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West Parcel Solar Project

Tiered Project Draft EIR to
2012 Facilities Master Plan Program EIR
(SCH 2002041161)

Volume 1 of 2

MT. SAN ANTONIO COLLEGE
Facilities Planning and Management
Walnut, California

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July 2017

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Volume 1 of 2

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INTRODUCTION AND SUMMARY

1.0 INTRODUCTION AND SUMMARY

This Draft Subsequent Tiered Project Environmental Impact Report has been prepared in conformance with the California Environmental Quality Act (CEQA), Guidelines for Implementation of CEQA, Sections 15000 – 15387: California Code of Regulations (CCR), Title 14, Chapter 3, State of California and in conformance with policies and procedures of Mt. San Antonio College (sometimes "Mt. SAC") for environmental evaluations of proposed projects under CEQA. Mt. SAC is the lead agency for the proposed West Parcel Solar Project and, as such, has authority over whether to approve or deny the proposed project.

This document is a draft project specific EIR (Section 15161) for the Mt. SAC West Parcel Solar Project because it addresses one or more potentially significant environmental impacts of the West Solar Project. This draft EIR is designed to inform Mt. SAC decision-makers, responsible agencies, and the public of the environmental consequences of implementing the proposed project. It focuses on the potential environment impacts that may result from development of all phases of the West Parcel Solar Project, including planning, construction, habitat restoration, operation, and maintenance. Usually, more technical analysis is included when preparing a Project EIR, compared to a Program EIR.

Second, this document is a Subsequent EIR (Section 15162) since one or more potentially significant impacts may occur and new information is available concerning the West Parcel Solar Project since the 2015 Facilities Master Plan Program/PEP Project EIR (which was certified in October 2016) and the 2012 Facilities Master Plan Program Subsequent EIR (which was certified in December 2013).

Third, this document is a Tiered EIR (Section 15385) because it includes information that was first included in the 2015 FMPU/PEP EIR or the 2012 Facility Master Plan SEIR. However, use of prior information is very limited. As required, when such information is used it is incorporated by reference, included a brief summary of the information, and referenced the source of the information from the prior CEQA documentation.

The CEQA concept of "tiering" refers to the evaluation of general environmental matters in a broad program level EIR, with subsequent focused environmental documents for individual projects that implement the program. CEQA and the CEQA Guidelines

encourage the use of tiered environmental documents to reduce delays and excessive paperwork in the environmental review process.

1.1 INTRODUCTION

The proposed project is located at Mt. SAC in the City of Walnut in the County of Los Angeles west of Interstate 57 (Orange Freeway) and south of Interstate 10 (San Bernardino Freeway) The College has local access from Temple Avenue, Grand Avenue and Amar Road (Exhibit 1.1).

The proposed project is a solar energy generation facility and is exempt from local construction and building ordinances and local zoning ordinances concerning the location and construction of the proposed project. Under Government Code Section 53097, the proposed project is subject only to local grading ordinance concerning review and approval of grading plans regulating drainage improvements and requiring the review and approval of grading plans as such grading ordinance provisions relate to the design and construction of onsite improvements. No land use entitlements or permits are required by the City of Walnut..

The 420-acre community college has a student enrollment of 35,280 (Fall Semester Based Annual Enrollment Headcount) or 31,275 FTES (Credit + Non-Credit) in 2014 - 2015. The Facilities Master Plan was last updated in October 2016. Existing facilities onsite in 2016 comprise approximately 1,087,184 assignable square feet (ASF) of development with approximately 8,985 surface parking spaces (March 2016).

The Mt. San Antonio College District (District) serves twenty communities in the eastern part of Los Angeles County with a combined population of over a million people. However, the college's larger effective service area extends beyond the District's boundaries. The college is the largest single campus community college district in California and includes eight (8) unified high school districts within its boundaries.

Table 1.1: Campus Statistics

Academic Year	Annual Credit + Non-Credit FTES	Enrollment Headcount[1]	Headcount Increase from 2015-2016
2014-15	31,275	35,280	
2015-16 (Baseline)	32,025	35,986	---
2020-21 (Buildout)	37,809	39,731	3,745
2025-26	42,569	43,139	7,153

Source: Cambridge West Partners, July 21, 2015.
1 Based on Fall Semester enrollment headcount

The College prepared the 2015 FMPU to revise the land plan included in the 2012 FMP, to further define prior projects that have not been constructed, to provide future facilities corresponding to the College enrollment projections prepared by the California Community College Chancellor's Office, and to evaluate several new projects not included in the 2012 FMP.

While the 2012 FMPU was prepared to accommodate a student enrollment of 33,433 (credit + non-credit annual full-time-equivalent students) in 2020, the 2015 FMPU will accommodate a student enrollment of 39,731. Therefore, 2015 student enrollment projections for 2020-21 are 6,298 students more than in the 2012 FMP.

Exhibit 1.1: Project Location

Exhibit 1.2: 2015 Campus Aerial

Exhibit 1.3: Campus Zoning

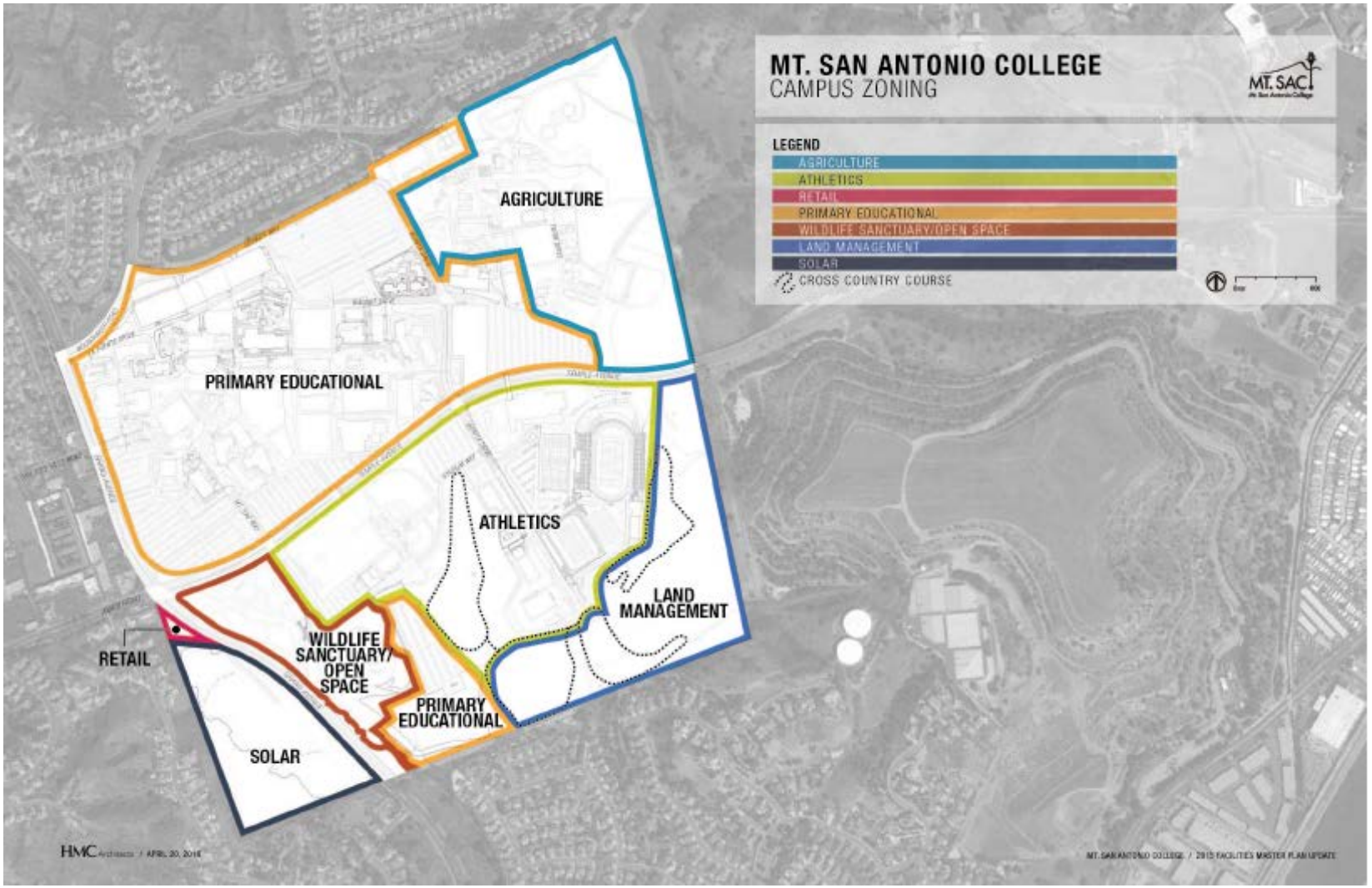


Exhibit 1.4: Site Topography

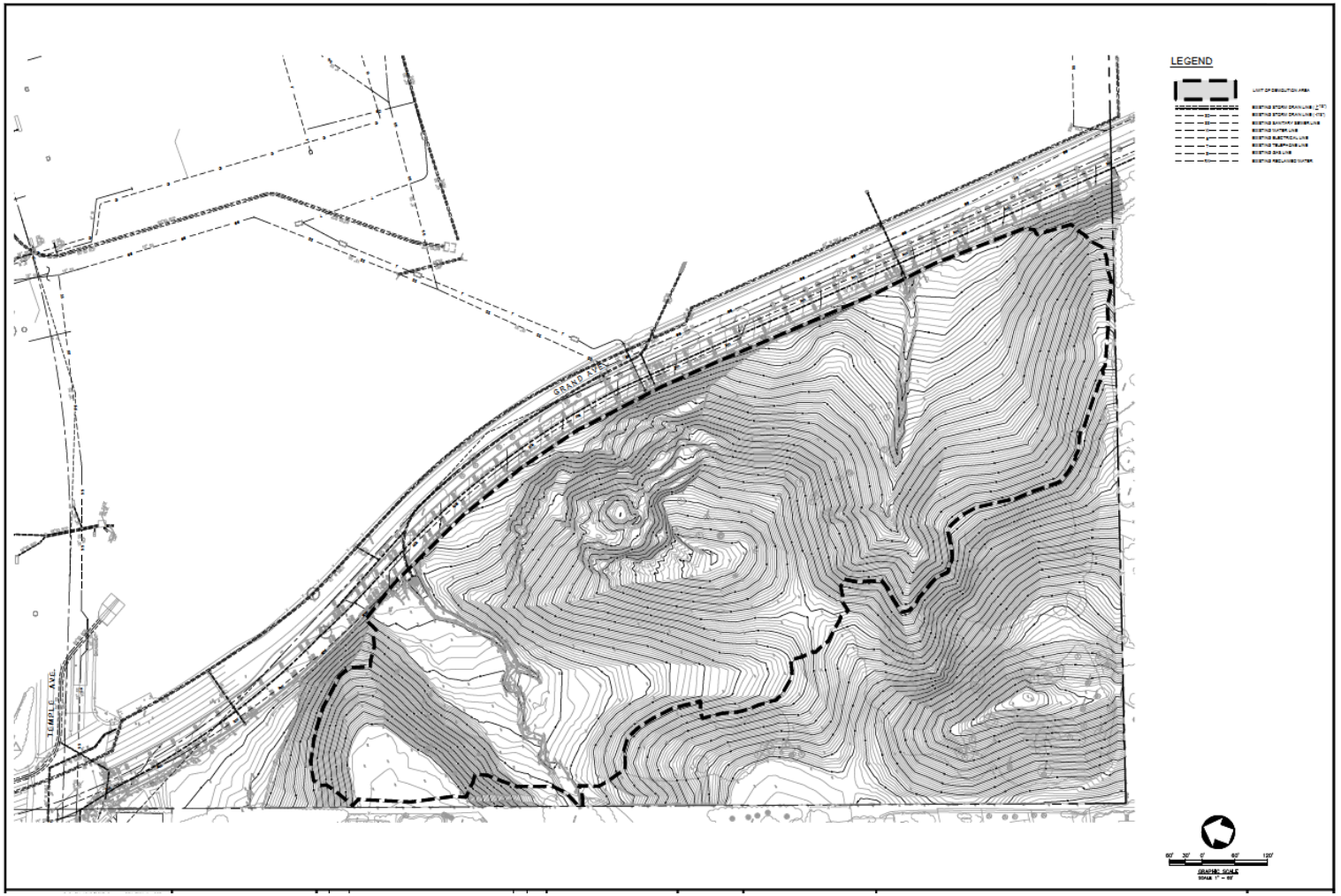


Exhibit 1.5: Grading Plan

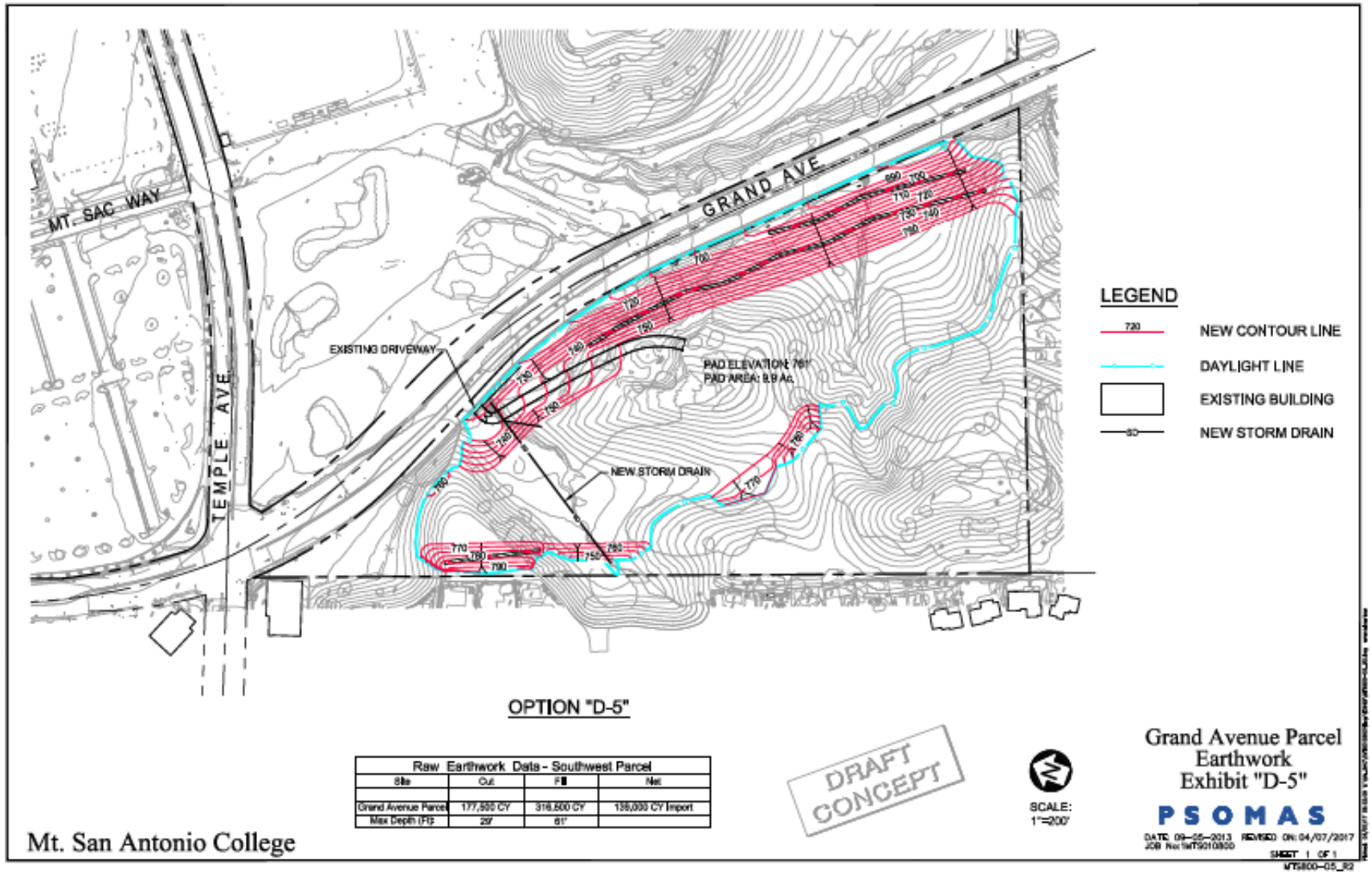


Exhibit 1.6: Landscape Plan (380,070 sq. ft.)

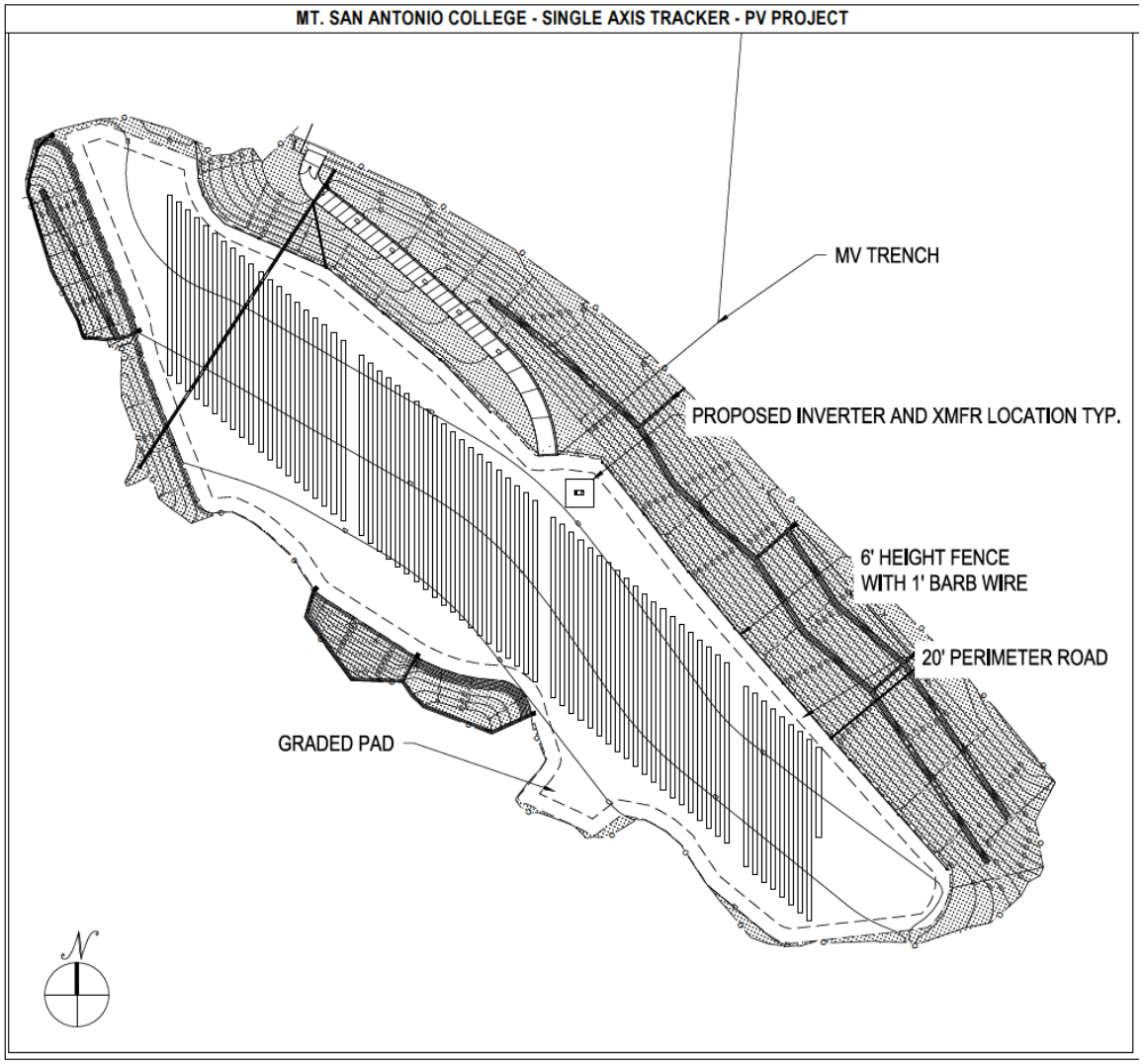
OVERALL PLANTING PLAN
1"=20'-0'

EPTDESIGN

Exhibit 1.7: Habitat Mitigation Plan

Mitigation Areas

Exhibit 1.8: Solar Array Layout



This Draft EIR focuses on the proposed West Parcel Solar Project and the potential environment impacts identified through the Initial Study and Notice of Preparation process, from public comments, and from professional evaluation by the project team.

Section 15123 of the CEQA Guidelines requires that a summary of an EIR identify areas of controversy known to the lead agency, including issues raised by agencies and the public. The proposed project is known to be controversial because there has been litigation brought by the City of Walnut and United Walnut Taxpayers challenging the proposed project on a variety of land use, zoning and CEQA grounds. During two public scoping meetings (June 7, 2017 and July 11, 2017) and comment period following the preparation of a Notice of Preparation (NOP) on June 16, 2017, Mt. SAC received letters and comments to the proposed project. The initial known areas of controversy from agencies and interested parties concerning the proposed project include consistency with the City of Walnut's General Plan and Zoning, grading, geological condition of the proposed project site, aesthetics, alternatives analysis, water and air quality, traffic impacts, and the District's compliance with CEQA. All comments received by the District are included in the appendices.

Section 15064 (f) (5) of the CEQA Guidelines states that argument, speculation, unsubstantiated opinion or narrative, or evidence that is clearly inaccurate or erroneous, or evidence that is not credible, shall not constitute substantial evidence. Substantial evidence shall include facts, reasonable assumption predicted upon facts, and expert opinion supported by facts.

This Draft SEIR evaluates six project alternatives; the no-project alternative that assumes no grading occurs on the West Parcel, four alternative solar projects on campus and a housing alternative on the West Parcel. Project Alternatives are evaluated in Section 6.0. A comparison matrix of the potential environmental impacts is also included in Section 6.0.

All of the documents referenced in this report are available for public review during normal business hours at Mt. San Antonio College, Facilities Planning and Management, Maintenance and Facilities Management (Building 47), at 100 N. Grand Avenue, Walnut, California 91789-1399. For an appointment, please call Rebecca Mitchell at (909) 274-5175 or send an e-mail request to facilitiesplanning@mtsac.edu

Most exhibits in this document are in low-resolution files to save file space and decrease loading time. Key exhibits (i.e. Exhibit 1.6: 2015 FMPU Land Use Plan and Exhibit 2.4: Physical Education Project (Phases 1, 2) are available in high resolution larger formats upon request.

1.2 ISSUES TO BE RESOLVED

During the initial consultation process and preparation of this Draft EIR, the issues requiring resolution included (1) Will manufactured slope be stable upon completion of grading, (2) Will the truck haul plan result in significant congestion and reduced level of service, (3) Will the solar panels result in significant light and glare impacts on adjacent residences, and, (5) Will impacts on the habitat of the federally threatened coastal California gnatcatcher be fully mitigated. These issues are discussed in Section 3.2 and Section 3.5.

During the scoping sessions, some members of the public opposed to the proposed project described the proposed project in pejorative terms, describing the proposed project as a solar farm, a landfill with an industrial facility, and a public safety risk. However, the objective of CEQA is to disclose how the District deals with environmental effects of its development projects, not to achieve consensus among opposition groups. The latter is a political process, not an environmental process.

1.3 TIERING FROM PROGRAM EIR

This Draft SEIR is tiered from the 2012 Master Plan's Subsequent Environmental Impact Report ("2012 Master Plan EIR") (SCH 2002041161) certified as a programmatic EIR by action of the District Board of Trustees in December 2013 and the 2015 Facilities Master Plan Update and Physical Education Projects (PEP) Subsequent Program/Project Environmental Impact Report ("2015 Master Plan EIR") certified as a programmatic/PEP project EIR (SCH 2002041161) by action of the District Board of Trustees in October 2016.

Under CEQA Guidelines Section 15152, tiering refers to using the analysis of general matters contained in broader EIRs, such as the 2012 Master Plan EIR and the 2015 Master Plan EIR, with a project specific EIR on later, site-specific projects, such as the Draft EIR for the proposed West Parcel Solar Project. This NOP was sent to the California Governor's Office of Planning and Research, each responsible and trustee agency, as well as to other interested parties.

This document is also a site-specific Project EIR. The first solar project was evaluated in the 2012 Facility Master Plan Final EIR (2002041161). The Final EIR was certified in December 2013. Section 3.9: West Parcel Solar/Retail is hereby incorporated by reference. Section 3.9, as revised by the Final EIR, addressed a 2.0 MW ground-mounted solar system on the project site. The grading plan was based 18.30 acres and

261,000 cubic yards of earth import. The 10.6- acre solar pad was at 770 feet above sea level (msl).

The most recent master plan was evaluated in the 2015 Facilities Master Plan Update & Physical Educations Projects Final Subsequent Program/Project EIR, Volumes 1 - 2, Mt. San Antonio Community College District was certified in October 2016. Selected portions of the 2016 document will be incorporated by reference, primarily to address existing conditions.

The requirements for incorporation by reference are included in Section 15150. The incorporated part of the referenced document shall be briefly summarized where possible or briefly described if the data or information cannot be summarized. The relationship between the incorporated part of the referenced document and the EIR shall be described.

All reports referenced above are posted on the District's website and are available by contacting Rebecca Mitchell at faciitiesplanning@mtsac.edu or (909) 274-5175.

Since the solar project remains similar, some aspects of the project have changed, new reports have been completed and five years have transpired since the 2012 Final EIR, this Tiered EIR will address any revised or new impacts associated with the revised project.

A later EIR shall be required (Section 15152 (f) (g)) when the initial study finds that the later project may cause significant effects on the environment that are not adequately addressed in the prior EIR.

(1) Where a lead agency determines that a cumulative effect has been adequately addressed in the prior EIR that effect is not treated as significant for purposes of the later EIR or negative declaration, and need not be discussed in detail.

(2) When assessing whether there is a new significant cumulative effect, the lead agency shall consider whether the increment effects of the project would be considerable when viewed in the content of past, present and probable future projects. At this point, the question is not whether there is a significant cumulative impact, but whether the effects of the project are cumulatively considerable (Section 15064 (i)).

(3) Significant environment effects have been "adequately addressed" if the lead agency determines that:

(a) They have been mitigated or avoided as a result of the prior EIR and findings adopted for the prior EIR; or

(b) They have been examined at a sufficient level of detail in the prior EIR to enable those effects to be mitigated or avoided by site-specific revisions, the imposition of conditions, or by other means in connection with the approval of the later project.

(g) When tiering is used, the later EIR shall refer to the prior EIR and state where a copy of the prior EIR may be examined. The later EIR or negative declaration should state that the lead agency is using the tiering concept and that it is being tiered with the earlier EIR (Section 15152 (f) (g)).

Where a Program EIR has been adopted, the Project EIR should limit the evaluation of the project to effects (Section 15152 (3)) which:

(1) Were not examined as significant effects on the environment in the Program EIR; or

(2) Are susceptible to substantial reduction or avoidance by the choice of specific revisions in the project, by imposition of conditions, or other means.

During the second Scoping Session on July 11, 2017, members of United Walnut Taxpayers asserted the use of tiering for the proposed project is illegal and violates a Court order. In fact, as shown above, the CEQA Guidelines permit and encourage tiering in Project EIRs and the referenced court judgment validates tiering.

1.4 SUMMARY OF IMPACTS

Table 1.4.1 summarizing potential West Parcel Solar Project impacts, recommended mitigation measures, and the level of significance with mitigation for each new or revised potential significant project impact associated with buildout, operation and maintenance of the project. A listing of all mitigation measures and a discussion of project impacts are also included in the topical sections of this report.

The recommended West Parcel Solar Project Mitigation Monitoring Program, which includes any revisions and additions from the 2016 Mitigation Monitoring Program for the 2015 FMPU is included in Appendix L.

Table 1.4.1: Summary of Impacts

Note: The full 2016 Mitigation Monitoring Program, adopted October 12, 2016) is included as Appendix BB. Table 1.4.1 includes all mitigation measures that are required for the West Parcel Solar (WPS) project. The recommended Mitigation Monitoring Program for the solar project is included as Appendix AA.

Project Impacts	Mitigation Measures	Level of Significance With Mitigation Incorporated
WEST PARCEL SOLAR PROJECT		
AESHETICS		
Grading will removal vegetation onsite and slopes along Grand Avenue will be earth.	AES-02. All new construction contracts shall implement those provisions of the *Landscape Plan* applicable to their projects. Facilities Planning and Management shall monitor compliance.	Less than Significant with Mitigation Incorporated.
AIR QUALITY		
Construction activities and construction equipment may generate particulates in excess of SCAQMD thresholds.	AQ-01. All contractors shall comply with all feasible Best Available Control Measures (BACM) included in South Coast Air Quality Management District (SCAQMD) Rule 403**:** Fugitive Dust included in Table 1: Best Available Control Measures Applicable to All Construction Activity Sources. In addition, the project shall comply with at least one of the following Track-Out Control Options: (a) Install a pad consisting of washed gravel (minimum-size: one inch) maintained in a clean condition to a depth of at least six inches and extending at least 20 feet wide and 50 feet long, (b) Pave the surface extending at least 100 feet and a width of at least 20 feet wide, (c) Utilize a wheel shaker/wheel spreading device consisting of raised dividers (rails, pipe, or grates) at least 24 feet long and 10 feet wide to remove bulk material from tires and vehicle under carriages before vehicles exit the site, (d) Install and utilize a wheel washing system to remove bulk material	Less than Significant with Mitigation Incorporated.

	from tires and vehicle undercarriages before vehicles exit the site, (e) Any other control measures approved by the Executive Officer and the U.S. EPA as equivalent to the methods specified items (a) through (d) above. Individual BACM in Table 1 that are not applicable to the project or infeasible, based on additional new project information, may be omitted only if Facilities Planning and Management specifies in a written agreement with the applicant that specific BACM measures may be omitted. Any clarifications, additions, selections of alternative measures, or specificity required to implement the required BACM for the project shall be included in the written agreement. The written agreement shall be completed prior to demolition and/or grading for a project. Facilities Planning and Management shall include the written agreement within the Mitigation Monitoring Program for the project and Facilities Planning and Management shall ensure compliance.	
Idling of construction equipment with engines may generate additional emissions onsite that can be avoided. All construction equipment with engines must be lower emission equipment to reduce particulates.	AQ-02. Project construction contracts shall prohibit vehicle and engine idling in excess of five (5) minutes and ensure that all off-road equipment is compliant with the CARB's in-use off-road diesel vehicle regulations and SCAQMD Rule 1186 and 1186.1 certified street sweepers or roadway washing trucks, and all internal combustion engines/construction equipment operating on the project site shall meet EPA-Certified Tier 2 emissions standards, or higher according to the adopted project start date requirements. A copy of each unit's certified tier specification, BACT documentation and CARB or SCAQMD operating permit shall be provided to the construction manager at the time of mobilization of each applicable unit of equipment. Facilities Planning and Management shall ensure compliance.	Less than Significant with Mitigation Incorporated.
Offsite construction-related trips shall be reduced when feasible to reduce particulates.	AQ-03. During construction, contractors shall minimize offsite air quality impacts by implementing the following measures: (a) encourage car pooling for construction workers, (b) limit lane closures to off-peak travel periods, (c) park construction vehicles off traveled roadways, (d) encourage receipt of materials during	Less than Significant with Mitigation Incorporated.

	non-peak traffic hours and (e) sandbag construction sites for erosion control. These requirements shall be included in construction contracts and implemented. Facilities Planning and Management shall monitor compliance.	
Off-peak deliveries indirectly reduce particulate emissions by reducing travel time.	AQ-04. Truck deliveries and pickups shall be scheduled during off-peak hours whenever possible to alleviate traffic congestion and air quality emissions during peak hours. Facilities Planning and Management shall monitor compliance.	Less than Significant with Mitigation Incorporated.
Emission reductions are needed to reduce particulate emissions.	AQ-05R. During project construction all off-road construction equipment shall be outfitted with BACT devices certified by CARB. Any emission control devices used by a contractor shall achieve emissions reductions that are no less than what could be achieved by a Level 3 diesel emissions control strategy for a similarly sized engine as defined by CARB regulations. A copy of each unit's certified tier specification, BACT documentation and CARB or SCAQQMD operating permit shall be provided by contractors before commencement of equipment use on campus. Facilities Planning and Management shall ensure compliance.	Less than Significant with Mitigation Incorporated.
Diesel equipment emits less articulates with low sulfur fuel.	AQ-06. Construction contracts shall specify that all diesel construction equipment used onsite shall use ultra-low sulfur diesel fuel. Facilities Planning and Management shall ensure compliance.	Less than Significant with Mitigation Incorporated.
Reducing fugitive dust from construction operations reduces particulates. Special measures will reduce emissions during high winds and during smog alerts.	AQ-07R. During grading and construction, fugitive dust from construction operations shall be reduced by watering at least twice daily using reclaimed water or chemical soil binder, where feasible, or water whenever substantial dust generation is evident. The project shall comply with Rule 403: Fugitive Dust (South Coast Air Quality Management District). Project contractors shall suspend grading operations, apply soil binders, and water the grading site when wind speeds (as instantaneous gusts) exceed 25 miles per hour. Traffic speeds on all unpaved graded surfaces shall not exceed 15 miles per hour. All grading operations shall be suspended during first and second stage smog	Less than Significant with Mitigation Incorporated.

	alerts. All project contracts shall require project contractors to keep construction equipment engines tuned to ensure that air quality impacts generated by construction activities are minimized. Upon request, contractors shall submit equipment tuning logs to Facilities Planning and Management. Facilities Planning and Management shall ensure compliance.	
Reducing the number of equipment onsite operating simultaneously reduces particulate emissions.	AQ-11. Construction equipment onsite for the West Parcel Solar project shall be limited to three scrapers, one loader, one dozer, and one compactor during the "Grading with Importation" phase. A limit of four scrapers, one dozer, and one compactor is required during the "Grading Alone" phase. Facilities Planning and Management shall ensure compliance.	Less than Significant with Mitigation Incorporated.
BIOLOGICAL RESOURCES		
Limiting the lighting in areas near sensitive biological habitat reduces impacts on their inhabitants.	BIO-01. New permanent lighting standards in Parking Lot M and Lot W immediately adjacent to sensitive biological habitat areas (i.e. Wildlife Sanctuary/Open Space Zone) shall not exceed 0.2 foot-candles at five (5) feet outside of the parking lot boundary. Facilities Planning and Management shall ensure compliance.	Less than Significant with Mitigation Incorporated.
Grading in areas with burrows used by burrowing owls increases mortality.	BIO-02. Pre-construction burrowing owl (BUOW) surveys will be conducted to ensure no construction related impacts occur to this sensitive species. A pre-construction survey for BUOW shall be completed for construction areas with suitable habitat for the BUOW Owl (e.g. Irrigation Well site, the Detention Basin site, and the Fire Training Academy site). If clearing, grading, or construction is planned to occur during the BUOW breeding season (February 1 through August 31), pre-construction surveys should be conducted in the construction area and in appropriate habitat within 500 feet of the construction area. A pre-construction nest/owl survey should be completed for each project or work area within 14 days of the start of construction. Multiple pre-construction surveys may be required because the start of specific projects may be separated in time by months or years. If there are no nesting owls, within each area, development would be allowed to	Less than Significant with Mitigation Incorporated.

	proceed. If BUOW are observed, impacts shall be avoided according to the Staff Report on Burrowing Owl Mitigation (CDFW 2012). All recommendations of the final studies shall be implemented. Facilities Planning and Management shall ensure compliance.	
Grading for the project will remove Venturaian coast sage scrub, a sensitive biological resource.	BIO-03. Prior to grading within areas of Venturan Coastal Sage Scrub, the college shall identify replacement 2:1 acreage. Replacement habitat shall be installed prior to project completion. Planning and Facilities Management shall ensure compliance.	Less than Significant with Mitigation Incorporated.
Grading in areas with native grassland reduces the habitat for some sensitive plants and animals.	BIO-04. Prior to grading within areas of non-native grassland, the college shall identify replacement 0.5:1 acreage habitat. Replacement habitat shall be completed prior to project completion. Planning and Facilities Management shall ensure compliance.	Less than Significant with Mitigation Incorporated.
Removal of trees may impact nesting migratory birds.	BIO-06. Prior to removal of any trees on campus in or near construction areas of the project site during March - May, a qualified biologist shall survey the trees for active nesting sites of migratory birds. (See BIO -17 for raptors) If migratory birds are observed nesting in the trees, development within 300 feet must be postponed either until all nesting has ceased, or until construction is moved far away enough so that the activity does not impact the birds. Facilities Planning and Management shall monitor compliance.	Less than Significant with Mitigation Incorporated.
Grading near wetlands may impact both the habitat and its occupants.	BIO-08. Permanent development adjacent to any future wetland mitigation areas shall incorporate a 25-foot buffer during final project design. If un-vegetated, the buffer shall be planted with non-invasive species that are compatible with the adjacent wetland mitigation area habitat. A qualified biologist shall review the final landscape plans for the buffer area to conform that no species on the California Invasive Plan Council (Cal-IPC) list are present in the plan. Facilities Planning and Management shall monitor compliance.	Less than Significant with Mitigation Incorporated.
Construction activities and equipment may intrude into adjacent areas if the site is not clearly identified.	BIO-09. The limits of construction for projects adjacent to sensitive habitats should be delineated with silt fencing/fiber rolls and orange construction fencing. A qualified biologist should attend a pre-construction meeting to inform construction crews about the	Less than Significant with Mitigation Incorporated.

	sensitivity of any adjacent habitat. A qualified biologist should also inspect the fencing upon installation and monitor clearing and grading of (and near) native habitat to prevent unauthorized impacts. Facilities Planning and Management shall monitor compliance.	
Future development must not intrude into wetland mitigation areas along Snow Creek and invasive plants must not intrude into natural areas.	BIO-11. A 25-foot buffer shall be incorporated into the project design for the Fire Training Academy to protect future wetland mitigation areas along Snow Creek. A qualified biologist shall also review the draft landscape plans for the buffer area to confirm that no species on the Cal-IPC list would be present during plan implementation. Facilities Planning and Management shall ensure compliance.	Less than Significant with Mitigation Incorporated.
Construction noise is prohibited during the prime nesting season in natural coastal sage habitats.	BIO-13. Construction noise adjacent to existing coastal sage scrub habitat within the West Parcel and on MSAC Hill that is retained (i.e. not graded) will be minimized whenever feasible by avoiding construction grading during the prime nesting season. Facilities Planning and Management shall monitor compliance.	Less than Significant with Mitigation Incorporated.
Reducing construction noise to acceptable levels near coastal sage scrub habitat during the breeding season is paramount for not harassing threatened bird species.	BIO-14. Project construction activities shall comply with all requirements included in the Noise Planning for Mt. San Antonio College West Parcel Solar Project, Helix Environmental Planning, June 7, 2016. Facilities Planning and Management shall ensure compliance.	Less than Significant with Mitigation Incorporated.
Construction activities must comply with all applicable permits and agreements.	BIO-15. Project construction activities shall comply with all requirements included in the Section 401, 404 permits and the 1603 Agreement for the West Parcel Solar Project. Facilities Planning and Management shall ensure compliance.	Less than Significant with Mitigation Incorporated.
Invasive plants may harm native sensitive plant species.	BIO-16. Erosion control seed mixes and landscape plans for the projects should be reviewed by a qualified biologist prior to final approval to ensure that no species on the California Invasive Plant Council (Cal-IPC) list of problem species would be incorporated into the plan(s). Facilities Planning and Management shall monitor compliance.	Less than Significant with Mitigation Incorporated.
Construction in areas other than on the West Parcel may impact raptors.	BIO-17. Raptors may be impacted during construction activities by nest disruption, habitat loss or noise. A pre-construction survey shall be conducted within 14 days of the start of construction. If clearing, grading, or	Less than Significant with Mitigation Incorporated.

	construction will occur from Feb 1 – July 31, pre-construction surveys shall be conducted in the construction area and in appropriate nesting habitat within 500 feet of the construction area. Multiple pre-construction surveys may be required if the start of specific projects is separated in time by months or years. If there are no nesting raptors within each area, development is allowed to proceed. However, if raptors are observed nesting within the area and within sight and sound of the work, development within 300 feet shall be postponed either until all nesting has ceased, until after the breeding season, or until construction is moved far enough away so the activity does not impact the birds. An exception to this would be any raptor nests east of North Grand Avenue. North Grand Avenue is a four-lane road with a landscaped median. Any nests east of the road would likely be habituated to activity from this busy road and unaffected by construction on the West Parcel. Facilities Planning and Management shall monitor compliance.	
When habitat for the coastal wren is removed by grading, it must be replaced elsewhere.	BIO-18. Impacts to coastal cactus wren habitat should be mitigated at 2:1 ratio. That is, for each acre of cacti dominated coastal sage scrub impacted, 2 acres should be created and/or preserved. Facilities Planning and Management shall monitor compliance.	Less than Significant with Mitigation Incorporated.
Construction noise is prohibited during the coastal California gnatcatcher breeding season.	BIO-19. Construction activities known to generate noise levels capable of disrupting breeding coastal California gnatcatchers birds will be restricted to the non-breeding season (September 1 to February 14). Facilities Planning and Management shall monitor compliance.	Less than Significant with Mitigation Incorporated.
Native habitat with sensitive animals may be impacted by night lighting.	BIO-20. All construction lighting and new campus lighting that is adjacent to sensitive habitat areas should be of low illumination and be shielded and directed downwards and away from adjacent native habitat. Facilities Planning and Management shall monitor compliance.	Less than Significant with Mitigation Incorporated.
Grading for the project will remove all vegetation in the grading area.	BIO-21. The Planting Plan, EPT Design (Sheet L3.01), January 15, 2015 or an update shall be implemented for the project. Facilities Planning and Management shall ensure compliance.	

Grading will remove sensitive habitat and result in "incidental" take of the coastal California gnatcatcher.	BIO-22. Because Mt. SAC is not enrolled as a participant in the NCCP, the District cannot rely on a habitat loss permit under Section 4(d) of the federal ESA. Since there is not an existing Habitat Conservation Plan (HCP) for the project site, the "take" of a listed species requires an approved application to the USFWS for issuance of a Section 10 (a) Permit for "incidental" take of endangered or threatened species (with preparation of an HCP). Facilities Planning and Management shall ensure compliance.	Less than Significant with Mitigation Incorporated.
GEOLOGY/SOILS		
Grading operations onsite, if not completed properly, may result in unstable slopes onsite.	MR-01. All recommendations in the final geotechnical report(s) for the West Parcel solar project shall be included in construction contracts and implemented. Facilities Planning and Management shall monitor compliance.	Less than Significant with Mitigation Incorporated.
Grading operations onsite may undercover subsurface remains.	CR-02. If, during the course of implementing the project, human remains are discovered, all work shall be halted immediately within 50 feet of the discovery, the Contractor shall inform the Project Manager, and the County Coroner must be notified according to Section 5097.98 of the PRC and Section 7050.5 of California's Health and Safety Code. If the remains are determined to be Native American, the coroner will notify the Native American Heritage Commission, and the procedures outlined in CEQA Section 15064.5(d) and (e) shall be followed. Facilities Planning and Management shall monitor compliance.	Less than Significant with Mitigation Incorporated.
Grading operations onsite may undercover subsurface archaeological resources.	MR-03. During construction grading and site preparation activities, the Contractor shall monitor all construction activities. In the event that cultural resources (i.e., prehistoric sites, historic sites, and/or isolated artifacts) are discovered, work shall be halted immediately within 50 feet of the discovery and the Contractor shall inform the Project Manager. A qualified archaeologist that meets the Secretary of the Interior's Standards and Guidelines for Professional Qualifications in Archaeology shall be retained to analyze the significance of the discovery and recommend further	Less than Significant with Mitigation Incorporated.

	appropriate measures to reduce further impacts on archaeological resources. Such measures may include avoidance, preservation in place, excavation, documentation, curation, data recovery, or other appropriate measures. Facilities Planning and Management shall monitor compliance.	
Grading and compaction operations onsite are not effective with expansive soils.	MR-04. The geologist shall require contractors use one or more of the following mitigation measures to improve expansive soils at the site. The measures include: (1) Placement of 2 feet thick of non-expansive soil below finished sub-grade, (2) Pre-saturation of on-site compacted sub-grade soils to at approximate three (3) percent above optimum moisture content or (3) Lime treat the upper two (2) feet of the sub-grade soils. Facilities Planning and Management shall monitor compliance.	Less than Significant with Mitigation Incorporated.
HYDROLOGY/SOILS		
Grading will alter the existing drainage onsite.	HYD-03. All drainage improvements shall be consistent with the *Master Campus Drainage Plan*. All recommendations of the approved final drainage plan(s) shall be included in construction contracts and implemented. Facilities Planning and Management shall monitor compliance.	Less than Significant with Mitigation Incorporated.
LAND USE/PLANNING		
All development on campus must be consistent with the FMP.	LU-01. All future land uses on campus, building locations and square footage (ASF) shall be substantially consistent with the 2012 Facility Master Plan. Facilities Planning and Management shall ensure compliance.	
Campus grading plans must conform to City of Walnut regulations.	LU-07. The District shall submit an application for a grading plan to the City of Walnut for all projects subject to the Walnut Municipal Code Sections 6-5.5 and 6-5.6. The grading plan shall confirm to the requirements of the Walnut Municipal Code Section 6-5.3 and Appendix J Sections J101.7, J108 - J111 of Appendix J. To the extent there is any ambiguity as to scope, the WMC controls over Appendix J. The District shall comply with all requirements of an approved grading plan. Facilities	Less than Significant with Mitigation Incorporated.

	Planning and Management shall ensure compliance.	
NOISE		
Construction noise levels are annoying and may violate noise ordinances if not conducted during appropriate hours.	NO-01. All construction and general maintenance activities, except in emergencies or special circumstances, shall be limited to the hours of 7 am to 7 pm Monday-Saturday. Staging areas for construction shall be located away from existing offsite residences. All construction equipment shall use properly operating mufflers. These requirements shall be included in construction contracts and implemented. Facilities Planning and Management shall monitor compliance.	Less than Significant with Mitigation Incorporated.
Construction noise may disrupt breeding patterns of the coastal California gnatcatchers in the natural habitat onsite.	BIO-19. Construction activities known to generate noise levels capable of disrupting breeding coastal California gnatcatchers birds will be restricted to the non-breeding season (September 1 to February 14). Facilities Planning and Management shall monitor compliance.	Less than Significant with Mitigation Incorporated.
PUBIC SERVICES/PUBLIC UTILITIES		
Development onsite will increase water usage for irrigation.	SS-03. The college shall obtain permit(s) and water commitments required by the Three Valleys Municipal Water District for water service for all projects. These requirements shall be included in construction contracts. TVMWD has requested advance notification whenever demand may increase by more than 50 percent so future planning may be completed. Facilities Planning and Management shall monitor compliance.	Less than Significant with Mitigation Incorporated.
The project will generate solar electricity for campus use only. The operation of both SCE and the solar system require coordination and integration.	SS-06. For each project, the college shall obtain all approval(s) required by Southern California Edison for electrical service. These requirements shall be included in construction contracts for each project. Facilities Planning and Management shall monitor compliance.	Less than Significant with Mitigation Incorporated.
TRANSPORTATION/TRAFFIC		
Required Truck Hauling Plans must be reviewed by the City of Walnut.	TR-31. The District shall submit an application for a truck hauling plan prepared by a registered traffic engineer to the City of Walnut for all projects subject to the Walnut Municipal Code Sections 6-8. In general,	Less than Significant with Mitigation Incorporated (Condition of Approval)

	WMC 6-8 addressed projects moving more than 5,000 cubic yards of earth on any public roadway. The District shall comply with all requirements of an approved truck hauling plan. Facilities Planning and Management shall ensure compliance.	
In addition to earth import, construction employees and construction equipment delivery will generate trips.	TR-32. Contractors shall submit traffic handling plans and other construction documents to Facilities Planning and Management prior to commencement of demolition or grading. The plans and documents shall comply with the *Work Area Traffic Control Handbook (WATCH)*. Facilities Planning and Management shall monitor compliance.	Less than Significant with Mitigation Incorporated.
Construction traffic may impact pedestrian activities near the haul route or campus traffic near the haul route.	TR-33. Demolition and construction contracts shall include plans for temporary sidewalk closure, pedestrian safety on adjacent sidewalks, vehicle and pedestrian safety along the project perimeter, and along construction equipment haul routes on campus. These plans shall be reviewed by the Public Safety Department and approved by Facilities Planning and Management. Facilities Planning and Management shall monitor compliance.	Less than Significant with Mitigation Incorporated.
Construction workers may park at the project site or on campus during construction.	TR-34. Demolition and construction contracts shall include plans for construction worker parking areas on campus. Facilities Planning and Management shall monitor compliance.	Less than Significant with Mitigation Incorporated.
Construction equipment and materials may be subject to damage or vandalism is not secured.	TR-35. Each project site shall be adequately barricaded with temporary fencing to secure construction equipment, minimize trespassing, vandalism, short-cut attractions, and reduce hazards during demolition and construction. Facilities Planning and Management shall monitor compliance.	Less than Significant with Mitigation Incorporated.
A lag person may be needed near the project site or along portions of the haul route to increase pedestrian safety.	TR-36. Construction contractors shall post a flag person at locations near a construction site during major truck hauling activities to protect pedestrians from conflicts with heavy equipment entering or leaving the project site. Facilities Planning and Management shall monitor compliance.	Less than Significant with Mitigation Incorporated.
Construction trips may change circulation patterns near the project site.	TR-59. The Public Safety Department shall keep the Sheriff Department informed of anticipated major	Less than Significant with Mitigation Incorporated.

	changes in circulation patterns, parking, and any special security needs related to campus construction and operation. Public Safety shall monitor compliance.	
Truck hauling may require changes in the signalization for WB left-turn and WBN through movements at Temple Avenue and Grand Avenue to minimize stacking that prevents use of the left-turn lane.	TR-62. During the truck hauling period, the City of Walnut shall adjust the traffic signal timing at the Temple Avenue and Grand Avenue intersection from 9:00 am to 3:00 pm by laggings the WB Temple Avenue left-turn movement, posting a "No Right Turn on Red" sign for the eastbound Amar Road approach and adding MUTCD C44 (CA) "Trucks Entering Exiting" Sign along Grand Avenue at the north and south West Parcel driveways. The City of Walnut shall ensure compliance.	This is a recommended Condition of Approval, not a mitigation measure for a project impact since the condition already exists
Source: SID LINDMARK, AICP, July 20, 2017		

PROJECT DESCRIPTION

2.0 PROJECT DESCRIPTION

Section 2.0 describes the existing setting of the project at the time of the issuance of the Notice of Preparation and the project characteristics.

2.1 LOCATION AND SETTING

Mt. San Antonio College is located approximately two miles west of Interstate 10 (San Bernardino Freeway) along Temple Avenue east of Grand Avenue in the City of Walnut. The 420-acre campus is located immediately west of California State Polytechnic University Pomona (Cal Poly) and east of Grand Avenue. The campus areas south of Temple Avenue are devoted primary to athletic uses (e.g. Hilmer Lodge Stadium, baseball and soccer fields), a ten-acre Wildlife Sanctuary, the 27-acre solar site and to agricultural operations. The 35-acre easterly portion of the campus is used for agricultural programs (i.e. the College Farm).

The majority of the existing campus facilities onsite are concentrated north of Temple Avenue between Grand Avenue and Bonita Drive. The campus and surrounding land uses are shown in the 2015 aerial photo in Exhibit 1.3. The existing surrounding land uses near campus are generally unchanged from 2012.

The majority of the fourteen (14) buildings proposed for demolition on campus in previous facility master plans have not occurred to date. This includes the Campus Inn (8), Gymnasium (03), Student Life Center (9C), and the Aquatic Facilities (27A-27C) in the Central Core of the campus. The majority of the buildings to be demolished are less than 5,000 ASF.

The area surrounding the campus remains primarily residential, with the exception of the commercial center on the northwest and offices on the southwest corner of Temple Avenue and Grand Avenue, Cal Poly to the northeast, and the Spadra Landfill to the east (i.e. part of Cal Poly). The Cal Poly lands south of Temple Avenue are also devoted to agricultural uses and open space.

The Walnut Valley Unified School District has two elementary schools near campus, Leonard Westhoff Elementary, located one mile west of the campus on Amar Road, and Collegewood Elementary, located ¼ mile north of the campus on Grand Avenue.

A. Environmental Setting for the Campus

The 420-acre campus is generally urban, especially within the 160-acre Primary Educational Zone. The 91-acre Athletics Zone includes buildings, sports fields and the Reservoir Hill Relay Course. The 70-acre Agricultural Zone includes open space and agricultural facilities. The 46-acre Land Use Management Area includes three relay courses and the 25.6-acre Habitat Mitigation Area. The 1.0-acre Retail (undeveloped) zone, the 27.0-acre Solar Zone and the 26.0 acre Wildlife Sanctuary/Open Space zones comprise the remainder areas of the campus (Exhibit 1.4).

The campus differs in elevation from 850 feet above mean sea level (msl) north of Edinger Way to 700 feet msl along the southern campus perimeter. The solar pad west of Grand Avenue is 761 msl.

The campus area is urban, with high traffic volumes on Temple Avenue (29,800 ADT) and along Grand Avenue (37,000 ADT). Approximately 8,985 parking spaces occur on campus (March 2016), along with approximately 1.56 million square feet of buildings.

The geology and soils characteristics within the campus are generally similar, but do vary with the topography. In general, the campus is not in a designated State of California Earthquake Fault Zone. However, a portion of the Physical Education Projects (PEP) site is located in a Seismic Hazard Zone. Although the campus is located within a mapped Seismic Hazard Zone for liquefaction, site-specific investigations have confirmed the groundwater level is below bedrock and the site is not susceptible to liquefaction.

Local zones of perched groundwater seepage and undocumented fill soils may occur in some areas. The Physical Education Project is classified as Site Class D and Site Design Category E (Table 3: 2013 California Building Code Service Design Parameters, Converse, Ibid). Implementation of the recommendations of a site-specific geology/soils study is required for all building projects on campus.

A variety of biological habitats occur onsite. The habitats include California Walnut Woodlands within the Agricultural Zone, Venturan Coastal Sage Scrub on the West Parcel and Mt. SAC Hill, southern cotton-willow riparian forest along Snow Creek and disturbed coastal sage scrub in isolated areas. Three sensitive species, the Coastal California Gnatcatcher, the Cactus Wren and the Least Bell's Vireo have been observed on campus, primarily in the Venturan Coastal Sage Scrub habitat.

The aerial photo illustrates the environment setting of the campus (Exhibit 1.3). The existing conditions for Hilmer Lodge Stadium are shown in Exhibit 2.1.

B. Project Setting

The Campus area west of Grand Avenue is designated Hillside Single Family Residential Identity in the City of Walnut General Plan and is zoned–Residential Plan Development 28,500: 1.3 dwelling units. However, as discussed in Section 2.3, the parcel is not subject to City zoning.

Exhibit 1: *Regional Location*, and Exhibit 2: *2015 Campus Aerial Photo*, shows the Proposed Project site in its regional and local contexts. As shown in Exhibit 1.2: *2015 Campus Aerial Photo*, the surrounding area is urban and predominantly single-family residential, with the exception of commercial uses west of Grand Avenue and north of Temple Avenue. The West Parcel is not developed and has primarily coastal sage scrub habitat.

As shown in Exhibit 1.3: *Campus Zoning*, the Campus is divided into five zones: Primary Educational Zone, Agricultural Zone, Athletics Zone, Wildlife Sanctuary and Solar & Retail. Exhibit 1.4*: Site Topography* shows the site contours without grading. The project site ranges in elevation from 690 – 875 feet above mean sea level.

Exhibit 1.5*: Grading Plan* shows the 27.2-acre site plan, the roadway access and the finished 9.9-acre pad at 761 feet msl with surrounding slopes and natural areas. The natural habitat area is 7.35 acres. The grading plan was filed with the City of Walnut in April 2017 for review and approval. Exhibit 1.6: Landscape Plan shows the plant palette for the site plan. The landscaping covers 380,070 sq. ft.

Exhibit 1.7*: Habitat Mitigation Plan* shows the natural and replacement habitat required for the project. The Plan was approved by the California Department of Fish and Wildlife in August 2016 as part of the Section 1602 permit. Approximately 8.1 acres of natural/restored habitat will remain on site at buildout and 18.2 acres of preserved/restored habitat will occur east of Grand Avenue.

Exhibit 1.8*: Solar Array Area* shows the 9.9-acre solar array area within the finished 17.65-acre graded pad.

The biological resources onsite are fully described in the 2015 Biological Technical Study. The 27.65-acre site is currently undeveloped. A 0.45 acre area at the northern tip of the property has been graded flat and is zoned Retail. The future use is likely agricultural produce and Christmas trees sales. The remainder of the site consists of

rolling hills with intervening swales. Elevations in the study are range from 690 – 875 feet above mean sea level. The existing vegetation communities are shown below.

Table 2.1.1 Existing Vegetation Communities	
Native and Naturalized Vegetation	Acres
Mule fat scrub	0.06
Venturan coastal sage scrub (including disturbed)	14.20
Subtotal	14.26
Active Use and Altered Areas	
Extensive agriculture	12.43
Disturbed habitat	0.71
Developed	0.25
Subtotal	13.39
TOTAL	27.65
Source: Helix Environmental Planning, Ibid., Table 1.	

Two streambeds occur onsite. The northern streambed traverses the site from west to east and enters the site from an unimproved streambed and exits via a culvert under Grand Avenue. The culvert connects to Snow Creek, which flows north to south east of Grand Avenue. The southeastern streambed originates onsite and drains east into Snow Creek via a second culvert under Grand Avenue. The 27.65 acreage is for the entire West Parcel, including the solar and retail zones.

Residential land uses in the City of Walnut occur on the south and west sides of the parcel. Grand Avenue occurs along the eastern boundary and a small commercial parcel exists west of the northern tip of the parcel.

2.2 PROJECT HISTORY

Five previous CEQA documents have been prepared for Facility Master Plans for Mt. San Antonio College (2002, 2005, 2008, 2012 and 2015). These CEQA documents have included program, project, supplemental and subsequent EIRs. The Mt. San Antonio College 2015 Facilities Master Plan Update and Physical Education Projects Subsequent Program/Project EIR (SCH 2002041161) was certified by the Board of Trustees in October 2016.

Since one or more new potential significant environmental impacts may occur with development of the proposed solar project, a new project specific environmental subsequent document is required. This Draft EIR will address potential cumulative and project specific significant environmental impacts not addressed in the prior documentation for the proposed solar project.

2.3 PROJECT CHARACTERISTICS

Project History

Previous Facility Master Plans have designated the West Parcel as Future Asset Management Area (2002), Future New Building or Expansion Zone (2012) and West Parcel Solar Project (2015). The parcel was zoned Solar and Retail in 2015.

The biological impacts of the WPS Project were first evaluated in 2008. However, the parcel was again evaluated in 2015. Therefore, the biological evaluation is not tiered from the 2008 documentation. The West Parcel Solar/Retail project was first evaluated in 2012, which included the requirement to complete a Section 7 Consultation with the United States Fish and Wildlife Service.

Permit applications to four Responsible Agencies in 2014 – resulted in submittal of three additional biological studies, a cultural resource study, a geotechnical study, a water quality management plan, the grading plan, and the solar project design plan. (All studies and permit applications are listed in the Bibliography).

Since the project is a design-build project, a few details of the project are not complete (i.e. quantity, layout and solar panel performance). However, there is sufficient information in the Borrego Springs Solar Best and Final Offer and subsequent site array plans to identify the project characteristics, the solar pad area, and operation and maintenance needs. A light and glare study was completed for the project in July 2017 (Newcomb Anderson McCormick).

Previous solar projects on the site have included the following designs, which differ primarily in the grading (Table 2.3.1). Initially, the project site was to receive earth import from three projects: Parking Structure J, Hilmer Lodge Stadium, and the Fire Training Academy. Earth import is now limited to the Physical Education Projects (i.e. Hilmer Lodge Stadium area).

Table 2.3.1: Solar Project Designs

Item	2012 FMP EIR		Design	
	Draft	Final	Sept 2016	April 2017
Project Site (ga)	27.65	27.65	27.65	27.65
Pad Size (ga)/Elevation (msl)	9.9/770	10.6/770	10.1/760	9.9/761
Grading (ga)	18.05	18.39	17.25	17.25
Earth Import (cubic yards)	261,000	333,980	163,571	139,000
Natural Habitat Retained Onsite (ga)	9.60	9.26	9.92	5.07
Restored Habitat Onsite (1)	---	---	0.58	3.03
Preserved/Restored CSS Offsite (ga)	---	---	18.20	18.20
Solar Panel System	Fixed	Fixed	Fixed	Tracked/Fixed
1 Restored Terrain defined later in the CDFW/USFWS permits, CSS = coastal sage scrub				

The existing conditions of the site were described in the 2012 Program EIR (SCH 2002041161) remain unchanged. The 27.25-acre site is natural habitat, primarily coastal sage scrub. Two local drainages are located onsite. The northern intermittent drainage, which conveys offsite storm flows to the storm drain along Grand Avenue, is three feet in width and approximately 550 linear feet. The southern ephemeral drainage is only one foot in width and approximately 300 linear feet. The site topography is shown in Exhibit 1.4.

Grading of the West Parcel will result in the removal of 9.45 acres of Non-Native Grassland (NNG) and removal of 8.07 acres of Venturan Coastal Sage Scrub (CSS). Loss of CSS may result in a corresponding loss of habitat for the coastal California gnatcatcher (CGN). The CGN is listed as a Species of Concern by the California Department of Fish and Wildlife, and listed as threatened by the U. S. Fish and Wildlife Service.
Grading will occur on 17.25 acres of the project site, resulting in a finished graded pad of 9.9 acres with an elevation of 761 feet msl (1. 5). The 2012 Final EIR had grading on 18.39 acres resulting in a 10.6 acre pad with an elevation of 770 feet. Earth import to the site has been reduced from 333.980 cubic yards in the 2012 Program EIR to 139,000 cubic yards. Therefore, the grading area, grading quantity, the solar pad and the elevation of the pad have been reduced in size and elevation from the site evaluated in the 2012 Program EIR.

The total obligation of the project for coastal sage scrub habitat resulting from the permit applications to Responsible Agencies is 17.04 acres. This obligation will be met with 8.68 acres of preservation and 8.36 acres of restoration. 8.04 acres of coastal sage scrub restoration will occur on- and off-site and 0.32 acres of riparian restoration will occur along Snow Creek on campus.

Solar Panel Characteristics

The solar system described in the 2012 Program EIR is similar to the existing project but more information is now available and some system characteristics changed. The Project remains a design-build agreement for the purchase and installation of a ground-mount solar photovoltaic system, which will provide clean power for the campus. The 2012 Program EIR described a 2.0-MW fixed photovoltaic system, which is now a 2.2-MW system; with both fixed solar panels and panels that tilt to better capture sunlight while minimizing glare. The tracked solar photovoltaic panels are Dura Track HZ Single Axis Solution System, which can tilt 45 degrees. The proposed solar array layout is shown in Exhibit 1.8. The solar array consists of 274 rows (strings) of panels, with eighteen panels in each row. The system has a projected output of 4,622,000 kwh.

PV solar panels are designed to absorb sunlight to convert it into electricity. The more sunlight that is absorbed, the more energy can be produced. A mono-crystalline silicon solar cell absorbs two-thirds of the sunlight reaching the panel's surface. This means that only one-third of the sunlight reaching the surface of a solar panel has a chance to be reflected. The tracked system eliminates glare by changing the angle of the panel in relationship to the sun.
The glare analysis used light textured glass without anti-reflective coating (ARC) as the module surface material in the analysis. The tracking system is sufficient to control glare from the panels.

The interconnect system remains unchanged and transmits solar power from the site to the campus by an underground conduit. The conduit will cross under Grand Avenue from the project site to the road south of the Wildlife Sanctuary. The conduit will proceed north along Mt. SAC Way, cross under Temple Avenue and extend along the north side of Temple Avenue to the main switchgear near Temple Avenue.

2.5 INTENDED USES OF THIS SEIR

The Board of Trustees of Mt. San Antonio Community College District will use the Tiered and Program EIR in their review and approval of the West Parcel Solar Project. The required District actions for the project include Certification of the Tiered EIR, approval of Statement of Facts and Findings, the Statement of Overriding Considerations and approval of a site-specific WPS Mitigation Monitoring Program.

This report also provides environmental information to a number of local, state, county and regional agencies providing service to the project, having discretionary review over

portions of the project, or having an interest in the project. The proposed solar project has been found by a court of law to be exempt from local building, construction, and zoning. Notwithstanding this exemption, the proposed project will need to comply with City grading ordinances regulating drainage improvements and requiring the review and approval of grading plans as these ordinances relate to the design and construction of onsite improvements which affect drainage, road conditions or grading. A truck hauling plan is a component of a grading plan. The agencies and groups involved with the CEQA process are identified below.

Table 2.5.1: Responsible and Interested Agencies

Responsible Agencies	Interest
California Department of Fish & Wildlife	Impacts on biological resources/habitat
California Department of Transportation-Region 7	Traffic impacts on mainline freeways/ramps
California Regional Water Quality Control Board–Region 4	Impacts on water quality
California EPA	Air quality impacts
Department of State Architect	Building plans specifications
State Historical Preservation Office	National and State historic resources
United States Fish & Wildlife Service	Impacts on biological resources/habitat
Interested Agencies	**Interest**
Cal Poly Pomona	Land use compatibility
City of Diamond Bar	Traffic impacts
City of Industry	Traffic impacts
City of Pomona	Traffic impacts
City of Walnut	Traffic impacts, grading and truck haul plans
Community College Chancellor's Office	Building programs
Consolidated Sanitation Districts of Los Angeles County	Wastewater treatment and landfill capacity
County of Los Angeles Fire Department	Physical impacts on fire facilities
County of Los Angeles Department of Public Works	Traffic Impacts
County of Los Angeles Sheriff Department	Physical impacts on sheriff facilities
Foothill Transit Agency	FTA transportation systems
Los Angeles County Metropolitan Transportation Authority	MTA transportation systems
Native American Heritage Commission	Cultural Resources
Kizh Nation	Tribal cultural resources
South Coast Air Quality Management District	Construction and operational impacts on air quality emissions
Three Valleys Municipal Water District	Impacts on water supply
Baldwin Park USD	Educational facilities and opportunities
Bassett USD	Educational facilities and opportunities
Bonita USD	Educational facilities and opportunities

Charter Oak & Covina Valley USD	Educational facilities and opportunities
Hacienda La Puente USD	Educational facilities and opportunities
Pomona USD	Educational facilities and opportunities
Rowland USD	Educational facilities and opportunities
Walnut Valley USD	Educational facilities and opportunities
San Gabriel Valley Regional Chamber of Commerce	Business, Economic and Training opportunities
Source: Mt. SAC Facilities Planning and Management, July 20, 2017	

EXISTING ENVIRONMENTAL CONDITIONS, IMPACTS AND MITIGATION MEASURES

3.0 EXISTING ENVIORNMENTAL CONDITONS, PROJECT IMPACTS AND MITIGATION MEASURES

Thresholds of Significance

Thresholds of Significance are discussed in Section 15064.7 of the CEQA Guidelines. The Thresholds of Significance used in this EIR are obtained from two sources: (1) The questions included in a CEQA Checklist, which are often quoted verbatim in the text and, (2) District Thresholds of Significance adopted by the Board of Trustees on May 11, 2016.

Tables 3.1.1, 3.1.2 provide a concise summary of the statistics related to enrollment, parking, traffic impacts, and construction air quality impacts. The tables provide an overview of the buildout of the 2015 FMPU.

Table 3.1.1: 2015 Facilities Master Plan Buildout Statistics

2015 Facilities Master Plan Update	
Development (ASF)	
-	
Existing (2014 – 2015)	1,087,184
Additions (2015 - 2020)	262,247
Demolitions (2015 - 2020)	(87,258)
Buildout (2020) with 5% Contingency	1,325,282
Net Increase (2020)	238,098
Demolition (2020-2025)	(62,249)
Additions (2020-2025)	278,240
Buildout (2025) with 5 % Contingency	1,552,072
	4.3 % per year
Net Increase 2025)	464,888
Source: 2015 FMPU Final EIR, Table 2.6	

Table 3.1.2: Cumulative Trips by Jurisdiction in the Study Area

Lead Agency	Cumulative Trips Within Study Area			
	2020 PM Peak Hour Trips	2020 ADT Trips	2025 PM Peak Hour Trips	2025 ADT Trips
Walnut	87	888	87	888
Industry[1]	96	1,383	1,561	14,982
Pomona	703	5,436	703	5,436
Diamond Bar	51	575	51	575
Cal Poly	695	6,992	1,511	15,200
Subtotal	1,632	15,274	2,955	37,081
2015 FMPU	449	4,606	858	8,798
Totals	2,081	19,880	4,771	45,879
Percent of Total	21.6	23.2	18.0	19.2
1 Includes Industry Business Complex (IBC) partial buildout in 2025 only of twenty (20) percent of 4,779,000 gsf and 67,993 ADT for 4,779.0 ksf)				
Source: Appendix C, Table 11, 12, Ibid., Iteris, February 2015				

3.1 AESTHETICS

3.1.1 Existing Conditions for Aesthetics

The project site is not developed and includes primarily coastal sage scrub habitat. The vegetation onsite is described in Section 3.3. The adjacent residential land uses may impose some light and glare near the project boundary, but it is not substantial.

3.1.2. Project Impacts on Aesthetics

Section I: Aesthetics of the CEQA Guidelines includes the following questions: *Would the project:*

(a) Have a substantial adverse effect on either a scenic vista or scenic resources within a designated scenic highway?

(b) Substantially degrade the existing visual character or quality of public views of the site and its surroundings in conflict with applicable zoning and other regulations?

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

The California Department of Transportation designated scenic highways within the state based on their criteria and procedures. There are not designated scenic highways in the Cities of Pomona and Walnut.

Grand Avenue adjacent to the project site is not a scenic highway so the project has no impact on scenic vista or scenic resources within a designated scenic highway.

The project site is not subject to zoning or other regulations pertaining to views or viewshed. Some examples of such regulations are viewshed ordinances, ridgeline protection ordinances or scenic byways in national parks. Private view of other private properties is not included in this designation. Therefore, the project has no impact on degradation of public views or existing visual character.

We should note that all development could be halted if private views from one property to another were a protected right.

The proposed project is a solar energy generation facility and has been found by a court to be exempt from City of Walnut building ordinance concerning the location and construction of the proposed project and City of Walnut zoning ordinances concerning the location and construction of the proposed project. The proposed project is not subject to the City of Walnut's General Plan or other City of Walnut land use regulations.

While the City of Walnut's General Plan states that Grand Avenue possess the most scenic value of all the existing roads within the City, it is not a state designated scenic highway. The statement is also a policy, not a regulation that applies universally to individual projects unless applied as a condition of approval for a project application.

The term scenic corridor is also used in the Walnut General Plan for the Grand Avenue segment from La Puente Road to Amar Road. The scenic corridor is characterized best by the linear park and open space along Snow Creek along the eastside of Grand Avenue. This segment also includes the West Parcel frontage. No scenic corridor designation is given to Temple Avenue. The scenic corridor designation is not applicable to the campus. While a scenic corridor may be considered a scenic resource, Grand Avenue or any scenic corridor is not a designated scenic highway. Therefore, the proposed project, although exempt from these Walnut General Plan provisions, has no impact on scenic resources for a designated state highway.

The Landscape Plan (Appendix E1) for the solar project includes extensive landscaping along the Grand Avenue frontage and the graded pad is 39 – 65 feet above the street. When mature, the landscaping along the project frontage will be similar or more robust than the existing natural habitat. The project landscaping will be irrigated until the plants are established and will not initially experience the natural cycles of growth and decline of the natural vegetation onsite.

The project does not create a new source of substantial light onsite or offsite. There is no security lighting for the project. A solar project may produce glare, depending on its location and design. Many people have seen photos of solar fields that concentrate light toward a central tower to produce intense heat to generate steam to generate electricity. However, the proposed solar panel system, as described in Section 2.3, is a ground mounted fixed and tracked systems with solar panels that does not produce significant glare offsite.

Newcomb Anderson McCormick Energy Engineering Consulting (NAM) completed a glare analysis for the project, using the Solar Glare Hazard Analysis Tool (SGHAT) developed by Sandia National Labs. This tool is the primary analytical tool used to

evaluate solar glare impacts based on the latitude, longitude, ground elevation and height of the solar panels above ground for specific observation points (i.e. residences). A simple definition of glare is that it is a continuous source of excessive brightness relative to ambient lighting. The SGHAT analysis is summarized herein and the complete report is included as Appendix C7.

The glare analysis is based on a south facing single axis solar PV system with backtracking. The panels can track the sun from east to west. The tracking systems tilt in the earning morning and evening to reduce the possibility of glare. The practice of limiting tracking angles is common in the industry and is known as backtracking. Backtracking allows solar rows to be placed closer together without sacrificing minimal production capacity. An angle of 60 degrees is a conservative estimate for maximum tracking angle as with backtracking. The PV system is at 760 feet elevation and the panel height is four (4) feet off the ground.

The SGHAT analysis includes the site and area topography and determines the ne of sight and visibility. The analysis does not include physical obstructions between the panel system and the observation point. Buildings, tree coverage, and geographical obstructions may minimize any glare fund in the analysis. Eight observation points were selected for evaluation in the analysis (Exhibit 3.1.1). The locations include two observation locations along the Grand Avenue frontage and six residences surrounding the project site perimeter.

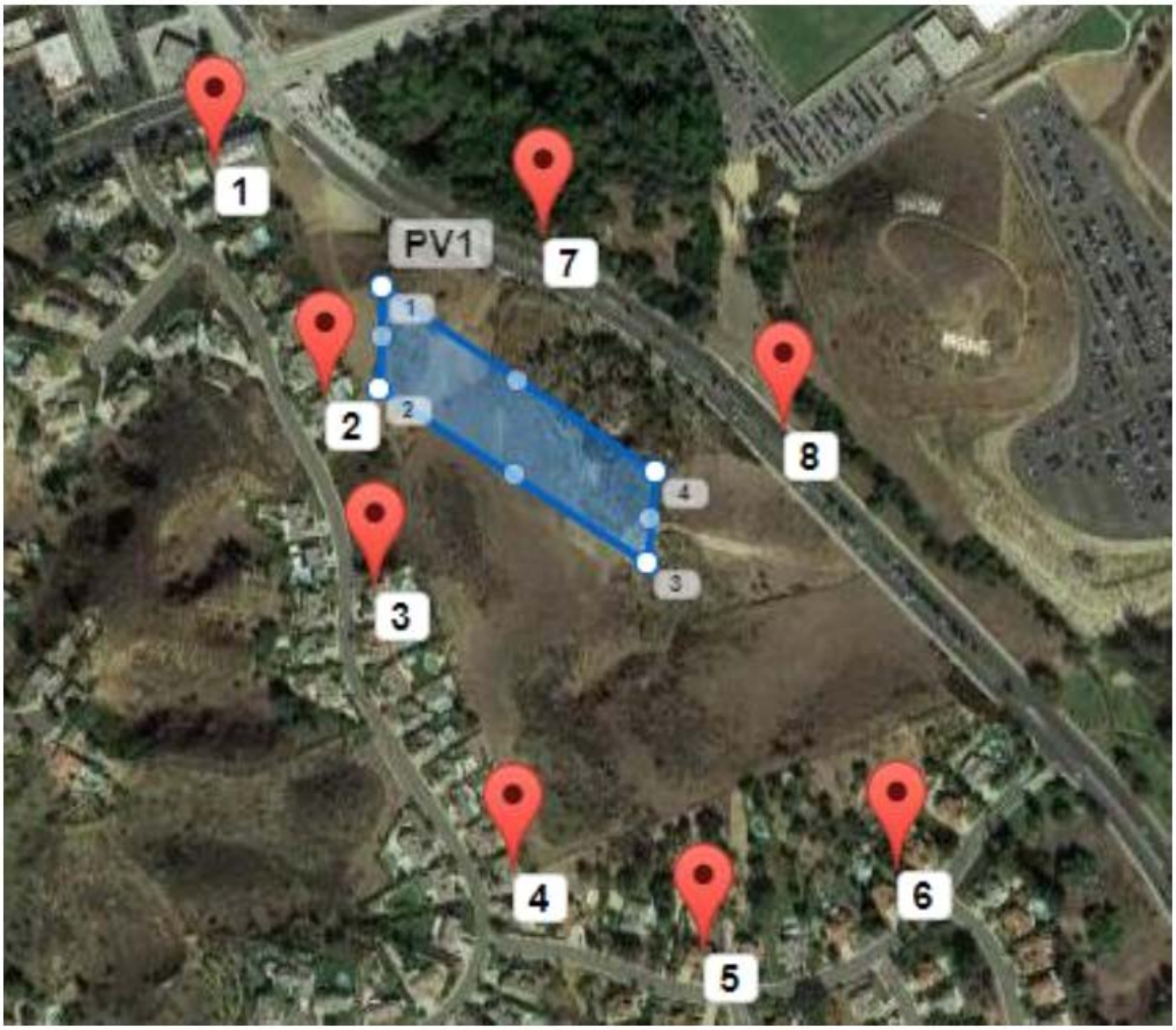
The PV array used in the analysis is a single axis tracking system with light textured glass without anti-reflective coating as the module surface material. The reflectivity of the panels varies with the incidence angle. The panels are assumed to be constructed facing south to completely track the sun from east to west, or an orientation of the tracking axis of 180 degrees. The maximum tracking angle with backtracking is 60 degrees.

The panels are assumed to be built at ground level elevation of 760 feet (the pad elevation) and the panels are four feet in height. The latitude and longitude, ground elevation, height above ground and total elevation of the system for the four corners (i.e. vertices) of the panel system listed in Exhibit 3.1.1 as 1 – 4 is given in Appendix N.

The eight (8) solo observation points for the six residential locations and the two locations along the Grand Avenue frontage have corresponding data for latitude, longitude, ground elevation, and eye-level height above ground in the glare analysis in Appendix N. There was no glare projected by the SGHAT tool for any of the eight (8)

observation points. A section of Location 3 is included as Appendix C4. Therefore, the West Parcel solar project has a Less than Significant Impact on light and glare.

Exhibit 3.1.1: Glare Analysis Observation Locations



The SGHAT does not imply that the solar panel system is invisible from areas at higher elevation and distances beyond the immediate neighborhood (Appendix J1). Even buildings on campus or in an industrial park may be visible from offsite locations at higher elevations.

Sections of the grade differentials between individual residential lots along the western project perimeter and the solar pad were completed (Appendices C9 to C14) for six residential lots. The sections (i.e. elevation profiles) show the solar arrays are not

highly visible from offsite ground elevations; either intervening topography or lower elevations between the lot and the solar pad obstruct or limit views of the solar panels. However, there are no regulations that require the solar panels not be visible from offsite properties. The sections also show that the solar pad is not visible from the Grand Avenue frontage since the solar pad is approximately sixty (60) feet above the street, and the slope is heavily landscaped (Appendix E1).

During Scoping Session 2, the chairperson of United Walnut Taxpayers asserting a new visual/aesthetic study for the project is needed. The sections described above meet that criterion. There is also not a substantial change in the grading plan since the viewshed simulations were completed in September 2015 by WWW Design & Consulting. The Landscape Plan also addressed viewshed issues, including along the Grand Avenue frontage. The reports cited are included in Appendices E1 and J1 respectively.

3.1.3. Mitigation Measures for Aesthetic Impacts

AES-02. All new construction contracts shall implement those provisions of the *Landscape Plan* applicable to their projects. Facilities Planning and Management shall monitor compliance.

3.1.4 Level of Significance for Aesthetic Impacts with Mitigation

Not applicable.

3.1.5 Aesthetic Cumulative Impacts

There are no other projects in the immediate project vicinity. The retail zone adjacent to the project will be used either for Christmas tree sales or agricultural/produce sales. No significant cumulative aesthetic effects are anticipated.

3.1.6 Mitigation Measures for Aesthetic Cumulative Impacts

None

3.1.7. Level of Significance for Cumulative Impacts with Mitigation

Not applicable

3.2 AIR QUALITY

3.2.1 Existing Conditions for Air Quality

While Section 3.2 of the 2012 Final EIR evaluated the existing air quality conditions for the campus, a more recent evaluation is included in the 2015 Final EIR. Therefore, Section 3.3.1 of the 2015 EIR is incorporated by reference.

Section 3.3.1 includes descriptions of the pollutants in the South Coast Air Basin (SCAB), ambient air quality standards and monitored air quality pollutants at the Pomona station (Table 3.3.3) for 2012 – 2014. The existing conditions for air quality near the campus and in the SCAB in 2017 are similar to those in 2014.

3.2.2. Air Quality Impacts

*3. **Air Quality**. Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the projects:*

d) Expose sensitive receptors to substantial pollutant concentrations?

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

The assumptions used in the CalEEMod projections in the 2012 Final EIR were based on an import of 261,000 cubic yards and the Conceptual Grading Plan (Exhibit 14 in the Final EIR). The current Grading Plan (Exhibit 1.5) has 139,000 cubic yards of import. The graded area for the Project has been reduced from 18.39 acres to 17.25 acres, a decrease of 6%. The import quantity for the Project has been reduced from 261,000 cubic yards in the Draft EIR (i.e. air quality analysis) to 139,000 cubic yards, a decrease of 47 percent.

The cumulative construction air quality analysis for four projects in the Final EIR remains a “worse case” analysis (Table 3.2.15) for grading operations. This analysis assumed all four projects (Athletic Education Building, Fire Training Academy, Parking Structure and West Parcel Solar/Retail) were being graded simultaneously. Moreover, the Parking Structure project is not proceeding simultaneously as originally contemplated because of the preliminary injunction that halted the work on it. The changes in the Project do not increase the severity of cumulative air quality emissions from construction grading and no new cumulative air quality impacts have been identified.

The Project, based on the new grading plan and the new air quality analysis, does not exceed SCAQMD construction and operational thresholds of significance (West Parcel Solar Project Update (Report #17-022), Greve & Associates, April 11, 2017. The analysis used the current grading estimates of 177,500 cubic yards of cut (previously 172,708 cy), 316,500 cy of fill (previously 336,279 cy), resulting in a net import of 139,000 cy (previously 163,571 cy). The import fill will come from the Physical Education Project site (i.e. Hilmer Lodge Stadium area).

The report's conclusions are summarized below and the full report is included in the Appendix A.

Table 3.2.1: Peak Construction Emissions for 2017 Grading Plan

	Pollutant Emissions (lbs./day)					
Activity	ROG	NOx	CO	SOx	PM10	PM2.5
Collection, Clear & Grub	1.7	17.9	13.7	0.0	7.9	4.3
Grading with Import	9.7	99.6	105.0	0.1	14.0	7.8
Final Grading	7.9	94.7	60.4	0.1	11.0	7.2
Solar Installation	0.3	3.0	2.6	0.0	0.3	0.2
Restoration	0.2	1.6	1.4	0.0	0.5	0.2
Landscaping	0.2	1.6	1.4	0.0	0.5	0.2
Solar Install+Restoration +Landscaping	0.7	6.3	5.4	0.0	1.2	0.5
SCQAMD Thresholds	*75*	*100*	*550*	*150*	*150*	*55*
Exceed Threshold?	*No*	*No*	*No*	*No*	*No*	*No*

The construction-related air quality particulate emissions due to the Project do not exceed SCAQMD Thresholds. Therefore, the Project has a Less than Significant Impact on local air quality. These conclusions are predicated on the following two assumptions: (1) The grading with import phase includes use of three scrapers, one loader, one dozer and one compactor and (2) The final grading phase includes four scrapers, one dozer and one compactor. These assumptions are included as requirements in Mitigation Measure AQ-11.

Tables 1, 2 in Appendix A compare the Peak Construction Emissions for the 2015 and 2017 Grading Plan using the CalEEMod version available in September 2015.

Table 3.2.2 projects the emissions from the 2017 Grading Plan using the most recent CalEEMod version which was released in 2017. The Project has a Less than Significant Impact on local air quality.

Table 3.2.2: Construction Emissions for 2017 Grading Plan (CalEEMod v.2016.3.1)

Activity	Pollutant Emissions (lbs./day) ROG	NOx	CO	SOx	PM10	PM2.5
Collection, Clear & Grub	1.8	17.5	8.4	0.2	8.1	4.3
Grading with Import	6.4	77.8	45.3	0.1	9.9	6.6
Final Grading	7.6	93.2	52.4	0.1	10.9	7.0
Solar Installation	0.5	3.4	3.5	0.0	0.6	0.3
Restoration	0.5	3.3	3.3	0.0	0.7	0.3
Landscaping	0.5	3.4	3.6	0.0	0.8	0.3
Solar Install+Restoration +Landscaping	1.4	10.1	10.4	0.0	2.1	1.0
SCQAMD Thresholds	*75*	*100*	*550*	*150*	*150*	*55*
Exceed Threshold?	*No*	*No*	*No*	*No*	*No*	*No*

The construction-related air quality particulate emissions due to the Project do not exceed SCAQMD Localized Significance Thresholds (LST) methodology. Therefore, the Project still has a Less than Significant Impact on local air quality and on the adjacent offsite residences. The current analysis differs from the Final EIR analysis, where the LST impact was significant due to the larger magnitude of grading assumed in the air quality analysis.

While particulate matter from diesel-engines is classified as a toxic air contaminant by the California Air Resources Board, impacts on humans is related to cumulative exposure and assess over a 70-year period. Use of diesel equipment onsite for the WPS Project occurs over a nine-month period. Therefore, diesel emissions have no impact on adjacent residents or onsite construction employees.

The 2012 Final EIR and current site plan have only a northerly access driveway, which will be used by service vehicles only after build-out. The decrease in solar array pad area for the current grading plan resulted from moving the slope westward from Grand Avenue. The perimeter of the natural habitat that is not graded along the interior (i.e. westerly) site perimeter has not changed. Therefore, grading is not occurring closer to off-site residences.

The solar array pad area has decreased slightly in acreage but additional stepped terracing was created for restoration landscaping along the natural terrain interface toward the westerly Project perimeter.

The project is not a large operation, as defined in SCAQMD Rule 403 since it does not involve movement of 3,850 cubic yards of earth three times in a year. The draft truck hauling plan is based on a maximum of 2,240 cubic yards per day.

With the mitigation measures required for the Project, the impact on air quality is Less than Significant with Mitigation Incorporated.

Air Quality Emissions for the Truck Haul Plan

Greve & Associates prepared an air quality and greenhouse gas emission analysis of the Truck Haul Plan, based on export of 139,000 cubic yards of earth from the stadium site to the West Parcel. The air quality and greenhouse gas analysis is summarized below (Air Quality and Greenhouse Gas Emissions and Noise Impacts of the West Parcel Solar Truck Haul Plan (Report #17-041)). The complete report is included in Appendix B3.

The current grading plan for the West Parcel projects 139,000 cubic yards of earth export, or 9,929 truck loads, and 160 truck loads per day. The truck hauling period is estimated as 62 days. The air quality analysis is based on peak daily emissions.

The project is required to comply with the air quality measures first adopted in the adopted 2016 Mitigation Monitoring Program (MMP) for the certified 2015 Facilities Master Plan/PEP Final EIR. The mitigation measures required of the solar project include Measures 3a through 3j that identify a spectrum of air quality mitigation with Measures 3a, 3b, 3c, 3f, 3g, 3h, and 3i aimed specifically at reducing air quality emissions (Appendix R1). The most effective mitigation measure is the requirements to use Tier IV construction equipment and to water the project site three times per day during grading activities.

In the 1993 CEQA Air Quality Handbook, the South Coast Air Quality Management District (SCAQMD) established significance thresholds to assess the impact of project-related air pollutant emissions. Table 3.2.3 presents the SCAQMD significance thresholds for construction. There are separate thresholds for short-term construction and long-term operational emissions. A project with daily emission rates below these thresholds has a less than significant effect on regional air quality.

Table 3.2.3: Regional Pollutant Emission Thresholds of Significance

	Pollutant Emissions (lbs./day)					
	CO	VOC	NOx	PM10	PM2.5	SOx

Construction	550	75	100	150	55	150

Emissions during all phases of construction were calculated using the California Emissions Estimator Model (CalEEMod). CalEEMod is a computer program developed by the SCAQMD in conjunction with the California Air Resources Board (CARB). The model (CalEEMod 2013.2.2) calculates emissions for construction and operation of various types of projects. The CalEEMod 2016.3.1 includes revised construction equipment emission rates. The CalEEMod printouts are included in Appendix C-3.

Table 3.2.4 presents the air quality emission results for peak construction emissions for the unmitigated case, and Table 3.2.5 presents the emission results for the mitigated situation. Specifically, the use of Tier IV equipment and watering three times per day during grading were included in the calculations.

Table 3.2.4: Peak Construction Emissions – Not Mitigated

	Pollutant Emissions (lbs./day)					
Activity	ROG	NOx	CO	SOx	PM10	PM2.5
Collection, Clear & Grub	5.4	54.6	26.4	0.0	21.3	12.8
Grading with Import	6.7	98.2	46.9	0.1	15.9	7.2
Final Grading	6.4	76.5	42.1	0.1	11.9	6.5
Solar Installation	0.3	2.6	2.3	0.0	0.2	0.2
Restoration	0.2	1.5	1.4	0.0	0.1	0.1
Landscaping	0.2	1.5	1.4	0.0	1.4	0.3
Solar Install+Restoration +Landscaping	0.6	5.6	5.0	0.0	1.8	0.5
SCQAMD Thresholds	*75*	*100*	*550*	*150*	*150*	*55*
Exceed Threshold?	*No*	*No*	*No*	*No*	*No*	*No*

Table 3.2.5: Peak Construction Emissions – With Required Mitigation Measures

Activity	Pollutant Emissions (lbs./day) ROG	NOx	CO	SOx	PM10	PM2.5
Collection, Clear & Grub	0.6	2.2	23.7	0.0	18.4	10.1
Grading with Import	1.4	29.0	35.2	0.1	12.7	4.3
Final Grading	1.0	4.1	34.8	0.1	9.0	3.8
Solar Installation	0.1	0.4	2.3	0.0	0.1	0.0
Restoration	0.0	0.1	1.3	0.0	0.0	0.0
Landscaping	0.0	0.1	1.3	0.0	1.3	0.2
Solar Install+Restoration +Landscaping	0.1	0.6	5.0	0.0	1.4	0.2
SCQAMD Thresholds	*75*	*100*	*550*	*150*	*150*	*55*
Exceed Threshold?	*No*	*No*	*No*	*No*	*No*	*No*

The NOx emissions for grading with import and for final grading are just below the significance threshold for the unmitigated case, but are well below the SCAQMD significance threshold with the required mitigation measures. All projected construction emissions are below the significance thresholds established by the SCAQMD. In all cases the peak daily emissions with required mitigation are well below the thresholds.

Roads with substantial diesel truck volumes have the potential to create particulate hot spots. The FHWA has published guidance on performing a qualitative analysis of particulate hot spots and established a screening threshold for potential impacts. The FHWA guidance states a road with an average daily diesel truck volume of 10,000 or less does not result in particulate hot-spots.

None of the roadways in the project area will have close to 10,000 trucks per day. There are no truck counts for the roadways of concern. However, the local roadways in the project area; Temple Avenue, Grand Avenue and Valley Boulevard have levels of heavy truck traffic of less than one percent (0.0074) of total traffic. The arterial traffic distribution estimate used for the roadways was compiled by the Orange County Environmental Management Agency, and is based on traffic counts at thirty-one intersections throughout the Orange County area. Arterial traffic distribution estimates can be considered typical for arterials in Southern California.

Therefore, the heavy truck traffic on Temple Avenue, Grand Avenue, and Valley Boulevard is projected as 196, 271, and 248 trucks per day, respectively. The truck hauling for earth export for solar project will 160 heavy trucks per day. The combined total of project and non-project trucks is well below the threshold of 10,000 trucks per

day provided by the FHWA. Therefore, the project will not result in a significant impact due to particulate hotspots and would not significantly increase the health risk.

The Truck Haul Plan for the project has a less than significant impact with mitigation incorporated on air quality emissions.

B. Greenhouse Emissions for the Truck Haul Plan

The SCAQMD has not officially adopted significance thresholds for greenhouse gas emissions. However, their draft recommendations use a 3,500 MT CO_2EQ/yr. threshold for residential projects, a 1,400 MT CO_2EQ/yr. (metric ton of equivalent carbon dioxide per year) threshold for commercial projects, and a 3,000 MT CO_2 EQ/yr. for mixed-use projects. The West Parcel solar project does not fall into any of these categories.

Construction emissions are amortized over the life of the project, defined by SCAQMD as thirty (30) years, and are added to the annual operation emissions. The greenhouse gas emissions for construction for the project are very small when amortized over a 30 year period. The CalEEMod analyses indicates that the total greenhouse gas emissions from the project will be 480 metric tons equivalent carbon dioxide (MTCO2EQ). When amortized over thirty (30) years, this is 16 MTCO2EQ per year. The project construction emissions are far below the SCAQMD recommended threshold. Since the project will generate electricity from solar power, it will reduce GHG emissions during the operational phase. Therefore, the project will not have a significant impact on greenhouse gas emissions.

Therefore, the Truck Haul Plan has a less than significant impact on greenhouse gas emissions.

3.2.3. Mitigation Measures for Air Quality Impacts

AQ-01. All contractors shall comply with all feasible Best Available Control Measures (BACM) included in South Coast Air Quality Management District (SCAQMD) Rule 403: Fugitive Dust included in Table 1: Best Available Control Measures Applicable to All Construction Activity Sources. In addition, the project shall comply with at least one of the following Track-Out Control Options: (a) Install a pad consisting of washed gravel (minimum-size: one inch) maintained in a clean condition to a depth of at least six inches and extending at least 20 feet wide and 50 feet long, (b) Pave the surface extending at least 100 feet and a width of at least 20 feet wide, (c) Utilize a wheel shaker/wheel spreading device consisting of raised dividers (rails, pipe, or grates) at least 24 feet long and 10 feet wide to remove bulk material from tires and vehicle under carriages before vehicles exit the site, (d) Install and utilize a wheel washing system to remove bulk material from tires and vehicle undercarriages before vehicles exit the site, (e) Any other control measures approved by the Executive Officer and the U.S. EPA as equivalent to the methods specified items (a) through (d) above. Individual BACM in Table 1 that are not applicable to the project or

infeasible, based on additional new project information, may be omitted only if Facilities Planning and Management specifies in a written agreement with the applicant that specific BACM measures may be omitted. Any clarifications, additions, selections of alternative measures, or specificity required to implement the required BACM for the project shall be included in the written agreement. The written agreement shall be completed prior to demolition and/or grading for a project. Facilities Planning and Management shall include the written agreement within the Mitigation Monitoring Program for the project and Facilities Planning and Management shall ensure compliance.

AQ-02. Project construction contracts shall prohibit vehicle and engine idling in excess of five (5) minutes and ensure that all off-road equipment is compliant with the CARB's in-use off-road diesel vehicle regulations and SCAQMD Rule 1186 and 1186.1 certified street sweepers or roadway washing trucks, and all internal combustion engines/construction equipment operating on the project site shall meet EPA-Certified Tier 2 emissions standards, or higher according to the adopted project start date requirements. A copy of each unit's certified tier specification, BACT documentation and CARB or SCAQMD operating permit shall be provided to the construction manager at the time of mobilization of each applicable unit of equipment. Facilities Planning and Management shall ensure compliance.

AQ-03. During construction, contractors shall minimize offsite air quality impacts by implementing the following measures: (a) encourage car pooling for construction workers, (b) limit lane closures to off-peak travel periods, (c) park construction vehicles off traveled roadways, (d) encourage receipt of materials during non-peak traffic hours and (e) sandbag construction sites for erosion control. These requirements shall be included in construction contracts and implemented. Facilities Planning and Management shall monitor compliance.

AQ-04. Truck deliveries and pickups shall be scheduled during off-peak hours whenever possible to alleviate traffic congestion and air quality emissions during peak hours. Facilities Planning and Management shall monitor compliance.

AQ-05R. During project construction all off-road construction equipment shall be outfitted with BACT devices certified by CARB. Any emission control devices used by a contractor shall achieve emissions reductions that are no less than what could be achieved by a Level 3 diesel emissions control strategy for a similarly sized engine as defined by CARB regulations. A copy of each unit's certified tier specification, BACT documentation and CARB or SCAQQMD operating permit shall be provided by contractors before commencement of equipment use on campus. Facilities Planning and Management shall ensure compliance.

AQ-06. Construction contracts shall specify that all diesel construction equipment used onsite shall use ultra-low sulfur diesel fuel. Facilities Planning and Management shall ensure compliance.

AQ-07R. During grading and construction, fugitive dust from construction operations shall be reduced by watering at least twice daily using reclaimed water or chemical soil binder, where feasible, or water whenever substantial dust generation is evident. The project shall comply with Rule 403: Fugitive Dust (South Coast Air Quality Management District). Project contractors shall suspend grading operations, apply soil binders, and water the grading site when wind speeds (as instantaneous gusts) exceed 25 miles per hour. Traffic speeds on all unpaved graded surfaces shall not exceed 15 miles per hour. All grading operations shall be suspended during first and second stage smog alerts. All project contracts shall require project contractors to keep construction equipment engines tuned to ensure that air quality impacts generated by construction activities are minimized. Upon request, contractors shall submit

equipment tuning logs to Facilities Planning and Management. Facilities Planning and Management shall ensure compliance.

AQ-11. Construction equipment onsite for the West Parcel Solar project shall be limited to three scrapers, one loader, one dozer, and one compactor during the "Grading with Importation" phase. A limit of four scrapers, one dozer, and one compactor is required during the "Grading Alone" phase. Facilities Planning and Management shall ensure compliance.

3.2.4 Level of Significance for Air Quality Impacts with Mitigation

Less than Significant with Mitigation Incorporated

3.2.5 Air Quality Cumulative Impacts

Unless specified elsewhere in the analysis, the geographical area for analysis of cumulative impacts (i.e. aesthetics, air quality, biological resources, cultural resources, energy, geology/soils, greenhouse gases, historical resources, public services, water quality, etc.) is the College campus.

Cumulative air quality impacts for buildout of the 2015 FMPU were projected in Table 3.3.18 of the 2015 Final EIR. The table is hereby incorporated by reference.

The project has a less than cumulatively considerable impact on cumulative air quality impacts for the campus and for the SCAB region because it generates no emissions and minimal trips upon buildout.

3.2.6 Mitigation Measures for Air Quality Cumulative Impacts

None

3.2.7. Level of Significance for Cumulative Impacts with Mitigation

Not applicable

3.3 BIOLOGICAL RESOURCES

3.3.1 Existing Conditions for Biological Resources

The existing conditions onsite were evaluated in Section 3.4 of the 2012 Final EIR. This analysis included the project site, the Wildlife Sanctuary, MSAC Hill, and the Fire Academy, Physical Education Project and Water Tank site.

However, the biological resources studies for the project site, the Wildlife Sanctuary/Open Space Zone were updated in May 2015 to update the acreages and incorporate requirements for the permits from Responsible Agencies. In addition, the Habitat Mitigation Plan for replacement of habitat removed from the project site was completed.

Two streambeds occur on site. The northern streambed traverses the site from west to east. It enters the site from an unimproved streambed and exits the site via a culvert under North Grand Avenue. The culvert connects the drainage to Snow Creek, which flows north to south, just east of North Grand Avenue. The southeastern streambed originates on site and also drains to the east and flows into Snow Creek via a culvert under North Grand Avenue.

The National Wetland Inventory (NWI) maps show freshwater forested/shrub wetlands and a riverine, intermittent streambed, temporarily flooded (Figure 4) along the northern drainage. No forested/shrub wetlands, however, exist on site. There is a patch of southern willow scrub located in this drainage, just off site to the west. The eastern portion of the canopy for these trees overhangs the western boundary, but no willows are rooted on site. The streambed mapping from NWI reflects what exists on the West Parcel.

Vegetation mapping, rare plant, general botanical, and zoological surveys, and a jurisdictional delineation of the site were conducted on February 17, 2014, by HELIX biologist W. Larry Sward. Vegetation communities and sensitive species observed or detected were mapped on a 1"=200' scale aerial photograph map.

Study Methodology

Vegetation community classifications follow Holland (1986). Plants were identified according to Baldwin, et. al. (2012), while common names are derived from either Baldwin, et. al., CNPS (2014) or Calflora (2014). Sensitive plant status follows the CNPS (2014) and CDFW CNDDB (2012a and b). Animal nomenclature used in this report is taken from Crother (2001) for amphibians and reptiles, American

Ornithologists' Union (2007) for birds, and Baker et al. (2003) for mammals. Sensitive animal status follows the CDFW CNDDB (2011). Wetland affiliations of plant species follow The National Wetland Plant List (Lichvar, et. al. 2014).

Waters of the U.S. (WUS) wetland boundaries were determined using the three criteria (vegetation, hydrology, and soils) established for wetland delineations, as described within the Wetlands Delineation Manual (Environmental Laboratory 1987) and Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (USACE 2008).

Soil samples were evaluated for hydric soil indicators (e.g., hydrogen sulfide [A4], sandy redox [S5], depleted matrix [F3], redox dark surface [F6], and depleted dark surface [F7]). Soil chromas were identified according to Munsell's Soil Color Charts (Kollmorgen 1994). All indices refer to the Delineation Manual.

Sample points were inspected for primary wetland hydrology indicators (e.g., surface water [A1], saturation [A3], water marks [non-riverine, B1], sediment deposits [non-riverine, B2], drift deposits [non-riverine, B3], surface soil cracks [B6], inundation visible on aerial imagery [B7], salt crust [B11], aquatic invertebrates [B13], hydrogen sulfide odor [C1], and oxidized rhizospheres along living roots [C3]) and secondary wetland hydrology indicators (e.g., water marks [riverine, B1], sediment deposits [riverine, B2], drift deposits [riverine, B3], drainage patterns in wetlands [B10], shallow aquitard [D3], and positive FAC neutral test [D5]).

Areas were determined to be non-wetland WUS if there was evidence of regular surface flow (e.g., bed and bank), but neither the vegetation nor soils criterion was met. Jurisdictional limits for these areas were defined by the ordinary high water mark (OHWM), which is defined in 33 CFR Section 329.11 as "that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank; shelving; changes in the character of the soil; destruction of terrestrial vegetation; the presence of litter or debris; or other appropriate means that consider the characteristics of the surrounding areas." The USACE has issued further guidance on the OHWM (Riley 2005; Lichvar and McColley 2008), which also has been used for this delineation. The OHWM widths were measured to the nearest foot at various locations along mapped drainages.

Waters of the state (WS) jurisdictional boundaries were determined based on the presence of riparian vegetation or regular surface flow. Streambeds within CDFW jurisdiction were delineated based on the definition of streambed as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supporting fish or other aquatic life. This includes watercourses having a "surface or

subsurface flow that supports riparian vegetation" (Title 14, Section 1.72). This definition for CDFW jurisdictional habitat allows for a wide variety of habitat types to be jurisdictional, including some that do not include wetland species (e.g., oak woodland and alluvial fan sage scrub). Definitions of CDFW jurisdictional areas are presented in Appendix B. Streambed widths were measured to the nearest foot at various locations along the channel. The CDFW publication on dryland watersheds (Vyverberg 2010) was used as an aid to map streambeds.

One sample point was studied; a standard data form was completed in the field and is included in Appendix C of the biological report. A photograph was taken of the sample point and is included in Appendix D of the biological report. The WUS mapping was verified in the field on April 8, 2015, by Pamela K. Kostka, Regulatory Project Manager with USACE.

Vegetation Onsite

Table 3.3.1
Existing Vegetation Communities

Native and Naturalized Vegetation	Acres
Mule fat scrub	0.06
Venturan coastal sage scrub (including disturbed)	14.20
Subtotal	14.26
Active Use and Altered Areas	
Extensive agriculture	12.43
Disturbed habitat	0.71
Developed	0.25
Subtotal	13.39
Total	27.65
Source: Helix Environmental Planning, Ibid. Table 1.	

A. Mule Fat Scrub

Mule fat scrub is a shrubby riparian scrub community dominated by mule fat and interspersed with shrubby willows (*Salix* spp.; Holland 1986). The mule fat scrub in the study area occurs along the northern drainage and is a potentially jurisdictional wetland. Approximately 0.06 acre of mule fat scrub occurs within the West Parcel.

B. Venturan Coastal Sage Scrub

Coastal sage scrub is one of the two major shrub types that occur in cismontane southern California, with the other shrub type being chaparral. Sage scrub occupies relatively xeric sites characterized by shallow soils. Significant portions of sage scrub habitat in southern California have been destroyed or modified, primarily as a result of urban expansion. Venturan coastal sage scrub is dominated by low, soft-woody shrubs with crowns usually touching (and typically with bare ground beneath and between them). Growth occurs in late winter and early spring, following the onset of the winter rains. Characteristic species of Venturan coastal sage scrub include California sagebrush (*Artemisia californica*), various buckwheats (*Eriogonum fasciculatum, E. cinereum,* and *E. parvifolium*), white sage (*Salvia apiana*), black sage (*S. mellifera*), and lemonade berry (*Rhus integrifolia*). This habitat type also occurs as a sparse, low-growing disturbed phase. Approximately 14.2 acres of Venturan coastal sage scrub (including the disturbed phase) occur within the West Parcel. This habitat occurs within the study area as a disturbed phase. These stands have a lower density of shrubs, which may also be smaller than the undisturbed stands, and a greater cover of weedy herbaceous species.

C. Extensive Agriculture

Extensive agriculture includes those parts of the study area that are actively grazed and currently support an herbaceous dominated community, including forbs (e.g., white-top [*Lepidium appelianum*], mustards [*Brassica* spp., *Hirschfeldia incana*, and *Sisymbrium* spp.], Italian thistle [*Carduus pycnocephalus*], bur clover [*Medicago polymorpha*], and tumbleweed [*Salsola tragus*]) and non-native grasses (e.g., oats [*Avena* sp.] and bromes [*Bromus* sp.]). Approximately 12.43 acres of extensive agriculture occur within the West Parcel.

D. Disturbed Habitat

Disturbed habitat includes land cleared of vegetation (e.g., dirt roads) and land containing a preponderance of non-native ruderal species that colonize disturbed or previously cleared areas. Disturbed habitat totals approximately 0.71 acre within the study area.

E. Developed Land

Developed land was mapped where permanent structures, pavement, and/or maintained landscaping have been placed. Most of the developed land occurs along the western boundary, near the northern tip of the parcel. This area consists of landscaping.

Also included in this category is a small stand of riparian trees along North Grand Avenue, just north of the northern gate. These trees exist near a leaky cattle watering station and are included in developed because they are sustained by artificial hydrology. Developed land within the West Parcel comprises approximately 0.25 acre.

SENSITIVE RESOURCES

Two vegetation communities found on the project site are considered sensitive by the resource agencies: mule fat scrub and Venturan coastal sage scrub. No sensitive plant species were observed during the current or previous surveys.

A. Sensitive Plant Species with Potential to Occur

A database search revealed that 33 sensitive plant species are known from the vicinity of Mt. SAC. Four of these are not expected to occur within the study area because they are only known from places with a higher elevation (Greata's aster [*Symphyotrichum greatae*], lemon lily [*Lilium parryi*], San Bernardino grass-of-Parnassus [*Parnassia cirrata* var*. cirrata*], and San Gabriel bedstraw [*Galium grande*]). Nine others are not expected in the study area because their appropriate habitat is absent:

- alkaline soils near hot springs (hot-springs fimbristylis [*Fimbristylis thermalis*]);
- granitic cliffs and canyon walls (San Gabriel Mountains dudleya [*Dudleya densiflora*]);
- alkaline soils (chaparral ragwort [*Senecio aphanactis*]; smooth tarplant [*Centromadia pungens* spp. *laevis*]; Davidson's saltscale [*Atriplex serenana* var. *davidsonii*]; and salt spring checkerbloom [*Sidalcea neomexicana*]);
- chaparral with granitic soil (San Gabriel River dudleya [*Dudleya cymosa* ssp. *crebrifolia*]);
- recently burned or disturbed aras with sandstone soils with carbonate layers (Braunton's milk-vetch [*Astragalus brauntonii*,]);
- coastal salt marshes and swamps, playas, and vernal pools (Coulter's goldfields [*Lasthenia glabrata* ssp. *coulteri*]);
- freshwater marsh (California sawgrass [*Cladum californicum*]); and
- streams and springs, and meadows and seeps (San Bernardino aster [*Symphyotrichum defoliatum*], Sonoran maiden fern [*Thelypteris puberula* var. *sonorensis*]).

Eighteen other sensitive species potentially occur in the study area (Exhibit 3.3.2). Surveys were done at the appropriate time of year to detect these species and none were observed. Differences in the climate from year-to-year can influence the size of certain herbaceous species. This is why the potential to occur for certain herbaceous

species is rated low to moderate instead of simply just low, even though they were surveyed for at the time of year when they were best observed.

Table 3.3.2
Potentially Occurring Sensitive Plan Species

Species	Status*	Potential to Occur	Notes
Chaparral sand-verbena (*Abronia villosa* var. *aurita*)	--/-- CRPR List 1B.1	Presumed Absent	Flowers from June to September. Coastal sage scrub, chaparral. Annual. Would have been observed if present.
Coulter's saltbush (*Atriplex coulteri*)	--/-- CRPR List 1B.2	Low	Flowers from May to October. Coastal sage scrub in clay soils. Perennial herb.
Nevin's barberry (*Berberis nevinii*)	FE/SE CRPR List 1B.1	Presumed Absent	Flowers March to June. Chaparral, woodland, coastal and riparian scrubs. Would have been observed if present.
Thread-leaved brodiaea (*Brodiaea filifolia*)	FT/SE CRPR List 1B.1	Low to Moderate	Flowers from March to June. Clay soils in woodlands, coastal sage scrub, and grasslands. Perennial herb.
Round-leaved filaree (*California macrophylla*)	--/-- CRPR List 1B.1	Low	Flowers from March to May. Clay soils in woodland and grassland. Annual.
Slender mariposa lily (*Calochortus clavatus* var. *gracilis*)	--/-- CRPR List 1B.2	Low to Moderate	Flowers from March to June. Coastal sage scrub and grassland. Perennial herb.
Plummer's mariposa lily (*Calochortus plummerae*)	--/-- CRPR List 1B.2	Low to Moderate	Flowers from May to July. Granitic, rocky soil in coastal sage scrub and grassland. Perennial herb.
Intermediate mariposa lily (*Calochortus weedii* var. *intermedius*)	--/-- CRPR List 1B.2	Low to Moderate	Flowers May to July. Coastal sage scrub and grassland. Perennial herb.
Southern tarplant (*Centromadia parryi* ssp. *australis*)	--/-- CRPR List 1B.1	Low to Moderate	Flowers from May to November. Margins of freshwater marsh and vernally mesic grasslands. Annual.
Parry's spineflower (*Chorizanthe parryi* var. *parryi*)	--/-- CRPR List 1B.1	Low	Flowers from May to July. Sandy or rocky soil in coastal sage scrub. Annual.

Table 3.3.2 (cont.) Potentially Occurring Sensitive Plan Species			
Species	Status*	Potential to Occur	Notes
Slender-horned spineflower (*Dodecahema leptoceras*)	FE/SE CRPR List 1B.1	Low	Flowers from April to June. Sandy areas in woodlands. Annual.
Many-stemmed dudleya (*Dudleya multicaulis*)	--/-- CRPR List 1B.2	Low to Moderate	Flowers from April to July. Coastal sage scrub and grassland.
Mesa horkelia (*Horkelia cuneata* ssp. *puberula*)	--/-- CRPR List 1B.1	Low	Flowers from February to September. Sandy or gravelly soils in coastal sage scrub. Perennial herb.
California satintail (*Imperata brevifolia*)	--/-- CRPR List 2B.1	Presumed Absent	Flowers from September to May. Riparian scrub along Snow Creek. Perennial herb. Would have been observed if present.
California muhly **(***Muhlenbergia californica***)**	--/-- CRPR List 4.3	Low	Flowers from July to September. Mesic areas in chaparral, coastal scrub, coniferous forests, meadows and seeps. Perennial rhizomatous herb.
prostrate navarretia (*Navarretia prostrata*)	--/-- CRPR 1B.1	Low	Flowers from April to June. Mesic to coastal sage scrub and grasslands. Annual.
Brand's star phacelia (Phacelia stellaris)	FC/-- CRPR List 1B.1	Low	Flowers from March to June. Coastal sage scrub. Annual
White rabbit-tobacco (Pseudognaphalium leucocephalum)	--/-- CRPR List 2B.2	Low to Moderate	Flowers from July to December. Sandy and rocky soils in woodlands, coastal sage scrub, and grasslands. Perennial

*A listing and explanation of status and sensitivity codes can be found in Appendix E

B. Sensitive Animal Species

Two sensitive animal species have been observed on the West Parcel: the federally listed threatened coastal California gnatcatcher and the California Species of Special Concern coastal cactus wren (Figure 5). Least Bell's vireo (*Vireo pusillus bellii*), which is federally and state listed as endangered and a species of concern, was previously observed nearby on the Mt. SAC campus. An analysis of the Primary Constituent Elements (PCEs) for these species shows that the West Parcel is well suited to support the gnatcatcher but not the vireo (Appendix F).

1. Coastal California gnatcatcher (*Polioptila californica californica*)

Listing: FT/SSC
Distribution: Occurs throughout coastal lowlands.
Habitat(s): Coastal sage scrub and open chaparral.
Status on site: A minimum of one pair and one individual were observed in the coastal sage scrub on the West Parcel in 2008 (Figure 5). Protocol surveys are currently underway for this species at this time. Preliminary results are a pair and three juveniles currently inhabit the West Parcel.

2. Coastal cactus wren (*Campylorhynchus Brunneicapillus sandiegensis*)

Listing: --/SSC
Distribution: Subspecies occurs throughout desert and coastal areas of southern California. Habitat(s): Restricted to clumps of native prickly pear (*Opuntia littoralis* and *O. oricola*) or cholla (*Cylindropuntia prolifera*) growing in coastal sage scrub or along washes.
Status on site: Individuals were heard vocalizing in the coastal sage scrub located on the West Parcel in 2008, 2013, 2014, and 2015.

Eleven other sensitive animal species potentially occur on the West Parcel (Table 3.3.3). All of these are listed as Species of Special concern by CDFW: three species have a moderate potential to occur; two species have low to moderate potential to occur; five species have low potential to occur; and one is not expected.

Table 3.3.3 Listed or Sensitive Animal Species with Potential to Occur		
Species	Status*	Potential to Occur
Reptiles		
Red-diamond rattlesnake (*Crotalus exsul*)	--/SSC	Low to moderate. Favors rocky outcrops (limited on site) in coastal sage scrub, chaparral, creosote bush scrub, and areas dominated by cactus.
San Diego horned lizard (*Phrynosoma coronatum blainvillei*)	--/SSC	Low. Occurs in chaparral, open sage scrub, and away from development, in areas containing loose soil.
Western patch-nosed snake (*Salvadora hexalepis virgultea*)	--/SSC	Low. Occurs primarily in chaparral and occasionally in coastal sage scrub.
Birds		
Burrowing owl (*Athene cunicularia hypugea*)	--/SSC	Low. Prefers flat grassland, open sage scrub, and desert habitats. Could be found in the flatter disturbed sage scrub, grassland, and parts of areas mapped as extensive agriculture.
Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*)	--/SSC	Moderate. Occurs in coastal sage scrub on rocky hillsides and in open chaparral. Open areas of sage scrub occur on site.
California horned lark (*Eremophila alpestris actia*)	--/SSC	Moderate. Common in agricultural fields and disturbed grasslands throughout southern California. Small flock observed in 2008 elsewhere at Mt. SAC. Not observed on West Parcel.
Mammals		
American badger (*Taxidea taxus*)	--/SSC	Not expected. Upland grasslands, meadows, and fields. Not enough suitable habitat present to support this species.
Northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*)	--/SSC	Moderate. The northwestern San Diego pocket mouse inhabits coastal sage scrub, sage scrub/grassland ecotones, and chaparral communities. Inhabits open, sandy areas of both the Upper and Lower Sonoran life-zones of southwestern California and northern Baja California, Mexico.

Pallid bat (*Antrozous pallidus*)	--/SSC	Low to roost on site. Roosts in caves, mines, crevices, and abandoned buildings. Could forage on site.
San Diego black-tailed jackrabbit (*Lepus californicus bennettii*)	--/SSC	Low. Occurs primarily in open habitats, including coastal sage scrub, chaparral, grasslands, croplands, and open, disturbed areas if there is at least some shrub cover present.
San Diego desert woodrat (*Neotoma lepida intermedia*)	--/SSC	Low to Moderate. Occurs in open chaparral and coastal sage scrub, often building large stick nests in rock outcrops or around clumps of cactus or yucca.

*A listing and explanation of status codes for plant and animal species can be found in Appendix E

C. Jurisdictional Areas

A single wetland delineation point was sampled within the West Parcel (Figures 6 and 7). Only one point was necessary because the location sampled was the most mesic location on the West Parcel and it proved to not be a wetland. Sampling Point 1 was located in the northern streambed in mule fat scrub. Only one wetland plant was dominant at this location, mule fat[1] (*Baccharis salicifolia*), thus meeting the Dominance Test for wetland vegetation. A soil pit was excavated to a depth of 18 inches revealed three layers of sandy loam, with chromas of: 7.5 YR 2.5/2 (0 to 2 inches), 10YR 3/2 ((2 to 9 inches), and 10YR 2.5/3 (9 to 18 inches). No hydric soil indicators were present. One secondary indicator of wetland hydrology was present, drift deposits (B3, riverine), which is insufficient for the wetland hydrology criterion.

The Arid West Supplement notes that sandy soils such as the ones at this location may be problematic. However, given the lack of wetland soil indicators, strong wetland vegetation and wetland hydrology must be present to conclude this sampling point is in a wetland. Vegetation dominated by a FAC plant and only one secondary wetland hydrology indicator is insufficient to make that conclusion. This location is considered a non-wetland WUS and WS (mule fat scrub).

The WUS at the West Parcel consist of 0.08 acre of non-wetland WUS, along a total of 999 linear feet of streambed (Figure 6). The WUS exist as ephemeral streams. The northern stream comprises 0.05 acre and 585 linear feet of the on-site WUS. The southern stream comprises 0.02 acre and 414 linear feet of the on-site WUS.

The WS at the West Parcel total 0.20 acre and 999 linear feet (Figure 7). Of this total, 0.06 acre and 133 linear feet consist of mule fat scrub and 0.14 acre and 866 linear feet consist of streambed.

Exhibit 3.3.1: Wetland Inventory

National Wetland Inventory

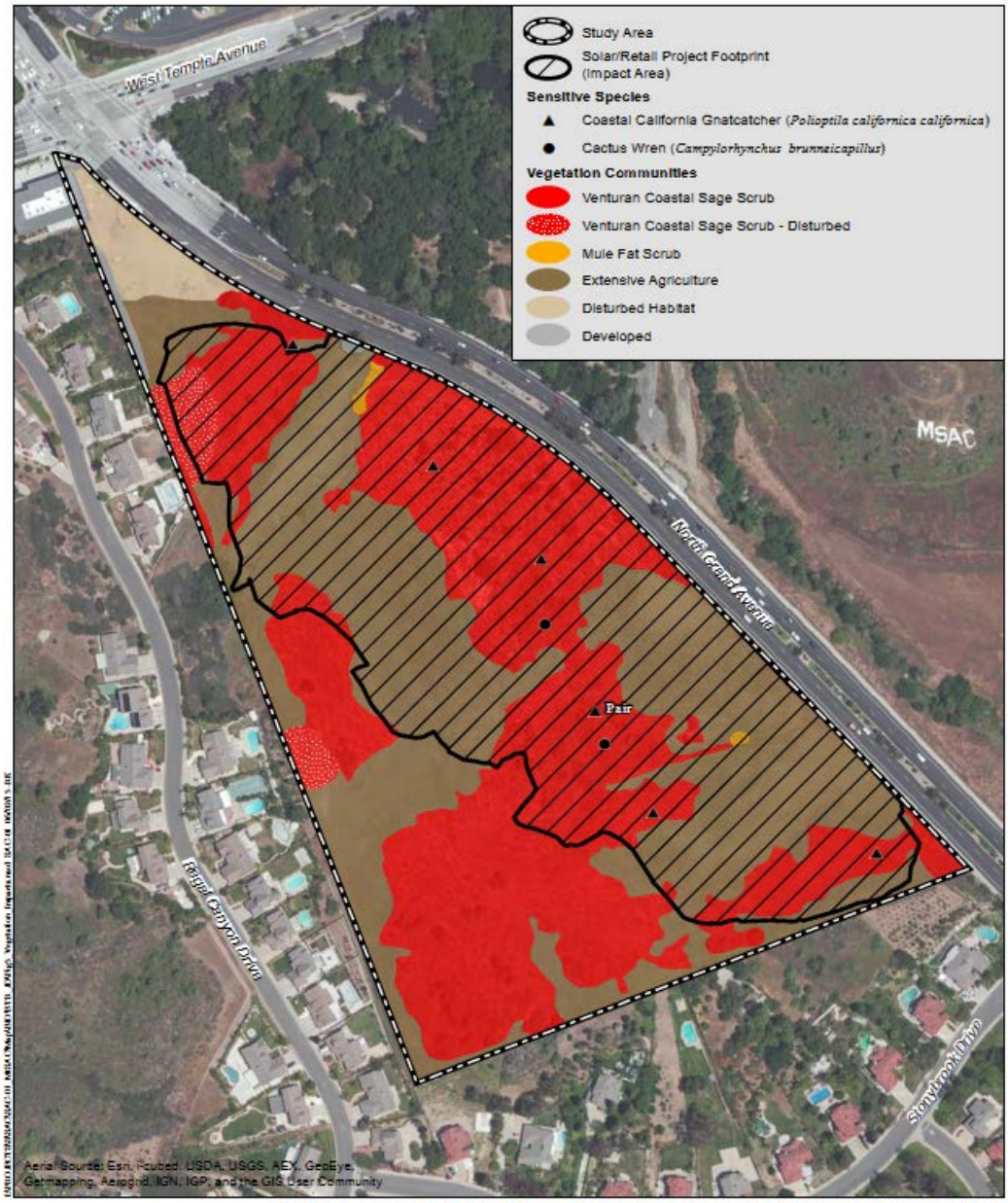
WEST PARCEL SOLAR PROJECT

HELIX Environmental Planning

N 0 350 Feet

Figure 4

Exhibit 3.3.2: Habitat/Sensitive Species



Habitat and Sensitive Species Map/Project Footprint

WEST PARCEL SOLAR PROJECT

HELIX Environmental Planning

0 250 Feet

Figure 5

Exhibit 3.3.3: Waters of the United States

Waters of the U.S.

WEST PARCEL SOLAR PROJECT

HELIX Environmental Planning

0 300 Feet

Figure 6

Exhibit 3.3.4: Waters of the State

Waters of the State

WEST PARCEL SOLAR PROJECT

Figure 7

1. Federal Permitting

Temporary and permanent fills and discharges (impacts) to WUS are regulated by the USACE under Section 404 of the CWA (33 USC 401 et seq.; 33 USC 1344; USC 1413; and Department of Defense, Department of the Army, Corps of Engineers 33 CFR Part 323). Impacts would require a Clean Water Act Section 404 permit from the Los Angeles District USACE. Based on the existing acreage of potential USACE jurisdiction, impacts would be covered under Nationwide Permit (NWP) 39 for Institutional Developments or NWP 51 for Land-based Renewable Energy Generation Facilities, although a waiver would be required from the USACE because the impacts exceed 300 linear feet. Notification to the USACE through the preparation of a Pre-Construction Notification (PCN) requesting authorization under either of these NWP's would be required.

2. State Permitting

A Clean Water Act Section 401 Water Quality Certification administered by the SWRCB or Regional Water Quality Control Board (RWQCB) also must be issued prior to any 404 Permit. Submittal of Request for Water Quality Certification to the Los Angeles RWQCB is expected to be required prior to project activities. Applicants are allowed to submit this request prior to certification of the CEQA document; however, the RWQCB will not issue a 401 Certification until a certified CEQA document is provided. There are no isolated waters or wetlands under RWQCB jurisdiction within the study area that would be subject to the State Porter-Cologne Water Quality Control Act only.

The CDFW regulates temporary and permanent alterations or impacts to streambeds or lakes under California Fish and Game Code 1602. The CDFW requires a SAA for projects that will divert or obstruct the natural flow of water; change the bed, channel, or bank of any stream; or use any material from a streambed. The SAA is a contract between the applicant and CDFW stating what activities can occur in the riparian zone and stream course (California Association of Resource Conservation Districts 2002). Notification of Lake or Streambed Alteration is expected to be required to the South Coast Region CDFW. Applicants are allowed to submit a SAA application prior to certification of the CEQA document; however, CDFW will not issue a 1602 permit until a certified CEQA document is provided.

3.3.2. Biological Resource Impacts

Impacts addressed in this section are considered either direct or indirect. A direct impact occurs when the primary effects of the project replace existing habitat with graded or developed areas. All of the project area is considered impacted for the purposes of this report. An indirect impact consists of secondary effects of a project such as exotic species invasion, increased lighting, noise, and increased human intrusion. The magnitude of an indirect impact can be the same as a direct impact; however, the effect usually takes a longer time to become apparent. This impact analysis is based on the footprint for the grading and solar array on the West Parcel.

Thresholds of Significance

Significance thresholds identified for biological resource issues include effects to rare, threatened, or endangered species or their associated habitats, and interference with the movements of resident or migratory fish or wildlife species. For purposes of this report, significance thresholds are summarized as follows: (1) a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS; (2) a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the CDFW or USFWS; (3) a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA through direct removal, filling, hydrological interruption, or other means; (4) a substantial interference with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites; (5) a conflict with any applicable policies protecting biological resources; and (6) a conflict with the provisions of an adopted HCP, NCCP, or other applicable habitat conservation plan. In response to the sixth threshold, it should be noted that there are no adopted plans applicable to the Mt. SAC study site.

Although there is repletion, the CEQA Checklist includes the following statement:

1. Biological Resources. *Would the projects:*

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

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

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

A. DIRECT IMPACTS

A1. Vegetation Communities and Developed Land

The solar power project on the West Parcel would directly impact two vegetation types, as well as extensive agriculture, disturbed habitat, non-native vegetation, and developed land (Table 4; Figure 5). A total of 17.22 acres would be impacted by the project.

Table 3.3.4
Existing Vegetation Communities Impacts

Native and Naturalized Vegetation	Area		
	Existing	Impacted	Preserved
Mule fat scrub	0.06	0.06	0
Venturan coastal sage scrub (including disturbed)	14.20	8.36	5.84
Subtotal	14.26	8.42	5.84[1]
Active Use and Altered Areas			
Extensive agriculture	12.43	8.78	3.65
Disturbed habitat	0.71	0.00	.71
Developed	0.25	0.02	0.23
Subtotal	13.39	8.80	4.59
TOTAL	27.65	17.22	10.43

Source: Helix Environmental Planning, Table 4, Ibid.

1 This total includes area within the fuel modification zone adjacent to the residential area to the west. The fuel zone areas will not be included as preserved for the purposes of calculating available mitigation on the West Parcel. The resulting amount of preservation available on the West Parcel is 5.07 acres.

A2. Sensitive Vegetation Communities

Direct impacts will occur to 0.06 acre of mule fat scrub and 8.42 acres of Venturan coastal sage scrub (included the disturbed phase); these impacts are considered significant. The impacts to mule fat scrub are significant because it is a wetland habitat. The impacts to the sage scrub are considered significant because of the regional sensitivity of the sage scrub and the presence of a federally listed species, the coastal California gnatcatcher, and state sensitive species, the coastal cactus wren. The impacts to the remaining habitats or areas are not significant because the habitat is not regarded as sensitive habitat (extensive agriculture, disturbed habitat, and developed areas).

Impacts to two sensitive vegetation types were documented on site: mule fat scrub and Venturan coastal sage scrub (including the disturbed phase). Impacts to both of these habitats area regarded as significant. The impact to streambed was not regarded as significant due to the small area affected. The impact to streambed will none the less be mitigated for as part of the CWA 404 Permit and 1602 Streambed Alteration Agreement (SAA).

The amount and type of mitigation required for these impacts varies on the habitat. A 3:1 mitigation ratio, with no net loss of acreage is generally required for wetland impacts. For the impacts to mule fat scrub this means creation of 0.06 acre of mule fat scrub and enhancement of 0.12 acre of wetland habitat on site or nearby. The mitigation ratio for coastal sage scrub (including disturbed phases) is 2:1. For each acre of sage scrub impacted, 2 acres must be preserved or created. The Habitat Mitigation Plan for the project fulfills these requirements (Appendix X)

Table 3.3.5
Vegetation Mitigation Analysis

Vegetation Community	Impact Acreage	Minimum Mitigation Ratio	Mitigation Acres
Mule fat scrub	0.06	3:1‡	0.18
Coastal sage scrub (all phases)	8.36	2:1§	16.72
TOTAL	8.42	--	16.90

Source: Helix Environmental Inc., Ibid., Table 6
1 – 1:1 creation and 2:1 enhancement, 2 – Preservation or restoration

A3. WUS and WS Jurisdictional Wetlands

All of the southern streambed and most of the northern streambed would be impacted by the project (Table 5). All of the mule fat scrub would be impacted. While the streambed impacts are not significant under CEQA they will require permitting by the USACE, CDFW, and SWRCB. The impact to mule fat scrub is significant under CEQA and would require a permit from CDFW.

Table 3.3.6
Jurisdictional Impacts (acres/linear feet)

	Existing	Impacted	Remaining
Waters of the U.S.			
Non wetland	0.08/999	0.08/976	0*/2
Waters of the State			
Mule fat scrub	0.06/133	0.06/133	
Streambed	0.14/999	0.14/843	0*/2
State Total	0.20/999	0.20/976	0*/2

Source: Helix Environmental Planning, Table 5, Ibid.

* The small segment (i.e., 34 feet) of the southern drainage at the western boundary will remain; however, the area is too small to be reflected in these calculations, which are rounded to the second decimal place.

The impact to streambed was not regarded as significant due to the small area affected. The impact to streambed will none the less be mitigated for as part of the CWA 404 Permit and 1602 Streambed Alteration Agreement (SAA).

A4. Sensitive Plants

No impacts to sensitive plant species are expected from the implementation of the West Parcel Solar Project.

A5. Sensitive Animals

Construction of the various project elements would impact habitat on site that supports two sensitive animal species, the coastal California gnatcatcher and coastal cactus wren. Potential impacts to the non-federally listed species (i.e., cactus wren and horned lark) and their habitats would not be considered significant. Potential impacts to the gnatcatcher are regarded as significant.

A limited amount of potentially suitable habitat for burrowing owl (*Athene cunicularia hypugea*) exists in two places in the study area. Both areas are relatively flat. One occurs primarily north of the northern drainage. The other occurs adjacent to North Grand Avenue in the southeastern part of the parcel. Revised survey protocol (CDFW 2012c) could not be met for this report due to the seasonally timing requirements of the survey protocol, and so a definitive conclusion about the presence of burrowing owls cannot be made. The probability of this species inhabiting Mt. SAC appears low.

No owls or evidence of their burrows were observed during the focused sensitive bird surveys, general biological survey, and rare plant surveys (HELIX 2008b). Furthermore, most of the West Parcel, with the exception of the two areas cited above, is too steep for these owls. The CNDDB records show that the nearest burrowing owl record is approximately 9 miles southwest of Mt. SAC, in the City of Chino Hills (Danbury Park). Protocol surveys for burrowing owl are underway and thus far have been negative. While it seems unlikely owls are present, potential impacts to this species remain unresolved in the absence of protocol surveys.

Construction of the project will directly impact occupied coastal California gnatcatcher habitat. Because Mt. SAC is not enrolled as a participant in the NCCP, the Master Plan cannot rely on a habitat loss permit under Section 4(d) of the federal ESA. Since there is not an existing HCP for the study area, any projects that would cause "take" of a listed species would require an application to the USFWS for issuance of a Section 10(a) permit for "incidental" take of endangered or threatened species (with preparation of an HCP).
Construction generated noise may adversely affect nesting coastal California gnatcatchers, impact coastal cactus wren habitat, impact burrowing owls and cause nest abandonment by raptors

A6. <u>Raptors</u>

Construction of the proposed project would potentially directly impact raptor foraging and nesting habitat through construction activity. Impacts to raptor foraging habitats would be adverse but not significant. Direct impacts to active raptor nests are prohibited under the federal MBTA, although raptor nesting habitat is extremely limited on the West Parcel and no nests were observed during the other surveys. There remains, however, a potential to impacts to raptors from nest disruption during project construction. However, with the pre-construction surveys required by mitigation measure BIO-17, the project impact on raptors for the solar project is less than significant.

B. INDIRECT IMPACTS

Potential indirect impacts from project construction could include decreased water quality (i.e., through sedimentation, contaminants, or fuel release), fugitive dust, colonization of non-native plant species in previously undisturbed areas, edge effects, animal behavioral changes, road kill, night lighting, errant construction impacts, and noise. The proposed project will be subject to the restrictions and requirements that address erosion and runoff, including the federal CWA. Best management practices also should be used throughout construction to further reduce impacts. A discussion of potential indirect impacts follows.

B1. Water Quality

Water quality can be adversely affected by potential surface runoff and sedimentation. The use of petroleum products (i.e., fuels, oils, and lubricants) could potentially contaminate surface water and affect biological resources. Decreased water quality may adversely affect vegetation, aquatic animals, and terrestrial wildlife that depend on these resources. However, Mt. SAC must comply with control requirements of the National Pollutant Discharge Elimination System (enforced by the SWRCB) during the construction and operation of the proposed facilities. Compliance with the water quality regulations would mean that the potential impacts to downstream biological resources would be less than significant.

B2. Fugitive Dust

Fugitive dust can disperse onto sensitive vegetation, and a continual cover of dust may reduce the overall vigor of individual plants by reducing their photosynthetic capabilities and increasing their susceptibility to pests or disease. In turn, this could affect animals that are dependent on these plants. Construction activities (including clearing and grading) occurring within or adjacent to the West Parcel could result in the deposition of significant amounts of dust on plants and trees, which could cause a significant impact. Implementation of dust control measures during clearing, grading, and construction (as required for air quality impacts) would reduce potential dust impacts on biological resources to less than significant levels.

B3. Non-native Plant Species

Non-native plants can colonize disturbed areas and could potentially spread into adjacent native habitats. Many of these non-native plants are highly invasive and can

displace native vegetation, reducing native species diversity. An abundance of non-native species could potentially increase flammability and fire frequency, change ground and surface water levels, or adversely affect native wildlife that are dependent on native plant species. Revegetation for erosion control and the use of landscaping could increase colonization by non-native plant species in non-impact areas that contain native vegetation. This impact could potentially occur to the native Venturan coastal sage scrub habitat if invasive landscaping plants are planted as part of the landscaping plans. Potential impacts by non-native plant species and the resulting degradation of habitat used by native species could be considered a significant impact.

Non-native plant species also have the potential to colonize non-impact areas and would result in degradation of habitat used by native species, which could be considered a significant impact. Since the landscape plan (Appendix E1) for the solar project includes no non-native plants, the project impact of invasive plants is less than significant.

B4. Human Activity/Edge Effects

Urbanization and increases in human activity can result in degradation to sensitive vegetation by fragmenting the land and forming edges between developed areas and habitat. These edges make it easier for non-native plant species to invade native habitats and for native and non-native predators to access prey that may have otherwise been protected within large, contiguous blocks of habitat. In addition, secondary extinctions through disruption of predator-prey, parasite-host, and plant-pollinator relations can also occur (Soulé 1986). Edge effects can be particularly significant. For example, when a nest parasite such as the brown-headed cowbird (*Molothrus ater*) has easy access to other birds' nests, brood parasitism in that area will increase. Illegal dumping of trash may also increase in these areas.

Human activity and edge effects resulting from the proposed solar site are not considered significant. Once constructed, the solar site will not increase the level of human related activities over what currently exists there today.

B5. Roadkill

This project is not expected to significantly increase the amount of traffic in area following construction; therefore, effects due to roadkill are not expected to be significant.

B6. Night Lighting

Night lighting exposes wildlife species to an unnatural light regime and may alter their behavior patterns, which could result in a loss of species diversity. Night lighting on native habitats also can provide nocturnal predators with an unnatural advantage over their prey. This could cause an increased loss in native wildlife. This impact would only be significant if the facility is illuminated at night. No security lighting is proposed for the solar project but lighting from the Fire Academy site and Parking Lot W may impact areas along Snow Creek and along the Wildlife Sanctuary. Unless appropriate measures are taken during the building design phase to prevent release of light into adjacent habitat, night lighting could result in a significant impact.

Night lighting on native habitats may result in altered behavioral patterns of wildlife species, and possibly a decrease in native species diversity of the site

B7. Errant Construction Impacts

Another potentially significant indirect impact of project construction is errant construction impacts outside the limits of construction (i.e., construction vehicles encroaching beyond the limits of work and entering native habitat). Any such activities occurring outside the construction limits within sensitive habitat would be considered a significant indirect impact.

Construction activities occurring outside the construction limits may significantly impact adjacent sensitive habitats. BIO-09 addresses this concern.

B8. Noise

Noise can cause animals to flee, which could be especially significant to birds that may abandon active nests. Additionally, birds may be susceptible to disturbances other than noise from construction activity. For example, construction activity within 500 feet of an active raptor nest may cause the nest to be abandoned and that impact would be considered significant. Although no active raptor nests were observed on site during the general survey, it is possible that they may occur on or adjacent to the study site near areas where construction activity is planned.

Construction noise impacts on onsite coastal California gnatcatchers are addressed in the Construction Noise Impact Planning for the Mt. SAC West Parcel Solar Project, Helix Environmental Planning, June 7, 2016 (Appendix I). The report evaluates the effectiveness of sound barriers for the grading and solar installation stages of the project. The report also outlines the duties of the noise project monitor in assuring the maximum noise level permitted is 60 dBA Leq. The monitor may shut down

construction for any length of time necessary to assure no noise impacts are occurring.

The regulations in this report are applicable only if construction proceeds into the breeding season. Grading and construction may proceed during the non-breeding season (September 1 to February 14) without compliance with this report.

B9. Indirect Less than Significant Impacts

Indirect impacts due to the following causes are Less than Significant due to compliance with state law or with project design features:

Dust related to construction shall be controlled through implementation of measures required per dust control mandates, including the application of water on un-vegetated, unpaved surfaces during construction.

Degraded surface water quality will be prevented by implementation of the Best Management Practices in the SWRCB guidelines.

C. HABITAT MITIGATION PLAN

The Habitat Mitigation Plan is the implementation manual that specifies how all of the habitat mitigation requirements for the project will be implemented on and off-site. Table 1 identifies the preservation and restoration acres for coastal sage scrub mitigation required on-site and off-site. Table 2 identifies the preservation and enhancement for mule fat and for creation of streambed.

Table 3.3.7
Coastal Sage Scrub Mitigation

Mitigation Type	Acres
Preservation	
West Parcel	5.07
Expanded Wildlife Sanctuary	3.51
Subtotal	8.58[1]
Restoration	
West Parcel	3.03[2]
Expanded Wildlife Sanctuary	5.11
Subtotal	8.14[3]
Total	16.72
Source: Helix EPI, Ibid, Table 1	

1 Includes 0.46 acre of disturbed CSS in the Expanded Wildlife Sanctuary, which will also be restored.
2 Includes restoration of 1.03 acres of temporary impact area, and 2.00 acres of agricultural land.
3 0.90 acre of restored CSS areas will be planted as cacti thickets; the remaining 7.24 acres of restoration will be planted as non-succulent dominated CSS.

Table 3.3.8 Jurisdictional Mitigation	
Mitigation Type	Acres
Mule Fat	
Creation	0.06
Enhancement	0.12
Subtotal	0.18[1]
Streambed	
Creation	0.14
Total	0.32
Source: Table 2	

[1] Mitigation must include at least 0.06 acre of creation; enhancement obligation may be met by creation.

The results of implementing the Habitat Mitigation Plan are shown in Exhibit 3.3.5.

During Scoping Session 2, the chairperson of United Walnut Taxpayers asserting the biological resources study was done in 2012 and needed to be updated. The Biological Technical Report was completed in May 2015; the Habitat Monitoring Program in October 2016 and a select survey was completed in June 2017. All of the reports cited are in the Appendices.

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Exhibit 3.3.5: Habitat Mitigation Plan

Mitigation Areas

3.3.3. Mitigation Measures for Biological Resource Impacts

The following measures are required to avoid significant effects of the project on biological resources.

BIO-01. New permanent lighting standards in Parking Lot M and Lot W immediately adjacent to sensitive biological habitat areas (i.e. Wildlife Sanctuary/Open Space Zone) shall not exceed 0.2 foot-candles at five (5) feet outside of the parking lot boundary. Facilities Planning and Management shall ensure compliance.

BIO-02. Pre-construction burrowing owl (BUOW) surveys will be conducted to ensure no construction related impacts occur to this sensitive species. A pre-construction survey for BUOW shall be completed for construction areas with suitable habitat for the BUOW Owl (e.g. Irrigation Well site, the Detention Basin site, and the Fire Training Academy site). If clearing, grading, or construction is planned to occur during the BUOW breeding season (February 1 through August 31), pre-construction surveys should be conducted in the construction area and in appropriate habitat within 500 feet of the construction area. A pre-construction nest/owl survey should be completed for each project or work area within 14 days of the start of construction. Multiple pre-construction surveys may be required because the start of specific projects may be separated in time by months or years. If there are no nesting owls, within each area, development would be allowed to proceed. If BUOW are observed, impacts shall be avoided according to the Staff Report on Burrowing Owl Mitigation (CDFW 2012). All recommendations of the final studies shall be implemented. Facilities Planning and Management shall ensure compliance.

BIO-03. Prior to grading within areas of Venturan Coastal Sage Scrub, the college shall identify replacement 2:1 acreage. Replacement habitat shall be installed prior to project completion. Planning and Facilities Management shall ensure compliance.

BIO-04. Prior to grading within areas of non-native grassland, the college shall identify replacement 0.5:1 acreage habitat. Replacement habitat shall be completed prior to project completion. Planning and Facilities Management shall ensure compliance.

BIO-06. Prior to removal of any trees on campus in or near construction areas during March - May, a qualified biologist shall survey the trees for active nesting sites of migratory birds. (See BIO -17 for raptors) If migratory birds are observed nesting in the trees, development within 300 feet must be postponed either until all nesting has ceased, or until construction is moved far away enough so that the activity does not impact the birds. Facilities Planning and Management shall monitor compliance.

BIO-08. Permanent development adjacent to any future wetland mitigation areas shall incorporate a 25-foot buffer during final project design. If un-vegetated, the buffer shall be planted with non- invasive species that are compatible with the adjacent wetland mitigation area habitat. A qualified biologist shall review the final landscape plans for the buffer area to conform that no species on the California Invasive Plan Council (Cal-IPC) list are present in the plan. Facilities Planning and Management shall monitor compliance.

BIO-09. The limits of construction for projects adjacent to sensitive habitats should be delineated with silt fencing/fiber rolls and orange construction fencing. A qualified biologist should attend a pre-construction meeting to inform construction crews about the sensitivity of any adjacent habitat. A qualified biologist should also inspect the fencing upon installation and monitor clearing and grading of (and near) native habitat to prevent unauthorized impacts. Facilities Planning and Management shall monitor compliance.

BIO-11. A 25-foot buffer shall be incorporated into the project design for the Fire Training Academy to protect future wetland mitigation areas along Snow Creek. A qualified biologist shall also review the draft landscape plans for the buffer area to confirm that no species on the Cal-IPC list would be present during plan implementation. Facilities Planning and Management shall ensure compliance.

BIO-13. Construction noise adjacent to existing coastal sage scrub habitat within the West Parcel and on MSAC Hill that is retained (i.e. not graded) will be minimized whenever feasible by avoiding construction grading during the prime nesting season. Facilities Planning and Management shall monitor compliance.

BIO-14. Project construction activities shall comply with all requirements included in the Noise Planning for Mt. San Antonio College West Parcel Solar Project, Helix Environmental Planning, June 7, 2016. Facilities Planning and Management shall ensure compliance.

BIO-15. Project construction activities shall comply with all requirements included in the Section 401, 404 permits and the 1603 Agreement for the West Parcel Solar Project. Facilities Planning and Management shall ensure compliance.

BIO-16. Erosion control seed mixes and landscape plans for the projects should be reviewed by a qualified biologist prior to final approval to ensure that no species on the California Invasive Plant Council (Cal-IPC) list of problem species would be incorporated into the plan(s). Facilities Planning and Management shall monitor compliance.

BIO-17. Raptors may be impacted during construction activities by nest disruption, habitat loss or noise. A pre-construction survey shall be conducted within 14 days of the start of construction. If clearing, grading, or construction will occur from Feb 1 – July 31, pre-construction surveys shall be conducted in the construction area and in appropriate nesting habitat within 500 feet of the construction area. Multiple pre-construction surveys may be required if the start of specific projects is separated in time by months or years. If there are no nesting raptors within each area, development is allowed to proceed. However, if raptors are observed nesting within the area and within sight and sound of the work, development within 300 feet shall be postponed either until all nesting has ceased, until after the breeding season, or until construction is moved far enough away so the activity does not impact the birds. An exception to this would be any raptor nests east of North Grand Avenue. North Grand Avenue is a four-lane road with a landscaped median. Any nests east of the road would likely be habituated to activity from this busy road and unaffected by construction on the West Parcel. Facilities Planning and Management shall monitor compliance.

BIO-18. Impacts to coastal cactus wren habitat should be mitigated at 2:1 ratio. That is, for each acre of cacti dominated coastal sage scrub impacted, 2 acres should be created and/or preserved. Facilities Planning and Management shall monitor compliance.

BIO-19. Construction activities known to generate noise levels capable of disrupting breeding coastal California gnatcatchers birds will be restricted to the non-breeding season (September 1 to February 14). Facilities Planning and Management shall monitor compliance.

BIO-20. All construction lighting and new campus lighting that is adjacent to sensitive habitat areas should be of low illumination and be shielded and directed downwards and away from adjacent native habitat. Facilities Planning and Management shall monitor compliance.

BIO-21. The Planting Plan, EPT Design (Sheet L3.01), January 15, 2015 or an update shall be implemented for the project. Facilities Planning and Management shall ensure compliance.

BIO-22. Because Mt. SAC is not enrolled as a participant in the NCCP, the District cannot rely on a habitat loss permit under Section 4(d) of the federal ESA. Since there is not an existing Habitat Conservation Plan (HCP) for the project site, the "take" of a listed species requires an approved application to the USFWS for issuance of a Section 10 (a) Permit for "incidental" take of endangered or threatened species. Facilities Planning and Management shall ensure compliance.

BIO-23. The Planting Plan, EPT Design (Sheet L3.01), January 15, 2015 or an update shall be implemented for the Detention Basin area east of the stadium. Facilities Planning and Management shall ensure compliance.

3.3.4 Level of Significance for Biological Resource Impacts with Mitigation

Less than Significant with Mitigation Incorporated

3.3.5 Biological Resource Cumulative Impacts

The cumulative impact of all campus projects upon biological resources was evaluated in the 2015 Final EIR. There are no other projects in the immediate project vicinity west and east of Grand Avenue. The retail zone adjacent to the project will be used either for Christmas tree sales or agricultural/produce sales. No significant cumulative biological resource impacts are anticipated.

Figure 3 in the 2008 Biological Technical Report identified all campus biological resources south of Temple Avenue.

3.3.6 Mitigation Measures for Biological Resource Cumulative Impacts

Mitigation Measures for cumulative impacts are included in the 2016 Mitigation Monitoring Program

3.3.7. Level of Significance for Cumulative Impacts with Mitigation

Less than Significant with Mitigation Incorporated

3.4 CULTURAL RESOURCES

3.4.1 Existing Conditions for Cultural Resources

Applied EarthWorks, Inc. prepared a cultural resource evaluation for the project site in December 2014. The report is summarized herein and included as Appendix V. The report was part of the Section 404 permit application to the U.S. Army Corps of Engineers (USACE).

The report summarizes the methods and results of an intensive cultural resource investigation of the approximately 28-acre survey area (which includes the 27.65-acre Project area in addition to a thin strip of land on the east side of Grand Avenue) and provided baseline information on cultural resources that enables more effective development and planning through early consideration of cultural resources. This study includes the definition of the Area of Project Effects (APE), a review of previous studies in the vicinity, and the results of a systematic, intensive cultural resources pedestrian survey of the project area. The purpose of the survey was to determine the presence of any historic properties pursuant to Section 106 of the National Historic Preservation Act (NHPA) of 1966 (as amended) (36 Code of Federal Regulations (CFR 800)), or historical resources under the California Environmental Quality Act (CEQA), within the project area.

As part of this study, the firm conducted an archaeological literature and records search of the California Historical Resources Information System (CHRIS) in June 2014. A records search of the project area plus a 1-mile radius was conducted through the South Central Coast Information Center (SCCIC), housed at California State University, Fullerton.

The CHRIS database indicates that at least twenty-five (25) cultural resources projects have been conducted within or within a 1-mile radius of the current Project area, including two surveys conducted in 1979 and 1980 that encompassed the current project area. The CHRIS database indicated that four cultural resources had been recorded within a 1-mile radius of the project area, including three prehistoric archaeological sites and one historic built environment resource (Mt. SAC Campus Historic District). None of these resources are located within the current project area.

The firm also requested a Sacred Lands File (SLF) search from the Native American Heritage Commission (NAHC) in June 2014. This SLF records search encompassed the current project area. The NAHC responded that no SLF resources were known to exist within the project area, but cautioned that the absence of specific site information does not indicate the absence of such resources. The NAHC provided a list of regional Native Americans who have interest in the region, detailed the process of consultation as

described in relevant legislation, communicated with local groups, and detailed how resources should be approached.

A letter was subsequently sent to all of the listed tribes and individuals informing them of the survey work and requesting information regarding cultural resources in the project area.

Tribal communities listed on the NAHC list include: the Gabrieleno Band of Mission Indians, the Gabrieleno/Tongva San Gabriel Band of Mission Indians, the Gabrielino Tongva Indians of California Tribal Council, the Gabrielino/Tongva Nation, the Gabrielino-Tongva Tribe, the Los Angeles City/County Native American Indian Commission, and the Tongva Ancestral Territorial Tribal Nation. The final results of the Section 106 Native American consultation efforts are to be documented by the USACE.

Exhibit 3.4.1: Site Overview

Figure 4 Overview of the 27.65-acre Project area, facing west.

3.4.2. Cultural Resource Impacts

The entire campus is a potential historic resource, since it is considered eligible as a Historic District. The Hilmer Lodge Stadium and the Technology Center are considered potentially eligible as individual contributors.

The Wildlife Sanctuary is a potential historic resource, but the solar project has a less than significant impact on the Sanctuary. The 10-acre Wildlife Sanctuary was expanded in the 2015 Final EIR and is part of the 26.9-acre Wildlife Sanctuary/Open Space Zone on campus. The Habitat Mitigation Plan (Exhibit 3.3.1) results in preservation in perpetuity of a total of 16.9-acres of habitat. This consists of 0.18-cre of mule fat scrub and 16.72-acres of coastal sage scrub. These activities have no impact on the Wildlife Sanctuary as a historic resource.

The intensive pedestrian survey of the project area resulted in the identification and documentation of one cultural resource. This resource is identified as AE-2840-1H, which includes the remains of a historic cattle chute. No evidence of prehistoric archaeological resources were identified in the project area.

AE-2840-1H comprises remnants of a cattle chute, a loading corral, water trough, barbed-wire fence lines, a cattle gate, and a dirt access road, all located on the southwest side of Grand Avenue south of Temple Avenue.

These remanants all appear to date to the historic period (around 1950) based on a review of historic aerial imagery available at *HistoricAerials.com* (NETR 2014). It was around 1950 that the modern alignment of Grand Avenue came into being at this location, and naturally, a location next to the road was chosen for the cattle chute and loading corral, as its sole purpose was to load cattle into trucks for transport to another location. The cattle chute remnants, being only a portion of the original structure, consists of a 9 by 15 ft (2.7 by 4.5 m) rectangular configuration of seven round erect wood posts measuring 5 ft (1.5 m) tall. Two additional wood posts are lying on the ground next to the structure. The south end of the structure has a hinged gate across the chute entrance, and a pile of wood boards and panels lying to the south of the chute appear to be the remains of a small loading corral.

About 15 ft to the east of the chute is a short, round metal water trough that appears to be fed by an underground pipeline. A ball-cock mechanism controls the water level, and a modern PVC pipe conveys water into the trough from the underground source.

Approximately 50 ft to the east of the cattle chute is a dirt access road that enters the property from Grand Avenue. A metal cattle gate at the entrance to the property has a label on it that reads, “Powder River Livestock Handling Equipment/Call 1-800-453-5318/In Utah Call 374-2983.”

According to the company's website (www.powderriver.com), the telephone number is still current, and they have been in business in Provo, Utah since 1938. However, this gate does not appear to date to the historic period, and most likely it replaced an older gate in decades past.

AE-2840-1H is not recommended as eligible for listing on the National Register of Historic Places (NRHP) or California Register of Historical Resources (CRHR) inclusion, and no further management of this resource is required.

Field notes documenting the current investigation are on file at Earthwork Inc., 133 North San Gabriel Boulevard, Suite 101, Pasadena, California. The contact person is Roberta Thomas at rthomas@appliedearhworks.com. A copy of this report was also filed with the USACE Los Angles District office and the SCCIC of the CHRIS at California State University, Fullerton.

Exhibit 3.4.2: Cultural Resources

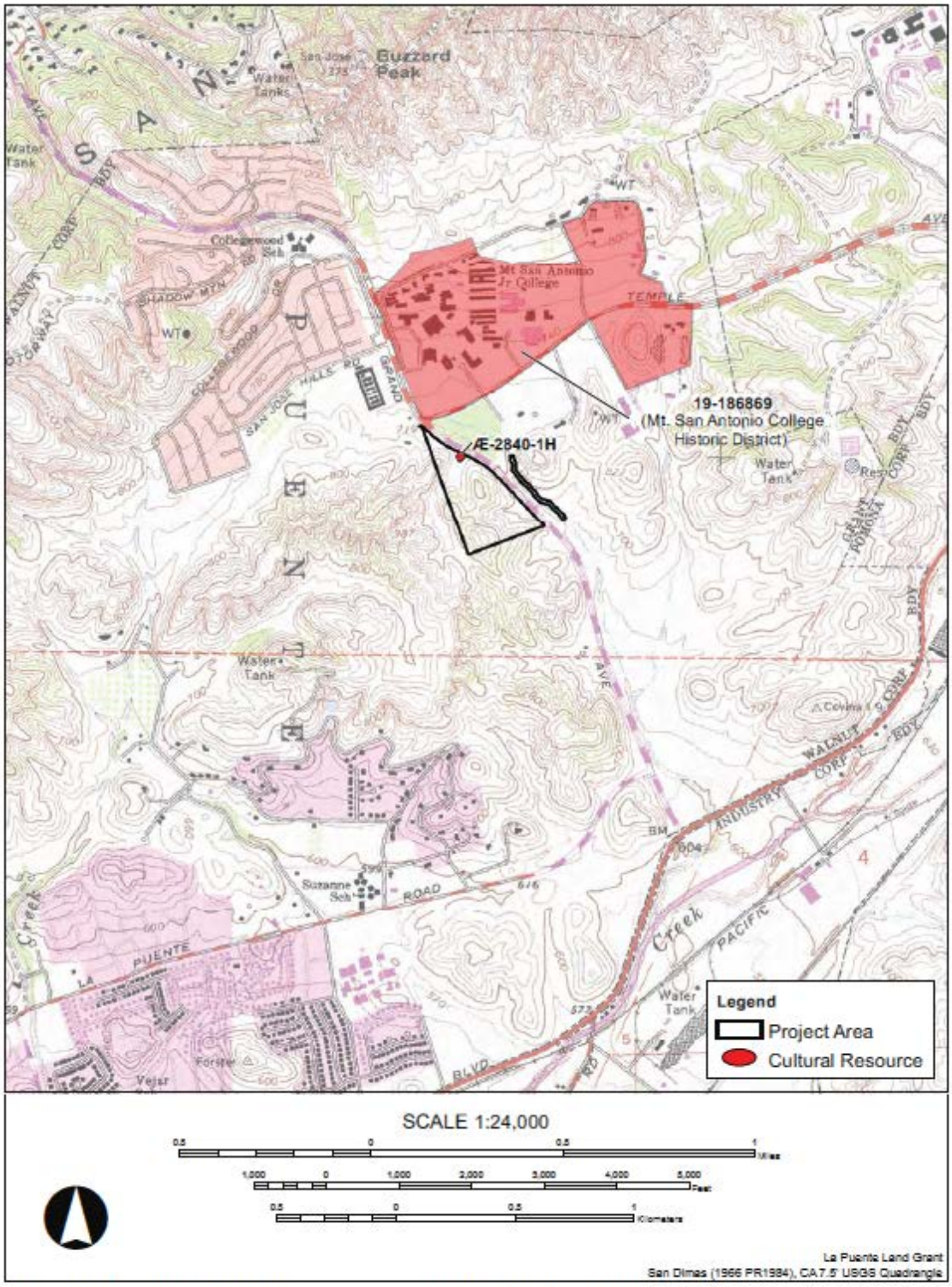


Figure 3 Location of cultural resources within or directly adjacent to the Project area.

The CEQA Checklist includes the following:

5. Cultural Resources*. Would the projects:*

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

e) Cause a substantial adverse change in the significance of a tribal cultural resource (TCR) such as a site, feature, place, cultural landscape, sacred place or object with cultural value to a California Native American tribe: that is either on, or eligible for inclusion in, the California Historic Register or a local historic register, or is a resource that the Lead Agency, at its discretion and supported by substantial evidence, determines should be treated as a Tribal Cultural Resource (PRC 21074 (a) (1-2)?

Applied Earthwork staff consulted with tribal groups during preparation of the Cultural Resources report for submittal of permits to the USACE. As stated, they anticipated further government-to-government consultation between the tribes and the USACE.

Comments from the Kizh Nation were received upon preparation of the 2015 FMPU/PEP Draft EIR. Their initial comments were addressed in Section 3.62 pp 261-262 of the 2015Draft EIR and the comments remain relevant for the current project. Additional responses were provided to Kizh Nation comments (Comment 7-2) during preparation of the 2015 FMPU/PEP Final EIR. Two additional new comments to project notices were also received, which are included as Appendix X-4 and X-17.

The Kizh Nation did not formally request notification but did request AB 52 consolation concerning the West Parcel project on July 14, 2017 (Appendix R1). The District initiated consultation with the tribe on July 27, 2017.

3.4.3 Mitigation Measures for Cultural Resource Impacts

None are required for cultural resources on the project site.

3.4.4 Level of Significance for Cultural Resource Impacts with Mitigation

Not Applicable

3.4.5 Cultural Resource Cumulative Impacts

There are ten designated historic sites located in the City of Walnut. The Wildlife Sanctuary is one of the sites. The Grove of Walnut trees is not located on campus.

Since the District is not subject to City building, land use, and zoning controls, except for City grading ordinances regulating drainage improvements and requiring the review and

approval of grading plans as these ordinance related to the design and construction of onsite improvements which affect drainage, road conditions, or grading, the City's designation of the Wildlife Sanctuary as a local historic resource has no official status with the District. Similarly, the Sanctuary has no designation status with the State Historical Preservation Office.

Table 3.4.1
Designated Historical Sites in the City of Walnut

Site	Description
Suzanne Park	First park to be dedicated after incorporation in 1959
Bob Quattlebaum Windmill	Historic windmill moved to Suzanne Park
Brookside Equestrian Center	Equestrian training center and set of film, *National Velvet*
W.R. Rowland Adobe Ranch House	One of the oldest buildings in Walnut, built in the 1840s
Bourdet House	First mayor of Walnut in 1959
Martinez Adobe	One of the oldest buildings in Walnut, built in the 1840s
Carrey Home	Honors the family's contributions to the City
Site of First Walnut City Hall	Established in 1959
Wildlife Sanctuary, Mt. SAC	10-acre nature preserve established in 1964
Grove of Walnut Trees	Walnut trees native to the area
Source: Phase 1 Cultural Resource Study for the West Parcel Solar Project, Walnut, Los Angeles County, California, Applied Earthworks Inc., December 2014, Table 2	

The cultural resources on campus were identified in Table 3.6.3 and Exhibit 3.6 in the 2015 Final EIR. Both items are hereby incorporated by reference.

3.4.6 Mitigation Measures for Cultural Resource Cumulative Impacts

The 2016 Mitigation Monitoring Program includes all adopted mitigation measures for cumulative cultural resource impacts on campus (Appendix Y).

3.4.7. Level of Significance for Cumulative Impacts with Mitigation

Unavoidable Adverse (on campus)

The 2015 Final EIR included adoption of a Statement of Overriding Considerations for historic resources. However, the 2015 FMPU/PEP had a less than significant impact on the Wildlife Sanctuary.

3.5 GEOLOGY/SOILS

3.5.1 Existing Conditions for Geology/Soils

Converse Consultants prepared a Geotechnical Technical Study for the Proposed Fill Placement on the West Parcel Solar Site, Mt. San Antonio College, Walnut, California in December 19, 2014. The report was submitted by William H. Chu, P. E., G. E., Senior Vice President and Principal Engineer.

United Walnut Taxpayers (UWT), as part of their ongoing litigation with the District, first submitted draft comments (Appendix X-1) on the Converse geotechnical study to the Board of Trustees and re-submitted them at the June 7, 2017 Scoping Session. While the draft comments are noted, they have not been submitted to the District as final comments. The existing comments include no supporting documents, and no information is provided on what geotechnical or civil engineers prepared the comments or whether they are currently licensed in the State of California. The comments assert that a "licensed Engineering Geologist" and "Licensed Civil Engineers" were involved in evaluating the Converse report. These individuals remain unidentified. The District does not respond to draft comments prepared by unidentified professionals. Therefore, this summary does not respond to the draft UWT comments included in Appendix X-1.

The Converse reports are summarized herein and the complete report is included as Appendix L. Please note that the indices in the outline herein do not match the indices used in the report. The indices herein are consecutive (alphabetical or numerical) and unique to facilitate accurate references in future comments or responses.

A. Executive Summary

The following is a summary of the geotechnical investigation, conclusions and recommendations, as presented in the body of the report. In the event of a conflict between this summary and the report, or an omission in the summary, the report shall prevail.

- The proposed development for the West Parcel consists of the removal of approximately the top 55 feet of the hillside, canyon cleanouts and placement of fill in the areas between the hillsides to create a large pad area at elevation 761 feet to be used for the proposed solar arrays. Fill soils from proposed development areas on campus (hilltop removal on west side of track stadium, or other projects) are planned to be imported and used to raise the West Parcel to create a building pad for the future solar arrays.

- The subsurface exploration consisted of drilling, logging and sampling twenty-one (21) hollow-stem auger borings from May 5 to May 9, 2014 extending between depths of approximately 10 to 51.5 feet below the existing ground surface (bgs), and one (1) bucket auger boring (BH-13) on May 19, 2014 to a depth of 31 feet (bgs).

- The earth materials encountered during the investigation consisted of existing fill soils in the northernmost portion of the project site at the Christmas Tree Lot, natural alluvial and colluvial soils, and sedimentary bedrock of the Sycamore Formation.

- Undocumented fill was encountered during exploration of the West Parcel site, to a depth of five (5) feet in Boring BH-3 in the area of the Christmas Tree lot. Deeper fill may occur elsewhere on the site. The fill at the site consists of primarily silty sand with some gravels.

- The project site is not located within a currently designated State of California Earthquake Fault Zone (formerly Alquist-Priolo Special Studies Zones) for surface fault rupture.

- The sites are partially located within potential liquefaction zones per the State of California Seismic Hazard Zones Map for the San Dimas Quadrangle. Based on our liquefaction potential analyses, the project sites are not susceptible to liquefaction and seismically-induced settlement is considered to be negligible.

- Localized zones of groundwater were encountered during subsurface exploration, ranging in depths at approximately 16 feet bgs in boring BH-15 to 44 feet bgs in Boring BH-14. Localized perched groundwater seepage should be anticipated during excavation in these locations.

- Based on our field exploration, laboratory testing, and analyses of subsurface conditions at the site, remedial grading, including cut-and-fill operations, is required to prepare the planned fill pads for support of the future developments.

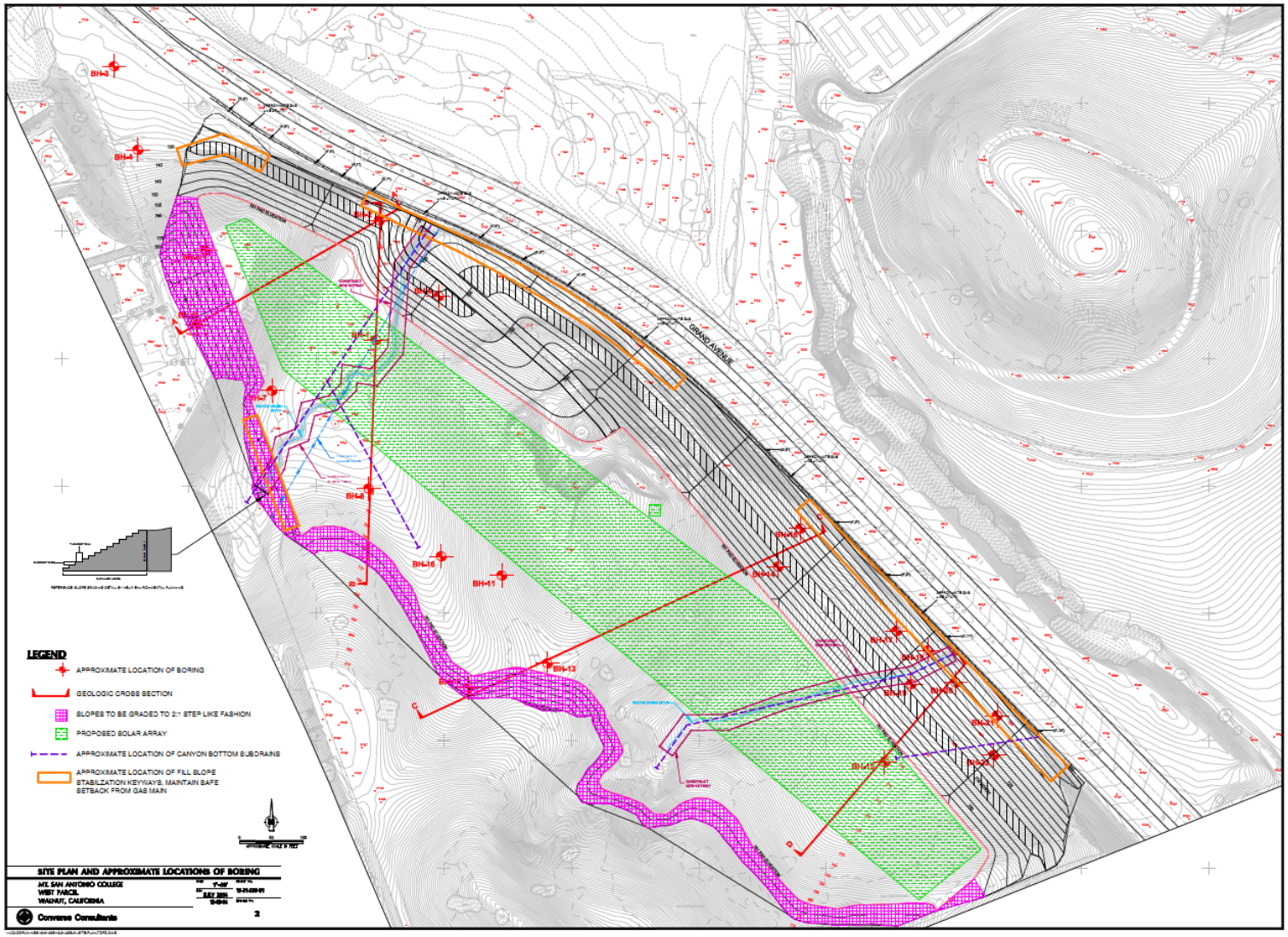
- The fill slope on the east side of the site along Grand Avenue will include a maximum proposed fill height of approximately 80 feet. Existing slopes within the project area will be completely removed or reduced to a 2:1 (H:V) gradient during the proposed grading operations placed over underlying hard sandstone pebble conglomerate bedrock. In the absence of significantly steep slopes, the potential for seismically-induced landslides to affect the proposed site is considered to be very low.

- The earth materials at the project site consisting of soil should be excavatable with conventional heavy-duty earth moving and trenching equipment. Earth materials consisting of conglomerate bedrock will be considerably harder to excavate. The on-site materials contain about 5 to 30 percent gravel up to 3 inches in maximum dimension. Larger gravels, cobbles and possible boulders may exist at the site. Earthwork should be performed with suitable equipment for gravelly materials.

Results of the investigation indicate that the site is suitable from a geotechnical standpoint for the proposed development, provided that the recommendations contained in the geotechnical report are incorporated into the design and construction of the project.

The firm completed twenty-two soil borings within the project site. The soil boring logs are included in Appendix L and the boring locations are shown below.

Exhibit 3.5.1: Soil Boring Locations



B. Site and Project Description

B1. Site Description

The project site for the proposed West Parcel solar project is primarily located within a natural drainage area and includes four gentle bedrock hilltops located at the southwest portion of the campus as shown in Exhibit 3.5.1. The West Parcel is located southwest of Amar Road/Temple Avenue and Grand Avenue. The site dimensions are approximately 1,100 feet east-west by 1,900 feet north-south. The site is bordered by Amar Road to the north, Grand Avenue to the east, and single family residential housing tracts to the west and south. The top of the hilltop in the central portion of the site is at approximately 815 feet relative to mean-sea-level (msl) and rises about 105 feet above the road along Grand Avenue. The site coordinates are: North Latitude: 34.0398 degrees, West Longitude: 117.8452 degrees.

The geographic coordinates listed were centered on the subject site and were used to calculate the earthquake ground motions. Review of the Engineering Geology and Seismology for Public Schools and Hospitals in California, dated August 9, 2005 (page 35) indicates that accuracy to within a few hundred meters of these coordinates is sufficient for the computation of the earthquake ground motion of the project site.

Historical and modern aerial imagery for the project site were reviewed from Google Earth (2013) and the website www.HistoricAerials.com (2009). The aerial imagery shows hillside ridges with intervening canyons that drained eastward through the project site toward Grand Avenue, located along the southwestern property boundary. A roadway that eventually became Grand Avenue cut through the northern portion of the site (in what is known as the Christmas Tree Lot) as early as 1948. Besides this, the project site was generally undisturbed until 1980, when grading of the slope along the eastern portion of the site was completed for the widening of Grand Avenue. Sometime after this time, the hilltops along the western portion of the site were flattened to an elevation of approximately 795 feet msl and 815 feet msl for the hilltop on the north and for the central portion of the site respectively, possibly as a result of grading operations for the housing tract west of the site. Occasionally, the project site has been used for cattle grazing.

B3. Project Description

The proposed development for the West Parcel consists of the removal of approximately the top 55 feet of the hillside and placement of fill in the areas between the hillsides to create a large pad area at elevation 761 feet msl to be used for the proposed solar arrays. Fill soils from proposed development areas on campus (proposed hilltop removal on west

side of track stadium or other excavations) will be imported to raise the West Parcel to create a building pad for future solar arrays.

The planned fill pad at the project site is expected to be up to approximately 60 feet in thickness above the existing grade. The slopes along the western portion of the proposed fill pad are planned to be placed in a 2:1 (H:V) step-like fashion as depicted in Exhibit 3.5.2.

C. Scope of Work

The scope of work consists of the tasks described in the following subsections.

C1. Site Reconnaissance

A site reconnaissance was conducted on April 02, 2014, during which the surface conditions were noted and the locations of the borings were determined. The borings were located using existing boundary features as a guide and should be considered accurate only to the degree implied by the method used. Underground Service Alert (USA) of Southern California was notified of our proposed drilling locations at least 48 hours prior to initiation of the subsurface field work.

C2. Subsurface Exploration and Access Road Grading

The subsurface exploration consisted of drilling, logging and sampling twenty-one (21) hollow-stem auger borings from May 5 to May 9, 2014 extending between depths of approximately 10.0 to 51.5 feet below the existing ground surface (bgs), and one (1) bucket auger boring on May 19, 2014 with down-hole observations to a depth of 31 feet (bgs). The borings were advanced using a truck-mounted drill rig with an 8-inch-diameter hollow-stem auger and 24-inch bucket auger drilled within or adjacent to the accessible areas of the planned pad locations.

The grading of a temporary dirt access road was required to provide drill rig access to the proposed boring locations on top of the bedrock hilltop just south of the Christmas Tree Lot and across the hillside to the southern portion of the site. The access road was cut into the sides of the hill, gradually working its way up the slope to the top of the hill. Converse had a representative onsite to observe the access road grading, which was done using a track-mounted dozer (John Deere 650J dozer with sideboard). The access road will be removed during hillside grading.

Subsurface conditions encountered in the borings were continuously logged and classified in the field by visual/manual examination by Converse engineers and geologists in accordance with the Unified Soil Classification System (USCS). California Modified Sampler (“ring samples”), Standard Penetration Test (SPT) samples, and bulk soil

samples were obtained from the borings and were delivered to the laboratory for testing. The bucket auger boring location (BH-13) was utilized for down-hole logging. A geologist down-hole logged the boring to identify bedrock materials and bedding structure. The bore holes were backfilled with soil cuttings following the completion of drilling.

The approximate locations of the exploratory borings are shown in Exhibit 3.5.1. A description of the field exploration and sampling program are presented in Appendix A, *Field Exploration*.

C3. Laboratory Testing

Representative samples of the site soils were tested in the laboratory to aid in the classification and to evaluate relevant engineering properties. The tests performed included:

- *In Situ* Moisture Contents and Dry Densities (ASTM Standard D2216)
- Grain Size Distribution (ASTM Standard C136)
- Maximum Dry Density and Optimum-Moisture Content Relationship (ASTM Standard D1557)
- Direct Shear (ASTM Standard D3080)
- Consolidation (ASTM Standard D2435)
- Expansion Index (ASTM Standard D4829)

A detailed description of the laboratory test methods and test results are presented in Appendix B, *Laboratory Testing Program*.

C4. Analyses and Report

Data obtained from the exploratory fieldwork and laboratory-testing program were analyzed and evaluated. This report was prepared to provide the findings, conclusions and recommendations developed during the investigation and evaluation.

C5. Locating High-Pressure Gas Line

As requested, Converse retained a subcontractor to detect the existing high pressure gas line along the eastern property boundary by using ground penetration radar devices. The location of the referenced high-pressure gas line has been delineated with approximate depths of the line as shown in Exhibit 3.5.1.

D. GEOLOGIC CONDITIONS

D1. Regional Geology

The proposed project site is located in the San Jose Hills along the western edge of the Pomona Valley within the Transverse Ranges geomorphic province of California near the northern terminus of the Peninsular Ranges Province.

The Pomona Valley is situated at the junction of two major convergent fault systems: 1) the northwest-trending, high-angle strike-slip faults of the San Andreas Fault System projecting from the northern terminus of the Peninsular Ranges Province, and 2) east-trending, low-angle reverse or reverse-oblique faults bounding the southern margin of the Transverse Ranges. Faults in the first group include the Palos Verdes, Newport-Inglewood, Whittier-Elsinore, and San Jacinto fault zones. Faults in the second group include the Malibu-Santa Monica, Hollywood, Raymond, Sierra Madre, and Cucamonga fault zones.

The *Geologic Map of the San Dimas and Ontario Quadrangles* prepared by Thomas W. Dibblee, Jr. (DF-91, dated July, 2002) was reviewed during the study. The map shows the location of Mount San Antonio College campus within an alluvial basin surrounded by hillsides consisting of sedimentary bedrock of the Monterey (Puente) and Sycamore Canyon Formations. No faults are shown running through or projecting toward the project sites. The location of the proposed West Parcel is mapped as underlain by the Sycamore Canyon Formation (Tscs). The Sycamore Canyon Formation consists of light gray sandstone and includes some conglomerate consisting of plutonic-derived cobbles and boulders in a light gray sandstone matrix. A portion of the map by Thomas W. Dibblee has been reproduced and is shown as Drawing No. 3, *Regional Geologic Map in the report*.

Durham and Yerkes (1964) attribute the Sycamore Canyon Formation to the upper member of the Monterey (Puente) Formation. For the purposes of this report, the bedrock underlying the project site is considered as belonging to the Puente Formation.

D2. Subsurface Profile of the Project Site

The earth materials encountered during the study consist of existing fill soils in the northernmost portion of the project site at the Christmas Tree Lot, natural alluvial and colluvial soils, and sedimentary bedrock of the Sycamore Formation. Existing soil and bedrock materials exhibited moisture contents ranging from as low as 3 percent up to 55 percent during the field exploration, while the optimum moisture contents for purposes of compaction range from 9.2 percent to 16.8 percent. Thorough moisture conditioning and mixing of soils should be performed to meet the requirements of acceptable fill materials prior to placing as engineered fill.

For the proposed West Parcel project, much of the site exposes natural materials at the surface, generally consisting of colluvial soil over bedrock on the hilltop and alluvial soils over bedrock on the gentle swales below. The locations of borings completed onsite were shown in Exhibit 3.5.1.

1. Fill Soils

Undocumented fill was encountered during exploration of the West Parcel site, to a depth of five (5) feet in Boring BH-3 in the area of the Christmas Tree lot. Deeper fill may occur elsewhere on the site. The fill at the site consists of primarily silty sand with some gravels.

2. Alluvium

Alluvial soil was encountered overlying the bedrock at the project site varying in thickness from approximately five (5) feet in Boring BH-7, BH-16, and BH-17 to twenty (20) feet in Boring BH-3. The alluvial soil encountered in the borings consists primarily of mixtures of silty sand and gravelly sand with variable amounts of clay, gravel, and cobbles. The soils also include occasional fragments of weathered bedrock. We expect that cobbles are larger in size than the largest observed, approximately three (3) inches in the maximum dimension, in the hollow-stem-auger soil cuttings. Based on our previous experience and knowledge of the area, and materials encountered during subsurface exploration, cobbles greater than eight (8) inches and occasional boulders may also be buried below the site (Converse 2007). The full thickness of the alluvial soils in the northern portion of the site near the gate and well (Borings BH-1 and BH-2) was not determined, as the full thickness and bottom of the alluvium was not penetrated in the borings.

3. Colluvium

Residual colluvial soil overlies the bedrock knolls throughout the subject site and was encountered to depths of two (2) feet in Borings BH-5 and BH-6 to five (5) feet in Boring BH-4. The colluvium consists of silty sand with variable amounts of clay, gravel, and cobbles.

4. Sandstone and Pebble Conglomerate Bedrock of the Sycamore Canyon Formation (Tscg)

The majority of the proposed West Parcel site is underlain by hard, cemented sandstone pebble conglomerate bedrock. The harder conglomerate bedrock consists of gravel and cobble-sized rocks in a cemented sand matrix. The conglomerate is massive and may contain boulder-sized hard rock material. The conglomerate bedrock materials were observed to be very hard during the exploration and will be more difficult to excavate during construction.

For additional information on the subsurface conditions, see the Logs of Boring data in Appendix A, *Field Exploration of the report*.

Subsurface geologic conditions beneath the subject site are depicted on *Geologic Cross-Sections A-A', B-B', C-C' and D-D'* for the site as shown in Exhibit 3.5.2. The geologic cross-sections show the proposed developments (building pads for solar arrays) and the interpreted extent and limits of the different earth materials encountered during our study.

Down-hole geologic observations were performed by an engineering geologist in Boring BH-13. A limited access 24-inch diameter bucket auger was used to drill the boring to a depth of thirty-one (31) feet. Boring BH-13 encountered moderately hard to hard conglomerate bedrock that required coring bits to drill the boring to a depth of thirty-one (31) feet. Bedding attitudes ranged from north 10 to 30 degrees east with bedding dips of 8 to 25 degrees northwest. These bedding attitudes will produce neutral to favorable orientations with respect to proposed cut slopes.

D3. Groundwater

The West Parcel site is situated within the Puente Basin portion of the larger San Gabriel Valley Groundwater Basin. Localized zones of groundwater were encountered during subsurface exploration, ranging in depths at approximately 16 feet bgs in boring BH-15 to 44 feet bgs in Boring BH-14.

Higher groundwater levels at the south eastern portion of the site are likely attributed to the existing drainage channel, which still transmits water along its historical drainage axis towards Grand Avenue to the existing Snow Creek stream channel located east of Grand Avenue. It appears the groundwater encountered during the current exploration is localized within the axes of historical drainages and is not likely to be encountered in areas away from the drainage channels. Canyon bottom sub-drain devices should be installed along the bottom axes of the drainage channels during grading operations, as described herein, to transmit the subsurface water to approved outlet locations.

It should be noted that wet weather periods may produce groundwater seepage in the bedrock fractures and along less permeable layers from infiltration of rainfall. Surface flow and runoff should be anticipated during grading and construction. In general, groundwater levels fluctuate with the seasons. Groundwater conditions below any given site vary depending on numerous factors including seasonal rainfall, local irrigation, and groundwater pumping.

D4. Subsurface Variations

Based on results of the subsurface exploration and our experience with the subject area, some variations in the continuity and nature of subsurface conditions within the project site are anticipated. Because of the uncertainties involved in the nature and depositional characteristics of the earth material at the site, care should be exercised in interpolating or extrapolating subsurface conditions between or beyond the boring locations. If, during construction, subsurface conditions different from those presented in this report are encountered, this office should be notified immediately so that recommendations can be modified, if necessary.

E. FAULTING AND SEISMIC HAZARDS

The project site is not located within a designated State of California Earthquake Fault Zone (formerly Alquist-Priolo Special Studies Zones) for surface fault rupture. The Alquist-Priolo Earthquake Fault Zoning Act requires the California Geological Survey to zone “active faults” within the State of California. An “active fault” has exhibited surface displacement with Holocene time (within the last 11,000 years) hence constituting a potential hazard to structures that may be located across it. Public school structures are required to be set-back at least fifty (50) feet from an active fault. The active fault set-back distance is measured perpendicular from the dip of the fault plane.

E1. Seismic Characteristics of Nearby Faults

No surface faults are known to project through or towards the site. The closest known faults to the project site with mappable surface expressions are the San Jose Fault (3.9 kilometers to the north) and Chino-Central Avenue (Elsinore) Fault (8.2 kilometers to the east/ southeast). The concealed Puente Hills Blind Thrust Fault (Coyote Hills segment) along with other regional faults was included as active fault sources for the probabilistic seismic hazard analysis for the site. The approximate locations of these local active faults with respect to the project site are tabulated on Table 3.5.1: *Summary of Regional Faults herein,* and are shown on Drawing No. 5, *Southern California Regional Fault Map in the geology report*.

The Pomona Valley Basin is bounded to the north by the San Jose Fault and to the southwest by the Chino-Central Avenue faults. These two fault systems do not exhibit evidence of surface movement within Holocene time and are not considered active based on current geologic information. The San Jose and Chino-Central Avenue faults are considered Late Quaternary, having exhibited displacement and movement within the past 130,000 years.

A. San Jose Fault

The San Jose Fault lies along the southern flank of the northeast trending San Jose Hills. The fault trends northeast and dips to the north. The mapped trace of the San Jose Fault is located approximately 3.9 kilometer north of the project.

Geotechnical investigations performed on the campus of California State Polytechnic University at Pomona (Geocon, 2001) indicated that the San Jose Fault is an active reverse-separation fault. Because of the lack of success in previous fault trench excavations, Geocon based its conclusions on a series of closely spaced boreholes along several traverses across a subtle topographic bench on the campus. They discovered two shallowly to moderately north-dipping thrust faults with the most recent displacement being about one (1) meter and occurred since 3,500 years. B.P. on the basis of radiocarbon dating of faulted alluvium. These findings would show this segment of the fault is active, but is a reverse separation fault south of the San Jose Hills (Yeats, 2004).

B. Chino-Central Avenue Faults

The Chino and Central Avenue faults trend northwest along the southwest portion of the Chino Basin. The fault lies along the northeast edge of the Puente Hills. The Chino and Central Avenue faults are considered part of the Elsinore fault which is one of the major right-lateral, strike-slip faults of the Peninsular Ranges geomorphic province. The Elsinore fault splits near Prado Dam into the Chino-Central Avenue and Whittier faults. The Chino-Central Avenue faults are two separate fault strands that strike northwest. The Chino fault dips southwest and is at least 18 km in length. The Central Avenue fault is about 8 km in length and concealed by younger alluvial deposits.

As is the case for most areas of Southern California, ground-shaking resulting from earthquakes associated with nearby and more distant faults may occur at the project site. During the life of the project, seismic activity associated with active faults can be expected to generate moderate to strong ground shaking at the site.

The table below summarizes selected data of known faults capable of seismic activity within 50 kilometers of the site. The data presented below was calculated using EQFAULT Version 3.0 with updated fault data from "The Revised 2002 California Probabilistic Seismic Hazard Maps (Cao et al., 2003)", Appendix A, and other published geologic data.

Table 3.5.1: Summary of Regional Fa*ults*

Fault Name and Section	Approximate * Distance to Site (kilometers)	Max. Moment Magnitude (Mmax)	Slip Rate (mm/yr)
San Jose*	3.9	6.4	0.50
Chino-Central Ave. (Elsinore)	8.2	6.7	1.00
Whittier	12.6	6.8	2.50
Sierra Madre*	13.5	7.2	2.00
Puente Hills Blind Thrust**	14.1	7.3	0.70
Cucamonga*	15.1	6.9	5.00
Elysian Park Blind Thrust*	17.1	6.7	1.50
Raymond	21.6	6.5	1.50
Clamshell-Sawpit	23.6	6.5	0.50
Elsinore-Glen Ivy	28.2	6.8	5.00
Verdugo*	30.1	6.9	0.50
Compton Thrust	31.4	6.8	1.50
Hollywood	37.6	6.4	1.00
San Jacinto – San Bernardino	38.0	6.7	12.00
San Andreas – 1857 Rupture*	39.5	7.4	30.00
San Andreas – Mojave*	39.5	7.4	30.00
Newport-Inglewood (L.A. Basin)*	39.7	7.1	1.00
San Andreas – San Bernardino*	41.1	7.5	24.00
San Andreas – Southern*	41.1	7.2	25.00
Cleghorn*	45.7	6.7	2.00
* Review of published geologic data and mapping including Appendix A of the 2002 California Fault Parameters Report (Cao et al., 2003). Distance from the site to nearest subsurface projection, per Shaw et al., 2002.			
Source: Converse, Ibid, Table 1.			

E2. Seismic History

An analysis of the seismic history of the site was conducted using the computer program EQSEARCH, (Blake, 2000, updated 2010), and attenuation relationships proposed by Bozorgnia, et al. (1999) for soft rock conditions. The Southern California Earthquake Catalog with the Southern California Earthquake Center was also utilized (SCEC, 2013).

Based on the analysis of seismic history, the number of earthquakes with a moment magnitude of 5.0 or greater occurring within a distance of 100 kilometers was 81 since the year 1800. Based on the analysis, the largest earthquake-induced ground

acceleration affecting the site since the year 1800 is a 7.0 magnitude earthquake in 1858 with a calculated ground acceleration of 0.18g at the site.

Review of recent seismological and geophysical publications indicates that the seismic hazard for the Pomona Basin is high. The Pomona Basin is bounded by active regional faults on all sides and underlain by alluvial sediments and buried thrust faults. The seismic hazard for the heavily populated Pomona Basin was illustrated by the 1971 San Fernando, 1987 Whittier Narrows, 1991 Sierra Madre and 1994 Northridge earthquakes. The epicenters for these earthquakes are shown on Drawing No. 6, *Epicenters Map of Southern California Earthquakes (1800-1999) in the report.*

E3. Seismic Hazards

In addition to direct effects on structures, strong ground shaking from earthquakes can also produce other side effects that include surface fault rupture, soil liquefaction, lateral spreading, seismically-induced settlement, ground lurching, landsliding, earthquake-induced flooding, seiches, and tsunamis. Drawing No. 7, *Seismic Hazard Zones Map*, in the report has been prepared to show the mapped location of potential liquefaction and earthquake-induced landslide areas near the project site. The State of California Seismic Hazard Zone Map for the San Dimas Quadrangle (March 25, 1999) shows the project site is located within an area of potential liquefaction and portions of the site indicate areas of potential seismically-induced land sliding.

Results of a site-specific evaluation for each type of possible seismic hazard are explained below:

E4. Surface Fault Rupture

The project site is not located within a currently designated State of California Earthquake Fault Zone. Based on a review of existing geologic information no known active fault zone crosses or projects toward the project site. The potential for surface rupture resulting from the movement of the nearby major faults is considered remote.

E5. Liquefaction and Seismically-Induced Settlement

Liquefaction is the sudden decrease in the strength of cohesion-less soils due to dynamic or cyclic shaking. Saturated soils behave temporarily as a viscous fluid (liquefaction) and, consequently, lose their capacity to support the structures founded on them. The potential for liquefaction decreases with increasing clay and gravel content, but increases as the ground acceleration and duration of shaking increase. Liquefaction potential has been found to be the greatest where the groundwater level and loose sands occur within 50 feet of the ground surface.

The site is partially located within potential liquefaction zones per the State of California Seismic Hazard Zones Map for the San Dimas Quadrangle. Drawing No. 7, *Seismic Hazard Zones Map*, has been prepared to show the mapped locations of potential liquefaction in relation to the project sites. Groundwater was encountered at 19 feet in BH-1 and BH-2 in the northern portion of the site and at 44 feet and 16 feet respectively in BH-14, BH-15.

The liquefaction potential and seismic settlement analyses were performed utilizing SPT data obtained from boring BH-15 for the upper 50 feet of soil. The detailed results of the liquefaction analysis and a summary of the methods used are presented in Section M of the Converse report. Based on the liquefaction potential analyses, and the firm bedrock materials encountered during the exploration, the project site is not susceptible to liquefaction and seismically-induced settlement is anticipated to be negligible.

E6. Lateral Spreading

Seismically induced lateral spreading involves primarily lateral movement of saturated earth materials due to ground shaking. It differs from the slope failure in that complete ground failure involving large movement does not occur due to the relatively smaller gradient of the initial ground surface. Lateral spreading is demonstrated by near-vertical cracks with predominantly horizontal movement of the soil mass involved. The topography at the project site consists of bedrock knolls overlain by relatively-dry and dense colluvial soils and gentle swales below. Under these circumstances, the potential for lateral spreading at the subject site is considered negligible.

E7. Seismically-Induced Slope Instability

Seismically-induced landslides and other slope failures are common occurrences during or soon after earthquakes. Slopes within the project area will be completely removed or reduced to a 2:1 (H:V) gradient during the proposed grading operations. Slopes with a gradient steeper than 2:1 (H:V) would be over underlying hard, cemented sandstone pebble conglomerate bedrock. In the absence of significantly steep slopes, the potential for seismically-induced landslides to affect the proposed site is considered to be very low.

E8. Earthquake-Induced Flooding

Review of the Flood Insurance Rate Map (FIRM), Panel 1725 of 2350, from the FEMA Map Service Center Viewer, indicates that the site is in an area designated as Zone D, “Areas in which flood hazards are undetermined, but possible.” Due to the absence of groundwater at shallow depths, distance of the subject site from large bodies of water and regional flood control structures, the potential for flooding at the subject site is considered remote.

E9. Tsunami and Seiches

Tsunamis are seismic sea waves generated by fault displacement or major ground movement. Based on the location of the project site from the ocean (over 20 kilometers), tsunamis do not pose a hazard. Seiches are large waves generated in enclosed bodies of water in response to ground shaking. Based on site location away from lakes and reservoirs, seiches do not pose a hazard.

E10. Volcanic Eruption Hazard

There are no known volcanoes near the site. According to Jennings (1994), the nearest potential hazards from future volcanic eruptions is the Amboy Crater - Lavic Lake area located in the Mojave Desert more than 120 miles east/northeast of the site. Volcanic eruption hazards are not present.

F. SEISMIC ANALYSIS

F1. CBC Seismic Design Parameters

Seismic parameters based on the 2013 California Building Code (CBC) are calculated using the United States Geological Survey *U.S. Seismic Design Maps* website application and the site coordinates (34.0398 degrees North Latitude, 117.8452 degrees West Longitude). These coordinates are in reference to the central portion of the project area. Review of the California Geologic Survey (CGS) publication Engineering Geology and Seismology for Public Schools, Colleges and Hospitals in California, dated August 9, 2005 (page 32) indicate that accuracy to within a few hundred meters of these coordinates is sufficient for the computation of the earthquake ground motion of the project site. Therefore, these coordinates are considered representative of the entire site. The seismic parameters are presented below.

Table 3.5.2: California Building Code Seismic Design Parameters

Seismic Parameters	2013 CBC
Site Class	D
Mapped Short period (0.2-sec) Spectral Response Acceleration, SS	2.177 g
Mapped 1-second Spectral Response Acceleration, S1	0.776 g
Site Coefficient (from Table 1613.5.3 (1)), Fa	1.0
Site Coefficient (from Table 161 (2)), Fv	1.5
MCE 0.2-sec period Spectral Response Acceleration, SMS	2.177 g
MCE 1-second period Spectral Response Acceleration, SM1	1.163 g
Design Spectral Response Acceleration for short period, SDS	1.451 g
Design Spectral Response Acceleration for 1-second period, SD1	0.776 g
Seismic Design Category	E
Source: Converse, Ibid., Table 2	

F2. Site-Specific Ground Motion Response Spectrum

The subject site is partially located in a Seismic Hazard Zone. Based on 2013 California Building Code (CBC) Section 1616A.1.3, a site-specific ground motion analysis is required. A site-specific response spectrum was developed for the project for a Maximum Considered Earthquake (MCE), defined as a horizontal peak ground acceleration that has a 2 percent probability of being exceeded in 50 years (return period of approximately 2,475 years).

In accordance with ASCE 7-10, Section 21.2 and Code Application Notice (CAN 2-1802A.6.2) the site-specific response spectra can be taken as the lesser of the probabilistic maximum rotated component of MCE ground motion and the 84th percentile of deterministic maximum rotated component of MCE ground motion response spectra. The design response spectra can be taken as 2/3 of site-specific MCE response spectra, but should not be lower than 80 percent of CBC general response spectra. The risk coefficient C_R has been incorporated at each spectral response period for which the acceleration was computed in accordance with ASCE 7-10, Section 21.2.1.1.

The 2013 California Building Code (CBC) mapped acceleration parameters are provided in the following table. These parameters were determined using the United States Geological Survey *U.S. Seismic Design Maps* website application, and in accordance with ASCE 7-10 Sections 11.4, 11.6, 11.8 and 21.2.

Table 3.5.3: California Building Code Mapped Acceleration Parameters

Site Class	D	Seismic Design Category	E
Ss	2.177	CRS	1.007
S1	0.776	CR1	1.019
Fa	1	0.08 Fv/Fa	0.120
Fv	1.5	0.4 Fv/Fa	0.600
SMS	2.177	T0	0.107
SM1	1.164	TS	0.535
SDS	1.451	TL	8
SD1	0.776	??	??
Source: Converse, Ibid., Table 3			

A Site-Specific response analysis, using faults within 100 kilometers of the site, was developed using the computer program EZ-FRISK by Risk Engineering (v. 7.51) and the 2008 USGS Fault Model database. Attenuation relationships proposed by Boore and Atkinson (2008), Campbell and Bozorgnia (2008), Chiou and Youngs (2008) were used in the analysis. These attenuation relationships are based on Next Generation Attenuation (NGA) project model. Maximum rotated components were determined using Huang (2008) method. An average shear wave velocity at upper 30 meters of soil profile (Vs30) of 270 meters per second, depth to bedrock of with a shear wave velocity 1,000 meters per second at 50 meters below grade, and depth of bedrock where the shear wave velocity is 2,500 meters per second at 3,000 meters below grade were selected for EZ-Frisk Analysis.

Applicable response spectra data are presented in the table below and on Drawing No. 8, *Site-Specific Design Response Spectrum in the report.* These curves correspond to response values obtained from above attenuation relations for horizontal elastic single-degree-of-freedom systems with equivalent viscous damping of 5 percent of critical damping.

G. LABORATORY TESTING PROGRAM

Tests were conducted in the Converse laboratory on representative soil samples for the purpose of classification and evaluation of their relevant physical characteristics and engineering properties. The amount and selection of tests were based on the geotechnical requirements of the project. Test results are presented herein and on the

Logs of Borings in Appendix A, *Field Exploration for Proposed Fill Placement at West Parcel.* The following is a summary of the laboratory tests conducted for this project.

G1. Moisture Content and Dry Density

Results of moisture content and dry density tests, performed on relatively undisturbed ring samples were used to aid in the classification of the soils and to provide quantitative measure of the *in situ* dry density. Data obtained from this test provides qualitative information on strength and compressibility characteristics of site soils. For test results, see the Logs of Borings in Appendix A, *Field Exploration for Proposed Fill Placement at West Parcel in the report.*

G2. Grain-Size Analysis

To assist in classification of soils, mechanical grain-size analyses were performed on Three (3) selected samples. Tests were performed in general accordance with the ASTM Standard C136 test method. Grain-size curves are shown in Drawing No. B1, *Grain Size Distribution Results in the report*.

G3. Maximum Dry Density Test

Four (4) laboratory maximum dry density-moisture content relationship tests were performed on one representative bulk sample. The tests were conducted in accordance with ASTM Standard D1557 laboratory procedure. The test results are presented on Drawing No. B2, *Moisture-Density Relationship Results in the report*.

G4. Direct Shear

Direct shear tests were performed on two (2) relatively undisturbed samples at soaked moisture conditions. For each test, three samples contained in brass sampler rings were placed, one at a time, directly into the test apparatus and subjected to a range of normal loads appropriate for the anticipated conditions. The samples were then sheared at a constant strain rate of 0.01 inch/minute. Shear deformation was recorded until a maximum of about 0.50-inch shear displacement was achieved. Ultimate strength was selected from the shear-stress deformation data and plotted to determine the shear strength parameters. For test data, including sample density and moisture content, see Drawing Nos. B3a through B3b, Direct *Shear Test Results in the report,* and in the following table.

Table 3.5.4: Direct Shear Test Results

Boring No.	Depth (feet)	Soil Classification	Peak Strength Parameters	
			Friction Angle (degrees)	Cohesion (psf)
BH-9	0-5	Silty Sand (SM)	32	150
BH-13	25-30	Sedimentary Bedrock-Conglomerate	29	300
Source: Converse, Ibid., Table B-1.				

G5. Consolidation Test

Consolidation tests were performed on four (4) selected samples. Data obtained from this test performed on a relatively undisturbed soil sample was used to evaluate the settlement characteristics of the foundation soils under load. Preparation for this test involved trimming the sample and placing the one-inch high brass ring into the test apparatus, which contained porous stones, both top and bottom, to accommodate drainage during testing. Normal axial loads were applied to one end of the sample through the porous stones, and the resulting deflections were recorded at various time periods. The load was increased after the sample reached a reasonable state of equilibrium. Normal loads were applied at a constant load-increment ratio, successive loads being generally twice the preceding load. The sample was tested at field and submerged conditions. The test results, including sample density and moisture content, are presented in Drawings Nos. B4a through B4d, *Consolidation Test Results in the report*.

G6. Expansion Index Test

Two (2) representative bulk samples were tested to evaluate the expansion potential of material encountered at the site. The test was conducted in accordance with ASTM D4829 Standard. Test results are presented in the following table.

Table 3.5.5: Expansion Index Test Results

Boring No.	Depth (feet)	Soil Description	Expansion Index	Expansion Potential
BH-1	0-5	Silty Sand (SM)	21	Low
BH-20	0-5	Silty Sand (SM)	23	Low
Source: Converse, Ibid., Table B-3				

G7. R-value Test

One (1) representative bulk soil sample was tested for resistance value (R-value) in accordance with State of California Standard Method 301-G. This test is designed to provide a relative measure of soil strength for use in pavement design. The test results are shown in the following table.

Table 3.5.6: R-value Test Results

Boring No.	Depth (feet)	Soil Classification	Measured R-value
BH-7	0-5	Silty Sand (SM)	44
Source: Converse, Ibid., Table B-4			

G8. Sample Storage

Soil samples presently stored in the Converse laboratory will be discarded 30 days after the date of this report, unless this office receives a specific request to retain the samples for a longer period of time.

H. GEOTECHNICAL EVALUATIONS AND CONCLUSIONS

Based on the results of our background review, subsurface exploration, laboratory testing, geotechnical analyses, and understanding of the planned grading development, it is the geologist's opinion that the proposed project is feasible from a geotechnical standpoint, provided the following conclusions and recommendations are incorporated into the project plans, specifications, and are followed during site construction.

The following is a summary of the major geologic and geotechnical factors to be considered for the West Parcel solar project:

- The site is located partially within a mapped Seismic Hazard Zone for liquefaction. Based on our liquefaction potential analyses, and the firm bedrock materials encountered during the exploration, the project site is not susceptible to liquefaction and seismically-induced settlement is anticipated to be negligible.

- Localized zones of groundwater were encountered during subsurface exploration, ranging in depths at approximately 16 feet bgs in boring BH-15 to 44 feet bgs in Boring BH-14. Localized perched groundwater seepage should be anticipated during excavation in these locations.

- For the West Parcel site, the axes of historical drainage channels should be installed with canyon bottom subdrains to collect any direct subsurface drainage to an approved outlet location.

- Undocumented fill soils up to 5 feet were encountered in boring BH-3 at the northern portion of the site in the Christmas Tree Lot. The fill at the site consists of primarily silty sand with some gravels. Undocumented fill should be excavated and recompacted.

- Based on the proposed plan, cut-and-fill grading operations are required to achieve the planned finished grades.

- The surficial site soils and earth materials generated from excavations of bedrock at both sites exhibit a low expansive potential. These materials should be mitigated if they are to be used for any future structural support.

- On-site silty, clayey soils and siltstone with an expansion index exceeding 20 should not be re-used for compaction within 5 feet below the planned fill pad finish grade or for retaining wall backfill. Soils containing organic materials should not be used as structural fill. The extent of removal should be determined by the geotechnical representative based on soil observation during grading. Based on borings BH-1 and BH-20, the top 5 feet of existing grade exhibits an expansion index greater than 20.

- The planned fill pad at the site is expected to be up to approximately 60 feet in thickness above the existing grade. Long term consolidation ground settlement for the planned compacted fill pads is expected to be less than 1.5 inches with differential settlement of 0.5 inch over a 30-foot span.

- The earth materials at the site consisting of soil should be excavatable with conventional heavy-duty earth moving and trenching equipment. Earth materials consisting of conglomerate bedrock will be considerably harder to excavate. The on-site materials contain about 5 to 30 percent gravel up to 3 inches in maximum dimension. Larger gravels, cobbles and possible boulders may exist at the site. Earthwork should be performed with suitable equipments for gravelly materials.

- Removals up to approximately 55 feet deep are anticipated.

- The fill slope on the east side of the site along Grand Avenue will include a maximum proposed fill height of approximately 80 feet. Existing slopes within the project area will be completely removed or reduced to a 2:1 (H:V) gradient during the proposed grading operations placed over underlying hard sandstone pebble conglomerate bedrock. In the absence of significantly steep slopes, the potential for seismically-induced landslides to affect the proposed site is considered to be very low.

- Slopes along the western portion of the proposed fill pad are planned to be placed in a 2:1 (H:V) step-like fashion as depicted in Exhibit 3.5.1.

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I. EARTHWORK AND SITE GRADING RECOMMENDATIONS

I1. General Evaluation

Based on the field exploration, laboratory testing, and analyses of subsurface conditions at the site, remedial grading including cut-and-fill operations is required to prepare the planned fill pads for support of the future developments. To reduce differential settlement, variations in the soil type, degree of compaction, and thickness of the compacted fill, the thickness of compacted fill placed underneath the footings should be kept uniform.

Site grading recommendations provided below are based on the firm's experience with similar projects in the area and their evaluation in this study. Site preparation might involve removal of any existing structures with their foundations and other existing underground manmade structures and utilities.

I2. Over-Excavation/Removal

The existing undocumented fill materials in their present condition are not considered suitable for supporting the planned additional fill. All undocumented fill should be removed, moisture-conditioned if necessary, and replaced as compacted fill. The actual depth of over-excavation from the existing ground surface will depend on existing depth of fill placed during site grading. During the explorations of the project area, undocumented fill soils up to five (5) feet in thickness below the existing ground surface were encountered in boring BH-3 at the northern portion of the site in the Christmas Tree Lot. The depth of existing fill could be deeper elsewhere onsite.

Unsuitable natural surface soils and alluvium shall be removed, moisture conditioned to near optimum moisture levels, mixed and re-compacted as compacted fill to project specifications. Clay top soils that are disturbed and loosened by seasonal cycles of wetting and drying producing dessication cracks and voids shall be removed and re-compacted. Estimated depth of clay top soil removal is approximately three (3) feet. Loose, disturbed or unsuitable alluvial soils encountered in the drainage canyons shall be removed to firm natural soils and/or bedrock and then replaced as compacted fill. Loose and unsuitable alluvial soils shall be cleaned out of the canyon bottoms prior to the placement of compacted fills and canyon bottom sub-drains.

Due to the proposed approximately 55 foot removal of bedrock off of the top of hill, the rebound of the cut sub-grade of bedrock is expected after the cut is first made. Elastic rebound due to removal of overburden typically occurs for cuts of greater than 50 feet in thickness. The amount of rebound will vary across the site and may result in an uneven ground surface. Therefore, we recommend the hilltop removal portions of the site (cut areas) be over-excavated at least two (2) feet and replaced with a properly compacted fill. This will aid in reducing unevenness in the sub-grade below the planned pavement and/or future structures.

Keyways with a minimum width of 25 feet and a minimum embedment depth of 5 feet should be excavated and constructed along the toe of the compacted fill slope for the site. Back-drains should be installed at the bottom of slope with a minimum one percent gradient to outlet pipe. A back-drain consisting of 4-inch diameter perforated PVC pipe (Schedule 40 or equivalent) with perforations down and ends capped encased with 1-cubic-foot $^{3}/_{4}$-inch gravel per linear foot wrapped with filter fabrics should be installed along the bench. Back-drains should be installed every 15 feet vertically. A minimum 1 percent gradient to solid outlet pipes is recommended. The outlet pipes should be a

minimum of 4-inch diameter PVC pipe (Schedule 40 or equivalent) and be installed every 50 feet with horizontal spacing, or a minimum of two outlets.

All excavations on slopes steeper than a gradient of 10:1 (horizontal: vertical) shall be benched into competent soils or bedrock. Typically the benching should be 2 to 3 feet in height and minimum 3 feet in width.

To minimize the potential of differential settlement, we recommend that over-excavation be kept uniform. The excavation to remove undocumented fill and unsuitable soils should be extended to a minimum of five (5) feet laterally beyond the fill pad limits, where space is available. The actual depth of removal should be determined based on observations and tests made during grading.

The exposed bottom of the over-excavation area should be scarified at least 6 inches; moisture conditioned as needed to near-optimum moisture content, and compacted to ninety (90) percent relative compaction. Over-excavation should not undermine adjacent off-site improvements. Remedial grading should not extend within a projected 1:1 (horizontal to vertical) plane projected down from the outer edge of adjacent off-site improvements.

Existing soil and bedrock materials exhibited moisture contents ranging from as low as 3 percent up to 55 percent during the field exploration, while the optimum moisture contents for purposes of compaction range from 9.2 percent to 16.8 percent. The grading contractor will need to take efforts to process the soils with thorough moisture conditioning and mixing of soils to meet the requirements of acceptable fill materials prior to placing as engineered fill as stated in the earthwork specifications.

If soft, yielding soil conditions are encountered at the excavation bottom, the following options can be considered:

a. Over-excavate until reach firm bottom

b. Over-excavate an additional 18 inches deep, and then place at least 18-inch-thick compacted base material (CAB or equivalent) to bridge the soft bottom. Base should be compacted to 95% relative compaction.

c. Over-excavate an additional 18 inches deep, and then place a layer of geo-fabric (i.e. Marifi HP570, X600 or equivalent), place 18-inch-thick compacted base material (CAB or equivalent) to bridge the soft bottom. Base should be compacted to 95 percent relative compaction. An additional layer of geo-fabric may be needed on top of base depending on the actual site conditions.

Site grading may result in transition lines with cut and/or fill conditions. This transition line would require special grading considerations. Detailed site grading recommendations are provided in the following sections.

I3. Canyon Bottom Subdrains

Canyon bottom sub-drain systems should be constructed of a minimum 6-inch diameter, Schedule 80 PVC pipe with glued manufactured pipe fitting and caps. The sub-drain pipes should be located in the bottoms of the canyons. The drain pipes should be sloped at a minimum 2 percent gradient to provide gravity flow to the approved outlet location. Perforated pipes shall be laid with perforations down. Schedule 80 PVC perforated pipe may have to be custom fabricated.

Surface drain systems should not be connected to the sub-drain system. Introduction of surface water in the sub-drain system could recharge water into the compacted fill soils. Surface and subsurface drainage systems should be kept separate.

A State of California Department of Transportation (Caltrans) Class 2 Permeable Material is recommended for the permeable drain material. The percentage composition by weight of permeable material in place shall conform to the following grading.

Table 3.5.7: Caltrans Class 2 Permeable Material Grading

Caltrans Class 2 Permeable Material Grading	
Sieve Size	Percentage Passing
1”	100
3/4”	90- 100
3/8”	40- 100
No. 4	25– 40
No.8	18– 33
No. 30	5 – 15
No. 50	0– 7
No. 200	0- 3
Note: Class 2 permeable material shall have a Sand Equivalent value of not less than 75.	
Source: Converse, Ibid., Table 6	

I4. Structural Fill

All engineered fill should be placed on competent, scarified and compacted bottom as evaluated by the geotechnical engineer and in accordance with the specifications presented in this section. Generally, excavated site soils, free of deleterious materials and rock particles larger than three (3) inches in the largest dimension, should be suitable for placement as compacted fill. Any proposed import fill should be evaluated and approved by Converse prior to import to the site. Import fill material should have an Expansion Index of less than twenty (20).

Excavated conglomerate bedrock, which consists of sand, gravel, and cobbles may be considered as base material below proposed hardscape, such as the propose access road.

Prior to compaction, fill materials should be thoroughly mixed and moisture conditioned when necessary, within two (2) percent of the optimum moisture for granular soils and at approximately three (3) percent above the optimum moisture for fine-grained soils. Fill soils shall be evenly spread in maximum 8-inch lifts, watered or dried as necessary, mixed and compacted to at least the density specified below. The fill shall be placed and compacted on a horizontal plane, unless otherwise approved by the Geotechnical Engineer.

Fills exceeding five (5) feet in height shall not be placed on native slopes that are steeper than 5:1 horizontal:vertical (H:V). Where native slopes are steeper than 5:1 H:V, and the height of the fill is greater than five (5) feet, the fill shall be keyed and benched into competent materials. A 2:1 (horizontal to vertical) or flatter slope gradient for the planned new fill pad is recommended. All new fill should be compacted to at least ninety (90) percent of the maximum dry density for the upper 10 feet of fill and ninety-five (95) percent of the maximum dry density for fill placed 10 feet below proposed finished grade in accordance with the ASTM Standard D1557 test method. Appropriate means and methods of placement will be required to achieve these compaction requirements.

Though we expect most of the bedrock materials to break down to less than 3-inch size materials by the standard grading process, following are recommendations with regards to hard cobble and boulder size clasts that may be encountered in the bedrock materials that do not break down without considerable effort.

Structural fills placed in the top ten (10) feet of the finished graded pads and 2:1 (H:V) fill slopes shall contain sedimentary bedrock particles no larger than three (3) inches in size throughout and be mixed evenly throughout the fill soil matrix.

Deeper structural fills placed below the top ten (10) feet of the graded pad and slope surfaces can contain rock particle sizes from three (3) to twelve (12) inch size provided the following conditions are adhered to during grading:

- The rock materials shall not be nested, stacked or piled on top of each other during placement.
- Rock materials shall be evenly placed and dispersed in controlled lifts and layers throughout the compacted fill soils.
- Granular fine grained soils shall be placed and compacted on all sides of the rock to eliminate void spaces.
- Buried rock materials shall be proof-rolled with loaded heavy rubber tire grading equipment (scrapers, loaders and compactors) to provide the required compaction.
- Compaction and moisture conditioning of the structural fill soils containing rocksshall meet all earthwork specifications for structural fill placement.
- Placement of rock within the structural fill soils shall be performed under the full-time observation and testing of the Geotechnical Soil Consultant.

Placement of natural rock materials larger than twelve (12) inches and less than twenty-four (24) inches in deeper structural fills shall require special observation and testing during fill placement. Placement of this rock size in the structural fills shall require prior approval by the Geotechnical Soils Consultant on a case by case basis. The contractor shall demonstrate that rocks of this size cannot be broken down and downsized by conventional grading methods.

Natural oversize rock materials that are resistant and durable can be used as natural rock armor for surface drain outlets, drainage aprons and drainage channels. Rocks should be placed in a controlled, tightly spaced pattern with compacted fill or concrete placed between the rocks to eliminate void spaces. The remaining oversize rocks, if any, could then be placed in specific areas selected by the Geotechnical Soils Consultants and documented on the as-built grading plans. The oversize rock shall be placed in accordance with the same criteria as the three (3) to twelve (12) inch size rock materials in controlled layers and with soil placed and compacted on all sides of the rock to eliminate void spaces.

Rock sizes could be increased from 3-inch to 6-inch size maximum in the top 10 feet if significant quantities of hard rocks were to be encountered. However, we do not anticipate this. The rock materials would have to be spread out in the fills in single layers with no nesting, stacking, or voids and then completely buried by fill soils as stated earlier. Additional re-grading of future building pad or structure areas (i.e., footing, slab and utility trench areas) may be required if rocks larger than 3-inch size are used in the top 10-feet of compacted fills.

If the District decides to allow up to 6-inch size rocks be used within top 10 feet of fills, it should be reminded that earthwork may need to be redone for future buildings or structures and removal of large size rocks may result in requiring imported soils at that time. Temporary shoring may also be required for excavation deeper than 5 feet or sloping excavation is not feasible in future construction activities. However, no buildings are proposed onsite as part of the solar project.

I5. Excavatability and Rippability

Based on our field exploration, most of the earth materials at the site should be excavatable and rippable with conventional heavy-duty earth moving equipment in good working condition. However areas of harder, cemented and resistant bedrock units and layers (pebble conglomerates, sandstone layers, siliceous layers, etc.) are anticipated to be encountered during excavation and grading. These areas may require the use of larger heavy-duty dozers, excavators, track-mounted hydraulic breakers and/or single shank rippers to loosen, rip, cross-rip, downsize, crush, breakdown, mix and process the excavated sedimentary bedrock materials into soil size materials suitable for use as structural fill. Every effort shall be made during excavation, transport and grading to reduce the size of the bedrock materials to particle sizes less than three (3) inches in size to be adequately placed as structural fill.

The earth materials generated from the removal of the existing bedrock knoll will contain larger gravels, cobbles and possible boulders. Those materials require screening and/or processing into smaller particles prior to be used for compaction as specified in the section under structural fill.

I6. Expansive Soil

Based on the laboratory testing results, the on-site silty, clayey earth materials are considered to be expansive. On-site silty, clayey soils and siltstone with an expansion index exceeding 20 should not be re-used for compaction within 5 feet below the planned fill pad finish grade or for retaining wall backfill. Soils containing organic materials should not be used as structural fill. The extent of removal should be determined by the geotechnical representative based on soil observation during grading. Based on borings BH-1 and BH-20, the top 5 feet of existing grade exhibits an expansion index greater than 20.

There are several alternative mitigation measures that can be utilized to improve expansive soils at the site. Some mitigation measures include:

. Placement of 2 feet thick of non-expansive soil below finished sub-grade.

. Pre-saturation of on-site compacted sub-grade soils to at approximate three (3) percent above optimum moisture content.

. Lime treat the upper two (2) feet of the sub-grade soils.

The on-site soil materials will be mixed during the grading and the expansion potential might change. Therefore, the expansion potential of site soils should be verified after the grading.

I7. Shrinkage and Bulking

The shrinkage and/or bulkage would depend on, among other factors, the depth of cut and/or fill, and the grading method and equipment utilized. For preliminary estimation, bulking and shrinkage factors for various units of earth material at the site may be taken as presented below:

. The approximate shrinkage factor for the upper ten (10) feet of alluvial soils is estimated to range from ten (10) to twenty (20) percent.

. The approximate bulking factor for the fill materials generated from the removal of bedrock hilltop is estimated to range from two (2) to five (5) percent, depending on final compaction achieved for the fill materials.

Although these values are only approximate, they represent our best estimates of the factors to be used to calculate lost volume that may occur during grading. If more accurate shrinkage and bulking factors are needed, it is recommended that field-testing using the actual equipment and grading techniques be conducted.

I8. Subgrade Preparation

Final sub-grade soils for structures and roads should be uniform and non-yielding. To obtain a uniform sub-grade, soils should be well mixed and uniformly compacted. The sub-grade soils should be non-expansive and well-drained. The near-surface site soils should be free draining. We recommend that at least the upper two (2) inches of sub-grade soils underneath the slab-on-grade should be comprised of well-drained granular soils such as sands, gravel or crushed aggregate satisfying the following criteria:

- Maximum size ~ 1.5 inches
- Percent passing U.S. #200 sieve ~ 12 percent
- Sand equivalent ~ 30

The sub-grade soils should be moisture conditioned before placing concrete.

J. PRELIMINARY DESIGN RECOMMENDATIONS

For planning purposes, the report assumes the future development onsite consists of multiple arrays of solar panels without subterranean basement in providing the preliminary design recommendations. The recommendations provided in this section are based on the assumptions that in preparing the site, the earthwork and site grading recommendations provided in this report will be followed. It should be advised that the design and construction recommendations presented herein are considered preliminary for planning purpose only. Any future development at these project sites shall be further reviewed and provided with project-specific geotechnical recommendations. However, this is standard geotechnical engineering procedure which combined initial geotechnical investigation with ongoing onsite observation while grading occurs by geotechnical professionals.

J1. Shallow Foundations

1. Vertical Capacity

We recommend continuous and square footings be founded at least 18 inches below lowest adjacent final grade on compacted fill on bedrock. A minimum footing width of 24 inches is recommended for square footings and 12 inches for continuous footings. The allowable bearing value for footings with above minimum sizes is 2,000 psf for compacted fill and 2,500 psf for bedrock. The net allowable bearing pressure can be increased by 350 psf for each additional foot of excavation depth and by 250 psf for each additional foot of excavation width up to a maximum value of 4,500 psf.

The net allowable bearing values indicated above are for the dead loads and frequently applied live loads and are obtained by applying a factor of safety of 3.0 to the net ultimate bearing capacity.

2. Lateral Capacity

Resistance to lateral loads can be provided by friction acting at the base of the foundation and by passive earth pressure. A coefficient of friction of 0.35 may be assumed with normal dead load forces. An allowable passive earth pressure of 300 psf per foot of depth up to a maximum of 3,000 psf may be used for footings poured against properly compacted fill or undisturbed stiff natural soils. The values of coefficient of friction and allowable passive earth pressure include a factor of safety of 1.5.

3. Settlement

The static settlement of structures supported on continuous and/or spread footings founded on compacted fill will depend on the actual footing dimensions and the imposed vertical loads. Most of the footing settlement at the project site is expected to occur

immediately after the application of the load. Based on the maximum allowable net bearing pressures presented above, static settlement is anticipated to be less than 1.0 inch. Differential settlement is expected to be up to one-half of the total settlement over a 30 foot span.

4. Dynamic Increases

Bearing values indicated above are for total dead load and frequently applied live loads. The above vertical bearing may be increased by 33 percent for short durations of loading which will include the effect of wind or seismic forces. The allowable passive pressure may be increased by 33 percent for lateral loading due to wind or seismic forces.

J2. Pier Foundations

As an alternative to conventional shallow foundations, the planned solar arrays can be supported on piers (caissons) provided the following recommendations incorporated into design and construction. The piers can be connected to a grade beam system determined by the project structural engineer to control the deflections of structure under the design tolerance.

1. Vertical Capacity

Piers should be at least 24-inch in diameter extending at least 8 feet below adjacent final grade on compacted fill or bedrock. Piers can be designed for an allowable skin friction of 250 psf against the perimeter of pier for a minimum embedment of 8 feet below the adjacent grade. The upper two (2) feet of soil skin friction should be neglected in pier capacity calculations.

If end bearing capacity is to be considered for design, the bottom of pier should be cleaned out with appropriate equipment. The allowable end bearing capacity can be designed for 3,500 psf. However, the diameter of pier may be increased and temporary casing may be required to facilitate cleanout.

2. Lateral Capacity

Resistance to lateral loads can be provided by friction acting at the base of the foundation and by passive earth pressure. A coefficient of friction of 0.35 may be assumed with normal dead load forces. An allowable passive earth pressure of 300 psf per foot of depth up to a maximum of 3,000 psf may be used for foundations poured against compacted fill or bedrock. The values of coefficient of friction and allowable passive earth pressure include a factor of safety of 1.5. For ground surface restrained by concrete slab, the passive resistance may be calculated from the ground surface.

For unrestrained ground condition, the passive resistance of the upper one (1) feet earth material should be neglected in design.

3. Settlement

The static settlement of structures supported on piers founded on native alluvium will depend on the actual footing dimensions and the imposed vertical loads. Most of the footing settlement at the project site is expected to occur immediately after the application of the load. Based on the maximum allowable net bearing pressures presented above, static settlement is anticipated to be less than 0.5 inch.

4. Dynamic Increases

Bearing values indicated above are for total dead load and frequently applied live loads. The above vertical bearing may be increased by 33 percent for short durations of loading which will include the effect of wind or seismic forces. The allowable passive pressure may be increased by 33 percent for lateral loading due to wind or seismic forces.

5. Modulus of Subgrade Reaction

For the subject project, design of the structures supported on compacted fill sub-grade prepared in accordance with the recommendations provided in this report may be based on a soil modulus of sub-grade reaction of (k_s) of 150 pounds per square inch per inch.

J3. Lateral Earth Pressure

Though not anticipated, the following are recommendations for retaining walls up to 6 feet in height. The earth pressure behind any buried wall depends primarily on the allowable wall movement, type of backfill materials, backfill slopes, wall inclination, surcharges, and any hydrostatic pressure. The following fluid pressures are recommended for vertical walls with no hydrostatic pressure, no surcharge, and level backfill.

Table 3.5.8: Lateral Earth Pressures for Retaining Wall Design

Wall Type	Equivalent Fluid Pressure (pcf)
	Level Backfill
Cantilever Wall (Active pressure)	30 (Triangular Distribution)
Restrained Wall (At-rest pressure)	50 (Triangular Distribution)
Source: Converse, Ibid., Table 7	

The recommended lateral pressures assume that the walls are fully back-drained to prevent build-up of hydrostatic pressure. Adequate drainage could be provided by means of permeable drainage materials wrapped in filter fabric installed behind the walls. The drainage system should consist of perforated pipe surrounded by free draining, uniformly graded, ¾ –inch washed, crushed aggregate, and wrapped in filter fabric such as Mirafi 140N or equivalent, and should extend to about 2 feet below the finished grade. The filter fabric should overlap approximately 12 inches or more at the joints. The sub-drain pipe should consist of perforated, four-inch diameter, rigid ABS (SDR-35) or PVC A-2000, or equivalent, with perforations placed down. Alternatively, a prefabricated drainage composite system such as the Miradrain G100N or equivalent can be used. The sub-drain should be connected to surface drain or sump pump.

In addition, walls with inclined backfill should be designed for an additional equivalent fluid pressure of one (1) pound per cubic foot for every two (2) degrees of slope inclination. Walls subjected to surcharge loads located within a distance equal to the height of the wall should be designed for an additional uniform lateral pressure equal to one-third or one-half the anticipated surcharge load for unrestrained or restrained walls, respectively. These values are applicable for backfill placed between the wall stem and an imaginary plane rising 45 degrees from below the edge (heel) of the wall footings.

J4. Flexible Pavement

The flexible pavement structural section design recommendations were performed in accordance with the method contained in the *CALTRANS Highway Design Manual*, Chapter 630 without the factor of safety. No specific traffic study was performed to determine the Traffic Index (TI) for the proposed project, therefore a wide range of TI values were evaluated.

Due to various earth materials encountered at the site, flexible pavement structural section recommendations are prepared for both sub-grade soils. We recommend that the project structural engineer consider the traffic loading conditions at various locations and select the appropriate pavement sections from the following table.

Table 3.5.9: Flexible Pavement Structural Sections

Design R-value	Design TI	Asphalt Concrete (AC) Over Aggregate Base (AB) Structural Sections		Full AC Structural Section
		AC (inches)	AB (inches)	AC (inches)
44	4	2	2.5	3
	5	3	3	4.5
	6	4	3.5	5.5
	7	4	6	7
	8	5	6.5	8
	9	6	7	9
Source: Converse, Ibid., Table 8				

Base material shall conform to requirements for Crushed Miscellaneous Base (CMB) or equivalent and should be placed in accordance with the requirements of the Standard Specifications for Public Works Construction (SSPWC, latest Edition).

Asphaltic materials should conform to Section 203-1, "Paving Asphalt," of the Standard Specifications for Public Works Construction (SSPWC, latest Edition) and should be placed in accordance with Section 302-5, "Asphalt Concrete Pavement," of the SSPWC, 2012 edition.

Positive drainage should be provided away from all pavement areas to prevent seepage of surface and/or subsurface water into the pavement base and/or sub-grade.

J5. Rigid Pavement

Rigid pavement design recommendations were provided in accordance with the Portland Cement Association's (PCA) Southwest Region Publication P-14, *Portland Cement Concrete Pavement (PCCP) for Light, Medium, and Heavy Traffic*. We recommend that the project structural engineer consider the loading conditions at various locations and select the appropriate pavement sections from the following table:

Table 3.5.10: Rigid Pavement Structural Sections

Design R-Value	Design Traffic Index (TI)	PCCP Pavement Section (inches)
44	4.5	5.75
	5.0	6.00
	6.0	6.25
	7.0	6.75
	8.0	7.00
	9.0	7.25
Source: Converse, Ibid, Table 9		

The pavement sections presented in the table are based on a minimum 28-day Modulus of Rupture (M-R) of 550 psi and a compressive strength of 3,000 psi. The third point method of testing beams should be used to evaluate modulus of rupture. The concrete mix design should contain a minimum cement content of 5.5 sacks per cubic yard

J6. Site Drainage

Adequate positive drainage should be provided away from the structures to prevent ponding and to reduce percolation of water into structural backfill. We recommend that the any landscape area immediately adjacent to the foundation shall be designed sloped away from the structures with a minimum 5 percent slope gradient for at least 10 feet measured perpendicular to the face structure. Impervious surfaces within 10 feet of the foundation shall be sloped a minimum of 2 percent away from the structure per 2013 CBC.

Planters and landscaped areas adjacent to the any building perimeter should be designed to minimize water infiltration into the sub-grade soils. Lower level walkways and open patio areas may require special drainage provisions and sump pumps to provide suitable drainage.

K. CONSTRUCTION RECOMMENDATIONS

K1. Temporary Excavations

Based on the materials encountered in the exploratory borings, sloped temporary excavations may be constructed according to the slope ratios presented in the following table.

Table 3.5.11: Slope Ratios for Temporary Excavation

Maximum Depth of Cut (feet)	Maximum Slope Ratio* (horizontal: vertical)
0 - 5	-5
5 - 15	-15
15+	15+
* Slope ratio assumed to be uniform from top to toe of slope	
Source: Converse, Ibid, Table 10	

Any loose utility trench backfill or other fill encountered in excavations will be less stable than the native soils. Temporary cuts encountering loose fill or loose dry sand should be constructed at a flatter gradient than presented in the table above. Surfaces exposed in slope excavations should be kept moist but not saturated to minimize raveling and sloughing during construction. Adequate provisions should be made to protect the slopes from erosion during periods of rainfall. Surcharge loads, including construction, should not be placed within five (5) feet of the unsupported excavation edge.

All applicable requirements of the California Construction and General Industry Safety Orders, the Occupational Safety and Health Act of 1987 and current amendments, and the Construction Safety Act should be met. The soils exposed in cuts should be observed during excavation by the project's geotechnical consultant. If potentially unstable soil conditions are encountered, modifications of slope ratios for temporary cuts may be required.

K2. Geotechnical Services during Construction

This report has been prepared to aid in the foundation plans and specifications, and to assist the architect, civil and structural engineers in the design of the proposed structures. It is recommended that this office be provided an opportunity to review final design drawings and specifications to verify that the recommendations of this report have been properly implemented.

Recommendations presented herein are based upon the assumption that adequate earthwork monitoring will be provided by Converse. Footing excavations should be

observed by Converse prior to placement of steel and concrete so that footings are founded on satisfactory materials and excavations are free of loose and disturbed materials. Trench backfill should be placed and compacted with observation and field density testing provided by this office.

During construction, the geotechnical engineer and/or their authorized representatives should be present at the site to provide a source of advice to the client regarding the geotechnical aspects of the project and to observe and test the earthwork performed. Their presence should not be construed as an acceptance of responsibility for the performance of the completed work, since it is the sole responsibility of the contractor performing the work to ensure that it complies with all applicable plans, specifications, ordinances, etc.

This firm does not practice or consult in the field of safety engineering. We do not direct the contractor’s operations, and cannot be responsible for other than our own personnel on the site; therefore, the safety of others is the responsibility of the contractor. The contractor should notify the owner if he considers any recommended actions presented herein to be unsafe.

L. CLOSURE

The findings and recommendations of this report were prepared in accordance with generally accepted professional engineering and engineering geologic principles and practice. We make no other warranty, either expressed or implied. Our conclusions and recommendations are based on the results of the field and laboratory investigations, combined with an interpolation and extrapolation of soil conditions between and beyond boring locations. If conditions encountered during construction appear to be different from those shown by the borings, this office should be notified.

The preliminary design recommendations given in this report are based on the assumption that the earthwork and site grading recommendations contained in this report are implemented. It should be advised that the design recommendations presented herein are considered preliminary for planning purpose only. Additional consultation may be prudent to interpret Converse's findings for contractors, or to possibly refine these recommendations based upon the review of the final site grading and actual site conditions encountered during construction. If the scope of the project changes, if project completion is to be delayed, or if the report is to be used for another purpose, this office should be consulted.

M. LIQUEFACTION/SEISMIC SETTLEMENT ANALYSIS

Liquefaction is defined as the phenomenon where a soil mass exhibits a substantial reduction in its shear strength. This strength reduction is due to the development of excess pore pressure in a soil mass caused by earthquake induced ground motions. Saturated soils behave temporarily as a viscous fluid (liquefaction) and, consequently, lose their capacity to support the structures founded on them. The potential for liquefaction decreases with increasing clay and gravel content, but increases as the ground acceleration and duration of shaking increase. Liquefaction potential has been found to be the greatest where the groundwater level and loose sands occur within 50 feet of the ground surface.

The liquefaction analyses are based on the *Special Publication 117A: Guidelines for Evaluating and Mitigating Seismic Hazards in California* (9/2008), *Recommended Procedures for Implementation of DMG Special Publication 117, Guidelines for Analyzing and Mitigating Liquefaction Hazards in California* (3/1999), and *2013 California Building Code*.

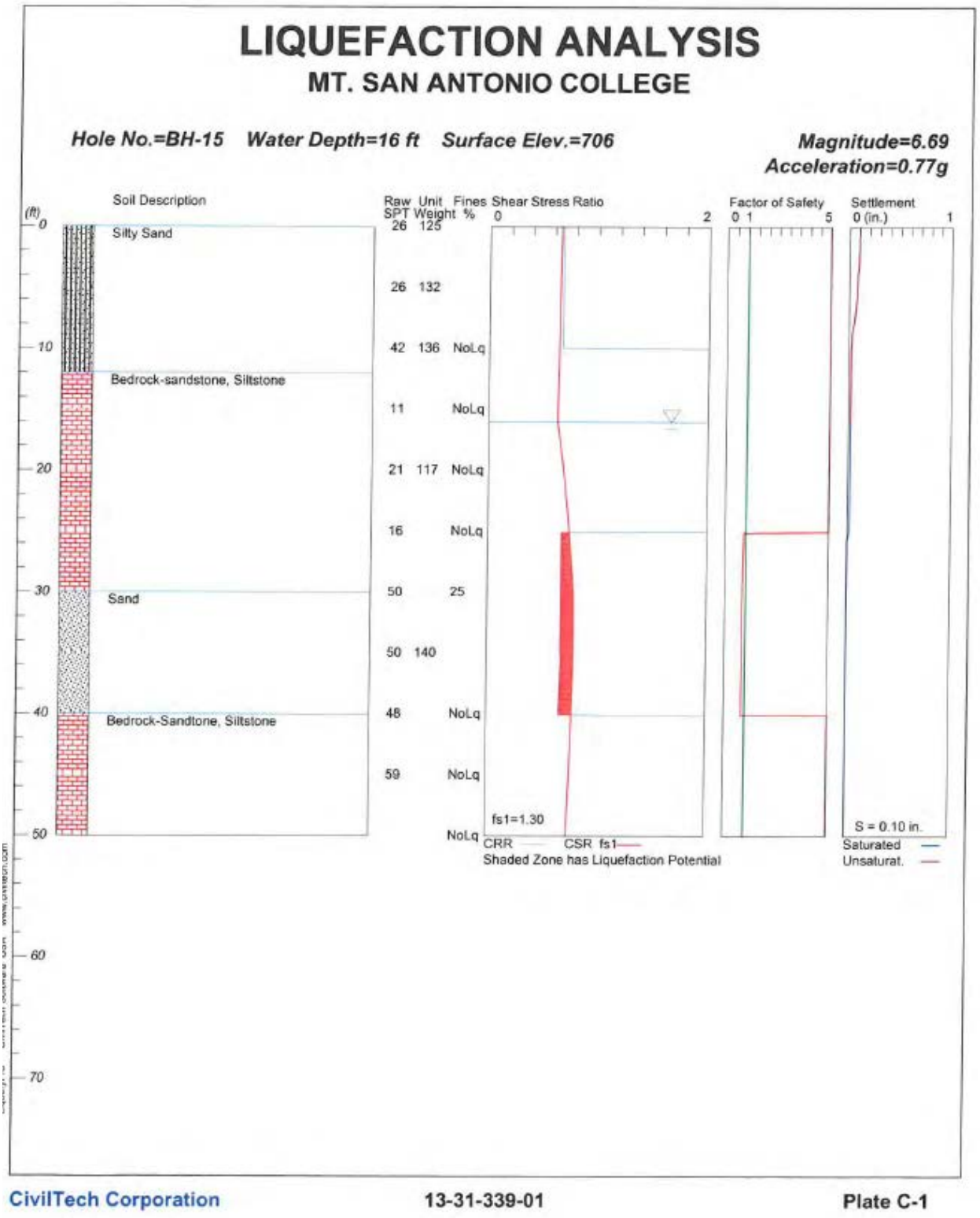
The subsurface data obtained from exploratory boring was used to evaluate the liquefaction/seismic settlement potential of the area. The Logs of Borings are presented in Appendix A, *Field Exploration*. The liquefaction potential and seismic settlement analyses were performed utilizing SPT data obtained from boring BH-15 for the upper 46.5 feet of soils, using *LiquefyPro,* Version 5.8d, 2009, by Civil Tech Software. The following seismic parameters are used for liquefaction potential analyses.

Table 3.5.12: Seismic Parameters Used in Liquefaction Analysis

Groundwater Depth* (feet)	Earthquake Magnitude** Mw	Peak Ground Acceleration*** (g)
16	6.69	0.77
* Based on Groundwater encountered during field exploration. ** Based on USGS 2008 NSHMP PSHA Interactive De-aggregation web site. ** Based on PGAM per section 21.5 of ASCE 7-10.		
Source: Converse, Ibid., Table D-1		

The results of our liquefaction analyses indicate the project site is not susceptible to liquefaction as presented in the attached calculations. The estimated seismic settlement is approximately 0.10 inches with differential settlement of approximately 0.05 inches.

Table 3.5.13: Liquefaction Potential – Plate C-1



N. EARTHWORK SPECIFICATIONS

N1. Scope of Work

The work includes all labor, supplies and construction equipment required to construct the building pads in a good, workmanlike manner, as shown on the drawings and herein specified. The major items of work covered in this section include the following:

- Site Inspection
- Authority of Geotechnical Engineer
- Site Clearing
- Excavations
- Preparation of Fill Areas
- Placement and Compaction of Fill
- Observation and Testing

N2. Site Inspection

1. The Contractor shall carefully examine the site and make all inspections necessary, in order to determine the full extent of the work required to make the completed work conform to the drawings and specifications. The Contractor shall satisfy himself as to the nature and location of the work, ground surface and the characteristics of equipment and facilities needed prior to and during prosecution of the work. The Contractor shall satisfy himself as to the character, quality, and quantity of surface and subsurface materials or obstacles to be encountered. Any inaccuracies or discrepancies between the actual field conditions and the drawings, or between the drawings and specifications must be brought to the Owner's attention in order to clarify the exact nature of the work to be performed.

2. This *Geoseismic/Geotechnical Study Report* by Converse Consultants may be used as a reference to the surface and subsurface conditions on this project. The information presented in this report is intended for use in design and is subject to confirmation of the conditions encountered during construction. The exploration logs and related information depict subsurface conditions only at the particular time and location designated on the boring logs. Subsurface conditions at other locations may differ from conditions encountered at the exploration locations. In addition, the passage of time may result in a change in subsurface conditions at the exploration locations. Any review of this information does not relieve the

Contractor from performing independent investigations and evaluations that satisfy Contractor as to the nature of the surface and subsurface conditions to be encountered and the procedures to be used in performing his work.

N3. Authority of the Geotechnical Engineer

1. The Geotechnical Engineer will observe the placement of compacted fill and will take sufficient tests to evaluate the uniformity and degree of compaction of filled ground.

2. As the Owner's representative, the Geotechnical Engineer will (a) have the authority to cause the removal and replacement of loose, soft, disturbed and other unsatisfactory soils and uncontrolled fill; (b) have the authority to approve the preparation of native ground to receive fill material; and (c) have the authority to approve or reject soils proposed for use in building areas.

3. The Civil Engineer and/or Owner will decide all questions regarding (a) the interpretation of the drawings and specifications, (b) the acceptable fulfillment of the contract on the part of the Contractor and (c) the matters of compensation.

N4.` Site Clearing

1. Clearing and grubbing shall consist of the removal from building areas to be graded of all existing structures, pavement, utilities, and vegetation.

2. Organic and inorganic materials resulting from the clearing and grubbing operations shall be hauled away from the areas to be graded.

N5. Excavations

1. Based on observations made during our field explorations, the surficial soils can be excavated with conventional earthwork equipment.

N6. Preparation of Fill Areas

1. All organic material, organic soils, incompetent alluvium, undocumented fill soils and debris should be removed from the proposed building areas.

2. In order to provide a relative uniform bearing material below shallow foundations, over-excavation and re-compaction of below the foundations and slab-on-grade are recommended. We recommend a minimum 2 feet of onsite soils below the bottom of foundations should be removed, moisture-conditioned

if necessary, and replaced as compacted fill. At least the six (6) inches of soil at bottom of over-excavation, cut and transition areas should be scarified and compacted. All undocumented fill should be removed and replaced with compacted fill. The excavation to remove unsuitable soils should be extended to five (5) feet beyond the building limits and appendages where space is available. All loose, soft or disturbed earth materials should be removed from the bottom of excavations before placing structural fill. The actual depth of removal should be determined based on observations made during grading. After the required removals have been made, the exposed native earth materials shall be excavated to provide a zone of structural fill for the support of footings, slabs-on-grade, and exterior flatwork. The fill thickness under structures should not vary.

3. The sub-grade in all areas to receive fill shall be scarified to a minimum depth of six (6) inches, the soil moisture adjusted within three (3) percent of the optimum moisture for granular soils and at above approximately three (3) percent of the optimum moisture for fine-grained soils, and then compacted to at least 90 percent for the upper 10 feet and 95 percent for fill placed 10 feet below proposed finished grade, of the laboratory maximum dry density as determined by ASTM Standard D1557 test method. Scarification may be terminated on moderately hard to hard, cemented earth materials with the approval of the Geotechnical Engineer.

4. Compacted fill may be placed on native soils that have been properly scarified and re-compacted as discussed above.

5. All areas to receive compacted fill will be observed and approved by the Geotechnical Engineer before the placement of fill.

N7. <u>Placement and Compaction of Fill</u>

1. Compacted fill placed for the support of footings, slabs-on-grade, exterior concrete flatwork, and driveways will be considered structural fill. Structural fill may consist of approved on-site soils or imported fill that meets the criteria indicated below.

2. Fill consisting of selected on-site earth materials or imported soils approved by the Geotechnical Engineer shall be placed in layers on approved earth materials. Soils used as compacted structural fill shall have the following characteristics:

    a. All fill soil particles shall not exceed three (3) inches in nominal size, and

shall be free of organic matter and miscellaneous inorganic debris and inert rubble.

4. Imported fill materials shall have an Expansion Index (EI) less than 20. All imported fill should be compacted to at least 90 and 95 percent of the laboratory maximum dry density (ASTM Standard D1557) at about three (3) percent above optimum moisture for fine grained soils, and within three (3) percent of optimum for granular soils.

5. Fill soils shall be evenly spread in maximum 6-inch to 8-inch lifts, watered or dried as necessary, mixed and compacted to at least the density specified below. The fill shall be placed and compacted on a horizontal plane, unless otherwise approved by the Geotechnical Engineer.

6. All fill placed at the site shall be compacted to at least 90 or 95 percent of the laboratory maximum dry density as determined by ASTM Standard D1557 test method. The on-site soils shall be moisture conditioned within three (3) percent of the optimum moisture for granular soils and at above approximately three (3) percent of the optimum moisture for fine-grained soils. At least the upper 12 inches of subgrade soils underneath the concrete apron, pavement and parking areas should be compacted to a minimum of 95 percent relative compaction.

7. Fill exceeding five (5) feet in height shall not be placed on native slopes that are steeper than 5:1 horizontal: vertical (H:V). Where native slopes are steeper than 5:1 H:V, and the height of the fill is greater than five (5) feet, the fill shall be benched into competent materials. The height and width of the benches shall be at least two (2) feet.

8. Representative samples of materials being used, as compacted fill will be analyzed in the laboratory by the Geotechnical Engineer to obtain information on their physical properties. Maximum laboratory density of each soil type used in the compacted fill will be determined by the ASTM Standard D1557 compaction method.

9. Fill materials shall not be placed, spread or compacted during unfavorable weather conditions. When site grading is interrupted by heavy rain, filling operations shall not resume until the Geotechnical Engineer approves the moisture and density conditions of the previously placed fill.

10. It shall be the Grading Contractor's obligation to take all measures deemed necessary during grading to provide erosion control devices in order to protect slope areas and adjacent properties from storm damage and flood hazard originating on this project. It shall be the contractor's responsibility to maintain slopes in their as-graded form until all slopes are in satisfactory compliance with job specifications, all berms have been properly constructed, and all associated drainage devices meet the requirements of the Civil Engineer.

N8. Trench Backfill

The following specifications are recommended to provide a basis for quality control during the placement of trench backfill.

1. Trench excavations to receive backfill shall be free of trash, debris or other unsatisfactory materials at the time of backfill placement.

2. Trench backfill shall be compacted to a minimum relative compaction of 90 percent as per ASTM Standard D1557 test method.

3. Rocks larger than one (1) inch should not be placed within 12 inches of the top of the pipeline or within the upper 12 inches of pavement or structure subgrade. No more than 30 percent of the backfill volume shall be larger than 3/4-inch in largest dimension diameter and rocks shall be well mixed with finer soil.

4. The pipe design engineer should select bedding material for the pipe. Bedding materials generally should have a Sand Equivalent (SE) greater than or equal to 30, as determined by the ASTM Standard D2419 test method.

5. Trench backfill shall be compacted by mechanical methods, such as sheepsfoot, vibrating or pneumatic rollers, or mechanical tampers, to achieve the density specified herein. The backfill materials shall be brought to within three (3) percent of optimum moisture content for granular soils and fine-grained soils, then placed in horizontal layers. The thickness of uncompacted layers should not exceed eight (8) inches. Each layer shall be evenly spread, moistened or dried as necessary, and then tamped or rolled until the specified density has been achieved.

6. The contractor shall select the equipment and processes to be used to achieve the specified density without damage to adjacent ground and completed work.

7. The field density of the compacted soil shall be measured by the ASTM Standard D1556 or ASTM Standard D2922 test methods or equivalent.

8. Observation and field tests should be performed by Converse during construction to confirm that the required degree of compaction has been obtained. Where compaction is less than that specified, additional compactive effort shall be made with adjustment of the moisture content as necessary, until the specified compaction is obtained.

9. It should be the responsibility of the Contractor to maintain safe conditions during cut and/or fill operations.

10. Trench backfill shall not be placed, spread or rolled during unfavorable weather conditions. When work conditions. When the work is interrupted by heavy rain, fill operations shall not be resumed until field tests by the project's geotechnical consultant indicate that the moisture content and density of the fill are as previously specified.

N9. Observation and Testing

1. During the progress of grading, the Geotechnical Engineer will provide observation of the fill placement operations.

2. Field density tests will be made during grading to provide an opinion on the degree of compaction being obtained by the contractor. Where compaction of less than specified herein is indicated, additional compactive effort with adjustment of the moisture content shall be made as necessary, until the required degree of compaction is obtained.

3. A sufficient number of field density tests will be performed to provide an opinion to the degree of compaction achieved. In general, density tests will be performed on each one-foot lift of fill, but not less than one for each 500 cubic yards of fill placed.

N10. Additional Trenching Investigations

Four additional exploratory test pit trenches were excavated onsite on June 9 and 12, 2017. The trench locations were selected to investigate the geotechnical conditions in the existing onside landside areas. The trenching report, trench locations and discussion of the geotechnical conditions is included as Appendix L2. Grading for the project will result in removal of all landslide debris and stabilization and compaction of the soil with drainage systems for the areas of concern.

3.5.2. Geology/Soil Impacts

The CEQA Checklist includes the following:

Geology and Soils. Would the project Expose people or structures to potential substantial adverse effects, including the risk of loss, injury or death involving:

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

a) (iii) Seismic-related ground failure, including liquefaction?

a) (iv) Section E7?

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

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

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

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

Based on the Converse report in Section 3.5.1, the following conclusions occur for the items in the CEQA Checklist:

1. The project site is not in an Alquist - Priolo Earthquake Fault Zone (Section E).

   The project site is not located within a designated State of California Earthquake Fault Zone (formerly Alquist-Priolo Special Studies Zones) for surface fault rupture. The Alquist - Priolo Earthquake Fault Zoning Act requires the California Geological Survey to zone "active faults" within the State of California.

2. Upon completion of construction, the project site is not subject to seismic-related ground failure including liquefaction (Section E5, Section M).

   Based on the liquefaction potential analyses, and the firm bedrock materials encountered during the exploration, the project site is not susceptible to liquefaction and seismically-induced settlement is anticipated to be negligible.

3. Upon completion of construction, the project site is not subject to landslides (Section E7)

   Slopes within the project area will be completely removed or reduced to a 2:1 (H:V) gradient during the proposed grading operations. Slopes with a gradient steeper than 2:1 (H:V) would be over underlying hard, cemented sandstone pebble conglomerate bedrock. In the absence of significantly steep slopes, the potential for seismically-induced landslides to affect the proposed site is considered to be very low.

4. Upon completion of construction, the project is not located on an unstable geologic unit or soil that is unstable (reference). The project upon completion will not result in on- or off-site landslides (Section E7), lateral spreading (Section E6), subsidence (Section E5), liquefaction (Section E5), or collapse (Section E7).

Based on the liquefaction potential analyses, and the firm bedrock materials encountered during the exploration, the project site is not susceptible to liquefaction and seismically-induced settlement (i.e. subsidence) is anticipated to be negligible.

Slopes within the project area will be completely removed or reduced to a 2:1 (H:V) gradient during the proposed grading operations. Slopes with a gradient steeper than 2:1 (H:V) would be over underlying hard, cemented sandstone pebble conglomerate bedrock. In the absence of significantly steep slopes, the potential for seismically-induced landslides (i.e. collapse) to affect the proposed site is considered to be very low.

The topography at the project site consists of bedrock knolls overlain by relatively-dry and dense colluvial soils and gentle swales below. Under these circumstances, the potential for lateral spreading at the subject site is considered negligible.

5. Upon completion of construction, the project will not be located on expansive soil (Section I6).

Based on the laboratory testing results, the on-site silty, clayey earth materials are considered to be expansive. On-site silty, clayey soils and siltstone with an expansion index exceeding 20 should not be re-used for compaction within 5 feet below the planned fill pad finish grade or for retaining wall backfill. Soils containing organic materials should not be used as structural fill. The extent of removal should be determined by the geotechnical representative based on soil observation during grading. Based on borings BH-1 and BH-20, the top 5 feet of existing grade exhibits an expansion index greater than twenty (20).

There are several alternative mitigation measures that can be utilized to improve expansive soils at the site. Some mitigation measures include:

1. Placement of 2 feet thick of non-expansive soil below finished sub-grade.
2. Pre-saturation of on-site compacted sub-grade soils to at approximate three (3) percent above optimum moisture content.
3. Lime treat the upper two (2) feet of the sub-grade soils.

6. The project does not generate wastewater and require sewer service.

Comments from June 7, 2017 Scoping Session

Several erroneous comments were made by Sassi Hassam during the June 7, 2017 Scoping Session, including that the Converse did not address liquefaction and that the report did not address landslides. The report indicates the potential for seismically-induced landslides to affect the proposed site is considered to be very low. In addition, Mansfield Collins asserted that the primary concern for the project is now public safety due to ground instability. Laviana Someya, 21229 Stonybrook Drive also expressed concern for damages to their property from the project and noted cracking and settling

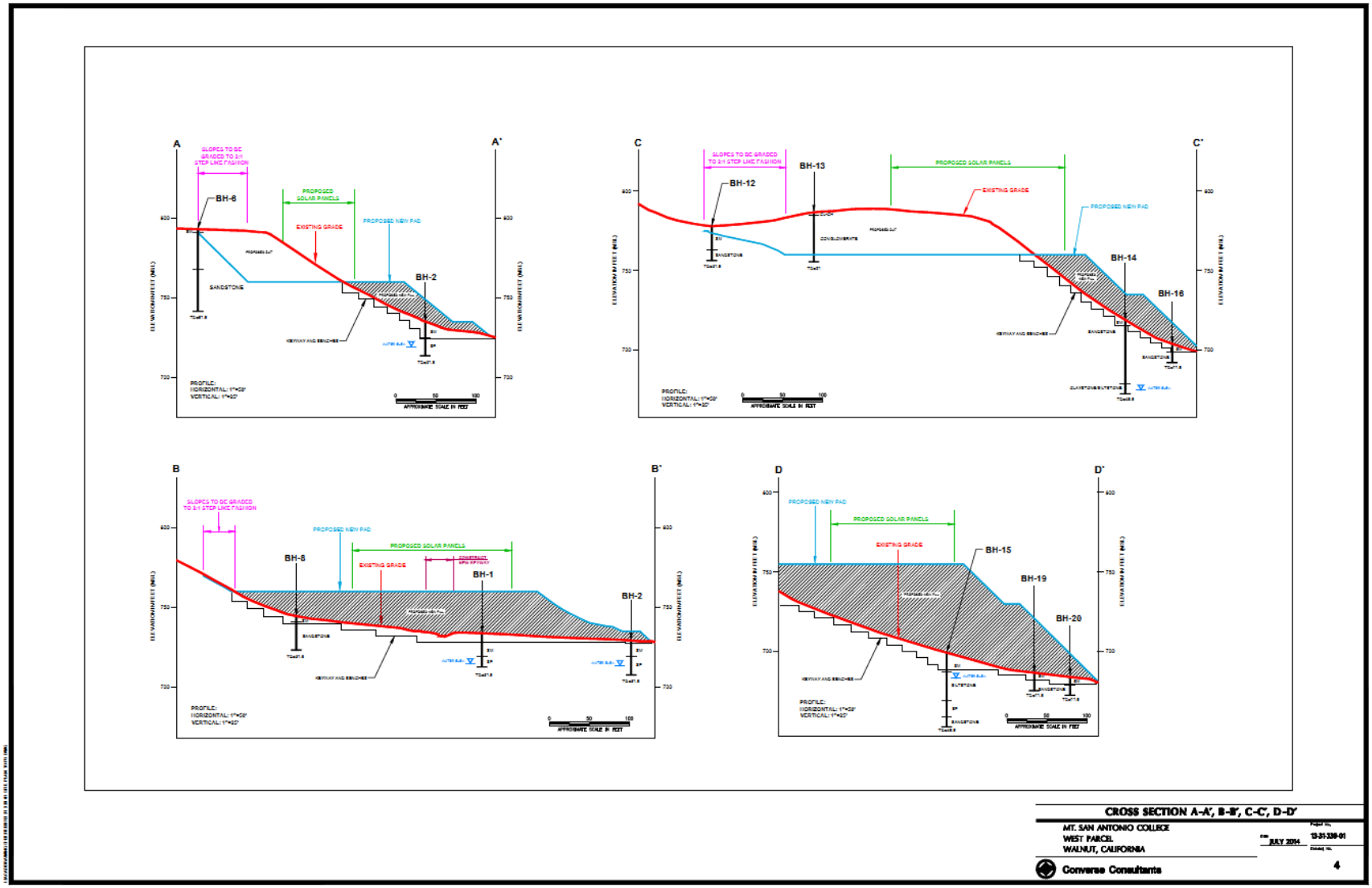
has occurred on their property.

It is not a proper conclusion that the project site is the cause of any cracking or settling in offsite residential properties. No geotechnical reports were submitted at the June 7th scoping session or afterwards to support the conclusions. Further, the City of Walnut is responsible for the grading plans for the offsite developed properties. Settlement may also occur due to pool design and weight of the water resulting in cracking. A definitive conclusion would require investigation of each property. The onsite landslide noted onsite occurred when Grand Avenue was developed in the late 1970s. There has been no subsequent onsite landslide for the past 47 years. Grading for the project will result in a site with improved stability, not less, and no future landslides or substantial settlement is likely with completion of the project.

N10. Additional Trenching Investigations

Four additional trenches were excavated onsite on June 12, 2017. The trench locations were selected to supplement the initial borings completed in May 2014. The investigation results are summarized herein and the report is included as Appendix L2.

Exhibit 3.5.2: Grade Differentials



3.5.3. Mitigation Measures for Geology/Soils Impacts

Mitigation measures for geology/soils impacts are unique compared to other environmental impacts because all of the recommendations of the geotechnical engineer are relevant, whether they are stated specifically in the report or if the measures are implemented in the field based on observation or testing when grading is being implemented. As stated in the geotechnical report:

Because of the uncertainties involved in the nature and depositional characteristics of the earth material at the site, care should be exercised in interpolating or extrapolating subsurface conditions between or beyond the boring locations. If, during construction, subsurface conditions different from those presented in this report are encountered, this office should be notified immediately so that recommendations can be modified, if necessary.

An example of the former is a specific moisture content requirement or a prohibition against using undocumented fill onsite. An example of the latter is when the observed soil or geologic conditions discovered during grading differ from that investigated in the geotechnical report. In that case, the geotechnical engineer has the authority to direct how the grading, compaction or testing is implemented.

The process is dynamic, based on the geotechnical engineer's directives during grading, and not confined to the report's findings and recommendations. This process is not postponing mitigation to a later stage, but a rational, comprehensive and effective process to assure the grading meets all regulatory standards and results in a site that is stable based on actual soil/geotechnical conditions and probable future conditions (i.e. seismic, rainfall, etc).

MR-01. All recommendations in the final geotechnical report(s) for the project shall be included in construction contracts and implemented. Facilities Planning and Management shall monitor compliance.

CR-02.. If, during the course of implementing the project, human remains are discovered, all work shall be halted immediately within 50 feet of the discovery, the Contractor shall inform the Project Manager, and the County Coroner must be notified according to Section 5097.98 of the PRC and Section 7050.5 of California's Health and Safety Code. If the remains are determined to be Native American, the coroner will notify the Native American Heritage Commission, and the procedures outlined in CEQA Section 15064.5(d) and (e) shall be followed. Facilities Planning and Management shall monitor compliance.

MR-03. During construction grading and site preparation activities, the Contractor shall monitor all construction activities. In the event that cultural resources (i.e., prehistoric sites, historic sites, and/or isolated artifacts) are discovered, work shall be halted immediately within 50 feet of the discovery and the Contractor shall inform the Project Manager. A qualified archaeologist that meets the Secretary of the Interior's Standards and Guidelines for Professional Qualifications in Archaeology shall be retained to analyze the significance of the discovery and recommend further appropriate measures to reduce further impacts on archaeological resources. Such measures may include avoidance, preservation in place, excavation, documentation, curation, data recovery, or other appropriate measures. Facilities Planning and Management shall monitor compliance.

MR-04. The geologist shall require contractors use one or more of the following *mitigation measures to improve expansive soils at the site. The measures include: (1) Placement of 2 feet thick of non-expansive soil below finished sub-grade, (2) Pre-saturation of on-site compacted sub-grade soils to at approximate*

three (3) percent above optimum moisture content or (3) Lime treat the upper two (2) feet of the sub-grade soils. Facilities Planning and Management shall monitor compliance.

3.5.4 Level of Significance for Geology/Soils Impacts with Mitigation

Less than Significant with Mitigation Incorporated

3.5.5 Geology/Soils Cumulative Impacts

There are no other substantial projects in the immediate project vicinity. Therefore, there are no cumulative geology/soils impacts.

3.5.6 Mitigation Measures for Geology/Soils Cumulative Impacts

None

3.5.7. Level of Significance for Cumulative Impacts with Mitigation

Not applicable

3.6 HYDROLOGY/WATER QUALITY

3.6.1 Existing Conditions for Hydrology/Water Quality

Hydrology/Water Quality issues for the project were evaluated in two reports. The water quality report is the initial analysis, while the storm water pollution prevention report is an application for a State Water Resources ministerial permit. There is considerable overlap in the two reports, since the basis for the latter application is the former report.

A. Water Quality Management Plan

Psomas has completed a draft water quality study for the project (Draft Project Specific Water Quality Management Plan for Mt. SAC South Camus Improvements: West Parcel, Psomas, July 2, 2015). The report is summarized herein and the complete report is included as Appendix R.

B. Storm Water Pollution Prevention Plan

Psomas has completed a storm water pollution prevent plan for the project (Storm Water Pollution Prevention Plan (SWPPP) for South Campus Site Improvements West, Psomas, October 10, 2016). The report is summarized herein and the complete report is included as Appendix A1.

A Stormwater Pollution Prevention Plan (SWPPP) is designed to comply with California's General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (General Permit) Order No. 2009-0009-DWQ as amended in 2010 and 2012 (NPDES No. CAS000002) issued by the State Water Resources Control Board (State Water Board).

The project SWPPP has been prepared following the SWPPP Template provided on the California Stormwater Quality Association Stormwater *Best Management Practice Handbook Portal: Construction* (CASQA, 2012). In accordance with the General Permit, Section XIV, this SWPPP is designed to address the following:

- Pollutants and their sources, including sources of sediment associated with construction, construction site erosion and other activities associated with construction activity are controlled;
- Where not otherwise required to be under a Regional Water Quality Control Board (Regional Water Board) permit, all non-stormwater discharges are identified and either eliminated, controlled, or treated;

- Site BMPs are effective and result in the reduction or elimination of pollutants in stormwater discharges and authorized non-stormwater discharges from construction activity to the Best Available Technology/Best Control Technology (BAT/BCT) standard;

Existing Drainage

The project site slopes to the north and the elevation of the project site ranges from 685 to 815 feet above mean sea level (msl). Surface drainage at the site currently flows to the east, towards Grand Avenue. Stormwater is conveyed through surface runoff. Stormwater discharges from the site are not considered direct discharges as defined by the State Water Board. Existing site topography, drainage patterns, and stormwater conveyance systems are shown in Exhibit 3.6.2: Drainage Improvements.

The project discharges to San Jose Creek Reach 2 that is listed for water quality impairment on the most recent 303(d)-list for coliforms.

Geology and Groundwater

The site soil consisted of undocumented fills, alluvial soils deposits to the maximum explored depth of 51.5 feet below existing ground surface. Undocumented fills up to a maximum observed depth of eleven were encountered in the borings. The fill encountered consists primarily of silty sand and clayey sand. The alluvial soils below the fill primarily consist of silty sand and clayey sand with gravels.

Groundwater was not encountered within the borings during field exploration. Based on the absence of the local groundwater 5.13at the project site, and observations based on recent local groundwater measurements, no significant quantity of sustained inflowing groundwater is expected.

The risk level was determined through the use of the K and LS factors provided in SMARTS. The risk level is based on project duration, location, proximity to impaired receiving waters and soil conditions. A copy of the Risk Level determination submitted on SMARTS with the PRDs is included in Appendix C: Table 2.2 and Table 2.3 of the report, which summarizes the sediment and receiving water risk factors and documents the sources of information used to derive the factors.

Table 3.6.1: Summary of Sediment Risk

RUSLE Factor	Value	Method for establishing value
R	54.52	Calculated per EPA Fact Sheet 3.1
K	0.32	SMARTS populated based on project location
LS	4.19	SMARTS populated based on project location
Total Predicted Sediment Loss (tons/acre)		
Overall Sediment Risk Low Sediment Risk < 15 tons/ acre Medium Sediment Risk >= 15 and < 75 tons/acre High Sediment Risk >= 75 tons/acre		Low

Runoff from the project site discharges into a municipal storm drain owned by the City of Walnut, which in turn discharges to San Jose Creek Reach 2 and ultimately the Pacific Ocean.

Table 3.6.2: Summary of Receiving Water Risk

Receiving Water Name	303(d) Listed for Sediment Related Pollutant(1)	TMDL for Sediment Related Pollutant(1)	Beneficial Uses of COLD, SPAWN, and MIGRATORY(1)
San Jose Creek Reach 2	No	No	No
Overall Receiving Water Risk			Low
(1) If yes is selected for any option the Receiving Water Risk is High			
Source: SWPPP, Ibid, Table 2.3			

Risk Level 2 sites are subject to both the narrative effluent limitations and numeric effluent standards. The narrative effluent limitations require stormwater discharges associated with construction activity to minimize or prevent pollutants in stormwater and authorized non-stormwater through the use of controls, structures and Best Management Practices. Discharges from Risk Level 2 site are subject to numeric action levels (NALs) for pH and turbidity shown in Table 2-4 of he report. This SWPPP has been prepared to address Risk Level 2 requirements (General Permit Attachment D).

3.6.2. Hydrology/Water Quality Impacts

The CEQA Checklist includes the following items:

Hydrology and Water Quality. *Would the projects:*

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

f) Otherwise substantially degrade water quality?

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

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

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

j) Inundation by seiche, tsunami, or mudflow?

All drainage and water quality Project impacts, due to compliance with the requirements of the Psomas study and any additional requirements by Responsible Agencies, will be Less than Significant with Mitigation Incorporated. No new significant effects will occur with compliance with the approved studies for responsible agencies

A. Water Quality Management Plan

The pre- and post condition discharges from the site based on the three drainage areas are shown below. There is no increase in storm flows with the project drainage improvements.

Table 3.6.3: Pre- and Post Condition Discharge Flows

	50 year – 24		100 year – 24	
	Precondition	Post-condition	Precondition	Post-condition
Discharge (cfs)	90	90	105	105
Volume (cubic feet)	217,407	217,407	260,077	260,077
Source: Psomas, Ibid, pge A-1.				

Exhibit 3.6.1: Drainage Areas

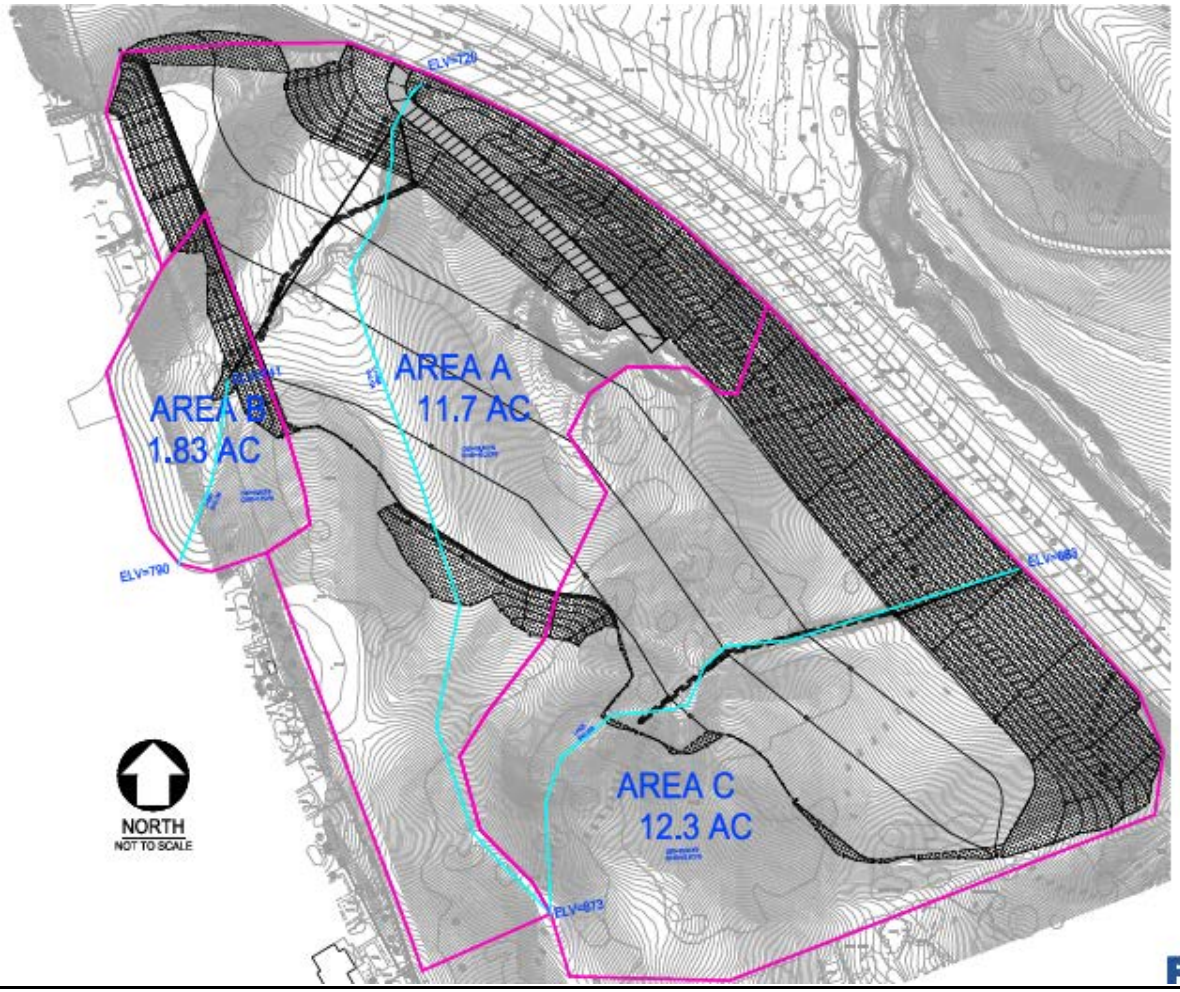
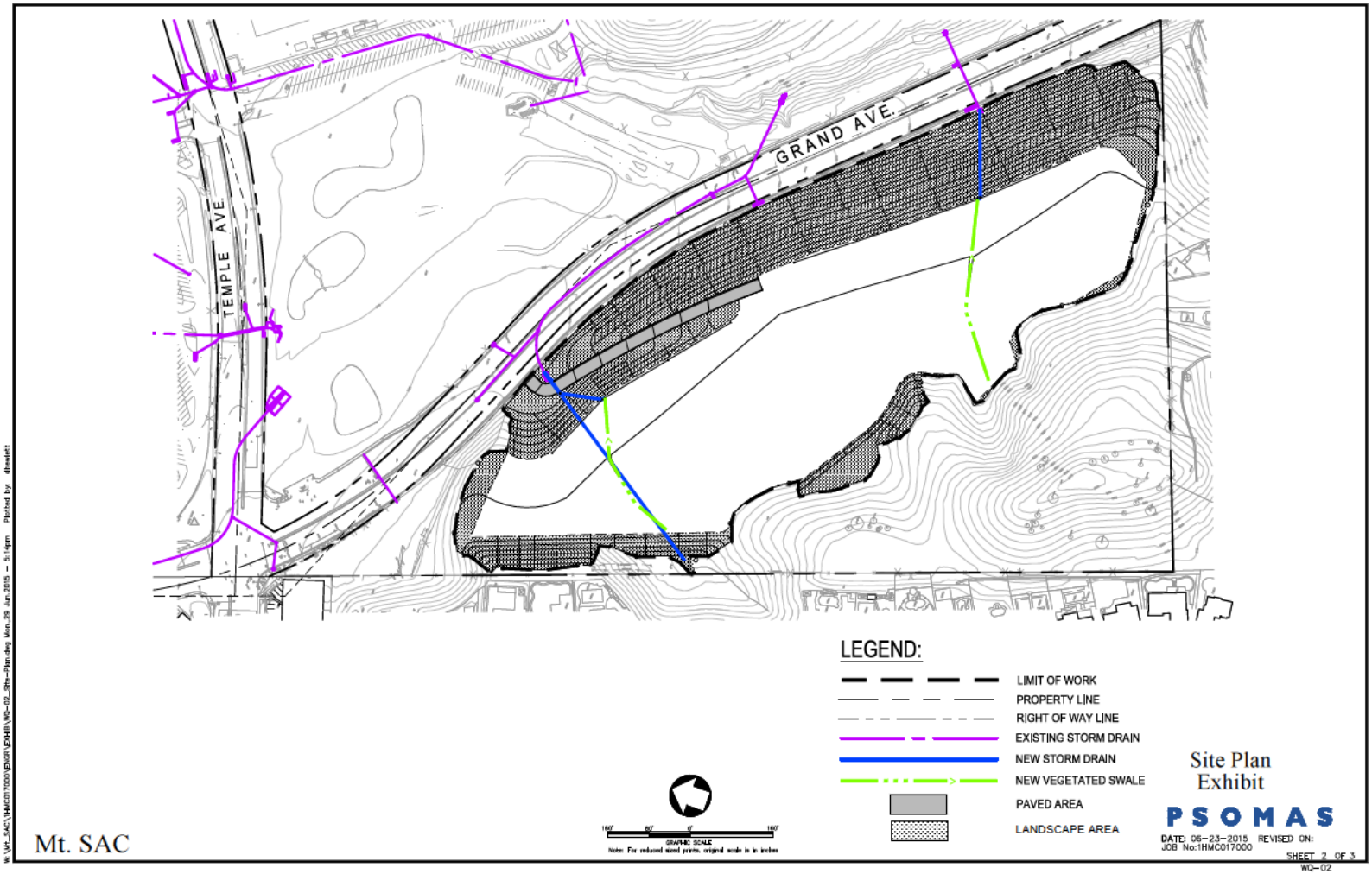


Exhibit 3.6.2: Drainage Improvements



B. Storm Water Pollution Prevention Plan

A SWPPP describes how the potential pollutants related to project development may impact water quality, what offsite channels or streams may be impacted, and methods to identify, monitor and control pollutants so water quality impacts do not occur. An extensive sampling and monitoring program is required for all phases of construction and operation of a project.

Bid 3005 for the solar project requires the contractors to comply with an approved Storm Water Pollution Prevention Plan (SWPPP). Review and implementation of a SWPPP is ministerial action and not discretionary. However, for informational purposes, select components of the plan are included below.

Table 3.6.4: BMP Implementation Schedule

	BMP	Implementation	Duration
Erosion Control	EC-1, Scheduling	Prior to Construction	Entirety of Project
	EC-2, Preservation of Existing Vegetation	Start of Construction	Entirety of Project
Sediment Control	SE-1, Silt Fence	Start of Construction	Entirety of Project
	SE-6,Gravel Bag Berm	Start of Construction	Entirety of Project
	SE-7,Street Sweeping and Vacuuming	Daily	Entirety of Project
	SE-10, Storm Drain Inlet Protection	Start of Construction	Entirety of Project
Tracking Control	TC-1, Stabilized Construction Entrance/Exit	Prior to Construction	Entirety of Project
Wind Erosion	WE-1, Wind Erosion Control	Apply to active areas	As needed

Erosion and Sediment Controls

Erosion and sediment controls are required by the General Permit to provide effective reduction or elimination of sediment related pollutants in stormwater discharges and authorized non-stormwater discharges from the project site. Applicable Best

Management Practices (BMPs) are identified in the report for erosion control, sediment control, tracking control, and wind erosion control. Only erosion control measures are stated herein. Please consult the complete report for sediment, tracking and wind erosion control.

A. Erosion Conrols

Erosion control, also referred to as soil stabilization, consists of source control measures that are designed to prevent soil particles from detaching and becoming transported in stormwater runoff. Erosion control BMPs protects the soil surface by covering and/or binding soil particles.

The project is required to implement the following practices to provide effective temporary and final erosion control during construction:

1. Preserve existing vegetation where required and when feasible.
2. The area of soil disturbing operations shall be controlled such that the Contractor is able to implement erosion control BMPs quickly and effectively.
3. Control erosion in concentrated flow paths by applying erosion control blankets, check dams, erosion control seeding or alternate methods.
4. Prior to the completion of construction, apply permanent erosion control to remaining disturbed soil areas.

Sufficient erosion control materials shall be maintained onsite to allow implementation in conformance with this SWPPP.

The following temporary erosion control BMP selection table indicates the BMPs that shall be implemented to control erosion on the construction site.

Table 3.6.5: Temporary Erosion Control BMPs

CASQA Fact Sheet	BMP Name	Meets a Minimum Requirement(1)	BMP Used		If not used, state reason
			YES	NO	
EC-1	Scheduling	1	1		
EC-2	Preservation of Existing Vegetation	1	1		
EC-3	Hydraulic Mulch	1(2)		1	Not applicable to the project
EC-4	Hydroseed	1(2)		1	Not applicable to the project
EC-5	Soil Binders	1(2)		1	Not applicable to the project
EC-6	Straw Mulch	1(2)		1	Not applicable to the project
EC-7	Geotextiles and Mats	1(2)		1	Not applicable to the project
EC-8	Wood Mulching	1(2)		1	Not applicable to the project
EC-9	Earth Dike and Drainage	1(3)		1	Not applicable to the project
EC-10	Velocity Dissipation Devices			1	Not applicable to the project
EC-11	Slope Drains			1	Not applicable to the project
EC-12	Stream Bank Stabilization			1	Not applicable to the project
EC-14	Compost Blankets	1(2)		1	Not applicable to the project
EC-15	Soil Preparation-Roughening			1	Not applicable to the project
EC-16	Non-Vegetated Stabilization	1(2)		1	Not applicable to the project
WE-1	Wind Erosion Control	1	1		
Alternate BMPs Used:					If used, state reason:

(1) Applicability to a specific project shall be determined by the QSD.
(2) The QSD shall ensure implementation of one of the minimum measures listed or a combination thereof to achieve and maintain the Risk Level requirements.
Run-on from offsite shall be directed away from all disturbed areas, diversion of offsite flows may require design/analysis by a licensed civil engineer and/or additional environmental permitting

Source: Psomas, SWPP, Ibid, Table 3.2

Table 3.6.6: Temporary Sediment Control BMPs

CASQA Fact Sheet	BMP Name	Meets a Minimum Requirement(1)	BMP used		If not used, state reason
			YES	NO	
SE-1	Silt Fence	I(2) (3)	I		
SE-2	Sediment Basin			I	
SE-3	Sediment Trap			I	
SE-4	Check Dams			I	
SE-5	Fiber Rolls	j(2)(3)	I		
SE-6	Gravel Bag Berm	j(3)	I		
SE-7	Street Sweeping	j	I		
SE-8	Sandbag Barrier			I	
SE-9	Straw Bale Barrier			I	
SE-10	Storm Drain Inlet Protection	j RL2&3		I	
SE-11	ATS			I	
SE-12	Manufactured Linear Sediment Controls			I	
SE-13	Compost Sock and Berm	j(3)		I	
SE-14	Biofilter Bags	j(3)		I	
TC-1	Stabilized Construction Entrance and	j	I		
TC-2	Stabilized Construction Roadway			I	
TC-3	Entrance Outlet Tire Wash			I	
Alternate BMPs Used:					If used, state

(1) Applicability to a specific project shall be determined by the QSD
(2) The QSD shall ensure implementation of one of the minimum measures listed or a combination thereof to achieve and maintain the Risk Level requirements
(3)Risk Level 2 &3 shall provide linear sediment control along toe of slope, face of slope, and at the grade breaks of exposed slope

3.6.3. Mitigation Measures for Hydrology/Water Quality Impacts

HYD-03. All drainage improvements shall be consistent with the *Master Campus Drainage Plan*. All recommendations of the approved final drainage plan(s) shall be included in construction contracts and implemented. Facilities Planning and Management shall monitor compliance.

3.6.4 Level of Significance for Hydrology/Water Quality Impacts with Mitigation

Less than Significant with Mitigation Incorporated

3.6.5 Hydrology/Water Quality Cumulative Impacts

All projects included in the 2015 Facilities Master Plan are subject to the Master Campus Drainage Plan and each project, if required has its own Stormwater Pollution Prevention Plan. All projects do have a cumulative impact on drainage flows and water quality.

There are no substantial projects on campus or in the surrounding area near the project site. The retail site north of the project is included in the current analyses.

3.6.6 Mitigation Measures for Hydrology/Water Quality Cumulative Impacts

HYD-03. All drainage improvements shall be consistent with the *Master Campus Drainage Plan*. All recommendations of the approved final drainage plan(s) shall be included in construction contracts and implemented. Facilities Planning and Management shall monitor compliance.

3.6.7. Level of Significance for Cumulative Impacts with Mitigation

Less than Significant with Mitigation Incorporated

3.7 LAND USE/PLANNING

3.7.1 Existing Conditions for Land Use/Planning

The City of Walnut has a General Plan designation of Schools (Exhibit 3.7.1) and a Zoning designation of RPD 61,700 – 0.6 du for Mt. SAC for the campus east of Grand Avenue with a Civic Center Overlay. These designations apply to all projects located east of Grand Avenue, including the campus Wildlife Sanctuary/Open Space Zone.

The project site is designated Hillside Residential and zoned RFD 28,500 – 1.3 DU. The project is located in the Solar & Retail Zone (Exhibit 1.3). The existing land use for the project site is occasionally cattle grazing but is undeveloped. The vegetation onsite is described in Section 3.3.

The surrounding land uses east of the project site and east of Grand Avenue are the Wildlife Sanctuary/Open Space area (26.0 acres), which includes Snow Creek and MSAC Hill, a dominant landform. A Restrictive Covenant is being placed on 16.9- acres in an agreement with the California Department of Fish and Wildlife and the United States Fish and Wildlife Service. All future development south of MSAC Hill must be setback at least 25 feet from the creek.

The dominant building uses on campus are classrooms, class laboratories, athletics (i.e. which includes child care, field building, and A/V, radio, and TV, and assembly and meeting rooms.

The adjacent residential neighborhoods near the project site west of Grand Avenue are also designated Hillside Residential and zoned RFD 28,500 – 1.3 DU. The neighborhoods gain access from Grand Avenue at Stonybrook Drive and from Regal Canyon Drive from Amar Road.

Exhibit 3.7.1: City of Walnut General Plan

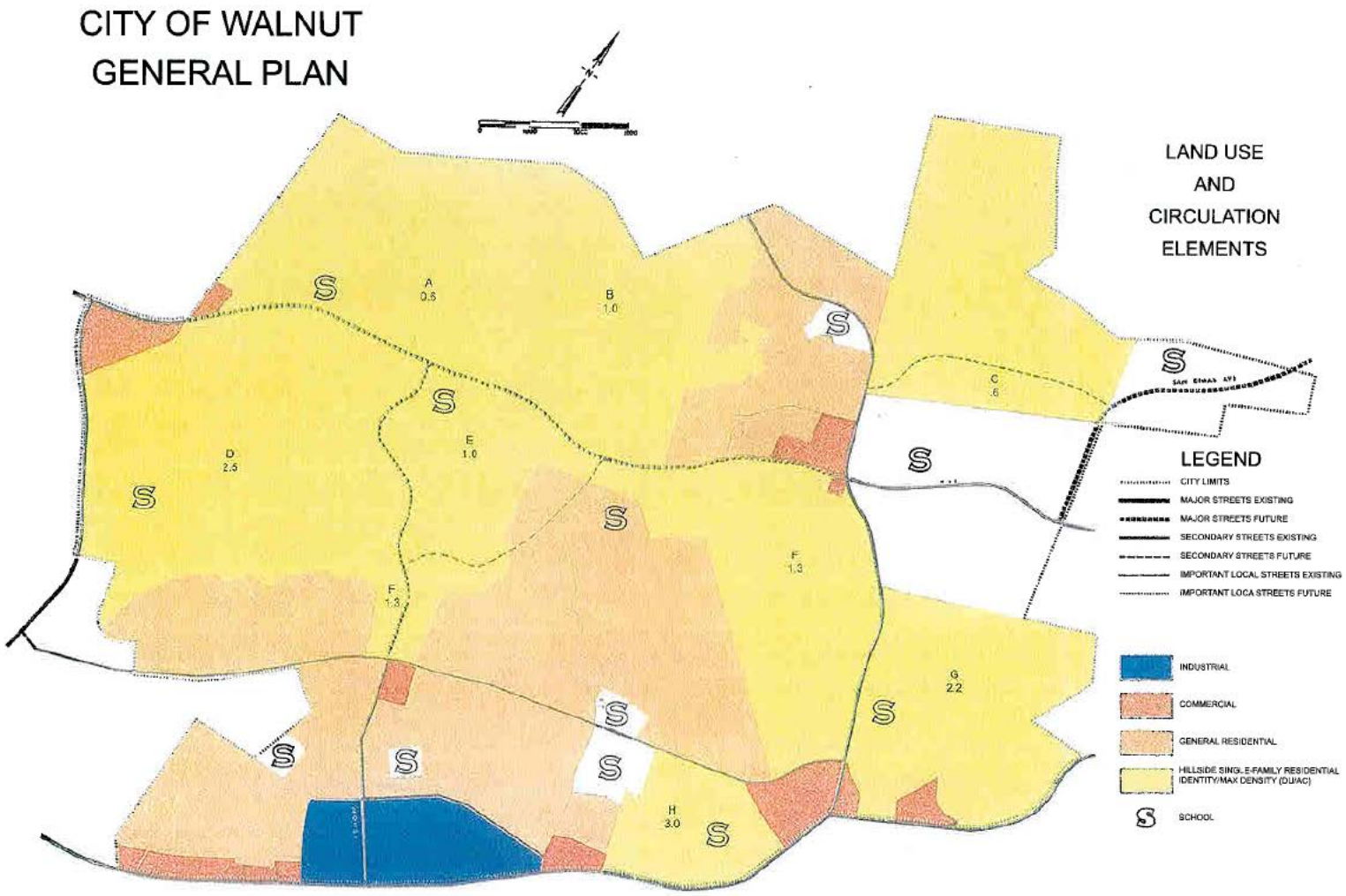
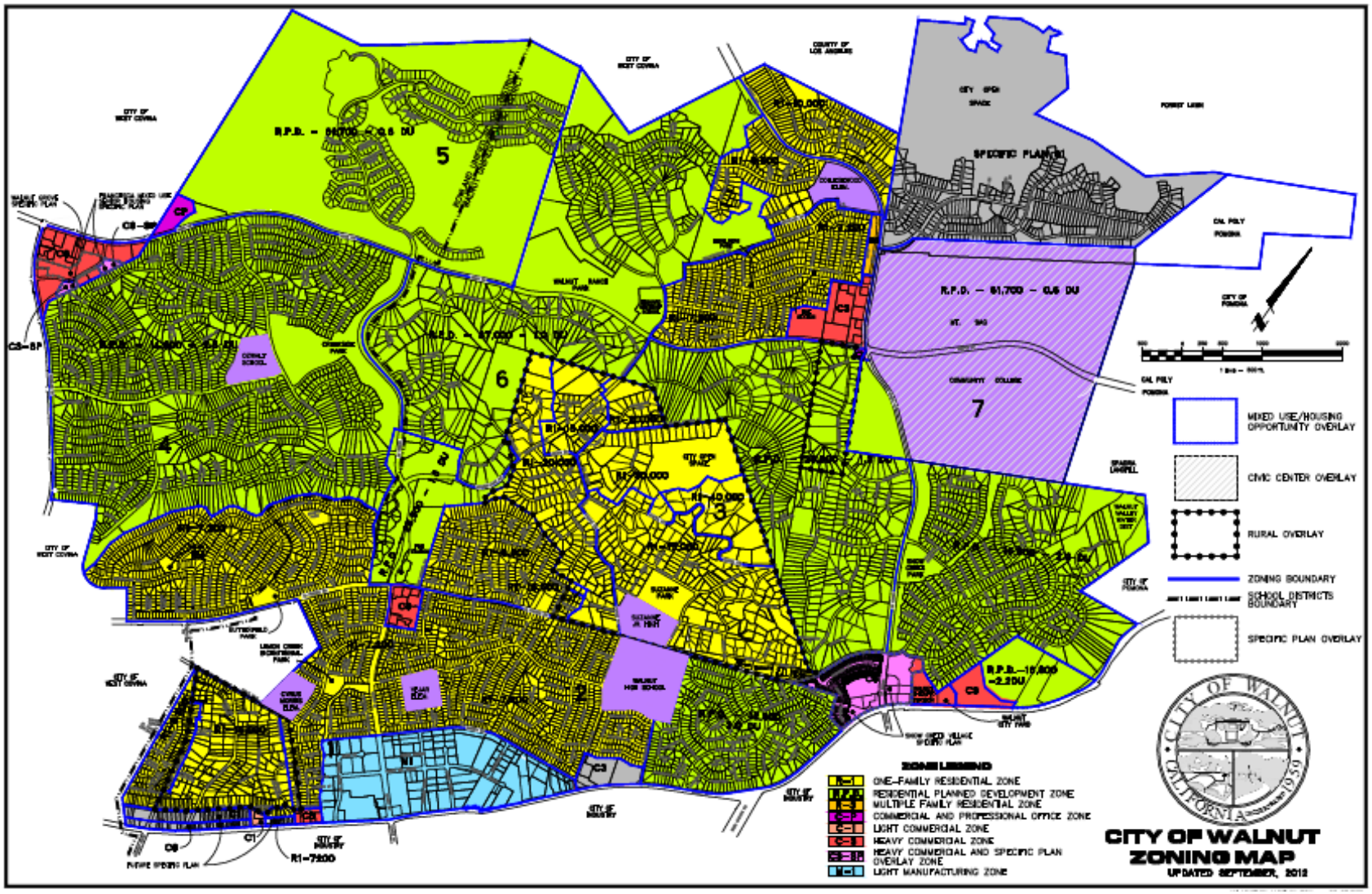


Exhibit 3.7.2: City of Walnut Zoning



3.7.2. Land Use Impacts

The CEQA Guidelines, Section X: Land Use and Planning (August 11, 2015) includes the following questions. *Would the project:*

(a) Physically divide an established community?

(b) Cause a significant environmental impact due to a conflict with any land use plan, policy or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

The Project does not physically divide an established community because all development is within the campus.

None of the new projects included in the 2015 FMPU (excluding the PEP project for discussion hereafter) conflict with any specific land use plan, policy or regulation adopted to avoid or mitigate an environmental effect.

This section will focus only on the land use and planning issues related to the project. Project impacts on biological resources are evaluated in Section 3.3.

The project does not conflict with any applicable habitat conservation plan or natural community conservation plan. Item c refers to special plans administered by either the U. S. Fish and Wildlife Service or the California Department of Fish and Wildlife. However, the campus has two "community conservation plans" on campus: the Land Use Management and Grazing Area, and the Wildlife Sanctuary and Open Space designations (Exhibit 1.3, Exhibit 1.7). The first area is administered through the Board approved Mt. San Antonio College California Black Walnut Management Plan, September 2012. The Wildlife Sanctuary is administered by the Biology Division.

The proposed project is a solar energy generation facility and has been found by a court of law to be exempt from City of Walnut land use controls. This does not mean the District is pursuing a land use strategy on campus that diminishes in any manner the public health, welfare or safety of surrounding land uses. Neither does the zoning exemption exclude opportunities for citizens to participate in the District's land use and planning activities. All District activities are subject to laws and regulations that require proper disclosure, adherence to the Brown Act and public noticing provisions.

It is not unusual for property owners of properties located near a different land use designation to disagree with future plans for development adjacent to their property, especially the proposed project which develops vacant land through the installation of ground mounted solar panels. This situation occurs between single- and multi-family

land uses, between commercial and non-commercial land uses, between residential and non-residential land uses, and between residential land uses of the same type with different lot sizes, densities or building height. However, the issues involved in such disputes may or may not violate any existing regulations, and may or may not be a significant impact. Within the confines of a CEQA document, each situation needs to be evaluated in an appropriate manner and focus on potential environmental impacts.

The primary issue related to previous and current land use disputes between the District and adjacent property owners, city officials or representatives of other citizen groups has been the type of land uses proposed by the District near the perimeter of the campus, the cost of such projects, the zoning for such projects and one or more specific issues.

The specific environmental issues that have been identified by the public in oral or written comments for this project have focused on truck hauling, grading, noise, viewshed, air quality, geotechnical, and building damage from construction equipment vibration. Each of these comments are being addressed in other sections of this document.

The existing City zoning designations are not consistent with the City's General Plan and are not consistent with the historical or current land uses within the campus. The proposed project's status as an exempt solar energy generation facility makes the inconsistencies moot. Campus zoning, the District's facility master plans, and future projects are consistent. However, the District is required to comply with City grading ordinances regulating drainage improvements and requiring the review and approval of grading plans as these ordinances related to the design and construction of onsite improvements which affect drainage, road conditions or grading..

The City of Walnut is now amending its General Plan and may revise the land use designations for the campus. It is anticipated the General Plan amendment will not be approved until well after this CEQA document is certified.

The City of Walnut does not include a Community College land use designation in its General Plan and designates all schools, including the College as Schools. In its zoning designations, the campus area east of Grand Avenue is designated with a Civic Center Overlay and a residential designation (RPD 61,700 – 0.6 du). The campus has not been in residential use and was developed with institutional uses since the college opened in 1946. The project site is designated Hillside Single Family Residential Identity - Maximum Density: 1.3 du/acre and zoned Residential Plan Development 28,500: 1.3 du.

Because the proposed project is exempt from the City's land use and zoning regulations, any potential conflict between campus projects (including the solar project) and City land use designations and Section 10: Item b of the CEQA Guidelines does not occur.

The Campus Zoning does not result in significant internal land use impacts. The 400-acre campus is divided into six zones: Agriculture (70 acres), Athletics (91 acres)), Primary Educational (160 acres), Land Use Management (46 acres), Retail (1 acre), and Solar (27 acres) and Wildlife Sanctuary/Open Space (26 acres).

However, since inconsistency between the General Plan and Zoning is considered both a regulatory violation and a significant effect by the City and some citizens, the land use/planning designations for the project site are a significant effect but for the proposed project's exemption from the City's land use controls.

3.7.3 Mitigation Measures for Land Use Impacts

Mitigation measures previously adopted for land use/planning issues that are retained for this project are:

LU-01. All future land uses on campus, building locations and square footage (ASF) shall be substantially consistent with the 2012 Facility Master Plan. Facilities Planning and Management shall ensure compliance.

LU-02. The following Master Plan elements shall be revised to conform to the 2015 Facilities Master Plan Update: (1) Land Use Plan, (2) Conservation Plan, (3) Circulation/Parking Plan. Planning Facilities & Management shall ensure compliance.

LU-03. The City of Walnut should revise its General Plan designation for the campus in its next General Plan Update to Community College and the Zoning District to Community College (or another applicable) zoning district so the General Plan and Zoning District are consistent. The Community Development Department of the City of Walnut shall ensure compliance.

LU-07. The District shall submit an application for a grading plan to the City of Walnut for all projects subject to the Walnut Municipal Code Sections 6-5.5 and 6-5.6. The grading plan shall confirm to the requirements of the Walnut Municipal Code Section 6-5.3 and Appendix J Sections J101.7, J108 - J111 of Appendix J. To the extent there is any ambiguity as to scope, the WMC controls over Appendix J. The District shall comply with all requirements of an approved grading plan. Facilities Planning and Management shall ensure compliance

3.7.4 Level of Significance for Land Use Plans

Since the District cannot dictate what land use designations the City of Walnut maintains on the project site in its plans, the impact is now considered adverse and may be adverse in the future.

3.7.5 Existing Cumulative Conditions for Land Use Plans

There are no other projects in the immediate project vicinity. The retail zone adjacent to the project will be used either for Christmas tree sales or agricultural/produce sales. No significant cumulative land use/planning effects are anticipated.

3.7.6 Cumulative Impacts for Land Use Plans

Since there are no substantial cumulative projects, there are no significant land use/planning cumulative impacts.

3.7.7 Mitigation Measures for Cumulative Conditions for Land Use Plans

None are required

3.7.8 Level of Significance for Cumulative Conditions for Land Use Plans

Not applicable.

3.8 NOISE

3.8.1 Existing Conditions for Noise

Section 3.8 of the 2015 Final EIR included an analysis of traffic-related noise along Grand Avenue. Therefore, Tables 3.5.3, Table 3.5.8 in Section 3.5 of the 2015 EIR are incorporated by reference.

The two tables estimate existing traffic noise levels in 2015 and future traffic noise levels in 2020 along Grand Avenue. Traffic-related noise in the 2015 Final EIR was based on counts taken in October 2015. The traffic-related noise along area roadways related to the 2015 Facilities Master Plan was Less than Significant.

3.8.2. Noise Impacts

The CEQA Checklist includes the following item:

Noise. *Would the project:*

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

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

f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

The dominant noise sources for the project will remain construction equipment noise. Construction operations will be limited, except for emergencies or special circumstances, to the hours of 7am to 7pm Monday through Saturday (Mitigation Measure NO-01). Hauling of earth materials will be defined in the Truck Haul Plan (Mitigation Measure TR-31).

Construction grading for the West Parcel during the prime bird nesting season, generally between February and September 15, is prohibited by the United States Fish and Wildlife Service. The Project must comply with permit conditions and with WPS Mitigation Measure BIO-13 to avoid noise impacts for birds onsite. Thus, the Proposed Project does not create a new significant noise impact or exacerbate a significant environmental impact disclosed in the Final EIR. Construction noise impacts on coastal

California gnatcatcher habitat is addressed in Section 3.3. The project monitor has the authority to halt all construction during the breeding season if noise levels are violated.

The District is not subject to the City's Noise Ordinance or noise standards. Per California Government Code 53091(e): Water and electrical energy facilities: "Zoning ordinances of a county or city shall not apply to the location or construction of facilities for the production, generation, storage, treatment, or transmission of water, or for the production or generation of electrical energy, facilities that are subject to Section 12808.5 of the Public Utilities Code, or electrical substations in an electrical transmission system that receives electricity at less than 100,000 volts. Zoning ordinances of a county or city shall apply to the location or construction of facilities for the storage or transmission of electrical energy by a local agency, if the zoning ordinances make provision for those facilities."

The project will not have a significant noise impact upon buildout. Only sporadic maintenance is needed for the solar project and no heavy equipment that generates noise is required. Therefore, the Project(s) has no noise impact after buildout.

Onsite ambient noise monitoring was completed on August 17, 2015 for two residences near the Project: 1131 Regal Canyon Drive and 21107 Stonybrook Drive. The average noise level (Leq) was 46.9 dBA and 51.8 dBA respectively (See Table 3.5.6 in 2015 Final EIR).

Table 3.8.1 presents projected construction equipment noise levels at distances of 50, 200 and 500 feet from residences. The noise levels projected for 50 feet would be representative of equipment working on slopes close to the residents. Often, the equipment onsite will be located around 200 feet from the residences when the pad areas are being constructed or solar panels are being installed. A distance of 500 feet from residences is the distance to the center of the building pad. The shortest distance represents the worst-case projections for short periods of time.

The project will have a substantial, but temporary, increase in ambient noise levels in the project vicinity above ambient noise levels during some phases of construction (i.e. grading) depending on the distance from the sensitive receptors, the type of construction equipment being used, and the noise volume generated by that equipment. The temporary increase above ambient noise levels is more pronounced outside of peak periods when background traffic noise is less.

Therefore, the most effective means of reducing temporary noise impacts during construction is to minimize the time construction occurs (i.e. complete it quickly to limit

the noise duration or limit the hours of construction). The following mitigation measure (NO-01) is feasible and effective in reducing Project construction noise from significant to Less than Significant with Mitigation Incorporated.

Under Mitigation Measure NO-01, all construction and general maintenance activities, except in emergencies or special circumstances, shall be limited to the hours of 7 am to 7 pm Monday-Saturday. Staging areas for construction shall be located away from existing offsite residences. All construction equipment shall use properly operating mufflers. These requirements shall be included in construction contracts and implemented. Facilities Planning and Management shall monitor compliance.

Table 3.8.1: Construction Noise Levels

	Site Prep	Grading with Fill Import	Finish Grading	Solar Install/ Restoration/ Landscape
At0 feet from Residences				
Maximum Levels at Residence (Lmax dBA)	97	97	97	97
Average Noise at Residence (dBA Leq)	86	94	93	85
At 200 feet from Residences				
Maximum Levels at Residence (Lmax dBA)	85	85	85	85
Average Noise at Residence (dBA Leq)	74	82	81	73
At 500 feet from Residences				
Maximum Levels at Residence (Lmax dBA)	77	77	77	77
Average Noise at Residence (dBA Leq)	66	74	73	65

Source: Table 2: West Parcel Solar Project – Construction Noise Analysis (Report #15-104D), Greve & Associates, LLC, September 9, 2015.

The maximum noise levels (L max) at the nearest residential land use may reach up to 97 dBA for short periods of time. (This is at the northwest corner of the project site and primarily effects four residences offsite). These noise levels will be considered loud by residents living adjacent to the property. Maximum noise levels will occur when the

grading equipment is at full power, and will be considerably less when grading equipment is at 200 feet from the residences.

Noise Impacts from Truck Hauling Earth Export

Greve & Associates prepared a noise analysis of the Truck Haul Plan, based on export of 139,000 cubic yards of earth from the stadium site to the West Parcel. The noise report (Air Quality and Greenhouse Gas Emissions and Noise Impacts of the West Parcel Solar Truck Haul Plan (Report #17-041)) is summarized below. The complete report is included in Appendix B3.

The haul trucks from the stadium site to the West Parcel will travel on Temple Avenue, Grand Avenue, and Valley Boulevard. Peak hour traffic data was obtain from the Iteris traffic report (2015 FMPU/PEP Traffic Study, Iteris, April 1, 2016). The p.m. peak hour traffic data was assumed to be eight (8) percent of the daily traffic. The CNEL noise levels in Table 3.8.2 represent the noise level at fifty (50) feet from the roadway centerline with and without the truck haul trips.

Table 3.8.2: CNEL Noise Level With and Without Haul Trucks at 50 Feet

Roadway	No Haul Trucks	With Haul Trucks	Difference
Temple Avenue	70.8	71.0	0.2
Grand Avenue	72.2	72.3	0.1
Valley Boulevard	71.8	72.0	0.2

The noise increases due to truck hauling for export of earth from the stadium site to the West Parcel along the truck hauling route range from 0.1 to 0.2 dB. This level of noise increase is not perceptible. Since the truck traffic will occur during daytime hours, there will be no sleep disturbance for nighttime sleepers.

3.8.3. Mitigation Measures for Noise Impacts

NO-01. All construction and general maintenance activities, except in emergencies or special circumstances, shall be limited to the hours of 7 am to 7 pm Monday-Saturday. Staging areas for construction shall be located away from existing offsite residences. All construction equipment shall use properly operating mufflers. These requirements shall be included in construction contracts and implemented. Facilities Planning and Management shall monitor compliance.

3.8.4 Level of Significance for Noise Impacts with Mitigation

Less than Significant with Mitigation Incorporated

3.8.5 Noise Cumulative Impacts

There are no other projects in the immediate project vicinity. The retail zone adjacent to the project will be used either for Christmas tree sales or agricultural/produce sales. No significant cumulative noise effects are anticipated.

Cumultive traffic-related noise impacts from buildout of the 2015 FMPU were evaluated in Table 3.5.8 of the 2015 Final EIR. The table is hereby incorporated by reference. Traffic-related cumulative noise increases along Grand Avenue were not significant.

3.8.6 Mitigation Measures for Noise Cumulative Impacts

None

3.8.7. Level of Significance for Cumulative Impacts with Mitigation

Not applicable

3.9 TRANSPORTATION/TRAFFIC

3.9.1 Existing Conditions for Traffic

Iteris Inc. (traffic engineering) completed a peak hour level of service traffic analysis for earth hauling for the solar project from the Physical Education Projects site (i.e. Hilmer Lodge Stadium) in July 2017. The impacts of truck hauling for the project cannot be separated from an analysis of the level of service at area intersections used by the truck haul route. Traffic counts provide the basic data for the analysis, but the assumptions used for truck hauling determine the total trips. The analysis is summarized below and the complete report is included as Appendices C1, C2.

Since the City of Walnut has ministerial review of the Truck Haul Plan, the approved truck haul plan may differ from that summarized herein. However, the peak level of service likely will not change substantially because it is more reliant on traffic count than the truck haul trip assumptions.

The intersection level of service definitions are included in K1 and are not listed herein.

Table 3.9.1: Intersection Significant Impact Criteria

Intersection LOS in Pre-Project Conditions	V/C	Project V/C Increase
C	0.71 to 0.80	0.04 or more
D	0.81 to 0.90	0.02 or more
E / F	0.91 or more	0.01 or more

Existing intersection traffic counts were collected on October 1, 2015 during the a.m. peak period (7:00 – 9:00 am) and the pm peak period (4:00 – 6:00 pm) on a typical weekday. The volumes collected between 8:00 to 9:00 am and 4:00 to 5:00 pm were used in this analysis to be most consistent with the truck hauling process which is planned to occur between 8:30 am and 4:30 pm. on weekdays and Saturdays.

The traffic counts are consistent with the data used in the 2015 Facility Master Plan Program/Project EIR and the 2017 Physical Education Project (Phase 1, 2) EIR. Any changes in traffic volumes between 2015 and 2017 would not substantially alter the study conclusions.

Four primary intersections were analyzed in the truck haul congestion analysis: Grand Avenue/Temple Avenue, Bonita Avenue/Temple Avenue, Grand Avenue/Valley Boulevard and Valley Boulevard/Temple Avenue. La Puente Road/Grand Avenue was not analyzed since all truck traffic at this intersection is thru-trips and there is ample lane capacity.

While the Grand Avenue/La Puente Avenue Road intersection is also a signalized intersection along the proposed return route (empty truck route), it is not expected that truck traffic making only a southbound through movement would impact the intersection operations. Thus, this intersection was not analyzed. Storage space for vehicles queuing at through movements are not limited in the same manner as storage space for vehicles queued at left-turn movements. There is more storage space available at the former, and less storage space available at the latter intersections.

The congestion analysis used the County of Los Angeles Level of Service (LOS) methodology that defines a significant impact related to the Level of Service for pre-project conditions (Table 2 in Appendix K1). This methodology is more restrictive than the methodology used by the Metropolitan Transit Authority in Congestion Management Program traffic analyses. Therefore, the Iteris traffic analysis is a “worse case” analysis of congestion at area intersections. All four intersections studied operated at LOS A – C during the peak hours (Table 3.9.1). The LOS calculation sheets are included in Appendix B of the truck haul study in Appendix K1 herein.

Greve & Associates prepared an air quality and noise analysis of potential impacts of the truck haul plan along local streets. The report is summarized in Section 3.2 and included as Appendix K2 herein.

Exhibit 3.9.1: Truck Haul Route

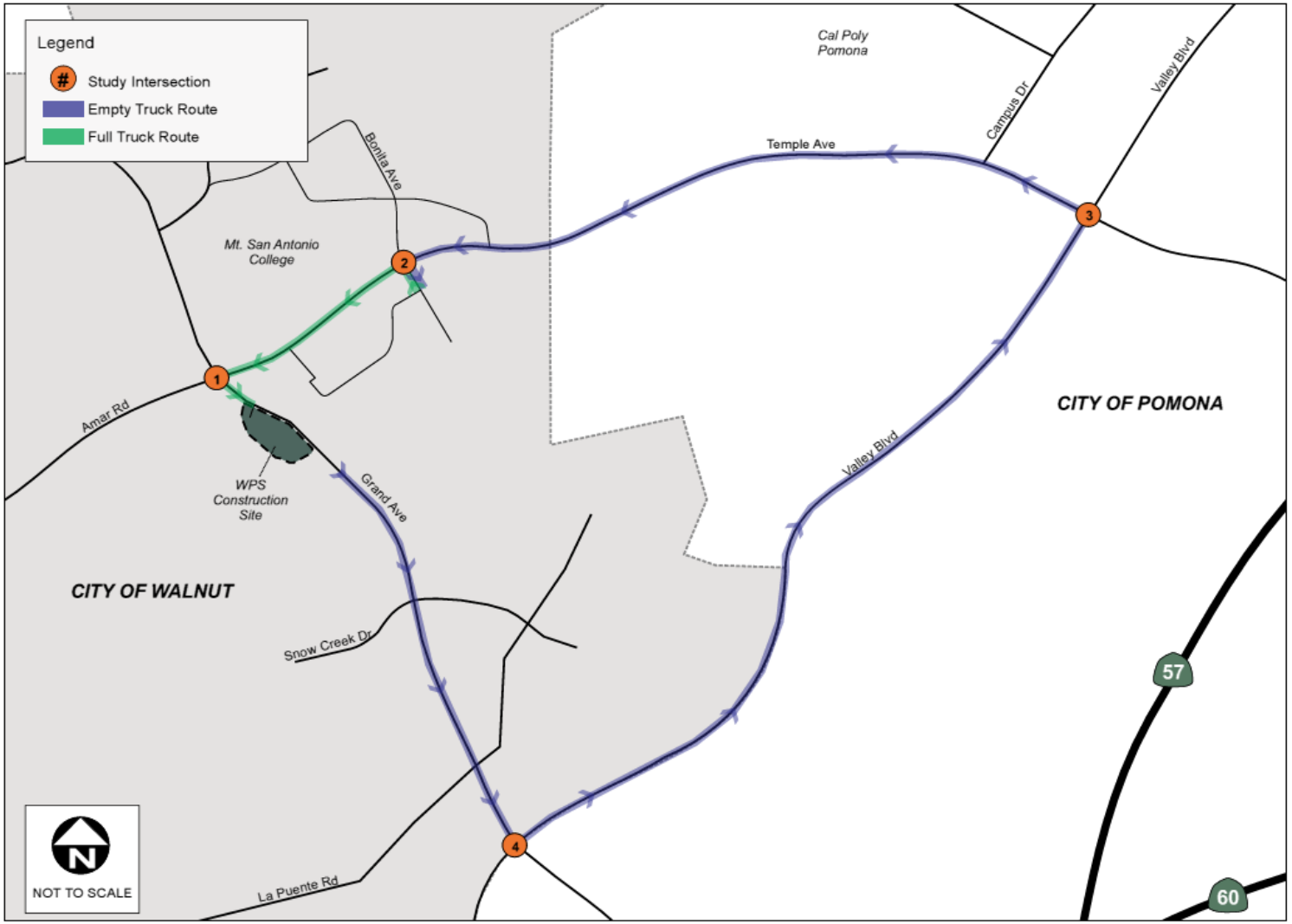


Table 3.9.2: Existing Level of Service

Intersection		Control Type	AM Peak Hour		PM Peak Hour	
			V/C	LOS	V/C	LOS
1	Grand Ave/Temple Ave	Signalized	0.665	B	0.698	B
2	Bonita Ave/Temple Ave	Signalized	0.570	A	0.568	A
3	Valley Blvd/Temple Ave	Signalized	0.723	C	0.745	C
4	Grand Ave/Valley Blvd	Signalized	0.670	B	0.756	C

Notes:
V/C = Volume to Capacity Ratio, LOS = Level of Service.

Table 3.9.3: Future Level of Service with Truck Hauling

Intersection		Existing Conditions				Existing Plus Construction Conditions				Change in AM V/C	Change in PM V/C	Significant Impact?
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour				
		V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS			
1	Grand Ave/Temple Ave	0.665	B	0.698	B	0.681	B	0.714	C	0.016	0.016	No
2	Bonita Ave/Temple Ave	0.570	A	0.568	A	0.602	B	0.599	A	0.032	0.031	No
3	Valley Blvd/Temple Ave	0.723	C	0.745	C	0.754	C	0.745	C	0.031	0.000	No
4	Grand Ave/Valley Blvd	0.670	B	0.756	C	0.685	B	0.756	C	0.015	0.000	No

Notes:
V/C = Volume to Capacity Ratio, LOS = Level of Service.

The Truck Haul Plan (THP) for the Solar Project includes import of approximately 139,000 cubic yards of earth from the borrow site (west of Hilmer Lodge Stadium) to the Solar Project site (West Parcel). The THP assumes that each haul truck is 40 feet in length and has a capacity of 14.0 cubic yards. Hauling may occur between the hours of 8:30 am and 4:30 pm only. The average vehicle travel times, based on simulated trips, required three (3) minutes from the borrow site to the West Parcel, and 10.5 minutes to return along the truck haul route from the West Parcel to the borrow site.

A limiting factor regarding the amount of trucks that can be accommodated within the circulation network are the existing left-turn pocket storage lengths at the four study intersections, where left-turn movements would be made. These storage lengths are as follows:

- Grand Avenue/Temple Avenue – 260' WB left-turn pocket length (dual left-turn lanes)
- Bonita Avenue/Temple Avenue – 170' NB left-turn pocket length and 120' WB left-turn pocket length
- Valley Boulevard/Temple Avenue – 180' NB left-turn pocket length
- Grand Avenue/Valley Boulevard – 250' SB left-turn pocket length (dual left-turn lanes)

3.9.2. Traffic Impacts

The CEQA Checklist includes the following:

Transportation/Traffic. *Would the project:*

b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?

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

e) Result in inadequate emergency access?

f) Conflict with adopted policies, plans, or programs regarding public transit, bikeways, or pedestrian facilities, or otherwise substantially decrease the performance or safety of such facilities?

A. Construction Traffic

Construction trip will include delivery of equipment, employee trips and earth import trips. All deliveries of equipment will occur during off-peak hours. Employee parking will be provided onsite.

The trips related to earth import are also temporary but of more concern because of the length of vehicles, the frequency of trips, and any conflicts between truck hauling and other vehicular traffic. These concerns are addressed in the Truck Haul Plan, which is described herein and will be submitted to the City of Walnut for ministerial review.

The procedure used to calculate the total number of days needed for construction assumes twenty (20) trucks hauling dirt to the construction site per hour, which is then converted to Passenger Car Equivalent (PCE) trips for the LOS analysis. PCE truck trips are the number of cars that would occupy the same space in a traffic lane as one 40 foot length haul truck (i.e. 2.5 passenger vehicles).

- A total of 139,000 cubic yards of dirt will be exported from the borrow site to the West Parcel
- The capacity of a 40' haul truck is 14 cubic yards
- As a result, a total of 9,929 truck loads are required:
    - 139,000 / 14 = 9,929 truck loads
- It is anticipated that construction would occur for a total of 8 hours a day
- As a result, a total 160 truck loads would be delivered per day:
    - 20 truck loads per hour * 8 hours a day = 160 truck loads per day
- As a result, the construction period is expected to last approximately 62 days:
    - 9,929 truck loads / 160 truck loads per day = 62 days
- Based on the 40' truck size, a PCE factor of 2.5 passenger vehicles per truck is assumed, resulting in approximately 50 PCE trips per hour generated at each site:
    - 20 truck trips x 2.5 vehicles per truck = 50 PCE-adjusted trips
- The weight of the empty truck is 47,000 pounds and the maximum weight of a loaded truck is 80,000 pounds

Figure 3 in Appendix K1 shows the assignment of PCE-adjusted truck trips within the study area during the a.m. and p.m. peak hours.

With approval of a Truck Haul Plan by the City of Walnut, the construction traffic impact will be Less than Significant.

B. Level of Service with Truck Hauling

The existing and existing plus construction (i.e. with truck hauling) am peak hour change in volume/capacity (v/c) ratio ranged from 0.015–0.032. The pm change in volume/capacity ranged from 0.000–0.031 (See Table 3.9.3). A significant impact does not occur unless the v/c ratio is 0.04 or more for a LOS C in the pre-project condition. Therefore, turning movements at the intersections is not a critical factor in creation of congestion on the truck haul route. The truck haul activity will not result in a significant level of service impact at any of the four intersections analyzed.

The number of trucks traveling westbound on Temple Avenue and entering the 260-foot left-turn pocket to proceed southbound on Grand Avenue may cause potential congestion. If there is not enough left-turn pocket length, the haul trucks may cause congestion for other vehicles attempting to also use the outside left-turn lane. This issue is more critical if the inner left-turn lane pocket is also full of vehicles and the haul truck arrives at the pocket when there is not 40 feet available for the haul truck length. In this situation, congestion may occur and other vehicles may experience less than free traffic flow in the inside thru-lane. Haul trucks should use the outer left-turn lane only. This situation already occurs during peak hours without truck haul traffic.

While the haul truck operators cannot time their operations to avoid a red or yellow light at an intersection, or control the flow of other vehicles on westbound Temple Avenue before Grand Avenue, the operators can provide spacing between haul trucks by not allowing more than two trucks to exit the borrow site at the same time, and to have proper spacing between those trucks. The most feasible solution is to create space between haul trucks as they leave the borrow site. Therefore the truck haul plan specifies that each truck leave the borrow and construction sites no more than every three minutes, resulting in a total of 20 trucks per hour maximum.

Therefore, trucks near the left-turn pocket at the Grand Avenue and Temple Avenue intersection is the key factor in determining if congestion will occur on the truck haul route to the West Parcel. Based on this analysis, if loaded trucks do not leave the borrow site under three (3) minutes apart, the left-turn pocket will not be congested. Changing the signalization at the Grand Avenue and Temple Avenue intersection is also recommended. This is discussed in Section E below.

Up to twenty (20) truck trips per hour may travel from the borrow site to the West Parcel without causing significant effects at area intersections or traffic flow near the left-turn pockets westbound at Temple Avenue and Grand Avenue. Therefore, 160 loads per day may occur per day and the total import yardage requires 62 days of truck hauling or

less than 2.6 months (i.e. six days per week) or 3.1 months (five days per week). Therefore, three (3) months of truck hauling is a realistic projection for earth import to the project site.

C. Driveways on West Parcel Site

Separate truck ingress and egress driveways are recommended at the WPS site during truck hauling activities. Truck ingress would occur at the northern driveway along Grand Avenue, approximately 650 feet south of Temple Avenue/Amar Road. There is an existing driveway curb cut approximately 20 feet in width at this location. When two-directional (ingress/egress) operations occur at this driveway, the northern driveway will be widened to forty (40) feet.

The second truck egress southern driveway is recommended approximately 1,260 feet south of the northern ingress driveway. The southern driveway width is 20 feet. Exhibit 3.9.2 shows the locations of the two driveways.

Exhibit 3.9.2: Truck Haul Driveway Locations

Figure 6 in Appendix K1 shows the detailed truck turning paths and minimum recommended driveways widths.

The benefits of separating the truck ingress and egress driveways onsite are:

- Southbound Grand Avenue tapers down from four lanes to three lanes to two lanes within a short distance south of its intersection with Temple Avenue. At the northern driveway, vehicles are currently merging from the number three lane to the number two lane due to the lane taper. This taper width at the northern driveway can be utilized for truck ingress operations without obstructing the southbound through movements along Grand Avenue.

- However, for the egress movement with the existing lane configuration, the trucks have to yield to three lanes of oncoming southbound vehicles (including the merge lane) at the northern driveway. At the proposed southern driveway location, the exiting trucks have to yield to only two lanes of oncoming traffic prior to making a right-turn onto Grand Avenue.

- If the ingress and egress operations occurred at the same time at only the northern driveway, the line of exiting trucks would be obstructed by entering trucks. This situation is avoided by separately the ingress and egress access points.

However, it should be noted that the two driveways may be would only be utilized for a portion of the construction activities because the southern egress is not feasible at some point during the grading and compaction process. The southern driveway would become too steep for haul trucks between the street and graded pad, and additional earth import is required to raise the finished pad level to the 761 foot elevation.

D. Signalization Changes

As shown in Table 3.9.4, modifying the Grand Avenue/Temple Avenue intersection traffic signal to remove the eastbound right-turn overlap phase and prohibiting right-turn-on-red would not have a significant effect on traffic operations at the Grand Avenue/Temple Avenue intersection.

Traffic signal timing was reviewed at the Grand Avenue/Temple Avenue-Amar Road intersection. Currently, the Grand Avenue corridor signals are coordinated.

The City of Walnut should consider temporarily removing/disengaging the eastbound Amar Road right-turn overlap phase at Grand Avenue and placing a temporary CA MUTCD R13A (CA) “No Right Turn on Red” sign. This signal modification will allow for more traffic gaps along southbound Grand Avenue, as eastbound Amar Road right-turning vehicles would only be able to turn during the eastbound green phase. This scenario was evaluated using the Synchro software, utilizing the Highway Capacity Manual (HCM) 2010 methodology which uses average vehicle delay in seconds to measure levels of service. The results are shown in Table 3.9.4.

The City should also consider “lagging” the westbound left-turn phase of theGrand Avenue/Temple Avenue intersection signal, resulting in the westbound through movement as the “leading” phase. This ensures that left-turning trucks would be able to access the left-turn pocket during cycles when the westbound through movement queues extend beyond the length of the 260-feet long left-turn pocket. This adjustment to the traffic signal phasing should be implemented during the 9:00 a.m. to 3:00 p.m. period, outside of the peak period timing plans. It is anticipated that this signal phasing modification will have no significant adverse impacts on the operations of the intersection. The scenario was evaluated using the Synchro software utilizing HCM 2010. The results are shown in Table 3.9.4.

Table 3.9.4: Existing Plus Construction Intersection Peak LOS with EB Right-Turn Signal Adjustment at Grand Avenue/Temple Avenue

Intersection		Existing Plus Construction Conditions				Existing Plus Construction Conditions (Removal of EB Right-turn Overlap & Added "No Right-turn on Red")			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS
1	Grand Ave/Temple Ave	37.5	D	41.2	D	38.1	D	42.4	D

Notes:
s = Seconds, LOS = Level of Service.

As shown in Table 3.9.5, modifying the traffic signal phasing by lagging the westbound left-turn phase has no significant effect on traffic operations at the Grand Avenue and Temple Avenue intersection.

Table 3.9.5: Existing Plus Construction Intersection Peak LOS with WB Left-Turn Signal Phase Adjustment at Grand Avenue/Temple Avenue

Intersection		Existing Plus Construction Conditions				Existing Plus Construction Conditions (WB Left-turn Lagging)			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS
1	Grand Ave/Temple Ave	37.5	D	41.2	D	36.6	D	39.8	D

Notes:
s = Seconds, LOS = Level of Service.

E. Signage Changes

Currently, the southbound departure leg at the intersection of Grand Avenue and Temple Avenue has a sign prohibiting trucks over 5 tons on this stretch of roadway. (srr Figure 8 in Appendix K1). The recommendation is this sign be temporarily bagged (i.e. covered) during the truck hauling period. It is not anticipated that truck hauling will result in any damage to streets along the truck haul route from the borrow site to the West Parcel.

The location of the southern egress driveway was first placed approximately 1,110 feet south of the northern driveway. However, based on the posted speed limit on Grand Avenue (50 miles per hour), the calculated sight distance for right-turn maneuvers from the southern driveway is 775 feet.

This distance was calculated based on American Association of State Highway and Transportation Officials (AASHTO) – A Policy on Geometric Design of Highways and Streets (6th Edition). The line of sight is anticipated to be obstructed by the hill (on the west side of Grand Avenue) as shown in Figure 7 in Appendix K1. Therefore, the recommended is that appropriate temporary signage be provided along Grand Avenue to alert motorists along southbound Grand Avenue of construction traffic. The recommended signage would consist of a California Manual on Uniform Traffic Control Devices (CA MUTCD) C44 (CA) "Trucks Entering Exiting" Sign (with flashers, if needed).

F. Traffic Gap Analysis

The traffic gap analysis identified twenty-seven (27) gaps in traffic exceeding 15 seconds during the peak hour analyzed (2:30 – 3:30 p. m. The data indicates there is ample space for truck traffic to travel south on Grand Avenue from Temple Avenue to the site driveway, or space for entering or leaving the West Parcel (i.e. a single or double driveway) without disrupting traffic flow on Grand Avenue or causing delays for haul trucks entering or leaving the West Parcel.

G. Recommendations without Southern Driveway

Use of the southerly driveway for exiting the site will be available for approximately 75 percent to 80 percent (i.e. a maximum of 50 days of hauling) of the estimated total 62-day import period before the area needs to be filled, graded and compacted to from the solar array pad. When the southern driveway is no longer available, only the northern driveway is available for both ingress and egress. This changes the truck hauling circulation pattern in relationship to the lanes available on Grand Avenue.

Since a single driveway is used for only twelve hauling days, and the gap analysis has shown there is sufficient gaps in traffic, the northern driveway, along with the other recommended mitigation measures, results in a less than significant truck hauling traffic impact during the twelve day period.

H. Operational Traffic

Upon buildout the solar project will have no impact on traffic. Service vehicles will occasionally enter the site and have no impact on traffic levels of service.

I. Air Quality/Greenhouse Emission and Noise Impacts of the Truck Haul Plan

Greve & Associates prepared an analysis of potential air quality and noise impacts of the truck haul plan on local streets. Because of the low truck hauling trips in relationship to ADT, there is no significant air quality or noise impacts related to the truck haul plan. The complete reports are summarized in Sections 3.2 and Section 3.8 and the reports are included in the Appendix K.

3.9.3. Mitigation Measures for Traffic Impacts

Condition of Approval of a Truck Haul Plan (earth import)

None (operational)

TR-62. During the truck hauling period, the City of Walnut shall adjust the traffic signal timing at the Temple Avenue and Grand Avenue intersection from 9:00 am to 3:00 pm by laggings the WB Temple Avenue left-turn movement, posting a "No Right Turn on Red" sign for the eastbound Amar Road approach and adding MUTCD C44 (CA) "Trucks Entering Exiting" Sign along Grand Avenue at the north and south West Parcel driveways. The City of Walnut shall ensure compliance.

3.9.4 Level of Significance for Traffic Impacts with Mitigation

Less than Significant (earth import)

Not applicable (operational)

3.9.5 Traffic Cumulative Impacts

When an initial study finds that the later project (i.e. WPS) may cause significant effects on the environment that are not adequately addressed in the prior EIR (i.e. 2012 Program EIR) the following applies:

(1) Where a lead agency determines that a cumulative effect has been adequately addressed in the prior EIR that effect is not treated as significant for purposes of the later EIR or negative declaration, and need not be discussed in detail.

(2) When assessing whether there is a new significant cumulative effect, the lead agency shall consider whether the increment effects of the project would be

considerable when viewed in the content of past, present and probable future projects. At this point, the question is not whether there is a significant cumulative impact, but whether the effects of the project are cumulatively considerable (Section 15064 (i)).

Cumulative Impact Analysis

Section 15130 (b) (3) of the CEQA Guidelines requiring identifying the scope of the area affected by the cumulative impact and provide a reasonable explanation for the geographical limitation used. The traffic study uses the geographical area that includes the intersections or ramps required for traffic studies conforming to the Los Angeles County Guidelines for CMP Transportation Impact Analysis.

The cumulative traffic-related noise analysis uses the same geographical area. The key issue in assessing cumulative impacts is whether the project's contribution to a cumulative impact is cumulatively considerable (Section 15130 (a) (3)).

The cumulative traffic impact of all campus and non-campus projects was evaluated in the 2015 Final EIR. This analysis was based on the trips identified for cumulative projects.

There are no other projects in the immediate project vicinity west of Grand Avenue that generate substantial trips. The retail zone adjacent to the project will be used either for Christmas tree sales or agricultural/produce sales. No significant cumulative land use/planning effects are anticipated.

The truck haul trips for the solar project are less than cumulatively considerable.

Table 3.9.6: Cumulative Trips by Jurisdiction in the Study Area

Lead Agency	Cumulative Trips Within Study Area			
	2020 PM Peak Hour Trips	2020 ADT Trips	2025 PM Peak Hour Trips	2025 ADT Trips
Walnut	87	888	87	888
Industry[1]	96	1,383	1,561	14,982
Pomona	703	5,436	703	5,436
Diamond Bar	51	575	51	575
Cal Poly	695	6,992	1,511	15,200
Subtotal	1,632	15,274	2,955	37,081
2015 FMPU	449	4,606	858	8,798
Totals	2,081	19,880	4,771	45,879
Percent of Total	21.6	23.2	18.0	19.2
1 Includes Industry Business Complex (IBC) partial buildout in 2025 only of twenty (20) percent of 4,779,000 gsf and 67,993 ADT for 4,779.0 ksf)				
Source: Table 3.4, 2015 FMPU/PEP Draft EIR, May 2017				

3.9.6 Mitigation Measures for Traffic Cumulative Impacts

None (project)

Table 3.2.12 and 3.2.14 in the 2015 Final EIR evaluated the cumulative traffic impact of buildout of the 2015 FMPU (existing + project + cumulative) in 2020 and 2025 without mitigation. The two tables are hereby incorporated by reference.

Mitigation Measures for cumulative traffic impacts of projects in the area circulation study area are included in the 2016 Mitigation Monitoring Program

3.9.7. Level of Significance for Cumulative Impacts with Mitigation

Not applicable (project)

Adverse (Section 5.0 of the 2015 FMPU/PEP Final EIR)

4.0 EFFECTS FOUND NOT TO BE SIGNIFICANT

Section 3.9 addresses the rationale for concluding that the West Parcel Solar Project has No Impact for the issues included in the CEQA Environmental Checklist. The issues included in the Checklist are listed below and the subsections with conclusions of No Impact for the solar project are discussed below.

	Aesthetics		Hazards & Hazardous Materials		Recreation
	Agricultural and Forest Resources		Hydrology/Water Quality		Transportation/Traffic
	Air Quality		Land Use/Planning		Utilities/Service Systems
	Biological Resources		Mineral Resources		Mandatory Findings of Significance
	Cultural Resources		Noise		
	Geology/Soils		Population/Housing		
	Greenhouse Gas Emissions		Public Services		

The issues and Checklist questions retain the index used for the CEQA Environmental Checklist that is included as Appendix K of the 2015 FMPU/PEP Final EIR. The evaluation of all Potentially Significant Impacts, Less than Significant Impact with Mitigation Incorporated, and Less than Significant Impacts for the PEP are included in Section 3.0.

Effects Found Not to Be Significant for the West Parcel Solar Project

Finding of No Effect. The project site and the adjacent open space are valued but do not have any scenic vista designation by the City of Walnut. None of the stated scenic resources in Item b occur with the project because Grand Avenue is not a state scenic highway. While the visual character of the site will be changed, it is not substantially degraded. Therefore, the conclusion is the project has No Impact on Items 1 (a – c).

1. ***Agriculture and Forest Resources***. *In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as*

an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and the forest carbon measurement methodology provided in the Forest Protocols adopted by the California Air Resources Board. Would the projects:

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

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

d) Result in loss of forestland or conversion of forestland to non-forest use?

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

Finding of No Effect. The campus has Agricultural Zoning on portion of the campus but the solar project is in the Solar/Retail Zone and the parcels east of Grand Avenue east of the project site re in the Wildlife Sanctuary/Open Space Zone. The West Parcel Solar Project site is not farmland, in agricultural use or a conversion of forestland. Therefore, the conclusion is the project has No Impact on Items 1 (a, b, d, e).

2. **Greenhouse Gases Emissions**. *Would the project:*

b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Finding of No Effect. The greenhouse gas analyses in CalEEMod shows the project does not have operational emissions that conflict with applicable plans, policies or regulations. Therefore, the conclusion is the project has No Impact on Items 2 (b).

3. **Hazards and Hazardous Materials**. *Would the project:*

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

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

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

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

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

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

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

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

Finding of No Effect. Construction, operation and maintenance of the project does not involve significant use of hazardous materials. No ACBM or lead paint will be encountered onsite, transported or disposed of because there are no buildings onsite. Although Collegewood Elementary is likely within ¼ mile of the project site, the project has no hazardous materials. The project site is not listed in Section 65962.5 and is not within two miles of a public airport. There are no private airstrips near the site. The District has its own emergency plans for Special Events and will have emergency plans for hosting the 2020 Olympic Track & Field Trials. The solar prject is not subject to Site risk for wildland fires. Therefore, the conclusion is the project has No Impact on Items 3 (a – h).

4. **Mineral Resources**. *Would the project:*

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

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

Finding of No Effect. There are no known mineral resources on the project site. Therefore, the conclusion is the project has No Impact on Items 4 (a, b).

5. **Population and Housing**: *Would the project:*

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

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

c) Result in a substantial imbalance in regional jobs/housing fit?

Finding of No Effect. Buildout of the project does not induce substantial unplanned population growth in the campus area or in the adjacent cities. Since there is no housing on campus, most students continue to live in the neighborhoods within their local school districts. Development of the solar project does not displace any people or housing.

College employment increases are minor and have little impact on the regional jobs/housing "fit" since many faculty and staff are part-time District employees and reside for many years in one location. Construction employees also do not change their place of residence due to a single project. The project has little or no impact on the regional jobs/housing balance.

Therefore, the conclusion is the project has No Impact on Items 5 (a – c).

6. **Public Services**. *Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered government facilities, need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:*

a) Fire protection?

b) Police protection?

c) Schools?

d) Parks?

e) Other public facilities?

Finding of No Effect. Since the project includes no housing, and does not induce housing or population, it has No Impact on schools, parks or other public facilities. The athletic and recreational facilities on campus provide ample opportunities for students and staff. Since the campus library serves the campus, the project has No Impact on off-campus libraries, senior centers, etc. The District has its own security department to

supplement Sheriff's operations. All buildings comply with the UBC fire codes and ample County fire services are available nearby. Therefore, the conclusion is the project has No Impact on Items 6 (a – e).

7. **Recreation.** *Would the project:*

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

b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

Finding of No Effect. Students and faculty may use offsite public recreation facilities, but have no substantial impact on any specific facility. . Therefore, the conclusion is the West Parcel Solar Project has No Impact on Items 7 (a, b).

8. ***Utilities and Service Systems****. Would the project:*

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

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

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

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

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

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

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

Finding of No Effect. Buildout of the project does not increase utilities/service system demands and it does not induce the construction of new or expanded water, wastewater treatment or storm water drainage facilities. New storm drains will be installed onsite and connect with others in Grand Avenue that have sufficient capacity for project flows.

The Three Valleys Municipal Water District has confirmed they have sufficient water supplies to serve the solar project. The landscaping onsite is 380,070 sq. ft. or 8.73 acres. As required by State regulations, the District's management plan incorporates projections for normal, dry and multiple dry years. The Campus complies with all federal, state and County of Los Angeles statues and regulations related to solid waste.

Therefore, the conclusion is the project has No Impact on Items 8 (a – h).

9. **Mandatory Findings of Significance**. *Would the project:*

b) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?

c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

Finding of No Effect. As shown in the project air quality, biological and greenhouse gas analyses, the project does not degrade the environment. The project has no significant impact on examples of California history or pre-history. Therefore, the conclusion is the project has No Impact on Items 9 (b, c).

In the June 7, 2017 Scoping Session Laviana Someya expressed a concern of health effects of residing near solar panels. Greve & Associates researched the US EPA website and other sources for information on long-term health effects from solar panels. There does not appear to be any scientific evidence there are any long-term health effects from solar panels. The initial public comment and an article on health effects of solar panels are included as Appendix X-12 and Appendix X-16.

On July 17, 2017 Dr. Shinshan Wang, ND submitted written comments suggesting the solar system would have detrimental impacts of electromagnetic fields (EMF). EMF impacts are widely documented long exposure in close proximity to electrical transmission towers or high-voltage lines. The underground electrical conduit system for the solar system does not constitute a high power transmission line, and it, or the solar panel do not pose a significant risk from EMF exposure.

5.0 UNAVOIDABLE ADVERSE IMPACTS

Adverse impacts of buildout of the 2015 Facility Master Plan Update and the Physical Educations Projects (Phase 1, 2) identified in the Statement of Overriding Considerations adopted in December 2015 that are not fully mitigated by the measures adopted in the 2016 Mitigation Monitoring Program and adverse impacts identified in the 2017 Physical Education Project (Phase 1, 2) Final EIR and the 2017 Mitigation Monitoring Program Update are:

(1) Additional lane improvements are not feasible at six (6) locations within the traffic study area for one or more traffic scenarios: (1) Grand Avenue/Mountaineer Road, (2) Grand Avenue/San Jose Hills Road, (3) Valley Boulevard/Temple Avenue, (4) Grand Avenue/Valley Boulevard, (5) Grand Avenue/Temple Avenue and (6) Grand Avenue/Baker Parkway. Locations 1–2 are adverse with the project in 2020, and locations 1–5 in 2025 with the project. With cumulative projects, locations 1–6 are adverse in 2020 and in 2025 (i.e. Tables 10, 15, 17 in Appendix B1 of the 2015 FMPU/PEP Final EIR).

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(2) The General Plan and Zoning designations for the campus are inconsistent and the designations do not reflect the historical use of the campus as a community college. Voters in the four local high school districts approved the formation of the Mt. San Antonio Community College District in December 1945.

The CEQA Guidelines include this statement: (b) Would the project cause a significant environmental impact due to a conflict with any land use plan, policy or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

The City of Walnut maintains their designations are related to environmental protection of perimeter land uses. Therefore, if the City does not revise its jurisdictions, future development could be regarded as in conflict with the City's designations and a significant effect. If the City's designations remain unchanged, a Statement of Overriding Considerations (SOC) is recommended.

(3) Project impacts of demolition of Hilmer Lodge Stadium and the other contributing resources demolished in Phase 2 (Buildings 27A – 27C and the Gymnasium) are adverse since the facilities are potentially eligible as historic resources in the California Register of Historic Resources. Project impacts of demolition of Hilmer Lodge Stadium, the Gymnasium, and Buildings 27A – 27C are adverse since the facilities are potentially eligible as historic resources in the California Register of Historic Resources. In addition, approved projects have an adverse direct and indirect visual project and cumulative impact on the Mt. SAC Historic District

(4) Project and related projects in the area result in traffic cumulative impacts at the South Campus Drive and Temple Avenue intersection in the City of Pomona for the am peak period only in 2020 and in 2025. The widening of the Temple Avenue Bridge over the wash for an additional westbound right-turn lane is not considered feasible because of its high cost, estimated as $2.0 – 3.0 million.

This cost estimate is based on a bridge widening estimate of roughly $1,000 per sq ft (i.e. construction only). For the Temple Avenue bridge, a widened by 12' for a distance of 170', that comes out to $2,040,000. Thus an estimate of $2.0 – 3.0 million is projected (including 20% extra for design and contingency fees).

(5) PM Peak Hour weekday traffic during the 2020 Olympic Track & Field Trials, when event traffic combined with pm peak commuter traffic, will result in significant traffic impacts at twenty locations for two weekdays. Providing feasible improvements for only two days is not practical or cost effective. The pm peak congestion is limited to two or three hours for two weekday evenings during Session 1. The intersections include the Campus Drive and Temple Avenue, and the Kellogg Drive and Interstate-10 intersections.

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(6) Although the shuttle system will reduce event trips near campus, and the required vehicle occupancy minimums will reduce trips and the need for parking, shuttle traffic for hosting the 2020 Olympics Track & Field Trials contributes to the adverse impact at area intersections for two weekday pm peak periods. Higher patron shuttle participation rates and higher vehicle occupancy limits are not feasible.

Unavoidable Adverse Impacts of the Solar Project

Upon buildout of the solar project, none of the previously adopted adverse impacts are relevant to the solar project. Upon buildout, the project has no traffic impact and the only trips associated with the solar project are vehicles used for periodic maintenance of the solar panels. These trips are less than cumulatively considerable and have no adverse impact on the Grand Avenue and Temple Avenue intersection.

The solar project has no direct impact on the stadium as a historical resource. No human remains, cultural resources, or tribal resources have been identified on the West Parcel. Therefore, the solar project has no adverse impact on cultural resources.

The approved permit applications and the project mitigation result in no adverse impacts on the biological resources onsite.

The solar use onsite is not subject to the City of Walnut's land use designations and there is no adverse impact on the existing General Plan or Zoning designations. It is the City's responsibility to reconcile the District zoning (Solar) for the project site, the City's General Plan, and the City's Zoning designations. Consistency between zoning and the General Plan is required by state law for charter cities, including the City of Walnut

ALTERNATIVES TO THE PROJECT

6.0 ALTERNATIVES TO THE PROJECT

The majority of the information in Section 7.0 is not new; it was included in the 2015 FMPU/PEP Draft EIR. Alternative 2: Parking Structures (i.e. on campus not on PEP site) from the prior EIR is deleted. The revised section is reiterated herein for the reader's convenience.

This section is prepared pursuant to *CEQA Guidelines, Section 15126*, which specifies that an EIR shall describe reasonable alternatives to the project, or to the location of the project, which could feasibly attain most of the objectives of the project and could avoid or substantially lessen one or more of the significant effects of the project. The discussion should allow meaningful evaluation, analysis and comparison of the alternatives with the proposed project. Among the factors that may be taken into account when assessing the feasibility of project alternatives are site suitability, economic viability, and general plan consistency.

No alternative sites are being considered for the 2015 FMPU project. The project is a renovation and modernization program for existing campus facilities at the project site. While enrollments could be shifted to other facilities offsite or to other campuses, the increased enrollment may cause adverse impacts at other colleges, and student vehicular travel to alternative campus sites from the Mt. SAC District may increase traffic and traffic-related impacts at other campuses. The result may be to shift project impacts from one campus to another and to increase student vehicular travel..

The project alternatives selected for further evaluation include the No-Project (no-build) Alternative (35,986 fall enrollment headcount), Alternative 1: Revise Physical Education Project and Alternative 2: No 2020 Olympic Track & Field Trials. Alternative 1 restricts all future development as of April 2017.

The focus of comparison for the project and project alternatives is on biological resources, cost and the feasibility of the alternative meeting the District objectives for the project.

However, other environmental, economic, District educational objectives and feasibility issues are considered in the subsequent analysis. Comparisons are made before implementation of feasible mitigation measures. The primary focus, in accordance with the *CEQA Guidelines*, is on comparison of any remaining significant environmental

effects. Project alternatives, by design, are required to have fewer significant environmental effects than the West Parcel Solar Project.

6.1 ALTERNATIVE 1: NO-PROJECT

The No-Project alternative is the no-build alternative. No new development would occur at the project site, including removal of vegetation or grading. All coastal sage habitat existing onsite, which is inhabited by coastal California gnatcatchers and cacti, inhabited by cactus wrens, would remain onsite. No truck hauling for earth import would occur from the Physical Education Project.

The No-Project alternative would not meet any of the project objectives for the solar project. The District objective to generate solar electricity and save on energy costs would not be realized.

Both the Board of Trustees and Mt. San Antonio Community College District residents have endorsed the facility programs for the campus by approval of the Measure R Bond in November 2001, the Measure RR Bond in 2008, the RR Revenue Anticipation Bond in 2011, and approval of the 2015 Facilities Master Plan/Physical Education Project. Both the Board and many citizens do not support the No-Project Alternative.

Not developing the solar project would be contrary to the Board of Trustees actions in seeking bids for the project and contrary to the objectives of campus Energy Conservation Program. The solar project is projected to save the District $500,000 a year in electricity costs.

With no new construction on campus, one source of employment for construction companies and employees is not available. With no Bond expenditures for construction, both the area and local economy are less robust.

The no-project alternative is the environmentally superior alternative because it has no impact on the habitat of the coastal California gnatcatcher. However, the no-project alternative does not meet any of the objectives of the project.

The no-project alternative (i.e. which included a no solar project) was also included in Section 5.1 of the certified 2012 FEIR. The Board of Trustees considered the no-project alternative for the West Parcel project site during review of the 2012 and 2015 Final EIR.

In Scoping Session 2, two citizens expressed concerns about the impact of the solar project on residential values. While no definitive study is available on a solar project on 10-acres, and such a study is beyond the scope of this EIR, there are numerous studies for wind turbine or solar farms, and the impact of solar panels on residential sales (i.e. residential roof solar systems). One study states the following:

"Building on its earlier 2009 study, the research team collected data from more than 50,000 home sales among 27 counties in nine states. These homes were within 10 miles of 67 different wind facilities, and 1,198 sales were within 1 mile of a turbine—many more than previous studies have collected. "Regardless of model specification, we find no statistical evidence that home values near turbines were affected in the post-construction or post-announcement/pre-construction periods."

Source: *A Spatial Hedonic Analysis of the Effects of Wind Energy Facilities on Surrounding Property Values in the United States (link is external),* (*U.S. Department of Energy*, August. 2013).

It is not likely that the completed solar project would be phased out (i.e. sunset) in the future and an alternative use developed onsite. If solar panel technology changes in the future, it is more likely that the solar panels would be changed, but not that the project would be terminated.

6.2 ALTERNATIVE 2: PARKING STRUCTURE J

Parking Structure J was proposed south of Edinger Avenue and Mountaineer Road east of Grand Avenue in 2008. The solar system on top of the parking structure was projected to generate 1.5 MW.

A rooftop solar system is advantageous because no additional land resources are required. However, framing for the structure and its weight may require additional improvements to the parking structure or framing that extends to the ground level.

The three-level 2,300 space parking structure was approximately twenty (20) feet in height. Therefore, the solar system on top of the structure would extend up to thirty-five (35) feet in height. The northern edge of the parking structure was located approximately 125 feet from the closest rear yards of the adjacent residential units. The nearest residences along Granite Wells Road are elevated approximately thirty (30) feet above the surface parking lot on campus (2008 Final EIR, page 82).

6.3 ALTERNATIVE 3: LOT F CARPORT STRUCTURE

Lot F (Alternative 3) now has 1,286 parking spaces, which will be reduced to 820 spaces (5.65 acres) in 2020 when the Future Instruction Building Zone 5 is complete (i.e. approved in the 2015 Facility Master Plan).

Typically a carport solar system results in solar panels on a central frame structure with height clearances of twelve feet beneath the canopy. The frame structure is supported by one or two rows of vertical poles between two rows of abutting parking spaces. The solar panels above the frame may be curved, flat or tilted.

There is considerable variation in parking lot coverage by the solar panels, depending on the design. The solar system is designed so sufficient light is available beneath the canopy during daylight hours.

The photo below is of the carport solar system at Kaiser Permanente Hospital in Irvine, California adjacent to Interstate 5 and Alton Parkway.

The estimated solar generation for Lot F was 1.5 MW. Development of Future Building Zone 5 in the western portion of Lot F, included in the 2012 Facility Master Plan was retained.

Exhibit 6.1: Solar Carport at Kaiser Permanente Hospital, Irvine

Sassi Hassan submitted information on a 2.2 MW carport solar system prepared by Sunvalley/RSI Solar of Sacramento, California at the June 7, 2017 Scoping Session (Appendix X-12). The project cost was $6,643,010 for a carport solar system located in Lots B, B3 northeast of the Temple Avenue and Grand Avenue intersection. The cost quoted did not include the District's sunk costs.

The net cost for a 2.0 MW solar system in 2013 (Appendix S1) was $6.25 million. The current cost is projected as $5.44 million (Table 6.6.1). Therefore, the project continues to have similar costs to its initial projection and less than the Sunvalley/RSI projection. The District is not obligated to scuttle a design-build agreement based on a Request for Proposal/Request for Proposal/Best and Final Offer completed in September 2015 (i.e. awarded to Borrego Springs Solar, who included a twenty-year performance guarantee) to provide a ground-mounted solar system, for a new cost estimate of a carport solar system.

The carport solar location evaluated by Sunvalley/RSI Solar is situated within the Preliminary Educational Zone and would preclude future development of structured parking and additional classroom facilities within Lots B, B3. Lots B, B3 currently have 876 parking spaces. Therefore, the Sunvalley/RSI carport alternative is rejected from further consideration on both costs and constrains for future facilities. The plan is not consistent with prior Board actions or consistent with the 2015 Facilities Master Plan.

If carports were developed on campus the criteria would be located close to the Campus Core and areas not planned for future classroom facilities in an adopted facility master plan. Lot H would meet this criteria but Lot F would not because of its distance from the Campus Core and planned facilities (Future Planning Zone 5). However, there are no plans for carports in Lot H at this time.

6.4 ALTERNATIVE 4 – EAST OF LOT F

Alternatives 4, 5 are shown in 6.2. The conduit for the inter-connect system from the solar pad is also shown.

Alternative 4 is a 6.8-acre pad east of Lot F in the Agricultural Zone that includes pasture lands for cattle grazing and California Black Walnut woodland along the north and west edges. The conduit is primarily routed along existing roadways.

The 6.8-acre solar pad may be developed by grading the pasture lands and removing the California Black Walnut woodland along the western and northern perimeter. Approximately 5.4-acres of the site faces south with no obstruction and 1.4-acres faces

north. The required electrical conduit would be approximately 2,500 linear feet and the estimated pad elevation is 810 to 835 feet msl. Earth export would be required.

The project site is smaller than desired, resulting in a 30 percent reduction in pad area compared to the West Parcel solar pad. Since the site ranges from 795 – 855 feet msl, grading is required to obtain a level solar pad. Grading would result in the removal of approximately 0.9-acres of California Walnut Woodland and cessation of all agricultural grazing activities.

Any loss of California Walnut Woodland in Alternative 4 must be replaced in the Land Use Management Area. This requires the 1:1 replacement for trees with 7 – 15 inch DBH and 3:1 replacement for less than 7-inch DBH. The overall ratio for the 224 CBW removed from the stadium hill west of Hilmer Lodge Stadium when it was graded was 1.24:1. Coastal sage scrub is not present in Alternative 4. If the drainage onsite is not dry in future years, state permits for biological resource impacts may be required for Alternative 4.

Alternative 4 is used for intensive agriculture, which is land that is irrigated, planted or otherwise managed. The loss of approximately 5.0 acres of pasture land would be detrimental to the agricultural educational program on campus. Since Alternative 4 is used for grazing, locating a solar project there has annual costs for purchasing hay not present in other alternatives.

The solar arrays would also be highly visible from Temple Avenue, the primary entry for approximately thirty-five (35) percent of all campus trips.

Alternative 4 is the environmentally superior scenario after the no-project alternative because there are fewer biological resource impacts than the West Parcel or Alternative 5. Grading occurs on 6.8-acres instead of 17.25-acres for the West Parcel.

However, Alternative 4 is cost prohibitive and does not provide enough electrical power for the campus. Therefore, Alternative 4 meets some of the project objectives but also has detrimental effects on campus agricultural programs.

The California Black Walnut woodland must be replaced in the Land Use Management Area. However, Alternative 4 reduces the acreage within the Land Use Management Area by 5.0 acres or more.

The restoration area for the California Black Walnut woodland removed from the hill west of Hilmer Lodge Stadium (2.02-acres) is along the southern perimeter of the Land

Use Management Area and is not impacted by Alternative 4. State and/or federal permits from responsible agencies may be required for Alterative 4, with associated costs and time delays. The cost for the inner-connect system for Alternative 4 is greater than that for the West Parcel.

Exhibit 6.2: Alternative 4 (north) and Alternative 5 (south)

6.5 ALTERNATIVE 5 – SOUTHEAST OF STADIUM

The 7.8-acre solar pad may be developed by grading within the Land Use Management Zone, resulting in removal of many groves of California Walnut Woodland along the site northern and southern perimeter. The site faces south, with the adjacent hills obstructed sunlight from the southern portion of the site in the early hours of the day.

The required electrical conduit would be approximately 4,200 linear feet and the estimated pad elevation is 735 to 775 feet msl. Earth export would be required. A 650 foot long dirt access road would be re-paved and widened to 28 feet for service vehicles.

The project site is also smaller than desired, resulting in a 20 percent reduction in pad area compared to the West Parcel solar pad. Since the site ranges from 720 – 820 feet msl, grading is required to obtain a level solar pad.

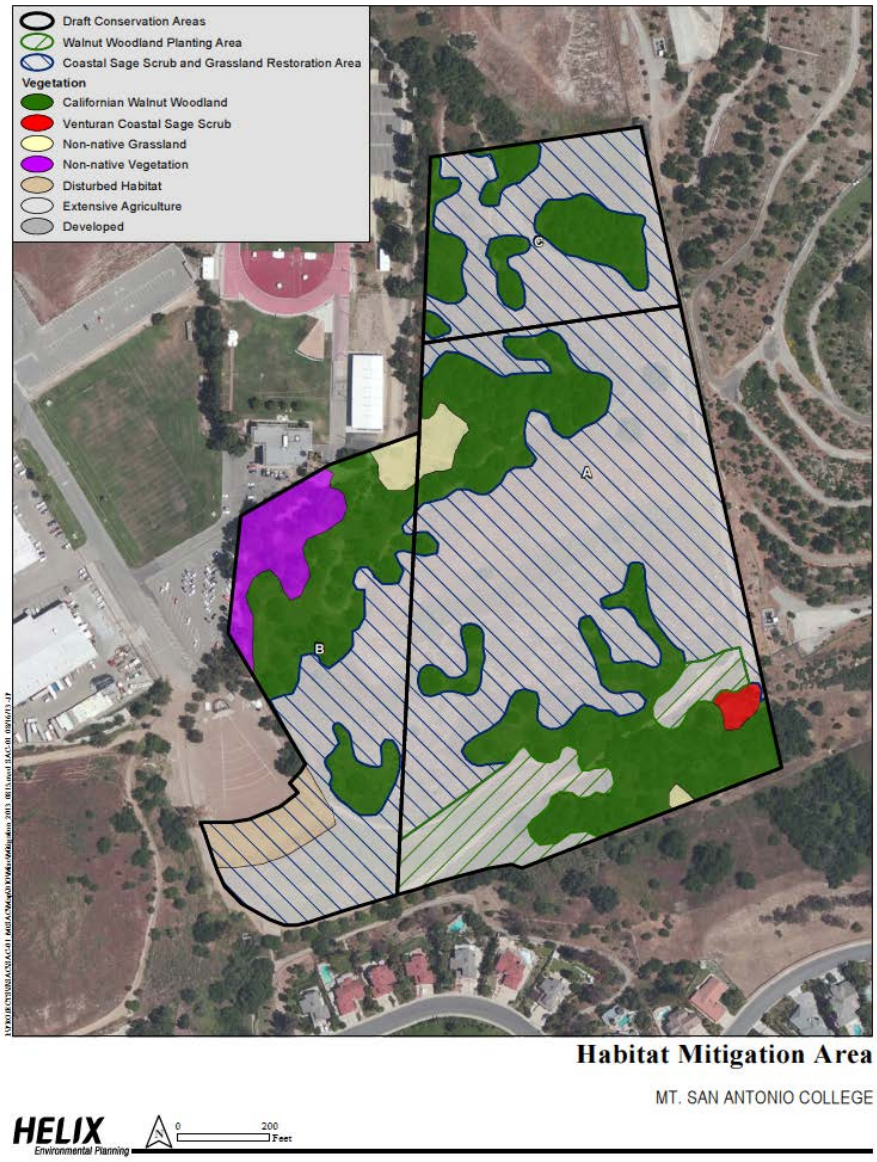
The Land Use Management Area (Exhibit 6.3) was adopted by the Board of Trustees in 2012. The area is required for replacement habitat for removal of native grassland, coastal sage scrub and California Black Walnut woodland elsewhere on campus. Alternative 5 is located in the center of the area and reduces the acreage available for replacement of habitat on campus. The Mt. San Antonio College California Black Walnut Management Plan was adopted in 2012.

Alternative 5 is used as extensive agriculture for the agricultural program and as a land management tool to remove weeds and tall grass, and to reduce fire danger. Extensive agriculture means areas that are grazed and have minimal active management.

The solar arrays would not be highly visible from Temple Avenue, and are not immediately adjacent to any residential land uses. However, the site may be visible from residential neighborhoods to the south.

Alternative 5 is located adjacent to the Switchbacks and Valley Loop cross country course. While the ambiance of the course would be impacted, replacing natural habitat with the solar array, the course would not be obstructed by Alternative 5.

Exhibit 6.3: Land Use Management Plan Areas



Since funding sources would be lost with project delays and buildout would be delayed for years; the District would not have the benefits of solar generation for years.

While Alternative 5 has no impact on coastal sage scrub compared to the West Parcel, Alternative 5 does have an impact on approximately 1.0-acre of California Walnut Woodland. This requires the 1:1 replacement for trees with 7 – 15 inch DBH and 3:1 replacement for less than 7-inch DBH. The overall ratio for the 224 CBW removed from the stadium hill west of Hilmer Lodge Stadium when it was graded was 1.24:1. Replacement and monitoring of California Walnut Woodland is very costly for the District. Both state and federal permits from responsible agencies may also be

required for Alterative 5, with associated costs and time delays. The cost for the inner-connect system for Alternative 5 is also greater than that for the West Parcel.

Alternative 5 is less advantageous than the West Parcel project in its environmental impacts since it removes habitat in an adopted campus restoration area and requires additional permits from Responsible Agencies. The West Parcel project is in the Solar/Retail Zone and Alternative 5 is in the Land Use Management Zone. In the future, if Alternative 5 was built, the remaining acreage in the Land Use Management Area may not be sufficient for the District's habitat restoration requirements.

Alternative 5 is not located directly adjacent to residential land uses but will be visible from neighborhoods to the south.

Since the site requires earth export, it is less advantageous than the West Parcel, which allows export of earth from other projects on campus, as opposed to hauling excess earth off-campus at great cost. Grading occurs on 7.8-acres instead of 17.25-acres for the West Parcel.

However, Alternative 5 is cost prohibitive and does not provide enough electrical power for the campus. Alternative 5 meets some of the objectives of the project but has damaging effects on the California Black Walnut Management Plan and other future habitat restoration plans are needed for removal of coastal sage scrub or other sensitive vegetation habitats.

6.6 ALTERNATIVE 6: HOUSING ON WEST PARCEL

In 2013, the District solicited a proposal for housing projects located on the West Parcel. An interested developer, Lewis Homes, submitted a proposal for 300 units of multi-family housing. The proposed agreement including provisions that the District fund exporting 300,000 cubic yards of earth from the site and that the District would receive $70,000 annually once the development reached the break even cost point. These conditions were unacceptable to the District and the project did not move forward.

A housing project is not subject to any zoning or building exemption. Alternative 6.6 would not be subject to Department State Architect and California General Services (CGS) regulations and entirely subject to all City of Walnut zoning, land use and construction ordinances and regulations. The West Parcel would need to be declared surplus by the Board based on finding of "no school purpose" in order to be developed for housing, and would be subject to a public bidding process in the absence of a waiver from the California Community College District Chancellor Board of Governors. Therefore, a housing project would not be feasible.

During Scoping Session 2, a citizen suggested the District give the West Parcel property to the City of Walnut for development of a park or aquatic center. This alternative has identical or greater impacts on the habitat onsite and is subject to the same CGS regulations discussed above. The development costs for completion of a park or aquatic center onsite are likely prohibitive for the City.

Alternative 1: Renovate the Aquatic Center (Building 27B) was included in the 2012 Facility Master Plan EIR. The discussion included exploring public use of the facility with outside entities and none expressed interest in doing so. Alternative 1: Revise Physical Education Project in the 2015 FMPU/PEP EIR also included renovation of the aquatics center and "if feasible community use." Again, no interest was expressed by community groups. The Board of Trustees also rejected these alternatives when certifying the Final EIR.

6.7 COST BENEFIT COMPARISONS

The Board of Trustees chose the ground-mounted solar system on the West Parcel as the preferred project to meet the District's objectives based on the initial cost benefit review of the project and Alternatives 2, 3. The cost benefit analysis presented to the Board of Trustees in November 2013 is included as Appendix S. The comparison of benefits focused on energy savings, funding sources and opportunities to transfer excess soil from one campus project to another.

A comparison of estimated development costs is shown in Tables 6.6.1, 6.6.2 for the Project and the other alternatives. However, the most relevant comparison is ROI and the amount of electrical power supplied. The proposed project is superior on these two factors, as well as buildout in a reasonable timeframe. The West Parcel solar project is projected to save the District $500,000 per year.

As shown in Table 6.6.2, the Project provides the best Return on Investment and the lowest cost per watt. The Project also saves the District $1.5 million for export earth offsite from other campus projects if the West Parcel is not available.

While the District is assured that Proposition 39 and SCE utility incentives of $2.15 million are available for this project, these incentives may not be available for later projects. All Responsible Agency permits for habitat removal, preservation and restoration have been obtained for the West Parcel site but new permits would be required for Alternative 5. The construction of the Project on the West Parcel poses no constraints on the educational programs and objectives of the District. Therefore, the Project remains the preferred alternative.

As required by the CEQA Guidelines, all project alternatives considered in this analysis have impacts less than the project. Other project alternatives that may have greater impacts are not considered. Achieving the project objectives may be considered, but is not the prime consideration in selection of project alternatives.

Please note that while the proposed solar system on the West Parcel is now a 2.2 MW system, the previous costs estimate for the project included in Table 6.6.1- 6.6. are for a 2.0 MW system. The best financial comparison between solar systems is not upfront costs but cost per watt and Return on Investment (ROI). The payback period and Cost per Watt/ROI are estimated for all project alternatives. The service life of the solar facilities is projected as twenty-five years.

Providing cost comparisons in constant dollars for prior and current alternatives, although preferable, is beyond the scope of this EIR. Therefore, the cost comparisons are relative, not absolute. The analysis in Tables 6.6.1, 6.6.2 is based on the methodology used in the 2013 Solar Memo (Appendix S1) but does not duplicate the discounting and inflation rates used therein. The tables are not a cost benefit analysis or real estate pro forma analysis, which are beyond the scope of this EIR.

Table 6.6.1: Solar Alternative Cost Estimates

	Project	Alternative 4	Alternative 5
	9.9 acre pad	6.8 acre pad	7.8 acre pad
Permits/CEQA[2]	94,500	20,000[1]	30,000[1]
Habitat Restoration[2]	161,700	50,000[1]	100,000[1]
Grading/Landscaping[2]	1,813,800	900,000[1]	1,500,000[1]
Solar (Fixed)[3]	6,330,000	$4,547,879[5]	$5,187,273[5]
Total Cost	$8,400,000	$5,517,879	$6,817,273
SCE Incentive	- 1,100,000	0	0
Prop 39	-1,050,000	-$1,050,000	-$1,050,000
Earth Export Savings	-1,500,000	0	0
Net Cost	$4,750,000	$4,467,879	$5,767,273
Added Cost (Tracking)[3]	690,785	690,785	690,785
Subtotal	$5,440,785	$5,158,664	$6,458,058
Sunk Costs to Date[2]	---	1,500,000	1,500,000
Added Conduit Costs[2]	$600,000	1,600,000	2,500,000
Hay Purchase ($20,000 per year)[2]	---	$400,000	---
Electrical Cost Savings (year)[2]	$500,000	$430,400[1]	$393,950[1]
Net Cost	$5,440,785	$8,228,264	$10,064,108
Cost/Watt[2]	$2.72	$5.88	$6.29
MW[4]	2.0	1.4	1.6
Alternative Rank	Preferred	Cost Prohibitive	Cost Prohibitive

1 Pro-rata based on acreage for Alternatives 4, 5
2 Estimated costs provided by Facilities Planning and Management on July 20, 2017
3 Cost estimate provided by Borrego Solar
4 MW capacity for project in initial cost estimate; MW capacity for alternatives pro-rated on acreage
5 Pro-rated based on acreage plus $200,000 increased installation costs

Source: Facilities Planning and Management, July 20, 2017

Table 6.6.2 presents the original data from the 2013 Solar Memo (Appendix S1) for the solar project and Alternatives 2, 3 and uses the data from Table 6.6.1 for Alternatives 4, 5.

Table 6.6.2: Alternative 4, 5 ROI & Payback Compared to 2013 Solar Memo Analysis for Alternative 2, 3[1]

Alternative[1]	Net Cost (millions)	ROI (%)[2]	Simple Payback (yrs)[3]	Cost per Watt	Other	Cost Ranking[5]
West Parcel Solar Project – Ground-Mounted (2.0 MW)	$5.44	211	11.0	$5.70	Save $1.5 million in soil export costs	1
1. No-Project Alternative	0.00	---	---	13.5 cents per kwh[4]	---	2
2. Parking Structure J (0.33 MW)	$9.28	131	16.5	$6.72	---	4
3. Carport System - Lot F (1.5 MW)	$1.92	120	15.5	$10.09	3 % loss of 466 total spaces	3
4. East of Lot F in Agriculture Zone - 6.8 ga (1.4 MW)	$8.23	110	26.3	$5.88	Potential dorm site or hay crop	5
5. Land Use Management Zone – 7.8 ga (1.6 MW System)	$10.06	103	28.1	$6.29	Loss of habitat replacement ga	6

1 – Data from 2013 Solar Memorandum (Appendix S1) for WPS, Alternatives 2, 3 and Table 6.6.1 for Alternatives 4, 5.

2 - NPV Savings/Net Cost = ROI. Net Present Value of $13,209,275 for project; pro-rated by acreage for Alternatives 4, 5

3 - Simple payback is (Net Cost – Grading Savings)/First Year Savings for WPS. Payback based on $455,061 savings/year for MW 2.0 (Appendix S1) and pro-rated acreage savings of $312,567 and $258,533 for Alternatives 4, 5 respectively.

4 - Blended existing cost of electricity based on time-of-day, peak, non-peak loads

5 - Ranking, one being best, for meeting project objectives, development cost, ROI and simple payback.

Source: Facilities Planning and Management, July 22, 2017

Table 6.6.3: Project Alternatives Comparisons

Issue	Alternative 1 No Project	Alternative 2 Parking Structure J	Alternative 3 Carport In Lot F	Alternative 4 East of Lot F	Alternative 5 South East of Stadium	Project West Parcel
1. 2020-21 Students (Headcount)	35,986	39,731	39,731	39,731	39,731	39,731
2. Total Square Feet. (ASF)	1,087,184	1,325,282	1,325,282	1,275,467	1,325,282	1,325,282
3. Loss of coastal sage scrub	No	No	No	No	No	Yes
4. Loss Californian Walnut Woodland	Yes	No	No	Yes	Yes	No
5. Loss of Non-native Grassland	No	No	No	No	Yes	No
5. Conflicts with campus Habitat Mitigation Plans (CBW/LUMA)	Yes	No	No	Yes	Yes	No
6. Earth Import Possible	No	No	No	No	No	Yes
7. Adverse Impacts	No	Yes	Yes	Yes	Yes	No
8. Simple Payback (years)	---	16.5	15.5	26.3	28.1	11.0
9. Solar Generation (MW)	0.0	0.33	1.5	1.4	1.6	2.2
10. Proposition 39 Funds available	No	No	No	No	No	Yes
11. SCE Incentives	No	Yes	Yes	Yes	Yes	Yes
12. Environmentally Superior before Mitigation (1=Best)	1	6	2	3	4	5
Source: Facilities Planning and Management, July 2017						

During Scoping Session 2, two residents of the City provided the following comment:

Are there outside funding sources being made available for the solar project installation - i.e. state grants, funding from the utility commission or utility companies, etc.?

There's been much talk circulating that the cost of the solar installation will exceed the cost of return over the useful life of the equipment. Have the delays in starting construction of this project, due to the legal conflicts created by the Untied Walnut Taxpayers group and the City of Walnut, caused the construction costs to go up over the original cost estimate?

Yes, as shown in Table 6.6.1, SCE Incentives of $1,100,000 and Proposition 39 funds of $1,050,000 are available for the West Parcel solar project. The original projected development cost of the project in November 2013 was $8.4 million, with a cost per watt/Return on Investment (ROI) of $5.70 per watt and an ROI of 211 percent. The electrical cost savings per year were projected as $500,000 and the solar system has a life of approximately 25 years, or a total savings of at least $11.4 million. After that period, the solar panels would be changed and the replacement installation cost would be about one-third of the initial installation cost.

The sunk costs (cost expended to date for legal services and extra technical services to date are approximately $1.5 million. This does not include any additional technical studies or staff time that were required to respond to legal issues related to the litigation. Therefore, litigation costs are a major expenditure for the District.

Preferred Alternatives

Each project alternative has: (1) Merit in portraying options available to the District, (2) Meets some objectives of the District while de-emphasizing others, (3) Potential construction-related environmental impacts differ in magnitude, location and cost, (4) Alternatives differ in whether a Statement of Overriding Considerations (SOC) is required for one or more environmental issues.

All project alternatives, except the no-project alternative and Alternative 2, should be considered in the environmental review process. This recommendation focused on environmental issues, not financial issues.

Ultimately, a combination of factors influences District actions for individual projects, including projected student enrollments, the Educational Master Plan, the most recent Facility Master Plan, available State and local Bond Measure funds, financial considerations, energy costs, and energy needs.

The no-project alternative is rejected from further consideration because the facilities required for the College to meet its energy savings objectives, no site is available for earth export for other approved projects, and the California Black Walnut Management Plan previously adopted by the Board of Trustees would not be implemented. Alternative 5 would require a Statement of Overriding Considerations for impacts to the Land Use Management Area.

Alternative 2 may be rejected because Parking Structure J is currently not an active project and a solar system on the roof would increase the maximum building height adjacent to a residential neighborhood. Alternative 6 (housing) is likely to be rejected by the District because of legal constraints, development cost and lack of revenue.

Mot public agencies consider simple payback a primary financial consideration when considering a project and require a payback period less than the life of the project. If a project has a 25-year useful life, then projects with shorter payback periods are preferred. Alternatives 4, 5 may be rejected because the payback period exceeds the useful life of the initial project.

Development cost is also a prime consideration for individual projects. Alternatives 2, 5 have the highest development costs of the five alternatives. Committing $10 million to a project with a longer payback period, higher energy costs, and lower ROI imply these alternatives may also be rejected.

However, within the context of the CEQA process, the primary consideration in considering project alternatives is a project's impact on the environment, not meeting the project objectives or economic considerations. However, CEQA recognizes these factors are important and a balancing of factors will determine an agency's actions. The ranking in Table 6.6.2 focuses on the financial aspects of the solar project and ranking in Table 6.6.3 focuses on the environmental aspects of the project.

IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF ENERGY SUPPLIES AND OTHER RESOURCES

7.0 IRREVERSIBLE AND IRRETRIEVEABLE COMMITMENTS OF ENERGY SUPPLIES AND OTHER RESOURCES SHOULD THE PROJECT BE IMPLEMENTED

Associated infrastructure systems and utility systems will be revised to accommodate the West Parcel Solar (WPS) project. Buildout of the WPS represents a long-term irretrievable commitment of the project site for campus facilities with a structural lifespan of 50 - 75 years. It is unlikely that completed new solar construction would be redeveloped for alternative uses in the future.

Development of the WPS will require irretrievable commitments to energy supplies and resources, both during the construction and operational phases of the project. However, no critical shortage of material resources or energy supplies for the project has been identified in this analysis. Both the energy supplies and other resources required for the project are typical of solar construction projects. As fossil fuels are the principal source of energy, the project will incrementally reduce existing supplies of fuels, including natural gas, diesel fuel and gasoline. These energy resource demands relate to project construction only. The solar project generates clean electrical power rather than resulting in continued use of electrical energy.

All service agencies can provide services for the WPS without direct or indirect adverse physical environmental impacts. Specific assurances of future services will be obtained for water supply, wastewater treatment, landfill capacity, fire services and public safety services.

In any case, the quantities of natural gas and electricity related to WPS construction (i.e. as estimated in CalEEMod) have no significant impact.

GROWTH-INDUCING AND CUMULATIVE IMPACTS

8.0 GROWTH-INDUCING AND CUMULATIVE IMPACTS

Approval of the West Parcel Solar (WPS) project will permit removal of existing vegetation on 17.25-acres and a new drainage system for the property.

However, no major expansion of drainage facilities offsite is required for the project. While the infrastructure for the WPS will be new, it does not increase capacity for other projects. Therefore, the project does not have an adverse growth-inducing effect.

Since the majority of the campus is urbanized (e.g. Primary Education Zone and Athletic Zone), with the exception of the Agricultural, Wildlife Sanctuary/Open Space and Land Use Management zones; any additional substantial new development on campus involves demolition, reuse of existing sites or conversion of the agricultural/open space areas on campus to urban use.

The WPS is a direct response to the electricity costs incurred by the District and an indirect response to the Educational Master Plan, the projected future student enrollment growth on campus, District and regional population growth trends (e.g., birth rates and young families) and regional economics. Community colleges are generally not growth inducing in the short-term, especially when development occurs on an existing campus, and in the long-term may only serve to stabilize older communities, and provide a better educated workforce, a stronger area economy, and an involved citizenry. By itself, the WPS project has no growth-inducing impacts.

Construction employment has a minor traffic impact and only during the construction period. The project is estimated to employ up to fifty (50) workers onsite during construction. Upon buildout, the WPS has no impact on housing, employment, traffic, air quality or noise.

Campus staff increases at buildout of the 2015 FMPU/PEP are projected as less than 200 FTE, but have no impact on area housing demands because of the large geographic region in which future employees may reside. The largest future construction projects on campus are the PEP and the Student Center.

Similarly, the projected student enrollment increase of 3,745 students (H/C) in 2020 has little impact on any one community, since most students do not change their residence to attend a community college and there is no permanent student housing on or near campus. The project has no significant growth-inducing effects on population, housing or public service facilities.

The cumulative impacts of area traffic, air quality emissions, and noise impacts were evaluated in the 2015 FEIR. The proximity of Cal Poly Pomona and Mt. San Antonio College results in cumulative impacts on the area circulation system, especially for Temple Avenue between State Route 57 and University Drive.

The 8,208 cumulative trips assigned to the network in the 2015 FEIR for 2020 are "worse case" estimates, because Cities identify many projects that are not built, economic conditions may slow future growth, or the magnitude of development proposed never occurs. For example, the NFL Stadium project was included in the Industry Business Center but never built.

The trips assigned to the area network in campus traffic studies are also higher than actual trips because no discounting of trips is included for offsite student centers, distance learning or savings from using public transit. Students may continue to respond positively to the College's discount bus tickets and use of the new Public Transportation Center, which may be operational by 2019. In the 2015 Fall Term, students obtained 11,024 GoPass tickets for use on Foothill Transit Agency buses.

ORGANIZATIONS AND PERSONS CONSULTED

9.0 ORGANIZATIONS AND PERSONS CONSULTED

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10.0 BIBLIOGRAPHY

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All of the documents referenced in the Bibliography are available for public review during normal business hours at Mt. San Antonio College, Facilities Planning and Management, Maintenance and Facilities Management (Building 47), at 100 N. Grand Avenue, Walnut, California 91789-1399. For an appointment, please call Rebecca Mitchell at (909) 274-5175 or send an e-mail request to facilities planning@mtsac.edu

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APPENDICES

10.0 APPENDICES

A. Air Quality Report & Update
B. Noise Report
C. Vibration Study
D. Draft WQMP
E. Landscape Plan
F. Grading Plan
G. Biological Technical Report
H. Habitat Mitigation Plan
I. Construction Noise/Bio Impact Study
J. WW Photo Simulations
K. Truck Haul Plans
L. Geology Reports
M. Borrego Solar BFO
N. Solar Light & Glare Study
O. Section 401 Water Quality Certification
P. Section 404 Nationwide Permit
Q. Section 1602 Streambed Alteration Agreement
R. AB 52 Consultation
S. Solar Options Memo
T. Notices
U. Land Use Management Area
V. Cultural Resource Study
W. Storm Water Pollution Prevention Plan (SWWP)
X. Other Correspondence and Scoping Sessions Comments
Y. NOP and NOC Comments
AA. West Parcel Solar Mitigation Monitoring Program (draft)
BB. 2017 Master Mitigation Monitoring Program (draft)