic standards related to subsurface profile types, acceleration and velocity coefficients, seismic zone and seismic source.

- Project construction shall incorporate measures related to remedial grading in appropriate areas, including portions of the site encompassing topsoil, alluvium and/or the weathered upper portions of the Otay Formation (as identified in Appendix K). Specific remedial grading measures shall include: (1) removal of unsuitable materials to approximate depths of 2 to 5 feet in appropriate areas (per direction by the project geotechnical engineer); (2) total removal and proper off-site disposal of organic materials and existing underground facilities (e.g., utilities); (3) drying of saturated materials to be used in fill, and/or mixing with drier materials prior to placement in fill; (4) scarification to a depth of approximately 12 inches, proper moisture conditioning (per applicable ASTM standards) and compaction of all areas to receive engineered fill and/or settlement-sensitive improvements; and (5) conformance with UBC, County and other applicable standards related to grading, removal of unsuitable materials and preparation of areas to receive engineered fill.

- Engineered fills shall incorporate applicable recommendations from the project geotechnical investigation and criteria from pertinent regulatory/industry sources (e.g., UBC, County and

ASTM standards), including proper composition, moisture content, placement methodology, compaction and bulkage/shrinkage factors.

- Undercutting shall be employed in appropriate areas as directed by the project geotechnical engineer, potentially including cut/fill transitions within pads, as well as areas underlain by the Santiago Peak Volcanics and unnamed Fanglomerate Deposits proposed for utility excavations.

- Canyon subdrains shall be designed and installed in applicable areas pursuant to direction by the project geotechnical engineer, with subdrain design and location to be confirmed by the project geotechnical and civil engineers, respectively.

- Project construction shall implement applicable measures to address potential erosion and sedimentation, pursuant to NPDES and County regulatory guidelines (refer to the discussion of Hydrology and Water Quality measures below for additional information).

- Blasting shall conform to all applicable regulatory requirements, shall be conducted such that blasted rock fragments are smaller than two feet in maximum dimension. Blasting is recommended to be conducted early in the grading process so that larger rock fragments can be appropriately placed on site or disposed of at an approved off-site location.

- Project construction shall incorporate measures to address expansive soils in applicable areas per direction in the project geotechnical investigation (and field observations by the project geotechnical engineer), including techniques such as removal and replacement (or mixing) of expansive materials with engineered fill, selective grading (e.g., placing a cap of non-expansive material), moisture conditioning, and/or other appropriate industry standard measures from sources such as the UBC.

- Project construction shall incorporate all applicable recommendations from additional chemical and resistivity analyses to be conducted prior to site development, as outlined in the project geotechnical investigation (Appendix K). Specific measures to address potentially corrosive materials in applicable areas would likely include standard industry techniques such as: (1) removal and replacement of corrosive soils with non-corrosive fill; (2) use of corrosion-resistant construction materials; (3) installation of cathodic protection devices; or (4) other appropriate industry standard measures from sources such as the UBC.

- Project construction and design shall incorporate measures to address issues related to project site drainage and the potential for encountering shallow groundwater, as outlined in the project geotechnical investigation (Appendix K) and/or contained in pertinent regulatory standards. Specifically, such measures shall include: (1) using positive drainage techniques to direct surface flows away from structures; (2) controlling runoff on slopes (e.g., with brow ditches or terrace drains); (3) minimizing/controlling landscape irrigation to avoid runoff by designing irrigation systems to match irrigation needs (i.e., avoid over watering) and use of automatic shutoff moisture/pressure sensors; (4) avoiding the placement of landscape planters adjacent to paved areas (and/or use of cutoff walls and subdrains for planters adjacent to paved areas to restrict or properly direct subsurface flows); (5) use of specialized grading techniques (e.g., removal and drying of saturated materials prior to reuse); (6) use of subdrains in

applicable areas to direct subsurface flows into drainage facilities; (7) conformance with NPDES permit requirements for groundwater removal/disposal (refer to the discussion of Hydrology and Water Quality measures below for additional information); and (8) conformance with OSHA requirements regarding the stability of proposed excavations.

- Project construction shall incorporate measures to address potential impacts related to the generation and disposal of oversize materials, as outlined in the project geotechnical investigation (Appendix K). Specific measures shall include: (1) limiting maximum material dimensions in compacted fills to 12 inches for areas within 5 feet of finish grade or within 3 feet of utility areas (whichever is deeper); (2) placing material with a maximum dimension of more than 12 inches in fills pursuant to site-specific direction by the geotechnical engineer and in conformance with applicable County requirements; and (3) proper off-site disposal or alternative on-site use (e.g., as part of landscaping or entry monument features) for oversize rock not suitable for placement in fill.

- The design and construction of manufactured slopes and retaining walls shall conform with applicable recommendations in the project geotechnical investigation, including criteria related to: (1) manufactured slope design (e.g., use of benching), grades and dimensions to maintain adequate static and pseudo-static stability factors; (2) use of appropriately designed slope keys and benches in applicable areas (including the Otay Formation); (3) additional observation and evaluation of cut slopes (particularly within the Otay Formation), pursuant to direction by the project geotechnical engineer, and conformance with recommendations resulting from such observation/evaluation (e.g., use of stability fills); (4) use of appropriate materials, installation techniques, dimensions, and drainage for manufactured slopes and retaining walls, pursuant to direction by the project geotechnical engineer; (5) use of drought-tolerant landscaping and irrigation controls for all manufactured slopes; and (6) use of appropriate criteria for active soil pressure, passive earth pressure, backfill material, drainage, foundation design, friction coefficients, and uniform pressure for retaining walls, per direction by the project geotechnical engineer.

- The design and construction of foundations shall conform with applicable recommendations in the project geotechnical investigation, including criteria related to foundation type, design, location, dimensions, reinforcement and bearing capacity. Foundation excavations shall be observed by the project geotechnical engineer prior to placement of reinforcing steel and concrete to verify soil conditions or, if applicable, to revise recommendations based on observed soil conditions.

- The design and construction of concrete slabs-on-grade shall conform with applicable recommendations in the project geotechnical investigation, including criteria related to subsoil preparation, intended use, design, location, dimensions, concrete composition, reinforcement, and use of crack-control joints. The project structural engineer shall also evaluate the structural requirements of concrete slabs to support proposed loading.

- The design and construction of pavement shall conform with applicable recommendations in the project geotechnical investigation, including criteria related to proposed use (i.e., parking areas versus streets), subgrade composition and dimensions, and thickness.

- The project geotechnical engineer shall review proposed grading plans prior to finalization to verify compliance with applicable recommendations in the project geotechnical investigation, and to determine the need for additional investigation, comments, recommendations and/or analysis.

Hydrology and Water Quality

As noted in Subchapter 4.1.3 of this SEIR, the following design features include measures derived from the project Preliminary Drainage Study and SWMP (SCEI 2009 and 2010a, respectively; refer to Appendix L), as well as applicable regulatory permits/sources and industry standards as outlined below. These measures will be incorporated into the project construction and operation procedures to avoid or reduce the potential for impacts related to hydrology and water quality:

Drainage Design Features

The following measures are derived from the project Preliminary Drainage Study (SCEI 2009), which is included in Appendix L of this SEIR.

- The project design shall include appropriate measures to maintain existing overall drainage patterns and runoff volumes/velocities leaving the site, including the following: (1) preserving the existing unnamed drainage course in the southeastern portion of the site (Lot 57) through dedication of an associated open space (and "flowage") easement; (2) designing all proposed storm drain facilities to accommodate a 100-year storm event; (3) using open, grass- and rock-lined channels to convey 100-year storm flows through the eastern and central portions of the site (including flows originating both upstream and on the site) as shown on the project TM, with the locations of these channels and the outlet points along the southern site boundary corresponding to pre-development drainage locations/patterns; (4) using an underground storm drain (pipeline) to convey 100-year storm flows through the western portion of the site (including flows originating both upstream and on the site), with the location of this facility and the associated outlet along the southern site boundary corresponding to pre-development drainage location/pattern; (5) constructing appropriately designed and sized interim desilting basins on Lots 1-56 to limit post-development peak 100-year storm flows from the site to pre-development levels (6) installing two detention basins on Lot 54 to limit interim post-development peak 100-year storm flows from the eastern portion of Lot 54 and Lot 55 to pre-development levels (with these basins also providing interim sediment control as noted above); and (7) installing energy dissipation structures (riprap aprons) at applicable discharge locations to maintain pre-development flow velocities and avoid associated downstream erosion issues.

Construction-related Water Quality Features

The following measures are derived from: (1) the project SWMP (SCEI 2010a, which is included in Appendix L of this SEIR); (2) the County Watershed Protection, Stormwater Management and Discharge Control Ordinance and associated Stormwater Standards Manual; (3) the NPDES General Construction and Groundwater Extraction permits; and (4) the industry standard sources referenced in Subchapter 4.1.3.

- Project construction shall incorporate appropriate BMPs to control erosion and sedimentation, pursuant to applicable NPDES and County requirements and standards. Specific BMPs shall be identified in the project SWPPP (to be prepared prior to project construction), and would likely include the following types of measures related to erosion and sediment control: (1) seasonal grading restrictions during the rainy season (October 1 to April 30); (2) preparation and implementation of a "weather triggered" action plan during the rainy season to provide enhanced erosion and sediment control measures prior to predicted storm events (i.e., 40 percent or greater chance of rain); (3) use of phased grading schedules to limit the area subject to erosion at any given time; (4) use of erosion control/stabilizing measures in appropriate areas (e.g., disturbed areas and graded slopes), such as geotextiles, mats, fiber rolls, soil binders, or temporary hydroseeding (or other plantings) established prior to October 1; (5) use of sediment controls to protect the site perimeter and prevent off-site sediment transport, including measures such as temporary inlet filters, silt fence, fiber rolls, gravel bags, temporary sediment basins, check dams, street sweeping, energy dissipators, stabilized construction access points/sediment stockpiles, and use of properly fitted covers for sediment transport vehicles; (6) storage of BMP materials in applicable on-site areas to provide "standby" capacity adequate to provide complete protection of exposed areas and prevent off-site sediment transport; (7) provision of training for the personnel responsible for BMP installation and maintenance; (8) use of solid waste management efforts such as proper containment and disposal of construction debris; (9) compliance with local dust control requirements; (10) installation of interim and/or permanent landscaping, with emphasis on native and/or drought-tolerant varieties, as soon as feasible during or after construction; (11) implementation of appropriate monitoring and maintenance efforts (e.g., prior to and after storm events) to ensure proper BMP function and efficiency; (12) implementation of sampling/analysis, monitoring/reporting and post-construction management programs per NPDES and/or County requirements; and (13) implementation of additional BMPs as necessary to ensure adequate erosion and sediment control. Construction-related erosion and sedimentation BMPs implemented for the proposed project would be further defined during the NPDES/County permitting and SWPPP process, with the resulting BMPs taking priority over the more general types of standard industry measures discussed above.

- Project construction shall incorporate appropriate BMPs to control construction-related hazardous materials, pursuant to applicable NPDES and County requirements and standards. Specific BMPs shall be identified in the project SWPPP (to be prepared prior to project construction), and would likely include the following types of measures for construction-related hazardous materials: (1) restricting paving operations during wet weather and use of sediment control devices downstream of paving activities; (2) proper containment and disposal of paving wastes and slurry (e.g., use of properly designed and contained concrete washout areas); (3) minimizing the amount of hazardous materials stored on site and

restricting storage/use locations to areas at least 50 feet from storm drains and water courses; (4) using raised (e.g., on pallets), covered and/or enclosed storage facilities for all hazardous materials; (5) maintaining accurate and up-to-date written inventories and labels for all stored hazardous materials; (6) using berms, ditches and/or impervious liners (or other applicable methods) in material storage and vehicle/equipment maintenance and fueling areas to provide a containment volume of 1.5 times the volume of stored/used materials and prevent discharge in the event of a spill; (7) placing warning signs in areas of hazardous material use or storage and along drainages and storm drains (or other appropriate locations) to avoid inadvertent hazardous material disposal; (8) providing training for applicable employees in the proper use, handling and disposal of hazardous materials, as well as appropriate action to take in the event of a spill; (9) storing absorbent and clean-up materials in appropriate on-site locations where they are readily accessible; (10) properly locating and maintaining trash and wastewater facilities; (11) posting regulatory agency telephone numbers and a summary guide of clean-up procedures in a conspicuous location at or near the job site trailer; (12) regularly (at least weekly) monitoring and maintaining hazardous material use/storage facilities and operations to ensure proper working order; (13) restricting construction debris storage areas to appropriate locations at least 50 feet from storm drain inlets and water courses; (14) using appropriate storage facilities for construction debris, including adequately sized watertight dumpsters, covers to preclude rain from contacting waste materials, impervious liners, and surface containment features such as berms, dikes or ditches to prevent run-on and runoff; (15) employing a licensed waste disposal operator to regularly (at least once a week) remove and dispose of construction debris in an authorized off-site location; (16) use of dust-control measures such as watering to reduce particulate generation; and (17) implementing a SWSAS program pursuant to regulatory guidelines. Construction-related hazardous material BMPs implemented for the proposed project would be further defined during the NPDES/County permitting and SWPPP process, with the resulting BMPs taking priority over the more general types of standard industry measures discussed above.

- Project construction shall incorporate appropriate BMPs under the NPDES General Groundwater Extraction Waste Discharge Permit, if required (i.e., if discharge of extracted groundwater exceeds permit criteria). Specific BMPs shall be identified by the San Diego RWQCB as part of the permit authorization and conformance process, and would likely include the following types of measures: (1) use of erosion prevention and sediment control devices similar to those described above for applicable conditions (e.g., if extracted groundwater is discharged onto graded or destabilized areas); (2) testing, filtering (e.g., with gravel and filter fabric media) and/or treatment (e.g., by conveyance to a municipal wastewater treatment plant) of extracted groundwater prior to discharge if required for NPDES permit conformance; and (3) removal of groundwater by a licensed operator for treatment and disposal if required for NPDES permit conformance. Groundwater extraction/disposal BMPs identified during the NPDES permit process would take priority over the more general types of standard industry measures discussed above.

<u>Interim Development Water Quality Features</u>

The following measures are derived from: (1) the project SWMP; (2) the County Watershed Protection, Stormwater Management and Discharge Control Ordinance and associated Stormwater Standards Manual; and (3) the NPDES Municipal Permit.

- The project shall incorporate applicable post-construction site design, source control and treatment control BMPs, pursuant to the project SWMP and related County and NPDES requirements. Specific site-design BMPs shall include: (1) preserving natural areas wherever feasible, including drainage channels, steep slopes and wetlands; (2) minimizing disturbance to existing slopes; (3) minimizing cut and fill areas to reduce manufactured slope dimensions; (4) collecting concentrated flows in stabilized drains and channels; (5) use of detention and desilting basins to regulate flows such that post-development runoff volumes do not exceed pre-development levels; (6) designing drainage channels to address potential erosion effects through use of appropriate channel configurations, lining materials and culvert outlet/channel transitions (i.e., providing smooth transitions to reduce turbulence and scour);and (7) use of energy dissipation so that post-development runoff velocities do not exceed pre-development levels.

  Specific source control BMPs shall include: (1) installing stenciling and/or tiles at storm drain inlets (per current County standards), and placing warning signs at appropriate locations (such as public access points along drainage channels) to discourage illicit contaminant discharge; (2) installing interim and/or permanent landscaping in appropriate locations (e.g., graded pads and slopes) to provide interim stability prior to ultimate site development (refer to Subchapter 1.1.3 for additional landscape details); and (3) employing automated irrigation systems in applicable landscaped areas with moisture and pressure sensors to limit irrigation during wet periods and preclude irrigation in areas of damaged or malfunctioning hardware (e.g., broken pipes or sprinkler heads).

  Specific treatment control BMPs shall include: (1) installing and maintaining one or more appropriately sized desilting basins on Lots 1-56; (2) installing and maintaining two desilting/detention basins on Lot 54 and three on Lot 56 to regulate interim post-development flows from developed roadways and associated areas; and (3) using vehicular pollutant removal filtration devices (such as ClearWater Solutions™ curb inlet filter systems) on paved internal roadways. Locations, technical specifications, maintenance requirements (including responsibilities) and funding mechanisms associated with treatment control BMPs for the proposed project are described in the project SWMP (Appendix L).