State Clearinghouse Number 2002041161

West Parcel Solar Project

Project Final Tiered EIR

Volume 4
Response to Public Comments on the Draft EIR
Appendices

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

SID LINDMARK, AICP
Planning . Environmental . Policy
September 2017

WEST PARCEL SOLAR PROJECT

TIERED DRAFT EIR

Volume 4: Response to Comments Appendices

SCH 2002041161

Mt. San Antonio Community College District
Facilities Planning and Management
1100 North Grand Avenue
Walnut, California 91789-1399

Rebecca Mitchell
Manager, Facilities Support Services
(909) 274-5175
facilitiesplanning@mtsac.edu

SID LINDMARK, AICP
Planning . Environmental . Policy
10 Aspen Creek Lane
Laguna Hills, California 92653-7401

September 2017

APPENDICES

A. Notices
B. City of Walnut Comments
C. UWT Comments
D. AB 52 Consultation
E. Citizen Comment
F. Other Correspondence
G. New Project Information
H. 2017 West Parcel Solar Final MMP
I. 2018 Master Facility Plan MMP

MT. SAC
Mt. San Antonio College

Facilities Planning & Management
1100 North Grand Avenue • Walnut, CA 91789
909-274-4850 • www.mtsac.edu

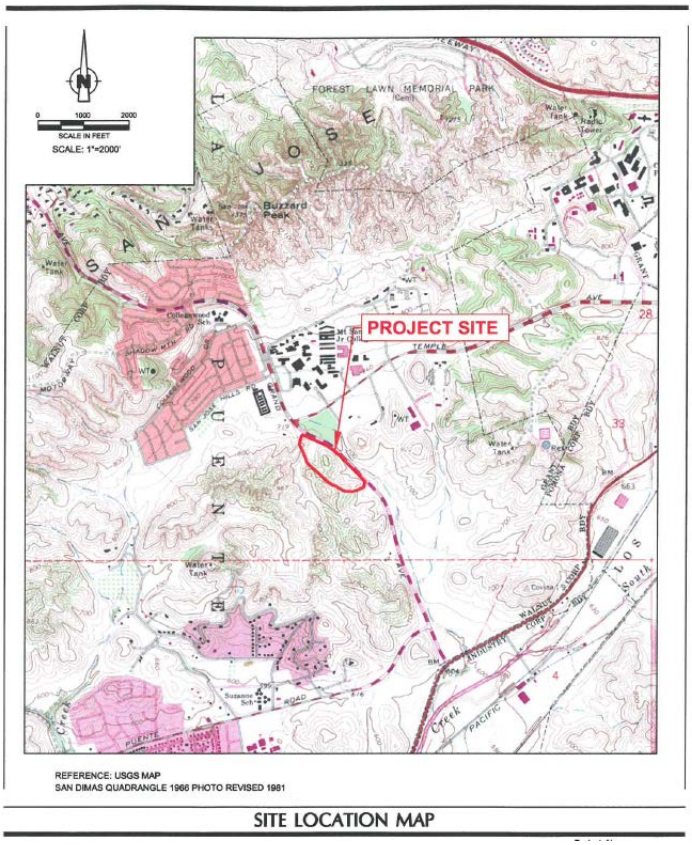
DATE: July 28, 2017

TO: Responsible and Concerned Agencies

SUBJECT: Notice of Completion (NOC) of the Mt. San Antonio College West Parcel Solar Project Tiered Draft Environmental Impact Report (SCH 2002041161)

FROM: Rebecca Mitchell, Manager
Facilities Planning & Management
Mt. San Antonio College
1100 North Grand Avenue
Walnut, California 91789-1399

The Mt. San Antonio Community College District (District) is the lead agency and has prepared a Tiered Draft Environmental Impact Report (Draft SEIR) for the Mt. San Antonio College West Parcel Solar Project (West Parcel Solar Project) under the terms and requirements of the California Environmental Quality Act (CEQA) and the implementing CEQA regulations. The project site is located on campus west of Grand Avenue and south of Amar Road and Temple Avenue.



SITE LOCATION MAP

The Draft SEIR is tiered to 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 Program/Project EIR (SCH 2002041161) by action of the District Board of Trustees in October 2016.

The West Parcel Solar Project is located on a 27.65-acre parcel located west of Grand Avenue zoned Solar & Retail. The 27.65-acre parcel contains primarily coastal sage scrub, habitat for the threatened coastal California gnatcatcher. Replacement and restored habitat will be implemented onsite and east of Grand Avenue. Grading will occur on 17.25 acres to create a 9.9 acre pad at 761 feet mean sea level for a 2.2 MW ground-mounted solar panel system. Earth import for the project from the stadium area of the campus is estimated as 139,000 cubic yards.

The potential environmental impacts of the West Parcel Solar Project are evaluated in the Draft SEIR posted on the District's website (see below for website address). A summary of potential project impacts, recommended mitigation measures and the status of the impacts with mitigation (i.e. Less than Significant with Mitigation Incorporated, etc.) is included in Table 1.4.1 in Volume 1. All technical studies, notices and correspondence are included in Volume 2: Appendices.

Documents Available for Review:

The Draft SEIR documents (Volumes 1, 2) are posted on the District's website:

http://www.mtsac.edu/construction/reports-and-publications/environmental-impact-reports.html

The Draft EIR may also be reviewed at the following locations:

Walnut Public Library
Reference Desk
21155 La Puente Avenue
Walnut, California 91789

Mt. San Antonio College Library
Building 6, Library, 2nd floor, Reference Desk
1100 North Grand Avenue
Walnut, California 91789

Time for Review:

The Draft EIR is being circulated for a 45-day public review period from July 28, 2017 to September 12, 2017. All comments on the Draft EIR must be received by 5:00 pm on Tuesday, September 12, 2017.

All public comments should be forwarded as written correspondence or pdf attachments to e-mails. **Freestanding e-mail comments are discouraged**. Please include the name and full mailing address of the respondent in all communication, and the date the comments are sent. If an agency is responding, please provide a person, e-mail address and phone number.

Please send your comments to Rebecca Mitchell, Manager, Facilities Support Services at the address below:

Project Title:	Mt. San Antonio College Physical Education Project (Phase 1, 2)
Project Applicant:	Mt. San Antonio Community College District
Date:	July 28, 2016
Contact:	Rebecca Mitchell
Telephone:	(909) 274-5175
Facsimile:	(909) 274-2931
E-Mail Address:	facilitiesplanning@mtsac.edu
Comments Due:	5:00 pm on Tuesday, September 12, 2017

Notice of Completion & Environmental Document Transmittal

Mail to: State Clearinghouse, P.O. Box 3044, Sacramento, CA 95812-3044 (916) 445-0613
For Hand Delivery/Street Address: 1400 Tenth Street, Sacramento, CA 95814

SCH # 2002041161

Project Title: West Parcel Solar Project Response to Comments

Lead Agency: Mt. San Antonio Community College District | Contact Person: Rebecca Mitchell
Mailing Address: 1100 North Grand Avenue | Phone: (909) 274-5175
City: Walnut | Zip: 91789 | County: Los Angeles

Project Location: County: Los Angeles | City/Nearest Community: Walnut
Cross Streets: Temple Avenue and Grand AVenue | Zip Code: 91789
Longitude/Latitude (degrees, minutes and seconds): 34 ° 03 ′ 98 ″ N / 117 ° 84 ′ 52 ″ W Total Acres: 26.75
Assessor's Parcel No.: | Section: | Twp.: | Range: | Base:
Within 2 Miles: State Hwy #: 57/60 | Waterways:
Airports: | Railways: | Schools: Westhoff/Collegewood

Document Type:

CEQA: ☐ NOP ☐ Early Cons ☐ Neg Dec ☐ Mit Neg Dec ☐ Draft EIR ☐ Supplement/Subsequent EIR (Prior SCH No.) ☐ Other: Response to Comments
NEPA: ☐ NOI ☐ EA ☐ Draft EIS ☐ FONSI
Other: ☐ Joint Document ☐ Final Document ☐ Other:

Local Action Type:

☐ General Plan Update ☐ General Plan Amendment ☐ General Plan Element ☐ Community Plan
☐ Specific Plan ☐ Master Plan ☐ Planned Unit Development ☒ Site Plan
☐ Rezone ☐ Prezone ☐ Use Permit ☐ Land Division (Subdivision, etc.)
☐ Annexation ☐ Redevelopment ☐ Coastal Permit ☐ Other:

Development Type:

☐ Residential: Units | Acres
☐ Office: Sq.ft. | Acres | Employees
☐ Commercial: Sq.ft. | Acres | Employees
☐ Industrial: Sq.ft. | Acres | Employees
☐ Educational:
☐ Recreational:
☐ Water Facilities: Type | MGD
☐ Transportation: Type
☐ Mining: Mineral
☐ Power: Type | MW
☐ Waste Treatment: Type | MGD
☐ Hazardous Waste: Type
☒ Other: 2.2 MW solar panel system

Project Issues Discussed in Document:

☒ Aesthetic/Visual ☒ Agricultural Land ☒ Air Quality ☒ Archeological/Historical ☒ Biological Resources ☐ Coastal Zone ☒ Drainage/Absorption ☐ Economic/Jobs
☐ Fiscal ☐ Flood Plain/Flooding ☐ Forest Land/Fire Hazard ☒ Geologic/Seismic ☐ Minerals ☒ Noise ☐ Population/Housing Balance ☒ Public Services/Facilities
☐ Recreation/Parks ☐ Schools/Universities ☐ Septic Systems ☒ Sewer Capacity ☒ Soil Erosion/Compaction/Grading ☐ Solid Waste ☐ Toxic/Hazardous ☒ Traffic/Circulation
☒ Vegetation ☒ Water Quality ☐ Water Supply/Groundwater ☒ Wetland/Riparian ☐ Growth Inducement ☒ Land Use ☒ Cumulative Effects ☐ Other:

Present Land Use/Zoning/General Plan Designation:

Retail & Solar (Campus Zoning) Single Family Residential/Residential Planned Development (City of Walnut)

Project Description: *(please use a separate page if necessary)*

The project will remove native vegetation on 17.25-acres of the project site and develop a 2.2 MW solar panel system on a 9.9-acre pad with an interconnect to the campus electrical system. Restored and replacement coastal sage habitat will be provided on- and off-site for the coastal California gnatcatcher. Approximately 139,000 cubic yards of earth will be imported to the project site from the stadium area on campus.

Note: The State Clearinghouse will assign identification numbers for all new projects. If a SCH number already exists for a project (e.g. Notice of Preparation or previous draft document) please fill in.

Reviewing Agencies Checklist

Lead Agencies may recommend State Clearinghouse distribution by marking agencies below with and "**X**".
If you have already sent your document to the agency please denote that with an "**S**".

_____	Air Resources Board	_____	Office of Historic Preservation
_____	Boating & Waterways, Department of	_____	Office of Public School Construction
_____	California Emergency Management Agency	_____	Parks & Recreation, Department of
_____	California Highway Patrol	_____	Pesticide Regulation, Department of
_____	Caltrans District # _____	_____	Public Utilities Commission
_____	Caltrans Division of Aeronautics	x	Regional WQCB # 4
_____	Caltrans Planning	_____	Resources Agency
_____	Central Valley Flood Protection Board	_____	Resources Recycling and Recovery, Department of
_____	Coachella Valley Mtns. Conservancy	_____	S.F. Bay Conservation & Development Comm.
_____	Coastal Commission	_____	San Gabriel & Lower L.A. Rivers & Mtns. Conservancy
_____	Colorado River Board	_____	San Joaquin River Conservancy
_____	Conservation, Department of	_____	Santa Monica Mtns. Conservancy
_____	Corrections, Department of	_____	State Lands Commission
_____	Delta Protection Commission	_____	SWRCB: Clean Water Grants
_____	Education, Department of	x	SWRCB: Water Quality
_____	Energy Commission	_____	SWRCB: Water Rights
x	Fish & Game Region # 5	_____	Tahoe Regional Planning Agency
_____	Food & Agriculture, Department of	_____	Toxic Substances Control, Department of
_____	Forestry and Fire Protection, Department of	_____	Water Resources, Department of
_____	General Services, Department of		
_____	Health Services, Department of	_____	Other: _____
_____	Housing & Community Development	_____	Other: _____
x	Native American Heritage Commission		

Local Public Review Period (to be filled in by lead agency)

Starting Date Not Applicable Ending Date Not Applicable

Lead Agency (Complete if applicable):

Consulting Firm: SID LINDMARK, AICP
Address: 10 Aspen Creek Lane
City/State/Zip: Laguna Hills, CA 92653
Contact: Sid Lindmark
Phone: (949) 855-0416

Applicant: Mt. San Antonio Community College District
Address: 1100 North Grand Avenue
City/State/Zip: Walnut, California 91789
Phone: (909) 274-5175 or facilitiesplanning@mtsac.edu

Signature of Lead Agency Representative: Rebecca Mitchell **Date:** 09/29/2017

Authority cited: Section 21083, Public Resources Code. Reference: Section 21161, Public Resources Code.

The City of Walnut

has not provided any comments

as of 9/27/17

United Walnut Taxpayers (UWT)
P.O. Box 1665
Walnut, CA. 91788
Contact Person, Layla Abou-Taleb, President

September 8, 2017

UWT Response to the July 2017 NOC of Tiered Draft EIR for the Mt. SAC West Parcel Solar Project

Introduction

United Walnut Taxpayers is providing comments on the West Parcel Solar Project Tiered Project Draft EIR to 2012 Facilities Master Plan Program EIR. Comments are divided into aesthetic effects, alternatives evaluation, costs evaluation, and review of 2014 and 2017 Converse study reports and 2017 DEIR Geology and Soils section. A Table of Contents is provided below.

Aesthetic Effects

1. There are three aspects to the aesthetics review, some of which have not been known until the release of this DEIR. They include motorist views of hillside losses, solar project building pad and asphalt surface, motorists views from street level south off Amar Road, and blocked views of residents and motorists.

    a. Motorist View of Building Pad and Asphalt Surface. The disclosure of an asphalt surface covering the building pad was not disclosed until this DEIR. The pictures shown below displays the hillside losses that will be experienced, and a perspective rendering based on known ground features showing the significant contrast between the natural hills versus the building pad and asphalt cover.

    b. Motorists Views from Street Level. Visual aspects from street level show the hillside losses that will occur from construction, traveling in a south to north direction on Grand Avenue. The grading construction element will require a grading permit through the City of Walnut, and must comply with General Plan restrictions of a Scenic Corridor and a Park Connection Corridor along Grand Avenue from Valley Boulevard to Temple Avenue.

    c. Blocked View from Motorists at Street Level. Motorists accustomed to seeing unobstructed views from Regal Canyon Drive will be blocked from views of the natural hillsides and the scenic wildlife reserve. Views would be almost completely obstructed by the building pad of the solar project.

Motorist View of Building Pad and Asphalt Surface

2. Visual effects of the west parcel project are seen from a number of perspectives in the City of Walnut up to a mile from the project, based on its elevated location with a large building pad and asphalt surface set within natural hillsides.

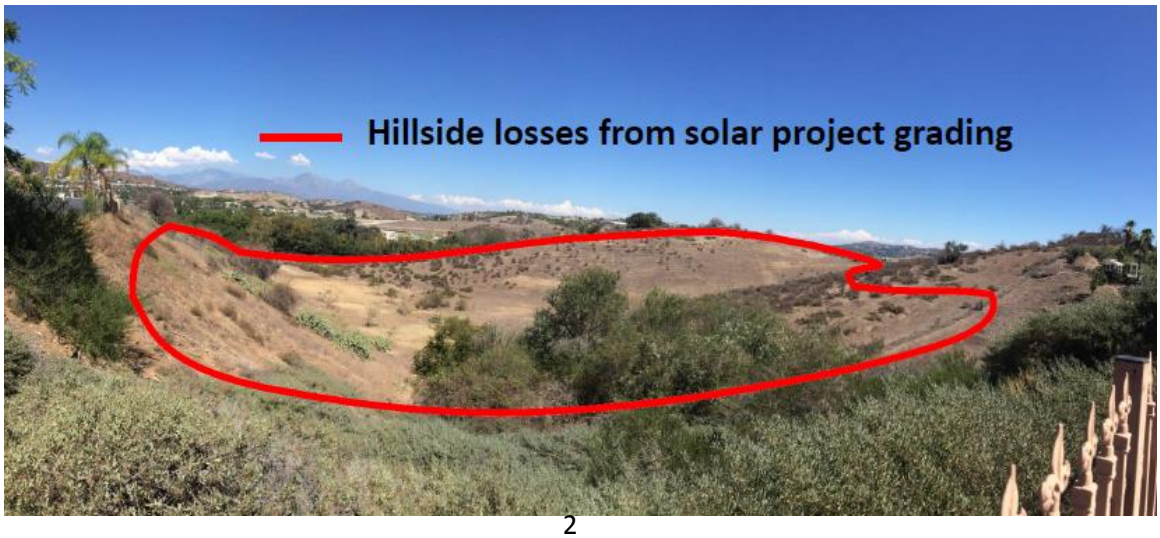
3. <u>Viewsheds along Grand Avenue are Significantly Changed</u>. Massive alterations to the natural viewshed of motorists on Grand Avenue entering from the north are shown below. Viewsheds show significant losses of natural hillsides some 70 feet above Grand Avenue and land areas that will be destroyed and replaced with a sterile building pad with long linear earthfill side slopes, asphalt cover and solar installations. The Grand Avenue viewshed is experienced by 1000's of motorists a day. Similar views are seen from Mountaineer Road.

Hillside Losses from Dirt Building Pad with Asphalt Cover Visible for Grand Avenue Entering

<u>Blocked Views of Motorists by Solar Project Building Pad</u>

4. <u>Regal Canyon Drive in the Willows Community.</u> Residents traveling up Regal Canyon Drive will see the industrial looking solar facility immediately next to the roadway blocking views of the natural canyons that once existed. Hundreds of cars a day travel this route, which will change the character of the passive community into a rigid landscape at its entrance.

Hillside Losses from Solar Project Building Pad at Regal Canyon Drive

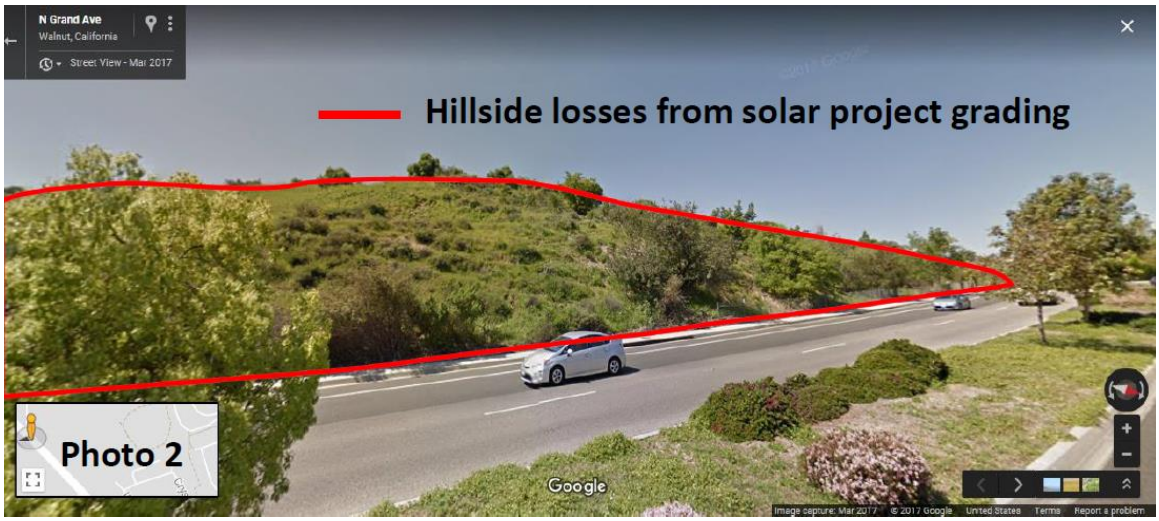


Motorists Blocked View from Solar Project at Regal Canyon Drive

Motorists Traveling Grand Avenue Observe Mass Hillside Losses Inconsistent with General Plan

5. Motorists traveling Grand Avenue would observe loss of hillsides, which is inconsistent with the General Plan Scenic Corridor designation of the roadway. The following views of Grand Avenue (photos 1 through 3, below) traveling from south to north from Snow Creek Drive to Amar Road displays the scenic values of Grand Avenue at street level and the significant destruction of native hillsides and vegetation caused by the west parcel project.

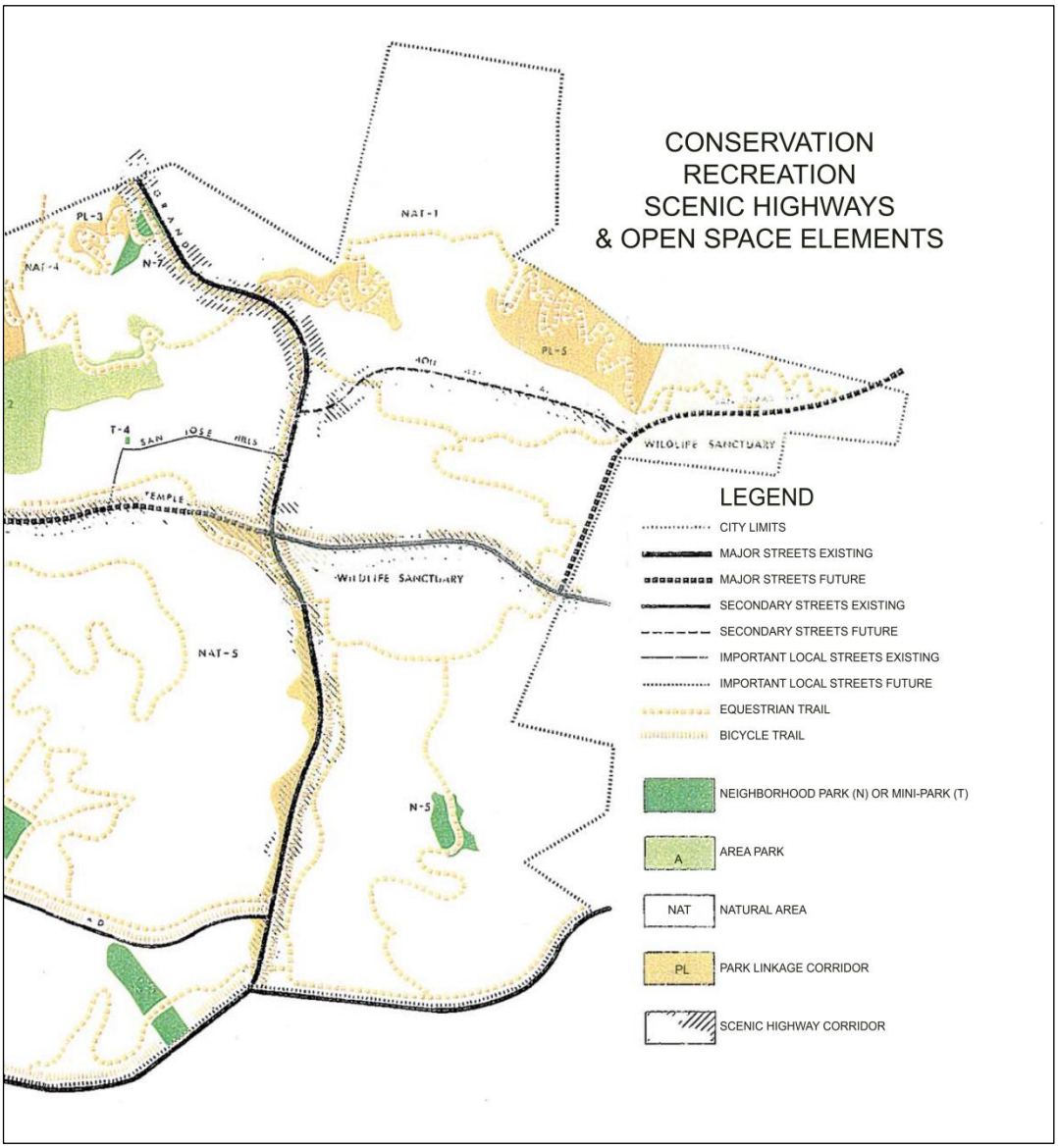
Hillside Losses from Solar Project Traveling form Snow Creek Drive to Amar Road



General Plan Conservation, Recreation, Scenic Highways & Open Space Element

6. The General Plan Conservation, Recreation, Scenic Highways & Open Space Element, page 49, Element VI states, "Of all the existing roads within the City of Walnut, Grand Avenue possesses the most scenic value" and that …… "It has naturally scenic qualities south of Temple Avenue." This is precisely where Mt. SAC intends to destroy its natural hillside beauty and replace it with up to 70 feet of earthfill covered with asphalt. Further, the General Plan states, "It can be viewed as a linear open space corridor maximizing both urban and natural processes." The destruction of the natural hillsides as planned under the proposed solar project would violate the intent to the General Plan designation of Grand Avenue as a scenic highway. The Scenic Highway designation along Grand Avenue is shown on the following figure.

7. According to the City of Walnut official's, Mt. SAC's grading plan submittal will be required to comply with this Scenic Highway designation, which would be in conflict with the proposed west parcel project.



Alternatives Evaluation

8. The Mt. SAC West Parcel DEIR has preliminarily evaluated six alternatives for solar power generation at different locations, and of different configurations and generation capacity. The alternatives evaluation, however, focused almost entirely on the west parcel, affording several paragraphs of description and analysis each to the other alternatives. A broader comparative assessment of the environmental impacts of alternatives, as required under CEQA Section 15126.6, is omitted.

<u>Scope of Alternatives Evaluated</u>

9. The scope of the DEIR relies mainly on economic evaluation of the alternatives as a decision-making tool, but omits the broader scope evaluations of environmental impacts of alternatives as part of the decision-making process. The alternatives include:

a. West parcel
b. Hillside area east of the stadium
c. Hillside area north and adjacent to Temple Avenue
d. Lot F
e. Lot A (Parking Structure J)

10. The United Walnut Taxpayers has evaluated a solar panel system on Lots B/B3 and discusses below the benefits of a parking structure initially proposed by Mt. SAC at Lot D in the 2015 SEIR.

Differing Levels of Resource Inventories and Impacts Evaluation

11. Imbalanced Resource Inventories and Impact Evaluation. Other than the west parcel, none of the alternatives are subjected to a similar level of resource inventory and impacts evaluation required by CEQA. Typically, a screening process removes certain alternatives found deficient in meeting project objectives, and is described in the screening process. This process may leave one or more alternatives for more detailed evaluation and comparison. Given this limited resource inventory and impact evaluation process of all but the west parcel, a reasonable comparison of alternatives is unworkable even in the limited scope evaluation described in Table 6.6.1

12. An evaluation of three alternative sites and methods for solar power generation was evaluated in a limited scope, unpublished report, "Solar Power Options for Mt. San Antonio College" in November 2013. The alternatives included (1) a 2.0 MW ground-mounted system at the west parcel, (2) a 0.33 MW system mounted atop a parking structure at Lots A/A2, and (3) a 1.5 MW carport [canopy] type system located in student Lot F. In some limited capacity and configuration, these alternatives have been evaluated in this DEIR. This reinforces that alternative configurations and locations for solar generation are available on campus.

Comparable Generation Capacity is Achievable at Several On-Campus Locations

13. The land area required for solar generation is estimated at 1.5 MW (2017 DEIR) over 3.4 acres at Parking Structure J or 2.3 MW per acre. An analysis of the Honolulu and Kahului Airports buildings and parking structures yields 3.1 MW per acre and for the Minneapolis-St. Paul Airport, an analysis of the parking structures yields 2.3 MW per acre. An average of the above three installations results in 2.7 MW per acre as a planning assumption, particularity for solar panels atop parking structures. Certain canopy-type solar systems may require larger net acreage per MW.

14. The alternatives included in the DEIR consistently do not match the generating capacity of the west parcel. However, examination of land areas available at various alternative sites show that equivalent generating capacity can be developed at Lot F, Lot B/B3, Lot D/D1 and Lot M. Moreover, the latest 2017 master plan indicates approximately 40 acres of parking lots are available on the Mt. SAC campus, providing many opportunities for alternatives to the west parcel.

Premature Discarding of Alternatives

15. In the alternatives evaluation, Mt SAC has prematurely discarded viable alternatives that either individually or in combination with other campus facilities may have formed viable alternatives. For example, proper consideration of solar panels atop parking canopies could result in a solar array not readily visible to nearby residents and motorists. These examples if properly sited could dramatically reduce visual impacts and be more favorable to the public, with decreased impact on the environment and natural landscape.

Combined Parking Structure and Solar Panel Systems

16. The alternative of a parking structure and with canopy mounted solar panels atop are viable at Lot F, Lots B/B3, Lots D/D1 and Lot M, which would not present unacceptable visual impacts to the public.

17. The time students must walk to certain parking structures configured with canopy-mounted solar systems is not objectionable. The walking time from Lot B near the Primary Instructional area compared to the furthest walking distance to Lot F or Lot M amounts to only 3 additional minutes. Based on Google maps walking rates for this flat terrain, the total walking times at 2.5 miles per hour walking rates are:

    a. Centroid of Lot F = 1889 feet (7.5 minute)
    b. Centroid of Lot M = 2100 feet (8.4 minutes)
    c. Centroid of Lot H = 1600 feet (6.3 minutes)
    d. Centroid of Lot B = 1200 feet (4.8 minutes)
    e. Centroid of Lot A = 800 feet (3.1 minutes)

Specific Comments on Alternatives

18. Motivation for West Parcel Project is for Campus Dirt Disposal. The report "Solar Power Options for Mt. San Antonio College", November 2013, states, "The use of the site for solar generation also provides an opportunity for the college to transfer soil from other construction projects on campus", likening the natural hillsides and canyons of the west parcel to a disposal zone. It is believed that the motivating factor and singular reason for the import of fill to the west parcel site is for disposal of dirt from the stadium hill and not the installation solar panels as much as 70 feet above street level. This was an unsound motivation, which has driven poor decision-making affecting surrounding residents, and the quality life and public safety in the City of Walnut.

    a. Hillside Alternatives in Agricultural Zone Unacceptably Impact the Natural Environment

        The hillside alternatives east of the stadium and north of Tempe Avenue result in significant impacts the natural environment. These two alternatives would be fixed ground mounted solar panels on native hillsides surrounding the college, which would result in similar impacts to hillsides as experienced on the west parcel. The UWT organization has not requested the evaluation of these alternatives. The destruction of the natural hillsides and agricultural zone is unacceptable.

        The alternatives evaluation for the hillside sites rely on prorated costs of earthwork. Because of the variable topography in hillside areas, the quantities of earthwork cannot be reliably estimated through prorated quantities. The costs of a linear or uniformly sized facility on flat ground may be prorated to a degree; however, earthwork quantities on variable topography cannot be prorated or relied upon for decision-making.

    b. Lot F is the Environmentally Preferred Alternative and Offers Combined Parking Structure/Solar Panel Benefits

        If located in areas less visible to the public, a parking structure with solar panel system atop would combine the uses of a solar panel system and parking structure, meeting the needs of both, saving land space, and possibly reducing public criticism.

Table 6.6.3 states further states that Parking Lot F is the Environmentally Superior alternative, before mitigation, which is a valid conclusion based on no impacts to habitats, and no aesthetic impacts to native hillsides. Remarkably, this conclusion is inconsequential since decision-making has been based solely on economic benefits, at the exclusion of environmental values.

At a 5.7-acre useable area estimated through Google maps, Lot F site is capable of supporting over 2 MW peak generation capacity with solar panel installations based on our estimate of 2.7 MW per acre, whereas the DEIR has limited Lot F to 1.5 MW peak capacity. From examination of land areas available, equivalent generating capacity to the west parcel can be developed.

c. Lot A (Parking Structure J) Confirms Planning Assumptions of 2.7 MW per Acre for Solar Installations

Based on area availability of 3.4 areas at Lot A, the 1.5 MW DEIR estimates of peak capacity at this location would be accomplished at 2.3 acres per MW. Considering this and results at other parking areas, UWT has used a planning assumption of 2.7 acres per MW.

d. Lot B/B3 (a United Walnut Taxpayer's proposal)

Significant Earthwork Costs Omitted from West Parcel Cost Estimate. The DEIR states that Lot B/B3 is not available because it is reserved for structured parking and is more costly than the west parcel. Should a parking structure be implemented near this area, consideration could be given to canopy mounted panels or solar panels atop a parking structure that could combine land use functions and be less visible from street level. The DEIR conclusion that a canopy mounted panel system is more costly than a west parcel system is false for the following reasons.

DEIR Earthwork Costs. Significant earthwork costs have been omitted from the total cost of the west parcel. For a reasonable cost estimate comparison of the west parcel to canopy mounted solar panels systems, proper grading costs must be included in the west parcel. Specifically, Table 6.6.1 included total grading costs of $1,813,800 and an export saving credit of $1,500,000 if avoiding earthwork exports off-site, for a net earthwork cost to the project of $313,800.

Documented Earthwork Quantifies. Earthwork quantifies of at least 477,500 CY are documented or characterized in the DEIR, including on-site grading (cut/fill) ($177,500 (CY), import from the stadium hill (139,000 CY), landslide removal based on Converse test pit cross sections including bulking (103,000 CY) and a stability key to help stabilize fill slopes including bulking (58,000 CY).

Earthwork Unit Prices. Given the above, it would be necessary to perform all earthworks on the project (477,500 CY) for a cost of $313,800 or at a unit price of $0.66 per cubic yard. This is unrealistic, since the representative unit costs of similar earthwork would be $13-$14 per CY, based on a survey of known contractor bids for similar work (see below).

Applying a realistic unit price of $14 per cubic yard to earthwork quantities of 477,500 CY yields a grading cost of $6,685,000 making the west parcel significantly more costly than solar panels mounted atop parking canopies or parking structures.

e. Lot D/D1 Described in 2015 SEIR May Function More Efficiently as a Combined Parking Structure./Solar Generation System

The 2015 SEIR discusses the benefits of a parking structure on Lot D to "provide parking for vehicles arriving from the south, west or east" and because of close proximity to the campus Primary Instructional zone. Solar panels atop the parking structure favorably combine land use functions of two facilities over a common land area. Solar panels are also less visible if elevated from street level. See the figure below depicting a parking structure with canopy solar panels at the top-level. The facility in the figure covers a 3.7-acre area and at 2.7 MW per acre would generate peak power of approximately 1.4 MW, but is expandable to the east or west to increase generation capacity.

The weight of the canopy structure and solar panels atop the parking structure are within CSB load requirements and require no additional strengthening in the parking structure (telecom. Sassi, 2017), such that costs per acre would be similar to canopy mounted panels at ground level.

Certain Alternatives Comparisons on Table 6.6.3 are False or Misleading

19. Loss of Non-Native Grasslands. Table 6.6.3 states the west parcel would result in the loss of no non-native gasses. This is false. The West Parcel Solar Project Biological Technical Report, May 2017, indicates the west parcel is substantially covered with non-native grasses, while other alternatives (excepting hillside alternatives) have no impacts to non-native grasses.

20. Adverse Impact. Table 6.6.3 makes the over-generalized and questionable statement that the west parcel alternative has no adverse impacts, while all other alternatives have adverse impacts. The west parcel exhibits significant impacts to non-native grasslands, coastal sage scrub, aesthetic impacts as demonstrated above, public safety issues demonstrated by active landslides, and co-mingling truck haul routes with public roadways. These are clearly adverse impacts.

21. Environmentally Superior Alternative. Table 6.3.3 states that the Parking Lot F is the environmentally superior alternative before mitigation, which is a valid conclusion based on no impacts to habitats, and no aesthetic impacts to native hillsides. However, this conclusion is inconsequential since all decision-making is based on economic benefits, at the exclusion of environmental values.

22. Conflicts with Campus Habitat Mitigation Plans (CBW/LUMA). This impact category correctly states that Lot F would not have impacts to the California Black Walnut Management Plan (CBW) and Land Use Management Areas (LUMA).

23. Earth Import Possible. This impact category implies that alternatives that dispose of dirt on the west parcel have beneficial impacts. Specifically, the west parcel project encourages disposal of dirt on its land areas from throughout the campus, which maximizes impacts to native habitats, and to public safety demonstrated by active landslides and co-mingling truck haul routes with public roadways.

Depiction of Lot D Parking Structure with Solar Panel Canopies at Roof Level

Cost Evaluation

24. Summary. The DEIR provides no back up information for the alternatives costs, makes cost adjustments generally beneficial to the west parcel costs but not to other alternatives, and when summing grading costs and export savings reduces grading costs to near zero. UWT has developed independent unit costs of grading which can be applied to major grading quantities and has developed costs of solar panels materials and installation, which together comprises the majority of project costs.

DEIR Assumptions and Cost Adjustments

25. Sensitivity of Cost Assumptions. Certain cost assumptions in Table 6.6.1 are highly sensitive to overall cost and in most cases will change the ranking of the alternatives. The most relevant assumptions and adjustments follow:

    a. Sunk Costs Should be Applicable to All Solar Generation Alternatives. Table 6.6.1 applied sunk costs to all but the west parcel. These costs should be applied to the west parcel as well, since they represent $1.5 million in legal fees of west parcel litigation.

    b. Costs to Export Stadium Hill Dirt Can be Avoided. The assumption that remaining dirt at the stadium hill must be hauled away at a cost to the project could well be erroneous. The remaining dirt, consisting mainly of good quality silty sand with some clay, may be used by contractors for off-site grading and hauled at no cost to the project. Sand and gravel suppliers and truckers may seek sources of earth borrow for customers and haul the dirt free of charge (telecom. WCSG, 2016, 2017).

In any case, a realistic effort should be made to have dirt removed at no cost and not assume it must be hauled at project cost. This assumption significantly changes relative costs of the west parcel versus solar panels mounted atop canopies or parking structures.

c. Cost of the Landslide Identified by Converse (2017) Must be Included in Total Costs. Removal and replacement of large quantities of landslide materials at the west parcel must be included in project costs. If not properly removed and replaced, these areas could experience landslides during construction or operation of the project.

d. SCE Incentives Should be Applied all Solar Alternatives. The cost incentives offered by SCE is a significant benefit to project costs and substantially affects the ranking of alternatives. The DEIR statement that SCE Incentives have been assured to the west parcel project appears to be false. SCE representatives have indicated the Net Energy Metering (NEM 1.0) program that the project is benefitting from expired on July 1, 2017, and has now become the NEM 2.0 Program. Unless applicants had their solar project installed and inspected by July 1, 2017, they will be required to reapply under the NEM 2.0 program. On this basis, any solar installation alternatives has been assumed to receive SCE solar incentive under the new NEM 2.0 program.

26. Prorated Costs of Hillside Grading are Unreliable. Prorated values are legitimate when estimates are made on uniform horizontal installations on relatively flat ground, but lose validity when applied to variable hillside topography where construction requires reasonably accurate cost estimates.

27. Costs of Grading are Unrealistic. Table 6.6.1, Solar Alternative Cost Estimates, states the cost of earthwork on the west parcel is $1,813,800, and that importing stadium hill dirt to the west parcel will result in an export savings of (-) $1,500,000 . The net earthwork costs are therefore $1,813,000 (-) $1,500,000 = $313,800, which given at least 477,500 CY of project grading discussed below results in an unrealistic unit cost around $0.66 per cubic yard.

28. Evaluation of Reliable Earthwork Unit Prices. Based on the unrealistic grading unit prices in the DEIR, an evaluation of grading unit costs based on contractor bid prices was performed to provide reasonably reliable unit costs and total grading costs of the project. The evaluation estimated (1) a mass grading import unit price of $13.76 per CY and (2) a salvage and replacement (cut/fill) earthwork unit price of $14.01 per CY (see below).

Mass Earthwork Import			
Quantity (CY)	Job No.	Contractor Bids Received	Contractor Bid Average Unit Price
70,000 CY	DWR/KSN Job. 1500-0140, July 2013	ASTA, Tiechert, Robert Burns, Granite, San Raphael, AM Stephens, Cal-Nevada, Ford	$10.26 per ton ($14.36 per CY @ 2013 price levels)
201,900 CY	DWR/MBK Job No. 2028-08-12-1	Asta, A.M. Stephens, Robert Burns, Dutra, Mass X, MCI, Tiechert, Woods	$8.91 per ton ($12.48 per CY @ 2012 price levels)
191,900 CY	WGI, 2007	Washington Group, Intl.	$13 per CY @ 2007 price levels ($14.45 per CY @ 2016 price levels)
		AVERAGE UNIT PRICE	**$13.76 per CY**

Salvage, Stockpile and Replace Dirt On-Site			
Quantity (CY)	Job No.	Contractor Bids Received	Contractor Bid Average Unit Price
337,485 CY	WGI, 2006/MWD Task Order, 2006	Washington Group, Intl.	$14.45 per CY ($17.20 @ 2016 price levels **(excavation, haul to stockpile + haul from stockpile, spread, compact)**
1,318, 753 CY	LACPWD, 2015, Job No. FCC00001147	W.A. Rasic Construction, C.A. Rasmussen, Griffith, Ames Construction, Pulice Construction, Shimmick, Myer and Sons	$6.09 per CY @ 2015 price levels **(excavation, haul to stockpile)**
337,485 CY	WGI, 2006	Washington Group, Intl.	$4.45 per CY @ 2006 price levels ($4.92 per CY @ 2015 price levels) **(haul from stockpile, spread, compact)**
		AVERAGE UNIT PRICE	**$14.01 per CY**

29. Total Project Grading Cost: Total project grading costs are composed of the following elements:

Grading Quantities

A description of the grading quantities for construction of the west parcel earthfill is provided in the following table. The quantities were (1) identified in the 2017 DEIR documents and (2) estimated within landslide areas to depths of at least 20 feet (Terrestrial Solutions, Inc. (TSI), June 2017) by D. Majors, P.E. (2017). Background data was reviewed in Converse Consultants study reports (2014, 2017). Streambed materials were recommended for removal and replacement to similar depths (TSI, 2017) and quantities estimated as a separate line item, below (D. Majors, 2017).

Summary of Earthwork Quantities		
Description	Quantity	Source
On-site hillside cut	177,500 CY	DEIR, 2017
Imported fill from stadium hill	139,000 CY	DEIR, 2017
On-site landslide removal, stockpile and replacement fill with 15% bulking, in addition to DEIR 55 feet cut on central hill (consulted DEIR Psomas/Converse mapping, 2017)	103,000 CY	TSI, UWT, 2017
On-site excavation, stockpile and replacement for stability key with 15% bulking (consulted DEIR Converse mapping, 2017)	58,000 CY	TSI, UWT, 2017
TOTAL EARTHWORK QUANTITIES WITH LANDSLIDE REMOVALS	**477,500 CY**	
On-site streambed excavation, stockpile and replacement fill with 15% bulking (consulted TSI, 2017)	109,000 CY	TSI, UWT, 2017
TOTAL EARTHWORK QUANTITIES WITH LANDSLIDE/STREAMBED REMOVALS	**586,500 CY**	

Grading Costs

30. Given realistic unit prices in the range of $14 per cubic yard, and earthwork quantities described above, the total grading cost was determined to be $6,685,000 (see below), making the west parcel significantly more costly than solar panels mounted atop parking canopies or parking structures.

Summary of Earthwork Costs			
Description	Quantity	Unit Price	Cost
On-site hillside cut and fill (SEIR, 2012)	177,500 CY	$14/CY	$2,485,000
Imported fill from stadium hill (DEIR, 2017)	139,000 CY	$14/CY	$1,946,000
On-site landslide removal, stockpile and replacement fill (est. from Converse, 2017)	103,000 CY	$14/CY	$1,442,000
On-site excavation, stockpile and replacement for stability key (TSI, 2017)	58,000 CY	$14/CY	$812,000
TOTAL WITH LANDSLIDE REMOVALS			**$6,685,000**
On-site streambed excavation, stockpile and replacement fill (TSI, 2017)	109,000 CY	$14/CY	1,526,000
TOTAL WITH LANDSLIDE & STREAMBED REMOVALS			**$8,211,000**

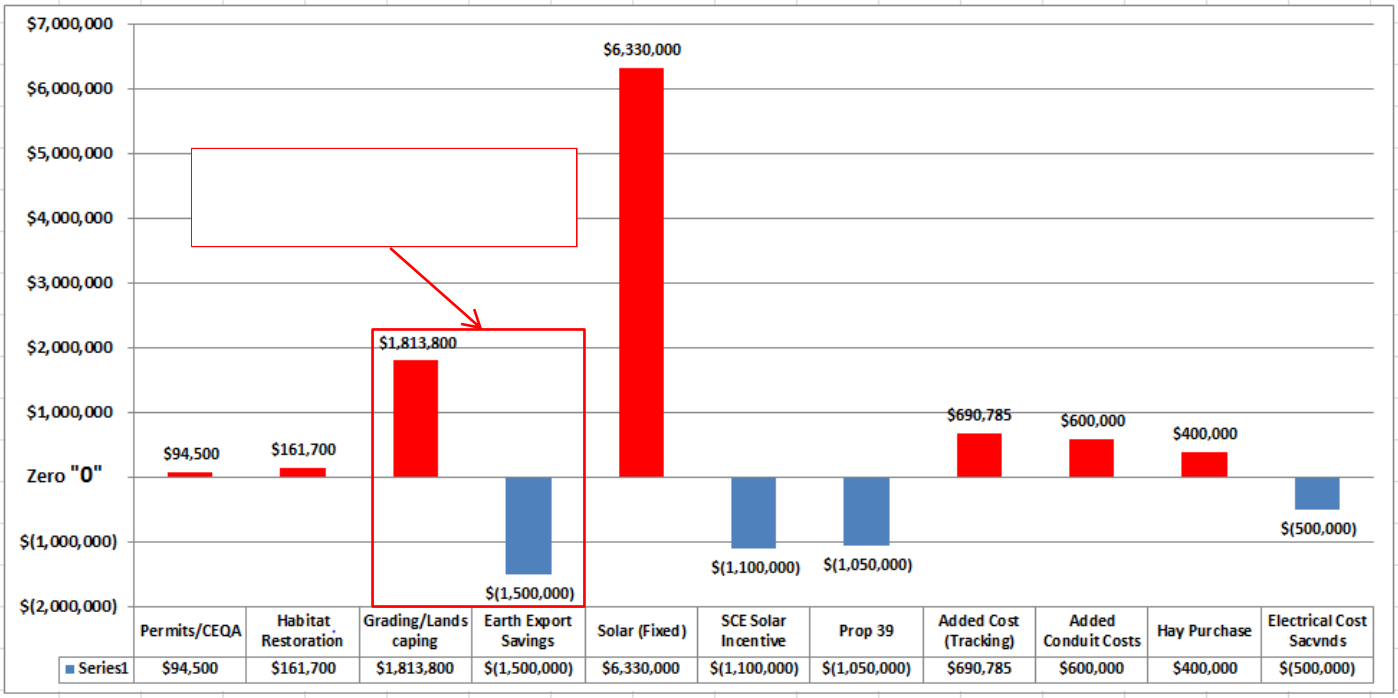
Examination of West Parcel Costs

31. The first chart shows the raw WPSP costs in the DEIR. It includes the various costs adjustments and credits applied by Mt. SAC after the construction costs are developed. The third vertical bar is the grading cost. The fourth bar is grading savings (a negative cost) if the stadium hill dirt is exported to the west parcel and not off-site.

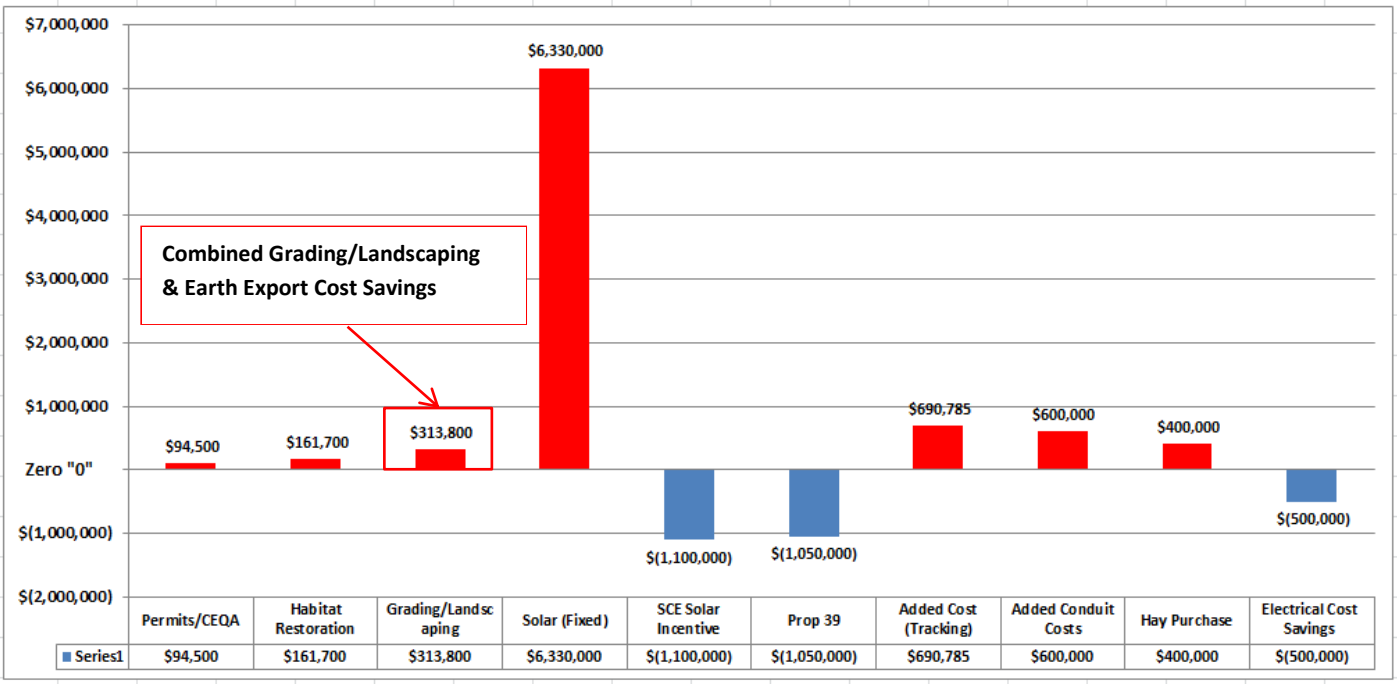
32. The second chart shows what happens when the grading cost and the export savings are combined into a net grading cost. The cost of grading virtually disappears because of combining a positive and a negative cost. As indicated above, it may not be necessary to export dirt off site, which eliminates the export cost savings and results in a further increase to west parcel costs.

33. These costs also do not account for possible additional remediation of landslides associated with High Landslide Potential lands identified on the LA County Engineer mapping for the City of Walnut General Plan and on the California Geological Survey CGS 88-21 Map No. 12 for this region, designating most lands at the west parcel at “close to their stability limits”.

Total Project Cost – West Parcel (DEIR)
Grading/Landscaping & Earth Export Savings



Total Project Cost – West Parcel (DEIR)
Combined Grading/Landscaping & Earth Export Savings



Comparative Cost Studies of Alternatives

General

35. DEIR Table 6.6.1 presents a what appears to be first costs of the west parcel at price levels varying from 2012 to 2016, referencing previous cost estimates with no supporting cost data, solar power installations of differing electrical output, which would make it necessary to compare alternatives on a cost per MW basis.

36. To simplify the comparisons, a representative 2.2 MW peak capacity project at the west parcel is compared to a 2.2 MW peak capacity system of canopy mounted solar panel systems generally near Lot B/B3 or Lots D/D1. In this way, the cost of these alternatives can be compared based on total cost. Either canopy mounted solar systems or solar panels atop parking structures have been shown to fit within these parking areas within or near the Primary Instructional Zone.

37. The alternative that generally ranked above others is the parking canopy mounted solar panels, which is understandable since it requires no grading, substantially eliminates environmental permits, and requires no import of export of dirt, whereas to the contrary, the west parcel requires all of these cost elements.

38. At equivalent electrical output, the principal cost elements to be evaluated are the grading costs and the cost of acquisition and installation of the solar panels, which amount to at least 80% of overall project costs.

Table 6.6.1 Alternatives Cost Comparison (Sensitivity of Cost to Mt. SAC Assumptions)

39. The total project costs depicted on Table 6.6.1 of the DEIR provides inadequate back-up information to evaluate the project costs. As such and as shown above, the development of costs for grading and for canopy-mounted solar arrays have been developed by UWT for comparison purposes.

40. In the chart below, there are 6 pairs of vertical cost bars, each with a red bar (west parcel) and blue bar (parking canopy panels). Per DEIR Table 6.6.1 assumptions, the parking canopies include sunk cost and Prop 39 incentives, but no SCE incentives. In the last column, the effects of adding in SCE Incentives to the parking canopies are shown. Per Table 6.6.1, the west parcel includes no sunk costs, no hay purchase, an export savings credit, Prop 39 incentives and SCE incentives, but virtually no earthwork costs when combining grading/landscaping with earth export savings. Sunk costs, hay purchase costs, grading costs and SCE incentives are progressively added into the cost chart to show the sensitivity of these cost items to total costs and ranking. See the Vertical Bar pairs A, B, C, D, E and F, which displays this process.

    a. Vertical Bars A. The red bar is the west parcel DEIR data. The blue bar is an equivalent power canopy type solar panel option developed by Sunvalley/RBI Solar, 2016 under supervision of H. Sassi, P.E.

    b. Vertical Bars B. Sunk cost and hay cattle feed replacement for loss of hillside grass are added to the red bar, which were left off the west parcel in Table 6.6.1.

    c. Vertical Bars C. West parcel earthwork, landslide removal and dirt import from the stadium, identified in or characterized in the DEIR, are added to the red bar costs. The third set of bars

shows the effects to grading costs by including published earthwork quantities in the DEIR and estimates of landslide removal, multiplied by historical earthwork unit prices locally and statewide. This amounts to at least 477,500 CY and over $6,685,000 in additional costs.

d. Vertical Bars D. Additional earthwork consisting of streambed materials removal and replacement, recommended by Terrestrial Solutions, Inc. (TSI) are added to the red bar.

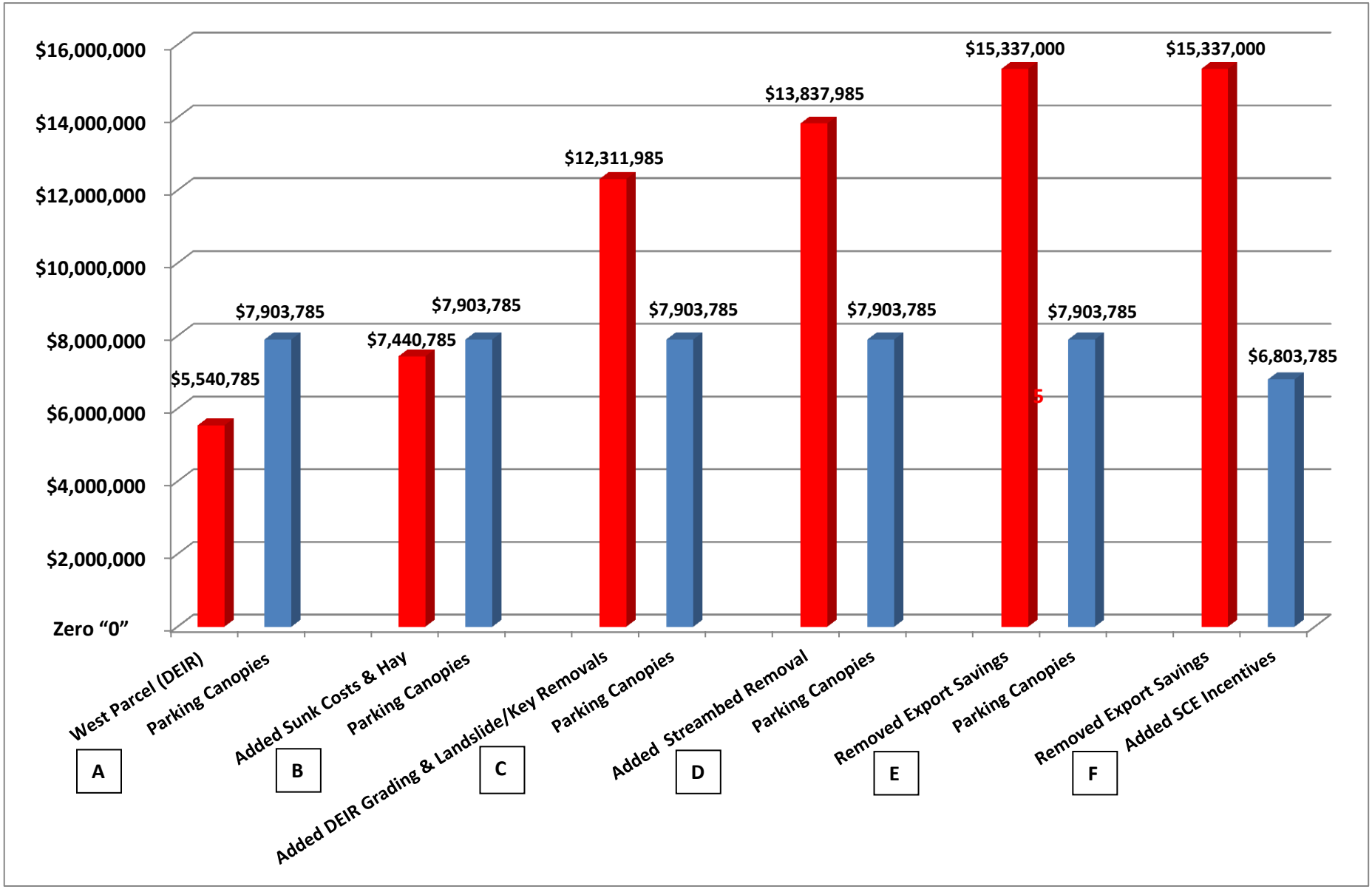
e. Vertical Bars E. Offsite export savings (a reduction in costs applied to the west parcel) are removed from the red bar since methods are available to disposed of stadium hill dirt free of charge though the needs of regional contractors .

f. Vertical Bars F. A credit is added to the blue bar for a SCE incentive program (a reduction in cost) since a new SCE Net Energy Metering (NEM 2.0) program was initiated on July 1, 2017.

41. Within the following table, the total west parcel cost in Vertical Bars C is $12,311,985. This cost includes the cost adjustments and credits applied by Mt. SAC, which if excluded, would yield the hard dollar construction costs of the project equal to $13,271,300. This cost is based on grading quantities from Psomas grading plans and landslide removals characterized in the DEIR. When multiplying these quantities by unit costs of local and statewide contractor bids for similar work and quantities, it produces the $13,271,300 value. This value compares favorably to the $13,723,645 Total Project Budget including Site Improvements and Earthwork identified in the Mt. SAC Board of Trustees Action for Professional and Design and Consulting – added Services (contract Amendments), page 37, October 12, 2016.

42. Economic studies to assess ROI & Payback (Table 6.6.2) have been based on the west parcel project Net Cost of $5,440, 785. Because these costs are considered unreliable as noted above, they should not be relied upon for development of ROI & Payback studies or for decision-making.

Total Project Costs
West Parcel (DEIR) vs. Parking Canopy Mounted Solar Panels



Terrestrial Solutions, Inc. (TSI) Geological and Geotechnical Review Reports

TERRESTRIAL SOLUTIONS INC. GEOTECHNICAL SERVICES

To: United Walnut Taxpayers

June 29, 2017
Project No.: 17-088

Attention: Mr. Dennis G. Majors, Board Member

Subject: Geotechnical Review of proposed Grading of the West Parcel Site for Mount San Antonio College, Walnut, California.

Primary References:
Converse Consultants, 2014, Geotechnical Study Report, Proposed Fill Placement at the West Parcel, Mount San Antonio College, Walnut, California, Project No. 13-31-339-01, dated December 19, 2014.

Psomas, Undated, South Campus Site Improvements – West, Mount San Antonio College. Sheets C0.0 through L3.10 (51 total sheets).

1.0 INTRODUCTION

Terrestrial Solutions Inc. (TSI) has conducted a geotechnical review of the available information and proposed grading at the West Parcel of Mount San Antonio College, Walnut, California. The primary document that was made available for review is a report from Converse Consultants (Converse) dated December 19, 2014. Also reviewed, was an undated grading plan, prepared by Psomas, submitted to the City of Walnut as the proposed grading plan of the site on January 24, 2017, with the ultimate intention of creating a large pad for construction of a solar panel array. It is our understanding that these documents were provided by the City of Walnut for purposes of obtaining a grading permit and represent the latest engineering and geotechnical information that have been received from the project developer, Mount San Antonio College.

The purpose of TSI's review is to assess the information presented in the primary references to determine if they provide sufficient geologic and geotechnical knowledge to provide remedial recommendations for development of the proposed project in a safe manner, and which suitably supports the proposed development while maintaining the integrity of the surrounding properties.

TSI's scope of work included review of the referenced documents, pertinent Aerial Photographs, site visits on March 30, April 12, and June 20, and preparation of this document. The site visit on March 30 included a field reconnaissance into the site through an unlocked and open gate and along a well-hiked trail to the top of the central knob.

11 Wedgewood
Irvine, CA 92620

cell: (949) 201-3388
email: dterrestrialsi@gmail.com

It is TSI's opinion that there are significant deficiencies in the subsurface investigations, discussions, and analysis presented in the Converse report. These deficiencies include: not identifying a significant landslide that is present at the site and formerly impacted Grand Avenue; insufficient geologic information to properly model the site, insufficient liquefaction analysis, and incomplete slope stability analysis which could result in undermining the stability of adjacent residential properties. In our opinion, the Converse report does not meet the minimum standards required by City, County, and State codes/guidelines and standards of practice for a geotechnical investigation of a hillside development in the southern California area. This review report further outlines the deficiencies and the consequences related to them for the proposed project and surrounding properties.

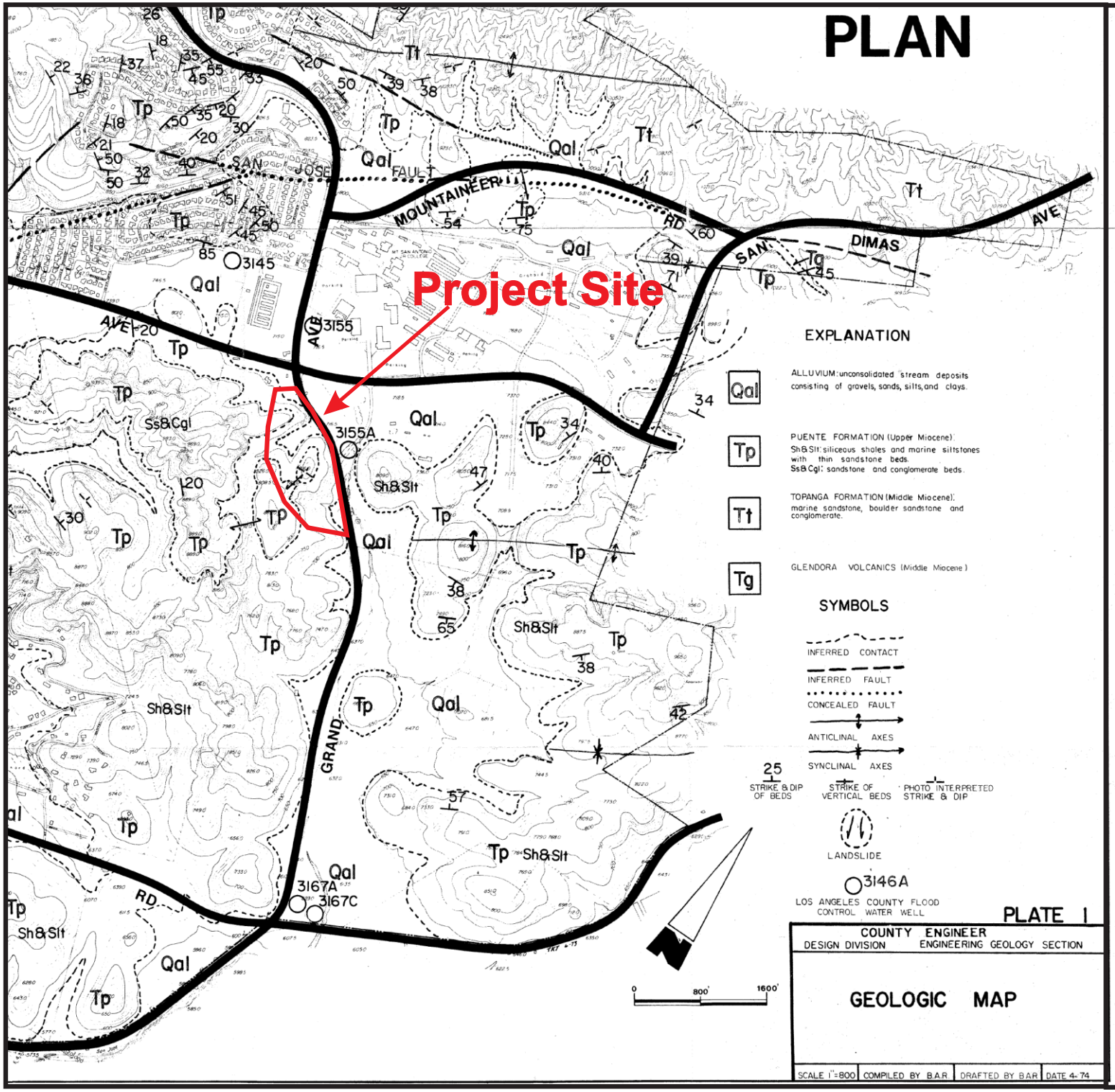
1.1 Site Description

The site is approximately 17.3 acres of undeveloped land, except at the northern end, which was previously graded to create a nearly level pad (Christmas Tree lot). The area proposed for development consists of a central hill area that is surrounded by valleys to the north and the south and a low connecting ridge between the two valleys. This irregularly shaped piece of land is surrounded to the immediate south and west by existing residential developments and to the northeast by Grand Avenue. The existing residential structures are along ridgelines that are directly above and overlook the proposed development.

Review of aerial photographs available from both Google Earth and HistoricAerials.com indicated that, other than the northern most portion, the site has remained relatively unused and undeveloped since at least 1946. A road has existed along the alignment of Grand Avenue since prior to 1946, and apparently was widened and realigned to its current four lane configuration in the late 1970's. The 1980 aerial reviewed indicates a disturbance or clearing of a portion of the east-central hill along Grand Avenue, including a landslide escarpment at the top of the hill. Apparently, the site has been used for cattle grazing in its recent history.

1.2 Proposed Project

The grading plan prepared by Psomas includes cut and fill grading to create a large pad area at an elevation ranging from 758 to 763 feet in elevation. To accomplish this, the pad area will require cutting down of the central hill, approximately 55 feet, and filling in the two valley areas up to approximately 60 feet. A large slope is proposed along Grand Avenue, which includes filling and cutting and is up to 80 feet in height. Two cut slopes are proposed along the northwestern perimeter of the site that are up to 40 feet in height. A fill slope up to 25 feet in height is also proposed along this edge. According to the grading plan approximately 139,000 cubic yards of import fill materials will be necessary to balance the cut/fill volumes proposed on the plan. The plan does not provide an estimate of remedial quantities to remove unsuitable earth materials and/or the corresponding shrinkage/bulking factors that are typically required by reviewing agencies.



Modified From Geologic Map City of Walnut General Plan, Plate I, 1974

Figure 1

Terrestrial Solutions Inc.

The Converse report preceded and therefore, did not review the Psomas grading plans provided to the City of Walnut as a part of a grading plan submittal in 2017. However, Converse did review a plan that was similar in design to the grading plan submittal and apparently developed in conjunction with the 2015 Addendum to the 2012 Facility Master Plan Final EIR. Agencies typically require that the Geotechnical Consultant review the latest plan that is prepared by the project Civil Engineer in case there have been significant changes that require additional analysis.

2.0 REVIEW OF THE GEOLOGIC AND GEOTECHNICAL INFORMATION

The Converse report (2014) was based on 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). Their investigation also included laboratory testing.

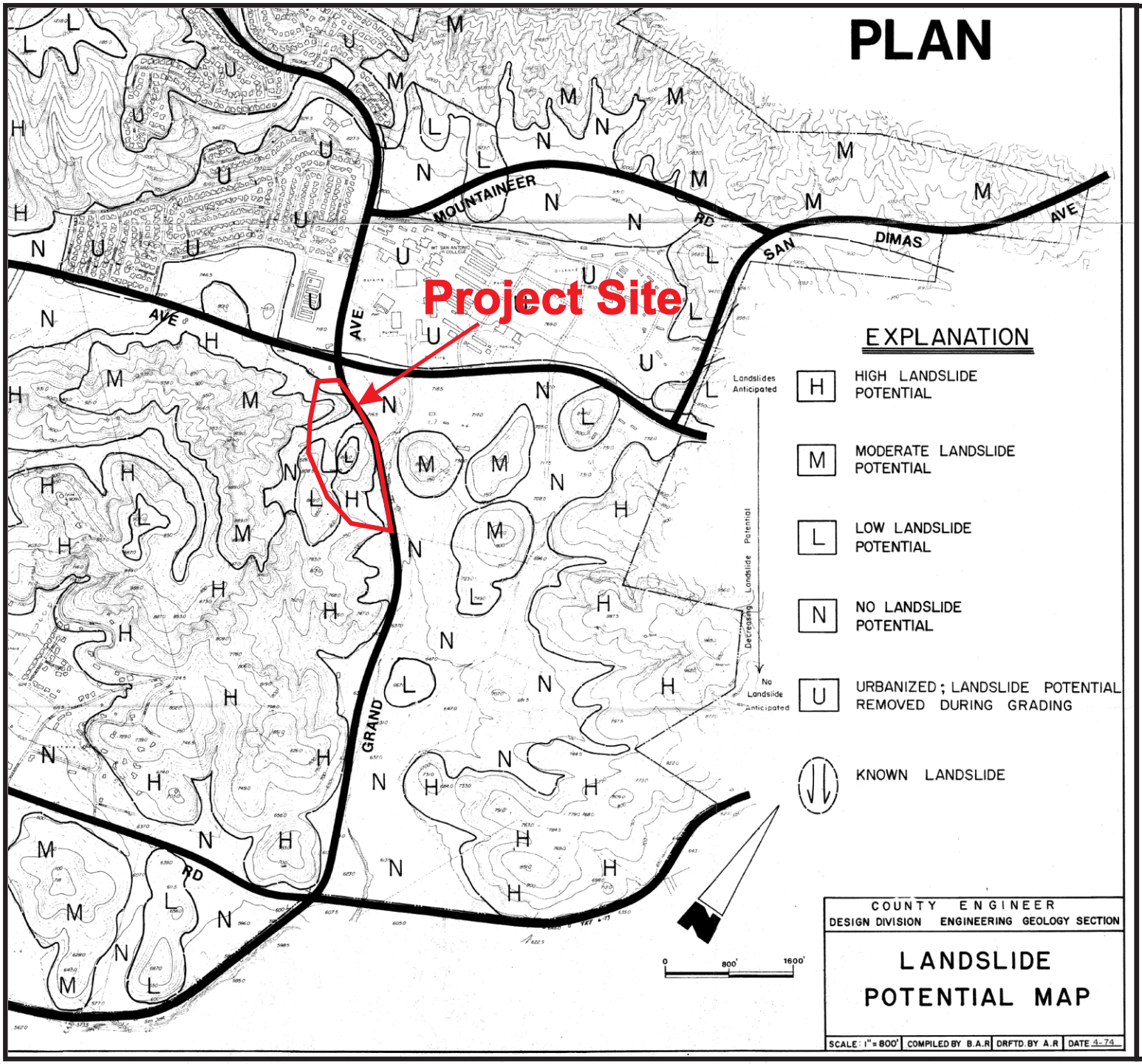
It is our understanding that supplemental trenching and possibly other field investigations were initiated by Converse (on behalf of Mt. SAC) in June 2017. Apparently, these field investigations were terminated by the US and Fish and Wildlife due to conflicts with the endangered California Gnatcatcher breeding season.

A normal review of a geotechnical report would include focused review and comments regarding specific sections of the report that are unclear, deficient in backup data, and/or of interest for other reasons. The Converse report was found to be significantly lacking in a geologic database and resulting geotechnical analysis from which to make appropriate review comments. Therefore, this review is separated into more general discussions of areas/issues of the report where there are significant concerns.

2.1 Geologic Conditions

In addition to the Converse (2014) report, several documents were reviewed by TSI to understand the geologic conditions which underlie the site. These documents include the regional Geologic map by Dibblee (1989), Geologic and Landslide Potential Maps (Plates I and II), generated by the Los Angeles County Engineer for the City of Walnut as part of their General Plan, dated April 1974 (included as Figures 1 and 2), CGS Open File Report 88-21 (Figure 3), and TSI's general knowledge of the subject geologic formations present at the site. The full references for these documents are provided at the end of this report as "Additional References".

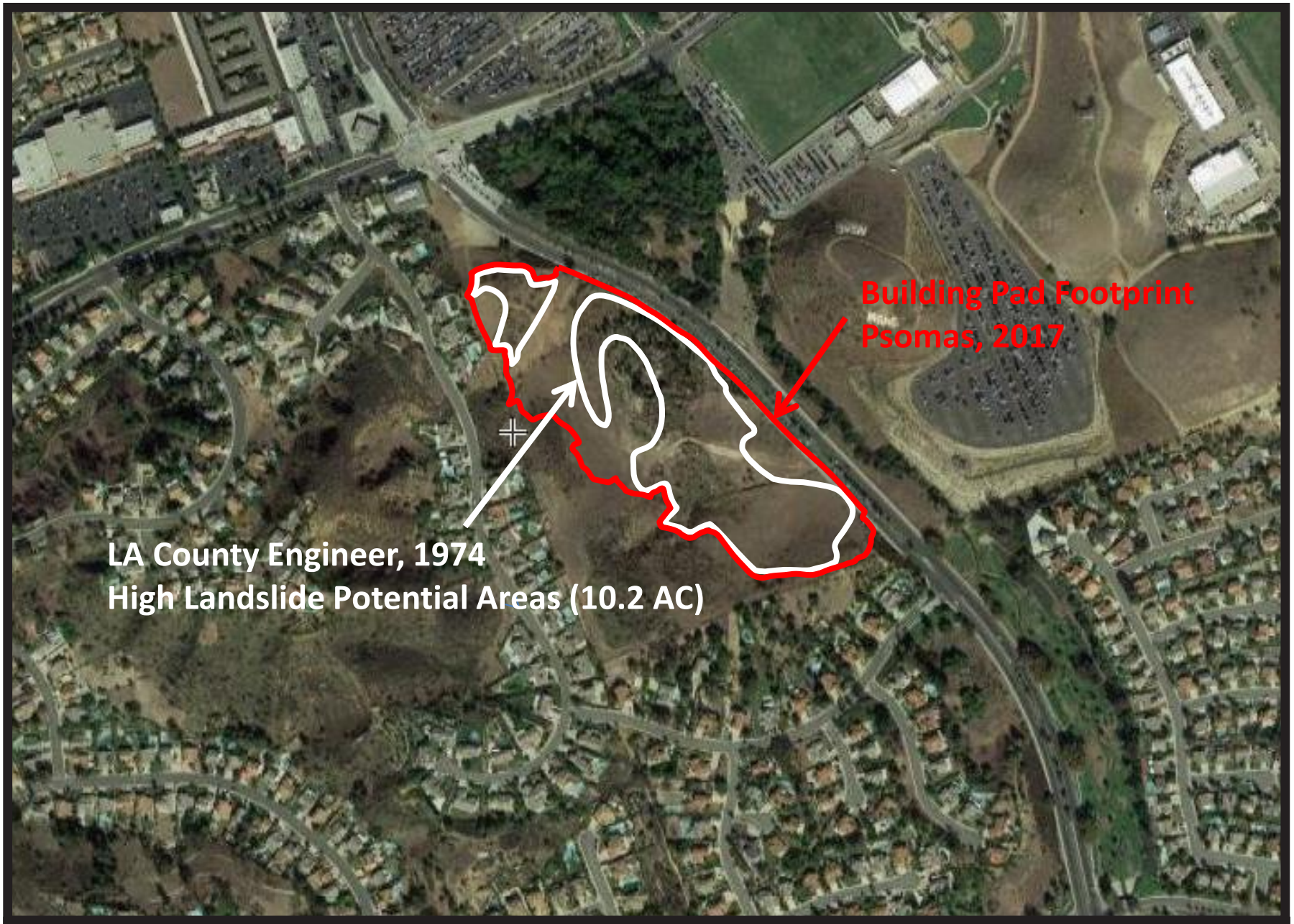
The Dibblee map (1989) was presented by Converse in their report and indicates the site is underlain by bedrock of the Tertiary Sycamore Canyon Formation which is the uppermost member of the Puente Formation, and that bedding is generally striking northwest-southeast and dipping 15 to 30 degrees to the northeast. The surrounding areas are indicated as being underlain by the Tertiary Yorba member of the Monterey (Puente Formation) with similar bedding orientations. According to the Geologic Map (City of Walnut, 1974), the site is underlain by bedrock of the Puente Formation. This map (Figure 1) indicates that the central knob and adjacent hilltops are underlain by sandstone



Modified From Landslide Potential Map City of Walnut General Plan, Plate II, 1974

Figure 2a

Terrestrial Solutions Inc.



Landslide Potential Map
City of Walnut, General Plan,
Plate II, 1974

Terrestrial Solutions Inc.

Figure 2b

and conglomerate, however, the lower portions of the hills are shown as underlain by shales and siltstones. TSI's brief observations at the site indicate sandstone and conglomerates are present as well as shales and siltstone in the central knob area. Where the shale and siltstone was observed, bedding was dipping to the east-northeast approximately 20 to 30 degrees (similar to as indicated by Dibblee [1989]).

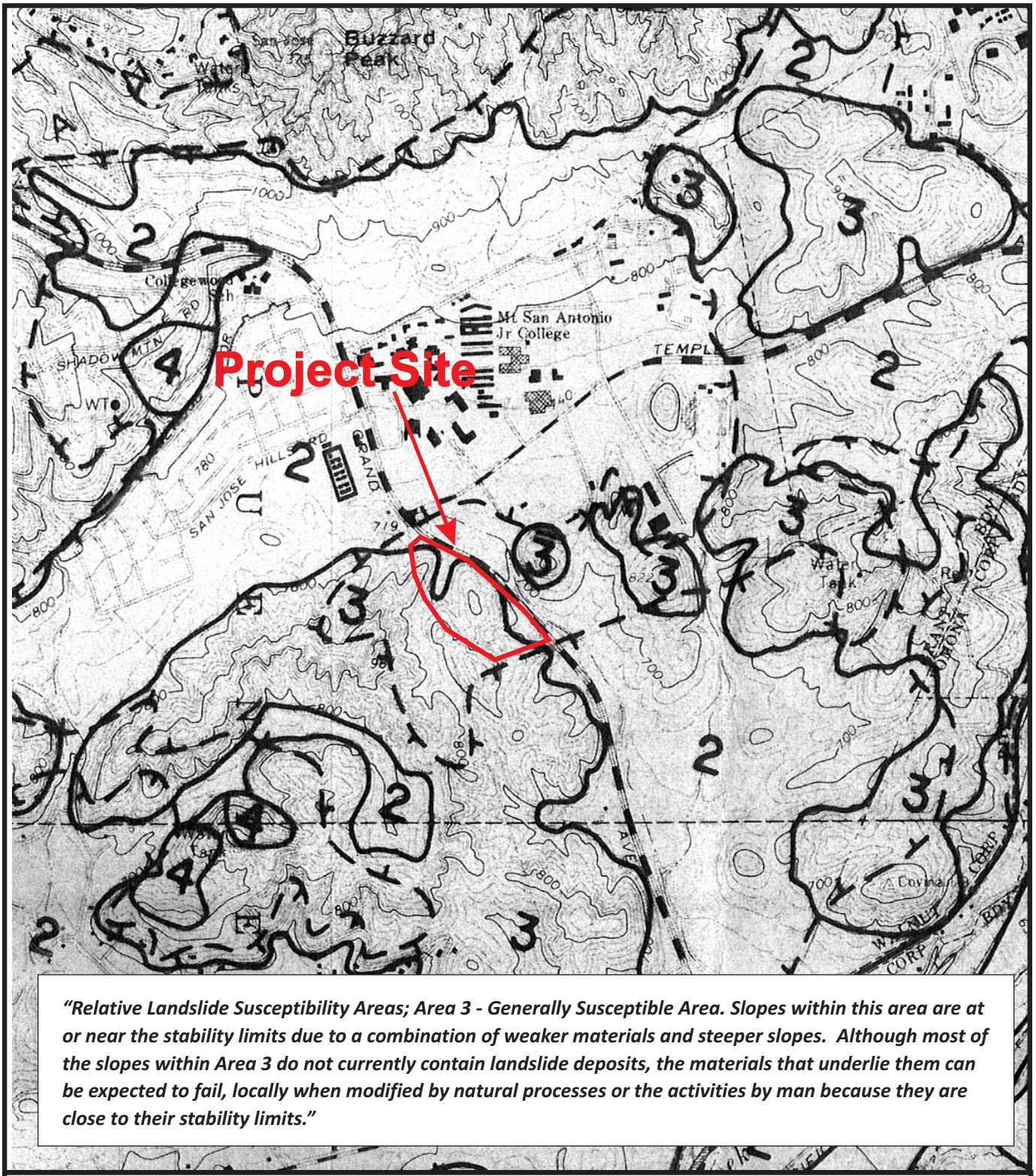
The text of the Converse report indicates, *"the majority of the proposed west Parcel site is underlain by hard, cemented sandstone pebble conglomerate bedrock".* There is no mention within the text of the report of the presence of siltstone and/or shales, which would be indicative of relatively lower strength materials rather than the "*hard, cemented sandstone pebble conglomerate"* cited in the Converse report. A detailed Geologic Map (other than Dibblee's Map) is not presented in the report. The boring logs indicate numerous observations of laminations and bedded siltstones. The cross-sections presented on Drawing No. 4 are referred to in the text (page 6) as Geologic cross-sections, but not labeled so on the drawing. The text indicates that these cross-sections indicate *"interpreted extents and limits of the different earth materials encountered"*. However, only a few notations are made of some of the earth materials encountered. Geologic contacts between the differing geologic materials are generally not indicated and no structural information (such as bedding orientations) are provided. Site-specific geologic structural information is only discussed in the text as it related to a single large-diameter bucket auger boring that was downhole logged. The observations in this boring indicated bedding that was generally striking north10 to 30 degrees east with 8 to 25 degree dips to the northwest. This bedding orientation is nearly opposite of the regional bedding orientations indicated on the Dibblee map and LA County Geologic Map (1974). In addition, Converse's observations from infrequent samples in the small diameter borings indicated bedding which had near horizontal to near vertical dips. These inconsistencies are not discussed in the text of the report or presented on the cross-sections.

The Converse report indicates that the San Jose Fault is located 3.9 kilometers (km) north of the site (Section 5.1). Based on the Dibblee map presented in their report the surface trace of this fault is less than 1.25 km to the north of the site.

2.2 Landslides/Mass Movements:

Converse correctly indicates that, according to official maps published by the State, the site is not located in an area that must be investigated for seismically induced landsliding. However, the Converse report does not reference the LA County Engineer Landslide Potential Map (Plate II, 1974) that indicates portions of the site have a high potential for landsliding (Figures 2a and 2b). In addition, Converse did not reference CGS Open File Report 88-21 that indicates the site is within Area 3 (Figures 3a and b). Area 3 is defined as;

"Relative Landslide Susceptibility Areas; Area 3 - Generally Susceptible Area. Slopes within this area are at or near the stability limits due to a combination of weaker materials and steeper slopes. Although most of the slopes within Area 3 do not currently contain landslide deposits, the materials



"Relative Landslide Susceptibility Areas; Area 3 - Generally Susceptible Area. Slopes within this area are at or near the stability limits due to a combination of weaker materials and steeper slopes. Although most of the slopes within Area 3 do not currently contain landslide deposits, the materials that underlie them can be expected to fail, locally when modified by natural processes or the activities by man because they are close to their stability limits."

Modified from CGS 88-21 Map No. 12.
Landslide Hazards in the Puente and San Jose Hills
1988

Terrestrial Solutions Inc.

Figure 3a

Landslide Susceptibility Areas
CGS 88-21, Map No. 12
1988

Terrestrial Solutions Inc.

Figure 3b

that underlie them can be expected to fail, locally when modified by natural processes or the activities by man because they are close to their stability limits."

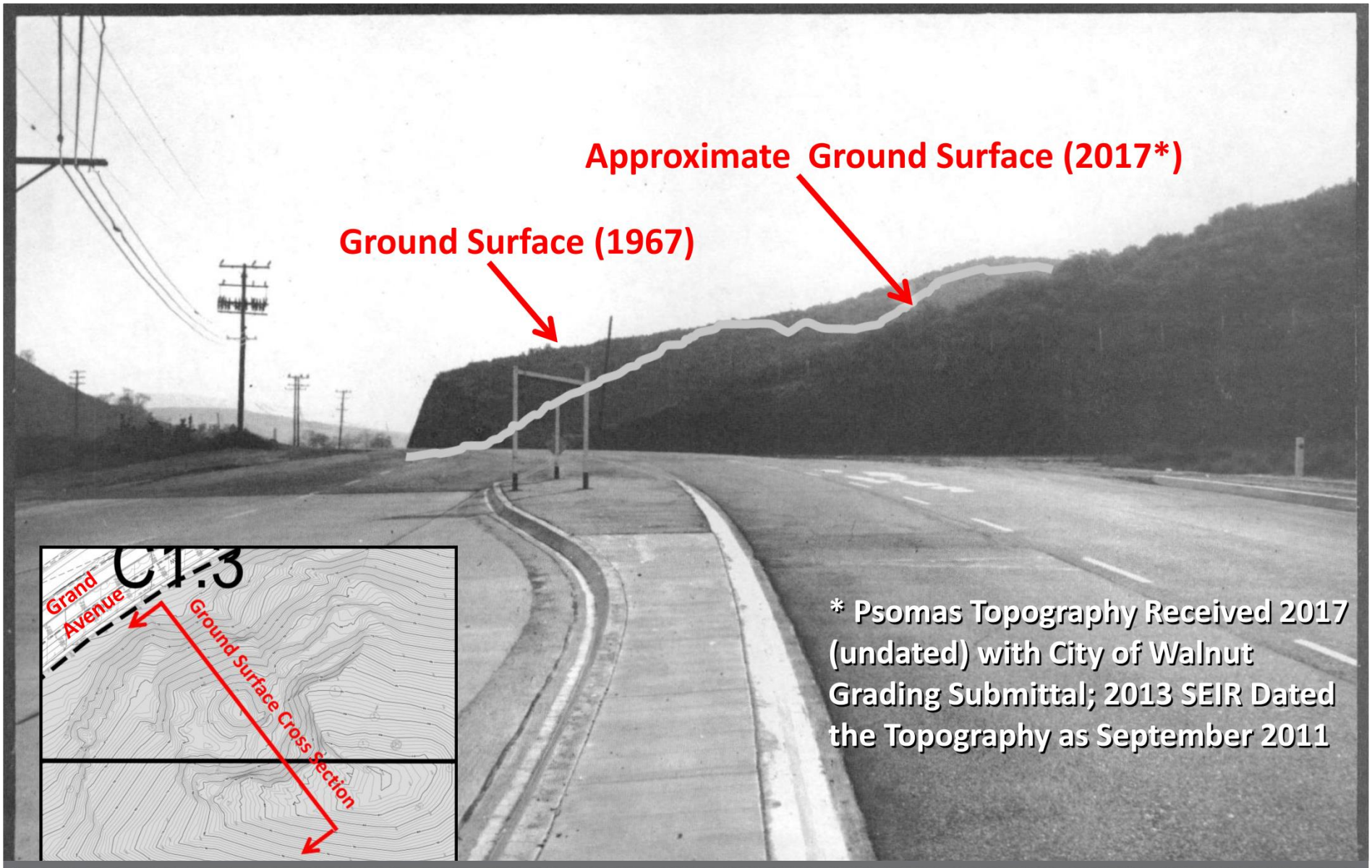
These figures clearly indicate that the proposed project is within areas that were previously determined by governing agencies to have a significant potential for slope instability and landsliding.

No discussion of mass movements/landsliding is provided in the Converse report other than relating to seismically induced landslides. State, County, and City codes/guidelines and standards of practice require a discussion of the potential for landsliding at any hillside site in California. No landslides are shown on any of their maps, cross-sections, or indicated in the text of the report. They also did not reference the LA County Engineering Map (Figures 2a and 2b) and/or the CGS Map (Figures 3a and 3b). Most of the borings excavated by Converse were outside of the areas identified on these maps as having the greatest potential for landslides or slope stability concerns. The known excavations observed on June 20, 2017 appeared to encounter disturbed and irregular bedrock debris in the area of the likely landslide, and thinly bedded, competent bedrock in the one trench located outside the limits of the landslide area.

TSI conducted a brief review of the potential for landsliding at the site. A review of aerial imagery from Google Earth clearly indicates a landslide(s) exists on the eastern side of the central hillside area descending to Grand Avenue (Photo's 1 and 2). This landslide area is present in aerial imagery dating from after 1980 until the present. The presence of this landslide complex was further confirmed based on the brief field reconnaissance on March 30, 2017. In addition, siltstone and shale bedrock with eastward dipping (toward Grand Avenue) bedding was also observed in this area.

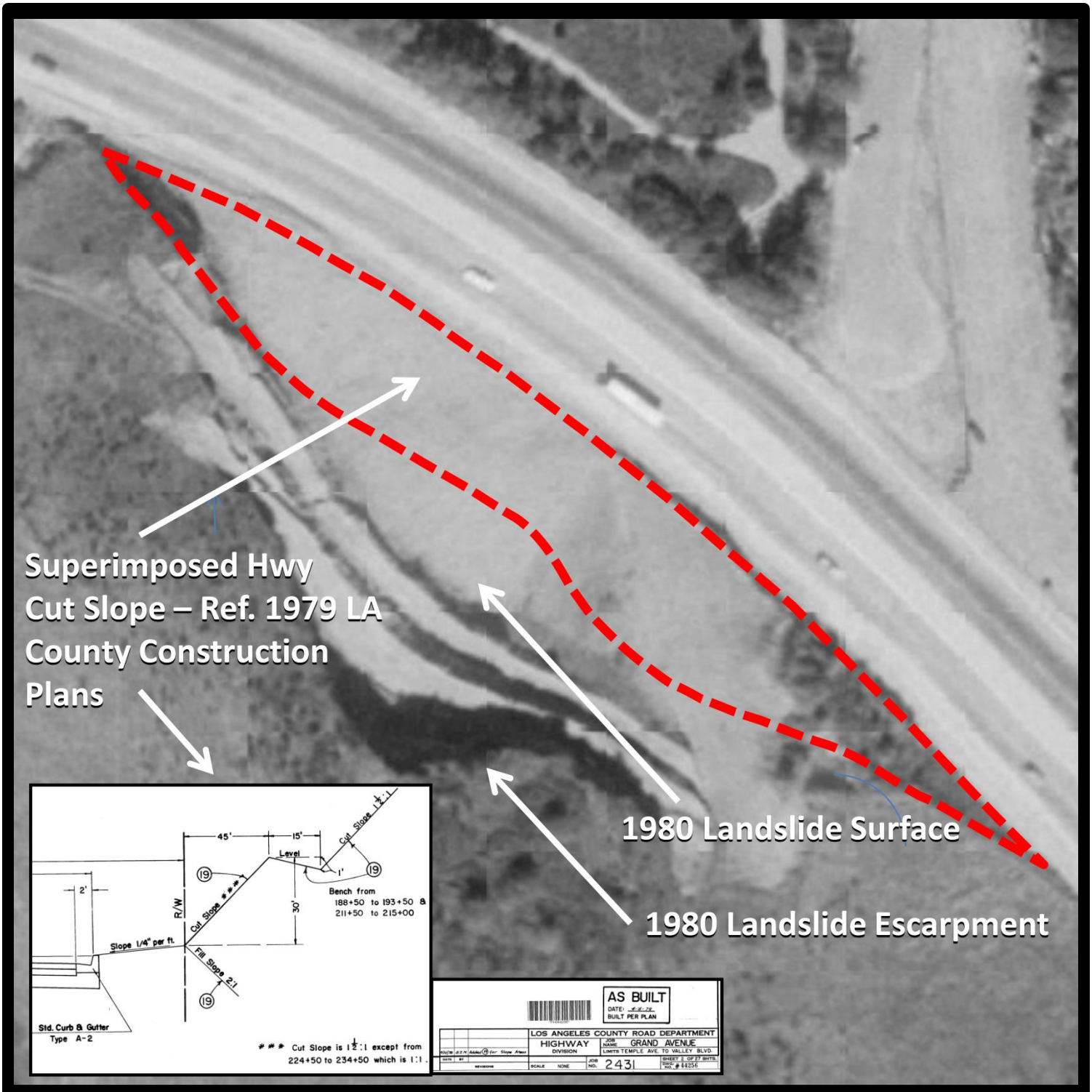
A second site walk was conducted on April 12 with the former mayor of the City of Walnut (June Wentworth). She said that at least two landslides occurred at the subject site after Grand Avenue was expanded to its current four lane configuration in the late-1970's. According to the former Mayor, at least one of the landslides closed the road (Grand Ave.) and covered all the lanes. She indicated that the landslide material was removed from the road and a small wall was constructed to reduce further debris from covering the road at one of the areas. Ms. Wentworth remembers being told by the City's Engineer that *"This hillside area was unstable and should never be developed".* Figure 4 is a compilation of a photograph showing Grand Avenue in 1967 and the current ground surface based on 2011 Psomas topography. This figure clearly shows the pre-grading conditions and that the central hillside area has significantly changed its profile due to the grading and the landslide that occurred. Figure 5 is an aerial view of the area of the landslide in 1980 with the projection of the limits of the initial cut slope based on as built drawings (1979). This figure also shows the limits of the area that failed after the slope was constructed, including the landslide escarpment at the top of the central hill. Photo's 3 and 4 show the current scarp to the landslide in the central hill area.

In addition to the landslide(s) discussed above, review of aerial imagery indicates several geomorphic features in other areas of the site which may indicate landsliding, or potential



Terrestrial Solutions Inc.

Figure 4



Aerial Showing Location of Landslide on Grand Ave. and Footprint of Original Cut Slope

Terrestrial Solutions Inc.

Figure 5

for landsliding. Essentially any of the east facing slopes (below the adjacent existing homes) that are underlain by thinly bedded (laminated) bedding have a potential for landsliding. An analysis of geomorphic features and the potential for landsliding was not provided by Converse.

2.3 Liquefaction

The Converse report identified portions of the site as having a potential for liquefaction according to the state of California (CGS, 1999). Several borings were excavated in these areas. Converse conducted analysis for liquefaction for only one of the borings (BH-15). This boring was located in the southern canyon area where the alluvial deposits were 12 feet in depth. Below the alluvial deposits was bedrock to the total depth. The Converse report concluded that the site was not susceptible to liquefaction and seismic settlement was anticipated to be negligible. Converse did not conduct specific liquefaction analysis for the northern canyon area where both borings BH-1 and BH-2 encountered alluvium to at least the total depth excavated of 21.5 feet. Neither of these borings was excavated to bedrock. Groundwater was indicated at a depth of approximately 19 feet in BH-1 and at a depth of 15.5 feet in BH-2. Neither of these borings were excavated along the axis of the canyon or at the low end of the canyon where the alluvium would be the deepest and groundwater would potentially to be the shallowest. Relatively low blow counts [Standard Penetrometer Testing (SPT)] were encountered in BH-1 at a depth of 10 feet. The observations within BH-1, loose alluvial deposits depicted by low blow counts, deeper alluvium, and shallow groundwater suggests susceptibility to liquefaction and a potential for instability of the proposed overlying earthfill.

2.4 Slope Stability

Converse did not provide specific stability analysis of the proposed or existing slopes in their report. They did comment (on page 7) that the proposed slope near BH-13 would have neutral to favorable bedding attitudes due to the bedding observed in this large diameter boring, contrary to published geologic mapping by Dibblee (1989) and the LA County Engineer (1974).

Geotechnical reports are generally required by reviewing agencies to specifically address the gross and surficial stability of proposed fill, cut, and existing/remaining natural slopes. For fill slopes, this typically includes analysis of the highest proposed slope. The surficial stability is generally based on the earth materials that are proposed for the slope. This analysis was not conducted by Converse.

Most agencies require that proposed cut slopes over approximately 10 feet in height have geologic characterization and specific analysis. This analysis requires sufficient surface and/or subsurface information to indicate the orientation of bedding, other potentially weak planes, and/or discontinuities. When there are out-of-slope geologic features, as are the conditions at this site, specific analysis of these features in relation to the proposed/existing slope is generally required by the reviewing agency. Specific slope stability analysis was not conducted for any slopes at the site in the Converse report.

Most of the proposed slopes lack sufficient geologic information to prepare a geologic cross-section and/or conduct slope stability analysis. In TSI's opinion, the slope of most concern is a cut slope that is proposed in the northwest portion of the site, which is up to 40 feet in height, and is located directly behind several existing homes. Two small diameter borings (BH-5 and BH-6) were excavated in the area of this proposed slope. These borings were sampled approximately every five feet. In both borings, at a depth of approximately 25 feet, siltstone is described as being encountered. The boring logs indicate no apparent bedding was observed in the samples collected. However, these borings were logged by an Engineer-in-Training who is not trained to analyze geologic conditions, and the observations were based on the limited sampling (every 5 feet). The cross-section (A-A', Drawing No. 4), which was prepared for this slope, does not provide geologic interpretations. Regional bedding attitudes and bedding observed by TSI elsewhere at the site indicated a significant potential for siltstone bedding that could dip 15 to 30 degrees out of the slope. The proposed cut slope up to 40 feet in height could potentially remove natural resisting forces to landsliding along these beddings planes and could represent a significant hazard to the offsite properties and existing homes at this location along Regal Canyon Drive.

The slope along Grand Avenue consists of variable cut, fill, and in some locations, fill over the existing slope. As discussed earlier, the central hill portion of the site along Grand Avenue is underlain by a landslide. The proposed cut slope in this area will most likely not remove all the landslide debris, and the underlying cause(s) of the landslide. The geologic conditions (including the presence of the landslide) have not been modeled by Converse for the differing conditions along the length of this proposed slope. No specific stability analysis was provided for any of this variable slope which is nearly 2000 feet in length and up to 80 feet in height. Grand Avenue is a major roadway within the City of Walnut and is located at the toe of this proposed slope. Therefore, understanding the stability of this slope is a critical aspect of this project.

Temporary slope conditions have generically been addressed by Converse (Page 29, Section 10.1). However, due to the potential for weak out-of-slope bedding and other potential discontinuities, proposed temporary conditions remain a hazard and have not been suitably addressed by the Converse report. Specifically, out-of-slope weak bedding planes (siltstone and shale) may be encountered for any east-facing slope where remedial removals and/or proposed cuts for keyways are proposed.

2.5 Remedial Removals

According to the Converse report;

"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 subdrains."

This statement is difficult to interpret and is not well defined as to the precise depths and/or criteria for remedial removal in the canyon bottom area. A definition of "loose and

unsuitable soils" is not provided within the report. Since the alluvial deposits are greater than 21.5 feet (BH-1 and BH-2) in depth, removal of unsuitable alluvium may be a significant issue as it relates to earthwork quantities and overall stability and cost to the project. Deep removals on the order of 20 feet or more may also result in destabilizing the adjacent natural slopes and could become a significant issue as geologic conditions are properly modeled. For example, the removal of alluvium at the south end of the project, could destabilize the adjacent properties and homes along Stonybrook Avenue (due to the potential for out-of-slope bedding within the bedrock).

If alluvial deposits are left in place beneath the deep fills proposed, then there may be significant settlement within the alluvium which could affect the proposed structures. Discussion and/or analysis of these conditions should have been provided in the report.

Page 19 indicates that soft, yielding soil conditions may be encountered. However, the report does not further elaborate where these conditions may occur. It is TSI's opinion that the extent of soft, yielding soils should be explicitly defined to address other potential impacts of these conditions.

Removal of alluvium along Grand Avenue, where the alluvium will be the thickest, has not been discussed and/or modeled. If alluvium is left in place adjacent/beneath Grand Avenue and additional filling is proposed over the alluvium, then there is potential that this condition will result in settlement under the proposed earthfill as well as induce settlement beneath Grand Avenue. Settlement of Grand Avenue and the underlying major utilities that likely exist within the road prism may be a significant issue. A discussion of this potential condition was not discussed or analyzed in the Converse report.

Remediation of the landslide materials that exist within the central hillside area, and other areas of the site, will consist of total removal of the landslide debris to competent bedrock. In addition to normal remedial removals a thorough evaluation, including subsurface investigations, of the underlying weak bedrock conditions must be conducted to determine the width and depth of a shear key that will likely be necessary to stabilize the proposed development. The Converse report indicated that a "Fill Slope Stabilization Keyway" was necessary for portions of the site (Drawing No. 2). However, their key was not based on specific slope stability analysis and was not recommended for cut slopes and/or areas of landsliding or potential slope stability issues.

2.6 Inconsistencies between Boring Logs and Laboratory Data

The boring logs for BH-1 through BH-22 describe the variable earth materials that were encountered at the site, and also present moisture and density information based on the collected soil samples. In many cases the description of the materials encountered appears to be inconsistent with the laboratory testing results. Typically, sand and gravelly sand has relatively higher dry densities and lower moisture contents than a clayey material. In borings BH-12, through BH-15, BH-17 through BH-19, BH-21, and BH-22 the moisture content within many of the samples tested ranged from 23 to 42 percent with dry densities often below 99 (pcf). These materials were often described/depicted as conglomerate and/or sandstone on the boring logs. This

combination of relatively high moisture content in conjunction with relatively low density is not typical of granular sandy materials. It is much more typical of clayey or even diatomaceous materials (common within the Yorba member of the Puente Formation). Converse does not provide a discussion of this unusual condition and the potential impacts if these materials are present near finish pad grades or are used within the fill materials near finish grades. If diatomaceous materials are present at the site, these materials are often very difficult to compact to project specifications, because they are highly sensitive to the moisture content. These earth material characteristics should have been discussed in the Converse report.

2.7 Subdrains

On Page 19 of the Converse report, recommendations for canyon bottom subdrains are provided and the approximate locations are indicated on their Drawing No. 2. The report recommends that Class 2 permeable (Caltrans) materials be used to surround the recommended subdrain pipe without filter fabric surrounding the system. While many agencies accept the use Class 2 materials, most agencies require the use of filter fabric around the gravel drain rock that surrounds the recommended pipe. This is because over time fine materials may clog the gravel drain rock (even Class 2) without the use of the filter fabric. As proposed by Converse, the potential for the long-term performance of a canyon type drain can be compromised. In addition, with remedial removals, the project requires pre-determined elevations and locations for the proposed canyon subdrain outlets and an indication how remedial removals may impact the proposed subdrain locations.

2.8 Perimeter Fill Slopes

The Converse report recommends constructing perimeter fill and cut slopes using a 2 to 1 slope cutting/benching technique where small vertical slopes are etched into these otherwise graded or natural slopes. While this method may have been based on recommendations by an environmental consultant (Helix), TSI believes that these benched slopes are very difficult to construct and result in preferential paths of erosion due to irregularities in the earth materials that the benches are cut into. Once erosional paths are formed in a slope then the erosional path expands and may undermine the integrity of a slope and/or adjacent slopes.

3.0 DEFICIENCIES AND CONSEQUENCES

TSI has reviewed the geotechnical report prepared by Converse (2014) regarding the subject project. Our review of the geotechnical report has discovered many very significant deficiencies in the baseline geologic data and geotechnical analysis. This has resulted in conclusions that are not well supported. In some cases, there is no discussion and/or analysis of significant issues that could impact the stability and safety of the subject site and equally important, the adjacent offsite properties, homes, and Grand Avenue. The primary deficiencies and consequences include:

- Geologic Model – Insufficient surface and subsurface information is available to determine/model the earth materials that are present, and the geologic structure throughout the site. The subsurface explorations conducted by Converse placed a

substantial number of boring holes outside of areas with high landslide potential and areas of potential slope instability depicted on the LA County Engineer Landslide Potential Map (1974) and California Geological Survey (CGS) Open File Report 88-21 Map No. 12 (1988). Data is lacking to create a geologic map and geologic cross-sections that illustrate the site geologic model. The report lacks subsurface data obtained from direct observations of excavations (borings and/or trenches) by a competent geologist. Most of the borings were logged by an Engineer-in-Training whom is not qualified to properly characterize bedrock conditions. Where slopes are proposed, large-diameter borings, that are downhole logged, are lacking which is the best method for observing subsurface geology and geologic structures. The existing small diameter borings indicated bedding that varied from near vertical to near horizontal. However, regional geology maps indicate bedding that dips uniformly to the east-northeast. No explanation is provided as to why there are changes in bedding (geologic structure) contrary to published geologic mapping. Faulting is not investigated and explained. If there is folding then the fold axis has not been modeled and explained. The lack of a proper geologic models has led to a lack of identification of potentially significant geologic hazards. The result is that the proposed project is likely unstable as proposed and more importantly may undermine the stability of the offsite properties including the adjacent residential properties and Grand Avenue.

- A discussion of existing, and potential landslides at the site including mitigation was not presented in the Converse report. The obvious, existing landslide at the center of the site was not identified and therefore, was not properly investigated and modeled. Geologic cross-sections were not prepared to show the subsurface projection of landslides and stability analyses were not conducted to determine if remedial measures were feasible. Geomorphic features that may represent potential landslides were not investigated and/or analyzed.

- General slope stability modelling and discussion was not provided, especially regarding the slope along Grand Avenue, the proposed cut slope below the existing homes, and the natural slopes of the project. These areas may be underlain by unstable bedrock. Based on the small diameter borings bedding is variable throughout the site. Where remedial removals are recommended, these removals may further undermine the stability of existing slopes on a temporary or long-term basis. Further, subsurface data should be obtained from direct observations of excavations (borings and/or trenches) by a competent geologist. Significant laboratory testing and analysis was omitted that would provide appropriate shear strengths of the anticipated shale, siltstone, potential weak bedding, and landslide rupture surfaces. Without comprehensive stability analyses under both static and dynamic conditions, the geotechnical integrity of the proposed earthfill and impacts to offsite properties cannot be determined.

- Liquefaction was only discussed in relation to the southern canyon area and one boring within this canyon. The northern canyon is larger and has deeper alluvium than the southern canyon leaving significant deficiencies in the liquefaction analysis. The total depth of alluvium was not modeled or investigated near Grand Avenue within the northern canyon. Additional Investigation should conducted to determine the total depth

of alluvium and to obtain subsurface information for the full length of the canyon which is necessary for a proper liquefaction evaluation and determination of remedial removals and the settlement characteristics of any alluvium proposed to be left in place. The use of CPT methods and rotary wash drilling are the most appropriate methods for gathering subsurface information below groundwater. Given the identified potential for liquefaction (State Maps), the lack of a sufficient liquefaction analysis, and the limited data provided, the stability of the proposed earthfill, and the long-term integrity of Grand Avenue cannot be demonstrated.

- Remedial removals were discussed however, estimated depths of removal and the criteria to determine when removals are sufficient were not provided. It is likely that remedial removals in the northern and southern canyons could exceed 20 feet in depth. The remedial removals of the landslide in the central knob area are also likely to exceed 20 feet in depth. The key to stabilize the cut and fill slope along Grand Avenue and the unstable landslide conditions will also generate significant remedial removals/keyways. It is likely that the required remedial removals will include 100's of thousands of cubic yards of removal and re-compaction. The remedial removal quantities have not been discussed in the Converse report or provided on the grading plans (Psomas). Typically reviewing agencies require a summary of the remedial quantities in order to assess the proper agency fees and provide an accurate schedule of grading.

- Remedial Removal depths of can affect many other issues including total and differential settlement, potential for collapse, and the stability of existing slopes. A remedial measures map is typically included in a grading plan review report, but was not present in the Converse report. The remedial map would typically indicate all the recommended remediation necessary for safely grading the site.

4.0 SUMMARY

It is TSI's opinion that there are significant deficiencies in the subsurface investigations, discussions, and analysis presented in the Converse report. In our opinion, this report does not meet the minimum standards required by City, County, and State codes/guidelines and standards of practice for a geotechnical investigation of a hillside development in the southern California area. Because of these deficiencies, the proposed project could result in unstable conditions that could significantly undermine the stability of the proposed project and offsite properties. As presented, the proposed project could also result in significant negative impacts to Grand Avenue.

It is TSI's opinion that significant additional surface and subsurface investigations are necessary to properly characterize/model site conditions. These subsurface investigations must include direct observation of geologic features by a Professional Geologist and Engineering Geologist. Further geotechnical investigations and analysis are likely to reveal other significant issues that have not been identified in this review that require further analysis and mitigation.

Terrestrial Solutions Inc. appreciates the opportunity to present this report. Should you have any questions, please contact the undersigned at (949) 201-3388.

Respectfully submitted,

Terrestrial Solutions Inc.

Don Terres, President, Principal Geologist
PG 4349, CEG 1362, Reg. Exp.: 01-31-19

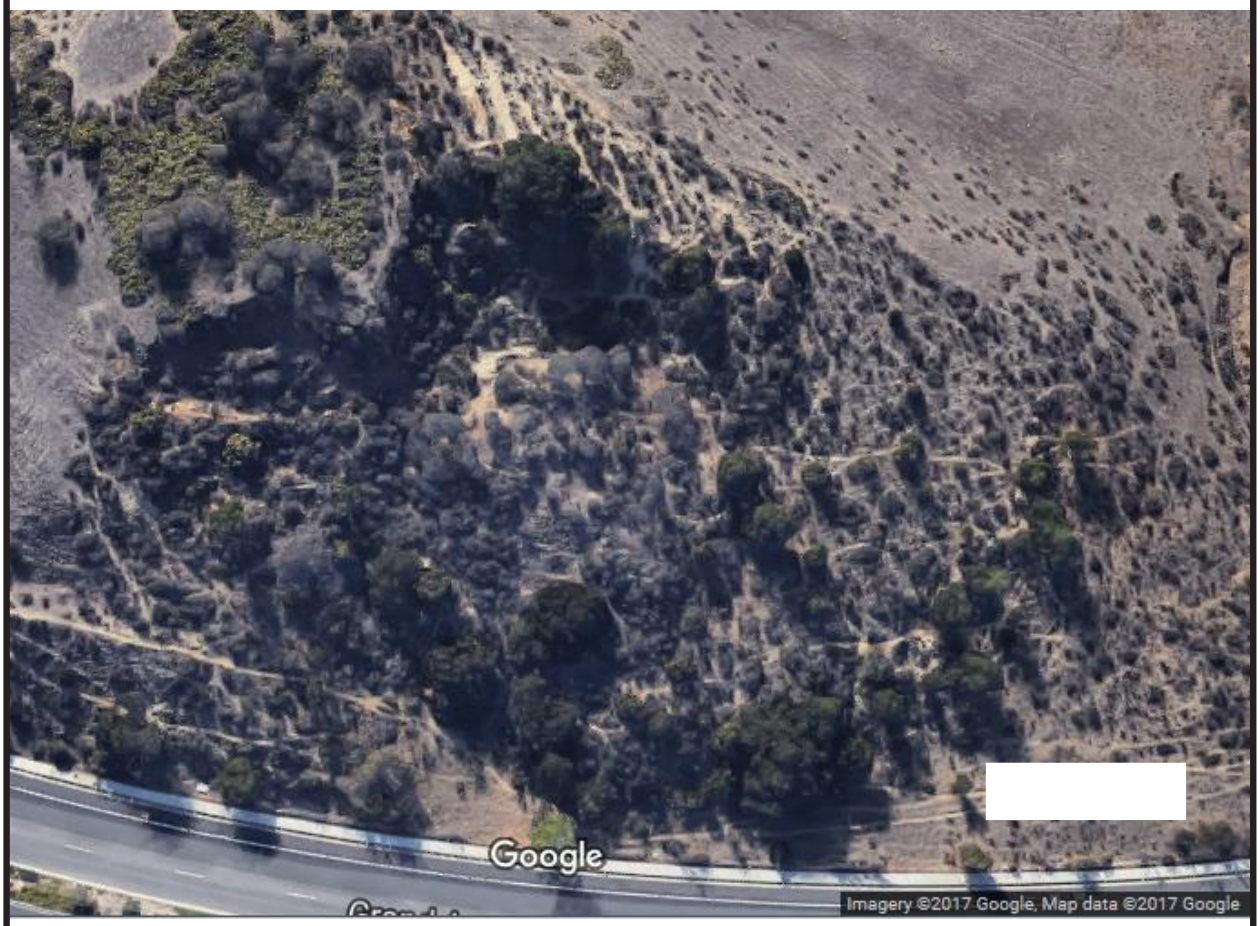
Additional References:

California Geologic Survey (CGS), 1988, Landslide hazards in the Puente and San Jose Hills, southern California, Open File Report 88-21, edited by Tan, S., 1988.

DIBBLEE, T.W. and MINCH, J.A., 2002, Geologic map of the San Dimas and Ontario Quadrangles, Los Angeles and San Bernardino Counties, California: Dibblee Geological Foundation DF-91, scale 1:24,000.

City of Walnut, General Plan Plates I and II, Prepared by the County of Los Angeles, dated April 1974.

Central Hill Landslide Area (close up and broader view)



East Side of Landslide
Escarpment (February 11, 2017)

Photo 3

West Side of Landslide
Escarpment (February 11, 2017)

Photo 4

Terrestrial Solutions Inc. Geotechnical Services

To: United Walnut Taxpayers

August 31, 2017
Project No.: 17-088

Attention: Mr. Dennis G. Majors

Subject: Geotechnical Review of Converse Report concerning The West Parcel Landslide, Mt. San Antonio College West Parcel Solar Project, Walnut, California.

Reference: Converse Consultants, 2014, Geotechnical Study Report, Proposed Fill Placement at the West Parcel, Mount San Antonio College, Walnut, California, Project No. 13-31-339-01, dated December 19, 2014.

Converse Consultants, 2017, West Parcel - Landslide Toe Test Pit Trench Study, Mt. San Antonio College West Parcel Solar Project, Walnut, California, Converse Project No. 13-31-339-30, dated July 27, 2017.

Terrestrial Solutions Inc., 2017, Geotechnical Review of proposed Grading of the West Parcel Site for Mount San Antonio College, Walnut, California. Project No. 17-088, Dated June 29, 2017.

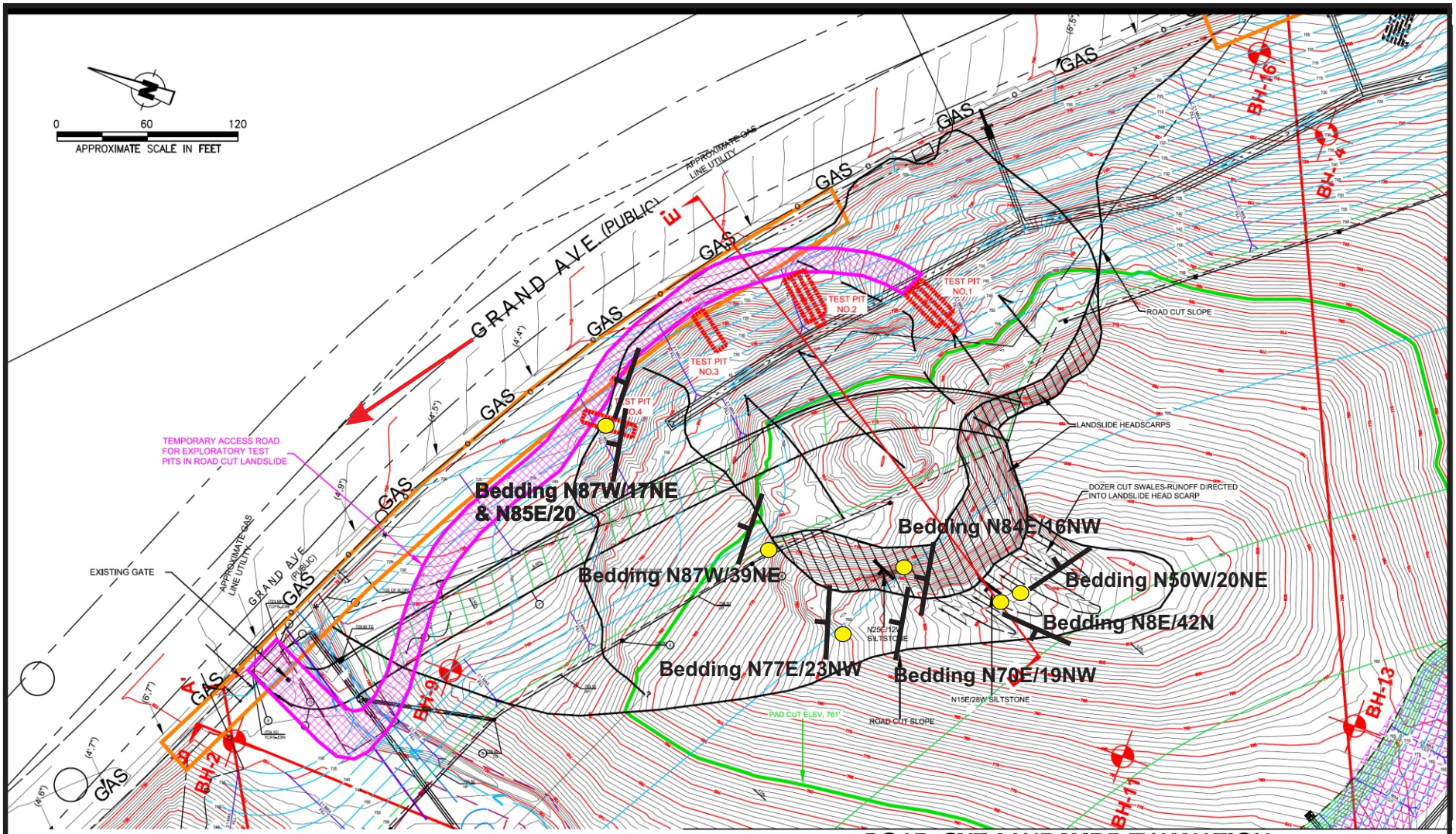
Terrestrial Solutions Inc. (TSI) has conducted a geotechnical review of the referenced 2017 Converse Consultants (Converse) document regarding an investigation of the West Parcel Landslide adjacent to Grand Avenue. This review is supplemental to the review conducted by TSI (2017) regarding the referenced 2014 Converse report. The purpose of this review is to determine if there are geotechnical issues which have not been sufficiently addressed, and/or could result in unstable conditions both for the proposed development and/or for adjacent offsite properties.

Converse Investigation:

Converse excavated 4 test pits in the area immediately adjacent to Grand Avenue where TSI (2017) previously identified a landslide. Converse had not indicated this landslide in their 2014 report. The logs for these trenches are presented at the end of their report and the locations are indicated on their Drawing No. 1 (see Figure 1). They also added two bedding attitudes to Drawing No. 1 located outside the limits of the landslide. A cross-section line is shown on this drawing but the cross-section was not presented in the report. It is our understanding that Converse did not have a permit to conduct destructive field activities (excavation of test pits) and therefore, the trenching program was halted by enforcement agencies. A test pit was still open at the time when a representative visited the site. It appears that the open test pit is in the Location of Test Pit No. 4 (Converse, 2017). The reviewed report is apparently supplemental to their previous report (Converse, 2014) although they do not specifically say that it is.

11 Wedgewood
Irvine, CA 92620

office/fax: (714) 505-2472
cell: (949) 201-3388
email: dterrestrialsi@gmail.com



ROAD CUT LANDSLIDE EVALUATION

Converse Consultants

WEST PARCEL
MT. SAN ANTONIO COLLEGE
WALNUT, CALIFORNIA

Project No.	Drawing No.
13-31-339-02	1

Bedrock Bedding Attitude by TSI

Bedding N77E/23NW

Modified From Converse Drawing No. 1

Figure 1

Terrestrial Solutions Inc.

Summary of Converse Report Data/information:

The Converse report identifies a landslide in all four of the test pits excavated, and Drawing No. 1 has several lines possibly indicating the limits of the landslide or several landslides. The limits of the landsliding is unclear because not all lines are labeled and no legend is provided for Drawing No. 1. Four arrows are shown that likely indicate the direction of landsliding (one or two landslides) however, in the area of Test Pit No. 4 there are no arrows and the line which may show the limits of landsliding is discontinuous to the west and ends with a question mark. An area that is indicated as landslide headscarp is indicated on Drawing No. 1. There is no discussion in the text of the report regarding multiple landslides, multiple pieces of the same landslide, or the limits of landsliding.

All four test pits indicate that a landslide slip plane was encountered and that the bottom portion of the test pit encountered bedrock. There were no slip plane attitudes indicated in the trench logs, or descriptions of the slip plane (except possibly Test Pit #3). Bedding attitudes were noted within the bedrock in all four of the trenches. The bedding attitudes were variable within the test pits. However, within Test Pits 2 through 4 most of the bedrock bedding attitudes had nearly east-west strikes with dips ranging from 12 to 21 degrees to the north. In Test Pit No. 1 the bedding attitudes had a strike ranging from north 52 to 65 degrees east and northwesterly dips ranging from 12 to 22 degrees. The two attitudes near the headscarp had strikes that ranged from north 15 to 25 degrees east with dips of 12 and 28 degrees.

Converse (2017) Findings/Conclusions/Recommendations:

Converse concluded that the landslide observed occurred in the late 1970's due to previous grading activities and was likely triggered by higher than normal rainfall. In addition, they conclude that cuts made above the landslide channeled water into the headscarp area. They stated that the landslide has not been repaired and that it has continued to grow/move since the initial movement. They also conclude that additional movement is possible and it poses a potential hazard to Grand Avenue.

Converse provided recommendations to be implemented during rough grading of the site in relation to the landslide. Their recommendations repeated throughout the report included total removal of the landslide material and construction of a key near the toe of the slope. They indicate that the size, width and depth of the key will be increased during grading to remove the disturbed landslide deposits as necessary. They also indicate that subdrains will be installed to prevent build-up of hydrostatic pressure behind the compacted fills. There is no mention of conducting slope stability analysis or that a specific factor of safety will be achieved.

The Converse report also states that "the proposed grading of the West Parcel Solar Project will improve the overall slope stability along the west side of Grand Avenue and for the adjacent offsite properties and the homes along the west side of the property".

TSI review of the Converse 2017 Report:

The Converse (2017) report was specifically titled as addressing the West Parcel Landslide above Grand Avenue that was previously observed during our brief site visits on March 30, April 12, and June 20, 2017. This landslide was not indicated in the previous Converse report (2014). The recent report has many inconsistencies with their previous report and does not provide sufficient information and/or analysis to provide a conclusion whether or not the designed project will result in a stable slope condition. TSI's review will address the significant areas where there are inconsistencies, a lack of data, and/or where additional analysis is necessary according to agency guidelines/requirements.

The primary purpose of the Converse report was to investigate the landslide adjacent to Grand Avenue and provide recommendations for remedial grading. The first step in this process would normally be to model the landslide and the underlying bedrock conditions. Converse's investigation of the landslide did not generate sufficient information to provide a proper analysis of the landslide(s). They provide a map view of possible limits of landsliding however, as previously pointed out, the lines which provide the limits of the landslide are not clearly labeled and/or end suddenly. No cross-section is presented that shows the structural relationship between the landslide the underlying bedrock, the existing topography, and the proposed grading plan. Governing agencies, state, and local guidelines for geologic/geotechnical reports require geologic cross-section(s) be presented to model geologic conditions in hillside areas. In this case, several cross-sections would likely to be necessary to properly model the geotechnical conditions within the area of the landslide and to the east and west along Grand Avenue. Governing agencies, state and local guidelines also require that a Geotechnical Engineer (or a qualified Civil Engineer) conduct slope stability analysis of the modeled geologic conditions. This analysis must consider the various geologic conditions, including slip plane inclinations, bedding inclinations, the strength of the differing earth and bedrock materials, and the potential for deeper, weak bedding planes. Conducting slope stability analysis is the only way to determine the proper size of keys and other remedial measures that are necessary to stabilize a slope to meet the agency codes and standards of practice. The referenced report is not signed by a Geotechnical Engineer and therefore, does not meet agency requirements for a complete geotechnical report. Other areas of deficiencies include:

- No slip plane attitudes are presented on the test pit logs. The test pits only penetrate a few feet into the bedrock. Standard of practice for these geologic conditions would be to excavated large diameter borings that are down hole logged in order to identify bedding planes well below the landslide. The large diameter borings are also useful in identifying potential weak clay or bedding planes that may represent deeper potential failure planes. Borings would

typically be necessary above the landslide and adjacent to the landslide to verify the consistency of the bedrock conditions. The information presented so far by Converse indicates inconsistent geologic conditions.

- Converse states that the bedrock bedding attitudes found in the four test pits are "similar to the previously measured bedding attitudes measured for the project site". However, the previous report indicated (page 7, Converse 2014) that "Bedding attitudes ranged from 10 to 30 degrees east with bedding dips 8 to 25 degrees northwest". As indicated previously Test Pits 2 through 4 had bedding attitudes that generally had an east-west strike and northerly dip. Therefore, the bedding attitudes described in the test pits are <u>not</u> similar to those previously reported.
- TSI conducted brief mapping of the area above the landslide where Converse mapped bedding that strikes north 15 to 25 degrees east (similar to the previous report). Within this same area TSI observed bedrock bedding attitudes that were striking from north 50 degrees west to nearly east-west with northerly dips (see attached figure 1). These attitudes are similar to other bedrock attitudes indicated in the test pits 2 through 4. The Converse report (page 3) concluded that bedrock attitudes represent bedding that is favorable or neutral in relation to the proposed/existing slope. This statement is false as many/most of the attitudes presented in the test pits and observed in the ground surface have an out-of-slope (proposed and existing) dip component.
- The Converse report does not indicate that the out-of-slope bedding is a contributing factor to the landsliding that occurred, yet it is a likely a significant contributing factor.
- The hill near the landslide exposes bedrock that consists of interbedded siltstone, claystone, and sandstone, yet also visible at the top of the hill and to the south are conglomeratic bedrock materials. Converse (2107) has not modeled these bedrock conditions, indicated the different geologic units on their Drawing No.1, or provided any discussion of these differing bedrock materials in their recent report. Converse has not provided any geologic information of the bedrock conditions offsite and beneath Grand Avenue. Is it possible for the bedding inclinations to change in this area. There are many projects throughout southern California where bedding orientations are different offsite and resulted in less favorable geologic conditions. As indicated in TSI's previous review report (TSI, 2017) many of the hollow stem borings excavated by Converse (2014) encountered siltstones which are thinly bedded, and described as having vertical to horizontal bedding. The reasons for the variable bedrock materials and bedding orientations, and the potential impacts of the variable bedding has not been discussed or explained by Converse in either report.
- Test Pit No. 4 (Drawing 1d) indicates the presence of landslide debris in the upper portion of the test pit and along the back wall of the excavation. TSI's observation of this excavation did not indicate the presence of any significant landslide debris along the west wall or the back wall of this excavation. Photo 1 (A and B) clearly shows fractures within similar looking bedrock, that extend from near the surface to the total depth of the test pit. The test pit log describes the material above the slip plane (approximately 7 feet above the bottom of the pit)

as "disturbed, loose, broken" yet as indicated in the photos the material above and below this depth is very similar in consistency, and was not observed to be significantly disturbed, loose and broken. Bedding was observed to be consistent in the rear and side wall from near the surface to the bottom. TSI's interpretation of this Test Pit is that it is primarily bedrock which is significantly different than as presented by Converse on Drawing No. 1d. The bedrock at this location has out-of-slope dipping bedding.

- The logs for test pits No. 1 through 3 indicate that bedrock was encountered in the bottom few feet of each excavation. TSI is concerned that there may be additional slip planes below the depth of excavation. For example, the slip plane indicated in Test Pit 3 is shown as being encountered within a foot of the bottom of the excavation and nearly 20 feet below the top of the excavation. The structural relationship between the slip plane and the underlying bedrock is not provided in any of the test pits. Because geologic cross-sections are not provided the interpreted relationship between these geologic units is also not apparent. Therefore, Converse interpretation of this area as being part of the landslide may be wrong.
- The sequence of how the landslide(s) occurred as described by Converse is not consistent with the information provided by the former Mayor of the City of Walnut (TSI, 2017). According to the former mayor, a first landslide occurred after the road was widened. The failure apparently blocked the entire roadway, which was shut down. The County then cleared the roadway and re-graded the area of the landslide (visible in 1980 aerials from historicaerials.com). A second failure occurred at a later date (after 1980) that resulted in the current conditions.
- Converse's statements that the landslide continues to enlarge and represents a continued hazard to Grand Avenue, is not supported by specific evidence or slope stability analysis in their report. It is however, consistent with statements of the former Mayor of the City of Walnut that at least two landslides occurred at the subject site after Grand Avenue was expanded to its current four lane configuration in the late-1970's. According to the former Mayor, at least one of the landslides closed the road (Grand Ave.) and covered all the lanes (TSI, 2017).

Since the early 1980's when the second landslide likely occurred (approximately 35 years) there have been no reported road closures due to movement of the current landslide. In addition, no observations of movement was documented over this past winter which had significantly higher than normal rainfall. An examination of the current escarpment compared to the escarpment observed in the 1980 historicaerials.com photo, shows some erosion/raveling from 1980 to the present.

Conclusions and Recommendations:

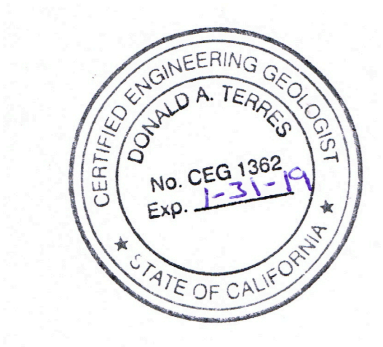
The Converse report was for the purpose of presenting a geologic model of the West Parcel Landslide that is adjacent to Grand Avenue. They also provided recommendations for stabilization of the landslide and the ultimate slope that is proposed for the West Campus Solar project. Based on the information presented in the subject report (Converse, 2017) and the previous report (Converse 2104), it is TSI's conclusion that the Registered Professional(s) that signed the report(s) have not followed state and local agencies requirements/guidelines for preparing a competent and complete geologic/geotechnical report that can be relied on to provide a project that is safe. There is not sufficient information presented in the subject report to properly model the landslide(s), the materials below the landslide, and adjacent areas. The author has not properly analyzed the data and made erroneous, misleading, and conclusionary statements that are not well supported by the data, and has not recommended or utilized other professionals which must be a part of the process. The numerous issues/deficiencies that were detailed in TSI's review of the Converse (2014) report have also not been addressed in their more recent report. The conclusions and recommendations presented in TSI's previous report are still applicable and must be addressed to provide a project that is safe and stable. Because of these deficiencies, the proposed project could result in unstable conditions that could significantly undermine the stability of the proposed project and offsite properties. As presented, the proposed project could also result in significant negative impacts to Grand Avenue.

It is TSI's opinion that significant additional surface and subsurface investigations are necessary to properly characterize/model site conditions. These subsurface investigations must include direct observation of geologic features by a competent Professional Geologist and Engineering Geologist. A Geotechnical Engineer is required by State guidelines for School sites and to provide slope stability analysis. The analysis, conclusions, and recommendations presented in the two Converse reports have not demonstrated that the registered professionals that signed these reports are capable of properly investigating and evaluating this proposed hillside development from a geotechnical viewpoint.

Terrestrial Solutions Inc. appreciates the opportunity to present this report. Should you have any questions, please contact the undersigned at (949) 201-3388.

Respectfully submitted,

Terrestrial Solutions Inc.



Don Terres CEG 1362
Reg. Exp.: 01-31-19

Test Pit No. 4

Photo 1A

Test Pit No. 4

Photo 1B

Terrestrial Solutions Inc. Geotechnical Services

To: United Walnut Taxpayers

August 31, 2017
Project No.: 17-088

Attention: Mr. Dennis G. Majors

Subject: Response to EIR planning session Comments, West Parcel Area, Mt. San Antonio College West Parcel Solar Project, Walnut, California.

Reference: Converse Consultants, 2014, Geotechnical Study Report, Proposed Fill Placement at the West Parcel, Mount San Antonio College, Walnut, California, Project No. 13-31-339-01, dated December 19, 2014.

Converse Consultants, 2017, West Parcel - Landslide Toe Test Pit Trench Study, Mt. San Antonio College West Parcel Solar Project, Walnut, California, Converse Project No. 13-31-339-30, dated July 27, 2017.

Terrestrial Solutions Inc., 2017a, Geotechnical Review of proposed Grading of the West Parcel Site for Mount San Antonio College, Walnut, California. Project No. 17-088, dated June 29, 2017.

Terrestrial Solutions Inc., 2017b, Geotechnical Review of proposed Grading of the West Parcel Site for Mount San Antonio College, Walnut, California. Project No. 17-088, dated August 29, 2017.

Introduction

Terrestrial Solutions Inc. (TSI) has reviewed Section 3.5 (Geology/Soils) of the West Parcel Solar Project, Tiered Project Draft EIR to 2012 Facilities Master Plan Program EIR (SCH 2002041161) prepared by Mt. San Antonio College, California. This review is supplemental to the previous reviews conducted by TSI (2017a and b) regarding the referenced 2014 and 2017 Converse reports. The purpose of this review is to respond to specific comments provided in the EIR documents. Some of the comments and responses are similar to those that are presented in TSI's previous reports.

Page 91: Second Paragraph

Regarding the draft comments and supporting documents: TSI has provided a geotechnical review of the two referenced reports by Converse Consultants (2104 & 2107). It is our understanding that these two review reports will be submitted by United Walnut Taxpayers (UWT) to the appropriate agency for consideration. The review reports were prepared by Don Terres whom is a Professional Geologist (PG 4349) and Certified Engineering Geologist (GEG 1362) in the State of California. His registrations are current, active, and Mr. Terres has been practicing Engineering Geology in the State of California for over 30 years. Mr. Terres vast experience includes his role as Geotechnical Reviewer for all reports submitted to the County of Orange, California.

11 Wedgewood
Irvine, CA 92620

office/fax: (714) 505-2472
cell: (949) 201-3388
email: dterrestrialsi@gmail.com

Pages 91 and 92: Executive Summary

The Executive Summary is stated as being a compilation from the 2014 Converse Consultant (Converse) Report. A specific section with all of these conclusions was not presented in the referenced reports. TSI's referenced report (2107a) provides a review of the Converse report and addresses most of the conclusions in this document. Several of the bulleted items are additionally addressed below.

Bullet #6 - While a liquefaction analysis was conducted for the site. This analysis was based on a boring that was not in one of the two areas of potential liquefaction as identified by the State of California. Boring BH-1 in the northern portion of the site would have been a more appropriate boring to analyze for liquefaction. However, to best characterize liquefaction potential, borings should have been excavated near the center of the mouth of the southern and the northern canyon areas. Until analysis of these areas is conducted, the analysis presented in the Converse report is not considered as sufficient to make a proper conclusion.

Bullet #8 – Remedial Grading of the site has not been well defined in either report. The depth of remedial removals has not been provided in the canyon areas. In addition, the keys for the designed slopes is not based on specific slope stability analysis for the variable conditions that will be encountered. These items are generally required by the governing agencies and standards-of-practice in the profession.

Bullet #9 – The statement regarding reducing the existing slope to a gradient less than 2:1 is misleading. Much of the existing slope along Grand Avenue is currently at a gradient less than a 2:1 inclination, therefore, increasing the design slope to a 2:1 slope is increasing the slope angle and height for much of this slope area. In addition, the underlying geologic conditions are much more critical than the angle of the proposed slope. The two Converse reports do not provide a geologic model that clearly indicates the underlying geologic conditions, nor do they provide complete geologic cross-sections. Complete geologic cross-sections are required by State and local guidelines and standards-of-practice for a proper geologic report.

Pages 93 through 134 in the EIR document are from sections of the Converse 2014 report that have been cut and pasted into the EIR document. For comments related to this report please see TSI's 2017a review report.

Section 3.5.2 Geology/Soil Impacts

CEQA checklist:

Item No. 1 – The conclusion is correct, although the Converse report does not provide the correct distance to the closest Active Fault (TSI 2107a).

Item No. 2 – Liquefaction: As discussed above and in TSI's referenced report (2017a), liquefaction has not been appropriately addressed. Therefore, this conclusion is not considered appropriate at this time.

Item No. 3-There is not a specific section in the Converse reports that addresses mass movements and/or landsliding in general. This is required by State and local guidelines and standards-of-practice. The referenced section E-7 only briefly addresses seismically induced landslides. There is a significant difference between addressing mass-movements/landsliding in general and the potential for seismically induced landslides. Neither has been properly and thoroughly addressed in the referenced Converse reports.

The statement regarding removing or reducing slopes to a 2:1 gradient is misleading. There is no analysis presented that indicates that a slope steeper or flatter than 2:1 is stable or not stable. The underlying geologic conditions is much more critical than the slope inclination. For the slope along Grand Avenue the geologic conditions have not been properly modeled, and much of this slope will have an increase in inclination and height. The remediation of this slope which has an active landslide, must be based on specific slope stability analysis on multiple cross-sections. Significant additional geologic information is necessary to accurately model the geologic relationships in this area, including the limits of the weak siltstone bedrock units.

The 2:1 cut slope proposed at the rear of the homes along Regal Canyon Drive is modeled by cross-section A-A'. However, this cross-section is incomplete. The hollow-stem borings in this area indicate that siltstones may be encountered near the toe of this slope. Hollow stem borings are not the appropriate tool for modeling geologic bedding conditions. However, bedding in this area is likely out-of-slope. Therefore, the homes above this slope may be exposed to unstable conditions as a result of this project. This proposed slope and the homes above could be in danger of failing if this slope is excavated. This slope area must be properly addressed prior to grading of the site.

There may be other similar areas of the site that will expose weak siltstone and clay beds that dip to the northeast and may result in unstable natural, existing, and/or designed slopes along the western edge of the site. There is no aerial photograph review of the geomorphology, and no discussion of the potential to undermine this area during remedial grading. More investigation excavations should have been conducted near the future daylight areas to address this potential condition.

Item No.4- There is a large landslide that exists on the site that was not identified by Converse in 2014. This is an unstable condition that is partly due to underlying unstable bedrock conditions. The underlying geologic unit in this area and throughout much of the site is a weak siltstone and claystone (identified in the borings) which have an out-of-slope bedding orientation. This is an "unstable geologic unit". The statement that the "project upon completion will not result in on- or off-site landslides" is a false/misleading conclusion. The section referenced (E7) only refers to seismically induced landslides. Landslides occur with and without seismic influences. The conclusionary statement provided (or either Converse report) does not address the potential for landslides to be caused by remedial removals, and does not address whether or not any of the existing slopes along the western perimeter of the site is underlain by landsliding.

If there is a potential for liquefaction at the mouth of the southern and/or the northern canyon areas as identified by the State of California, then the potential for lateral spreading and/or other seismic phenomena must also be addressed proposed in these areas.

Comments from June 7, 2017 meeting:

The text refers to comments made by Mr. Hassan Sassi as erroneous. His specific comments were not available for review. However, the indication that Mr. Sassi's statement indicating that the Converse report (2104) did not address landsliding is at least partially correct. The referenced Converse (2014) report did not address landslides that were unrelated to seismic activity. It also does not address the potential for unstable slope due to the proposed grading or remedial grading. This is a requirement of geologic reports. This same Converse report did not identify the obvious landslide that exists within the central portion of the site along Grand Avenue. Therefore, Mr. Sassi's comment is accurate and very appropriate. As discussed above Converse's statement regarding the potential for seismically induced landslide is not based on an accurate model of the underlying geology, and is also very misleading. TSI considers that the potential for landsliding related to this project is a significant geotechnical concern and has not been appropriately addressed by either report by Converse. This is consistent with Mr. Mansfield Collin's statement.

A statement is made that "*Grading for the project will result in a site with improved stability, not less, and no future landslide or substantial settlement is likely with the completion of the project*". The statement of improved stability is not supported by specific analysis. The slope to be excavated below the homes on Regal Canyon Drive will not have "improved" stability and may not be stable in it's proposed configuration. The homes above this proposed slopes could be in danger and will be less stable because of the proposed project. This is the same for the slope near BH-13 where the existing slope will be made steeper (less stable). The stability of the entire slope proposed along Grand Avenue has not been demonstrated with proper geologic modeling and slope stability analysis.

N10. Additional Trenching Investigations

TSI provided a review of the additional trenching as provided in the referenced report by Converse (2107). This investigation only addressed the specific landslide along Grand Avenue and did provide any specific information or discussion of potential for landsliding for the remainder of the site. The information presented in this report did not provide a model of this landslide nor did it provide specific slope stability analysis. It is TSI's opinion that this supplemental report did not provide sufficient information or provide well supported remedial recommendations to provide a site or slope that will be stable upon completion.

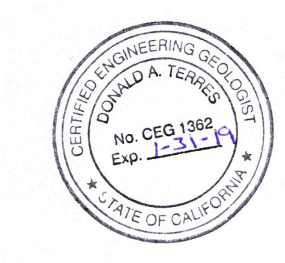
Conclusion

It is TSI's opinion that significant additional surface and subsurface investigations are necessary to properly characterize/model site conditions. These subsurface investigations must include direct observation of geologic features by a competent Professional Geologist and Engineering Geologist. A Geotechnical Engineer is required by State guidelines for School sites and to provide slope stability analysis. The analysis, conclusions, and recommendations presented in the two Converse reports have not demonstrated that the registered professionals that signed these reports are capable of properly investigating and evaluating this proposed hillside development from a geotechnical viewpoint.

Terrestrial Solutions Inc. appreciates the opportunity to present this report. Should you have any questions, please contact the undersigned at (949) 201-3388.

Respectfully submitted,

Terrestrial Solutions Inc.



Don Terres CEG 1362
Reg. Exp.: 01-31-19

United Walnut Taxpayers (UWT)
P.O. Box 1665
Walnut, CA. 91788
Contact Person, Layla Abou-Taleb, President

September 8, 2017

UWT Response to the July 2017 NOC of Tiered Draft EIR for the Mt. SAC West Parcel Solar Project

Introduction

United Walnut Taxpayers is providing comments on the West Parcel Solar Project Tiered Project Draft EIR to 2012 Facilities Master Plan Program EIR. Comments are divided into aesthetic effects, alternatives evaluation, costs evaluation, and review of 2014 and 2017 Converse study reports and 2017 DEIR Geology and Soils section. A Table of Contents is provided below.

Aesthetic Effects

1. There are three aspects to the aesthetics review, some of which have not been known until the release of this DEIR. They include motorist views of hillside losses, solar project building pad and asphalt surface, motorists views from street level south off Amar Road, and blocked views of residents and motorists.

   a. Motorist View of Building Pad and Asphalt Surface. The disclosure of an asphalt surface covering the building pad was not disclosed until this DEIR. The pictures shown below displays the hillside losses that will be experienced, and a perspective rendering based on known ground features showing the significant contrast between the natural hills versus the building pad and asphalt cover.

   b. Motorists Views from Street Level. Visual aspects from street level show the hillside losses that will occur from construction, traveling in a south to north direction on Grand Avenue. The grading construction element will require a grading permit through the City of Walnut, and must comply with General Plan restrictions of a Scenic Corridor and a Park Connection Corridor along Grand Avenue from Valley Boulevard to Temple Avenue.

   c. Blocked View from Motorists at Street Level. Motorists accustomed to seeing unobstructed views from Regal Canyon Drive will be blocked from views of the natural hillsides and the scenic wildlife reserve. Views would be almost completely obstructed by the building pad of the solar project.

Motorist View of Building Pad and Asphalt Surface

2. Visual effects of the west parcel project are seen from a number of perspectives in the City of Walnut up to a mile from the project, based on its elevated location with a large building pad and asphalt surface set within natural hillsides.

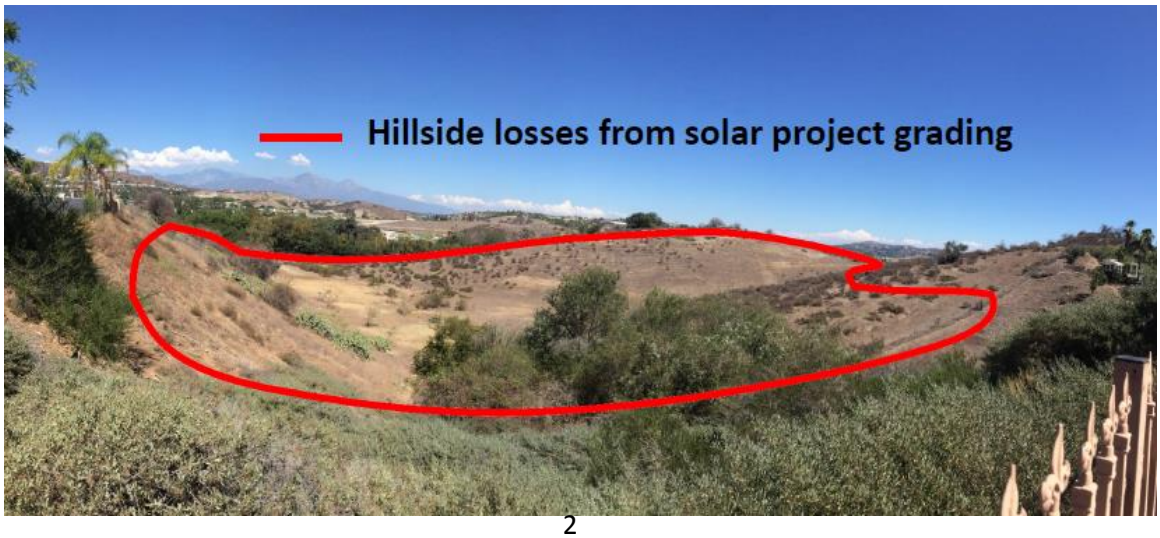
3. Viewsheds along Grand Avenue are Significantly Changed. Massive alterations to the natural viewshed of motorists on Grand Avenue entering from the north are shown below. Viewsheds show significant losses of natural hillsides some 70 feet above Grand Avenue and land areas that will be destroyed and replaced with a sterile building pad with long linear earthfill side slopes, asphalt cover and solar installations. The Grand Avenue viewshed is experienced by 1000's of motorists a day. Similar views are seen from Mountaineer Road.

Hillside Losses from Dirt Building Pad with Asphalt Cover Visible for Grand Avenue Entering

Blocked Views of Motorists by Solar Project Building Pad

4. Regal Canyon Drive in the Willows Community. Residents traveling up Regal Canyon Drive will see the industrial looking solar facility immediately next to the roadway blocking views of the natural canyons that once existed. Hundreds of cars a day travel this route, which will change the character of the passive community into a rigid landscape at its entrance.

Hillside Losses from Solar Project Building Pad at Regal Canyon Drive

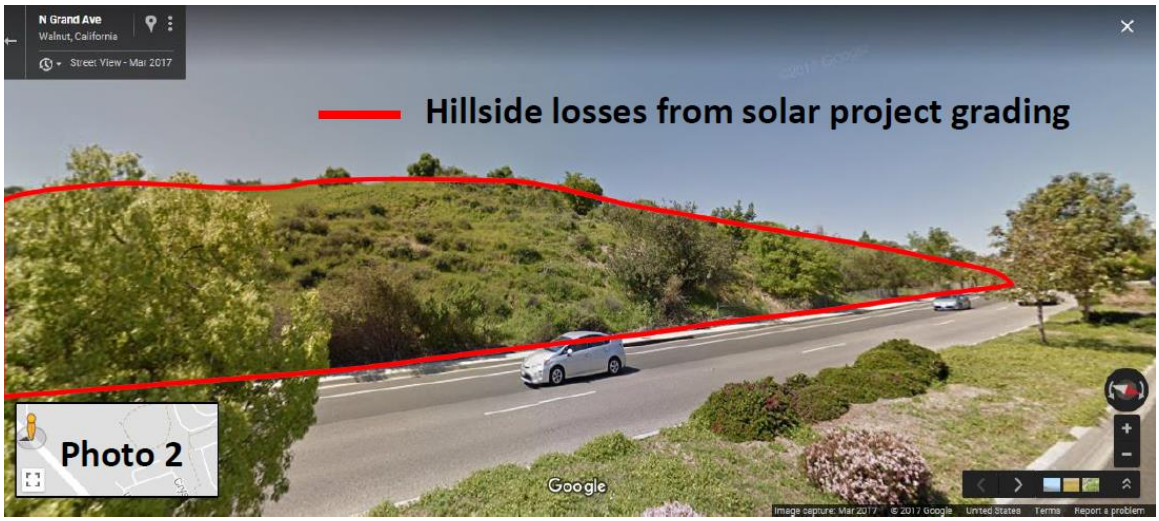


Motorists Blocked View from Solar Project at Regal Canyon Drive

Motorists Traveling Grand Avenue Observe Mass Hillside Losses Inconsistent with General Plan

5. Motorists traveling Grand Avenue would observe loss of hillsides, which is inconsistent with the General Plan Scenic Corridor designation of the roadway. The following views of Grand Avenue (photos 1 through 3, below) traveling from south to north from Snow Creek Drive to Amar Road displays the scenic values of Grand Avenue at street level and the significant destruction of native hillsides and vegetation caused by the west parcel project.

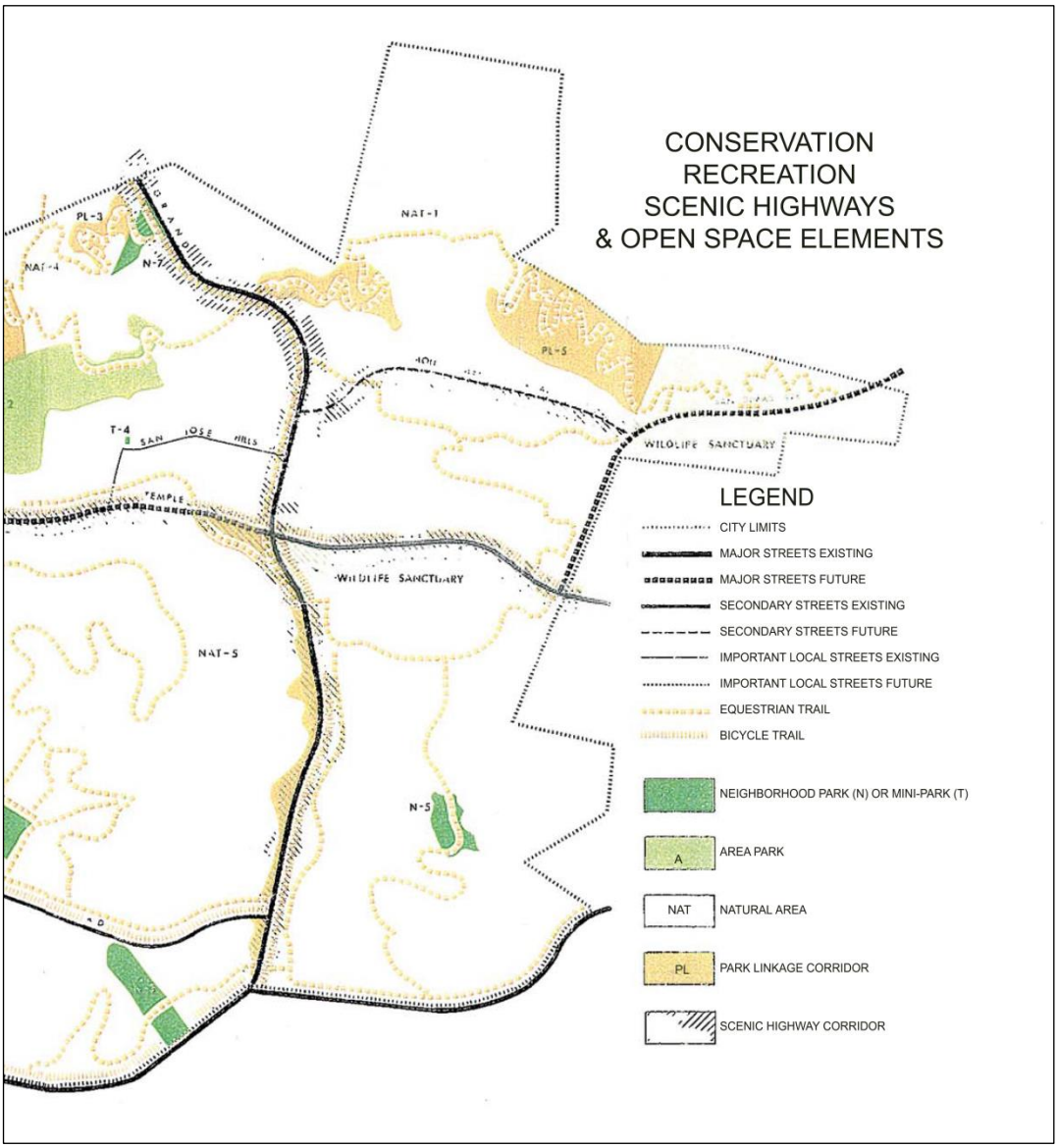
Hillside Losses from Solar Project Traveling form Snow Creek Drive to Amar Road



General Plan Conservation, Recreation, Scenic Highways & Open Space Element

6. The General Plan Conservation, Recreation, Scenic Highways & Open Space Element, page 49, Element VI states, "Of all the existing roads within the City of Walnut, Grand Avenue possesses the most scenic value" and that …… "It has naturally scenic qualities south of Temple Avenue." This is precisely where Mt. SAC intends to destroy its natural hillside beauty and replace it with up to 70 feet of earthfill covered with asphalt. Further, the General Plan states, "It can be viewed as a linear open space corridor maximizing both urban and natural processes." The destruction of the natural hillsides as planned under the proposed solar project would violate the intent to the General Plan designation of Grand Avenue as a scenic highway. The Scenic Highway designation along Grand Avenue is shown on the following figure.

7. According to the City of Walnut official's, Mt. SAC's grading plan submittal will be required to comply with this Scenic Highway designation, which would be in conflict with the proposed west parcel project.



Alternatives Evaluation

8. The Mt. SAC West Parcel DEIR has preliminarily evaluated six alternatives for solar power generation at different locations, and of different configurations and generation capacity. The alternatives evaluation, however, focused almost entirely on the west parcel, affording several paragraphs of description and analysis each to the other alternatives. A broader comparative assessment of the environmental impacts of alternatives, as required under CEQA Section 15126.6, is omitted.

<u>Scope of Alternatives Evaluated</u>

9. The scope of the DEIR relies mainly on economic evaluation of the alternatives as a decision-making tool, but omits the broader scope evaluations of environmental impacts of alternatives as part of the decision-making process. The alternatives include:

a. West parcel
b. Hillside area east of the stadium
c. Hillside area north and adjacent to Temple Avenue
d. Lot F
e. Lot A (Parking Structure J)

10. The United Walnut Taxpayers has evaluated a solar panel system on Lots B/B3 and discusses below the benefits of a parking structure initially proposed by Mt. SAC at Lot D in the 2015 SEIR.

Differing Levels of Resource Inventories and Impacts Evaluation

11. Imbalanced Resource Inventories and Impact Evaluation. Other than the west parcel, none of the alternatives are subjected to a similar level of resource inventory and impacts evaluation required by CEQA. Typically, a screening process removes certain alternatives found deficient in meeting project objectives, and is described in the screening process. This process may leave one or more alternatives for more detailed evaluation and comparison. Given this limited resource inventory and impact evaluation process of all but the west parcel, a reasonable comparison of alternatives is unworkable even in the limited scope evaluation described in Table 6.6.1

12. An evaluation of three alternative sites and methods for solar power generation was evaluated in a limited scope, unpublished report, "Solar Power Options for Mt. San Antonio College" in November 2013. The alternatives included (1) a 2.0 MW ground-mounted system at the west parcel, (2) a 0.33 MW system mounted atop a parking structure at Lots A/A2, and (3) a 1.5 MW carport [canopy] type system located in student Lot F. In some limited capacity and configuration, these alternatives have been evaluated in this DEIR. This reinforces that alternative configurations and locations for solar generation are available on campus.

Comparable Generation Capacity is Achievable at Several On-Campus Locations

13. The land area required for solar generation is estimated at 1.5 MW (2017 DEIR) over 3.4 acres at Parking Structure J or 2.3 MW per acre. An analysis of the Honolulu and Kahului Airports buildings and parking structures yields 3.1 MW per acre and for the Minneapolis-St. Paul Airport, an analysis of the parking structures yields 2.3 MW per acre. An average of the above three installations results in 2.7 MW per acre as a planning assumption, particularity for solar panels atop parking structures. Certain canopy-type solar systems may require larger net acreage per MW.

14. The alternatives included in the DEIR consistently do not match the generating capacity of the west parcel. However, examination of land areas available at various alternative sites show that equivalent generating capacity can be developed at Lot F, Lot B/B3, Lot D/D1 and Lot M. Moreover, the latest 2017 master plan indicates approximately 40 acres of parking lots are available on the Mt. SAC campus, providing many opportunities for alternatives to the west parcel.

Premature Discarding of Alternatives

15. In the alternatives evaluation, Mt SAC has prematurely discarded viable alternatives that either individually or in combination with other campus facilities may have formed viable alternatives. For example, proper consideration of solar panels atop parking canopies could result in a solar array not readily visible to nearby residents and motorists. These examples if properly sited could dramatically reduce visual impacts and be more favorable to the public, with decreased impact on the environment and natural landscape.

Combined Parking Structure and Solar Panel Systems

16. The alternative of a parking structure and with canopy mounted solar panels atop are viable at Lot F, Lots B/B3, Lots D/D1 and Lot M, which would not present unacceptable visual impacts to the public.

17. The time students must walk to certain parking structures configured with canopy-mounted solar systems is not objectionable. The walking time from Lot B near the Primary Instructional area compared to the furthest walking distance to Lot F or Lot M amounts to only 3 additional minutes. Based on Google maps walking rates for this flat terrain, the total walking times at 2.5 miles per hour walking rates are:

    a. Centroid of Lot F = 1889 feet (7.5 minute)
    b. Centroid of Lot M = 2100 feet (8.4 minutes)
    c. Centroid of Lot H = 1600 feet (6.3 minutes)
    d. Centroid of Lot B = 1200 feet (4.8 minutes)
    e. Centroid of Lot A = 800 feet (3.1 minutes)

Specific Comments on Alternatives

18. Motivation for West Parcel Project is for Campus Dirt Disposal. The report "Solar Power Options for Mt. San Antonio College", November 2013, states, "The use of the site for solar generation also provides an opportunity for the college to transfer soil from other construction projects on campus", likening the natural hillsides and canyons of the west parcel to a disposal zone. It is believed that the motivating factor and singular reason for the import of fill to the west parcel site is for disposal of dirt from the stadium hill and not the installation solar panels as much as 70 feet above street level. This was an unsound motivation, which has driven poor decision-making affecting surrounding residents, and the quality life and public safety in the City of Walnut.

    a. Hillside Alternatives in Agricultural Zone Unacceptably Impact the Natural Environment

        The hillside alternatives east of the stadium and north of Tempe Avenue result in significant impacts the natural environment. These two alternatives would be fixed ground mounted solar panels on native hillsides surrounding the college, which would result in similar impacts to hillsides as experienced on the west parcel. The UWT organization has not requested the evaluation of these alternatives. The destruction of the natural hillsides and agricultural zone is unacceptable.

        The alternatives evaluation for the hillside sites rely on prorated costs of earthwork. Because of the variable topography in hillside areas, the quantities of earthwork cannot be reliably estimated through prorated quantities. The costs of a linear or uniformly sized facility on flat ground may be prorated to a degree; however, earthwork quantities on variable topography cannot be prorated or relied upon for decision-making.

    b. Lot F is the Environmentally Preferred Alternative and Offers Combined Parking Structure/Solar Panel Benefits

        If located in areas less visible to the public, a parking structure with solar panel system atop would combine the uses of a solar panel system and parking structure, meeting the needs of both, saving land space, and possibly reducing public criticism.

Table 6.6.3 states further states that Parking Lot F is the Environmentally Superior alternative, before mitigation, which is a valid conclusion based on no impacts to habitats, and no aesthetic impacts to native hillsides. Remarkably, this conclusion is inconsequential since decision-making has been based solely on economic benefits, at the exclusion of environmental values.

At a 5.7-acre useable area estimated through Google maps, Lot F site is capable of supporting over 2 MW peak generation capacity with solar panel installations based on our estimate of 2.7 MW per acre, whereas the DEIR has limited Lot F to 1.5 MW peak capacity. From examination of land areas available, equivalent generating capacity to the west parcel can be developed.

c. Lot A (Parking Structure J) Confirms Planning Assumptions of 2.7 MW per Acre for Solar Installations

Based on area availability of 3.4 areas at Lot A, the 1.5 MW DEIR estimates of peak capacity at this location would be accomplished at 2.3 acres per MW. Considering this and results at other parking areas, UWT has used a planning assumption of 2.7 acres per MW.

d. Lot B/B3 (a United Walnut Taxpayer's proposal)

Significant Earthwork Costs Omitted from West Parcel Cost Estimate. The DEIR states that Lot B/B3 is not available because it is reserved for structured parking and is more costly than the west parcel. Should a parking structure be implemented near this area, consideration could be given to canopy mounted panels or solar panels atop a parking structure that could combine land use functions and be less visible from street level. The DEIR conclusion that a canopy mounted panel system is more costly than a west parcel system is false for the following reasons.

DEIR Earthwork Costs. Significant earthwork costs have been omitted from the total cost of the west parcel. For a reasonable cost estimate comparison of the west parcel to canopy mounted solar panels systems, proper grading costs must be included in the west parcel. Specifically, Table 6.6.1 included total grading costs of $1,813,800 and an export saving credit of $1,500,000 if avoiding earthwork exports off-site, for a net earthwork cost to the project of $313,800.

Documented Earthwork Quantifies. Earthwork quantifies of at least 477,500 CY are documented or characterized in the DEIR, including on-site grading (cut/fill) ($177,500 (CY), import from the stadium hill (139,000 CY), landslide removal based on Converse test pit cross sections including bulking (103,000 CY) and a stability key to help stabilize fill slopes including bulking (58,000 CY).

Earthwork Unit Prices. Given the above, it would be necessary to perform all earthworks on the project (477,500 CY) for a cost of $313,800 or at a unit price of $0.66 per cubic yard. This is unrealistic, since the representative unit costs of similar earthwork would be $13-$14 per CY, based on a survey of known contractor bids for similar work (see below).

Applying a realistic unit price of $14 per cubic yard to earthwork quantities of 477,500 CY yields a grading cost of $6,685,000 making the west parcel significantly more costly than solar panels mounted atop parking canopies or parking structures.

e. Lot D/D1 Described in 2015 SEIR May Function More Efficiently as a Combined Parking Structure./Solar Generation System

The 2015 SEIR discusses the benefits of a parking structure on Lot D to "provide parking for vehicles arriving from the south, west or east" and because of close proximity to the campus Primary Instructional zone. Solar panels atop the parking structure favorably combine land use functions of two facilities over a common land area. Solar panels are also less visible if elevated from street level. See the figure below depicting a parking structure with canopy solar panels at the top-level. The facility in the figure covers a 3.7-acre area and at 2.7 MW per acre would generate peak power of approximately 1.4 MW, but is expandable to the east or west to increase generation capacity.

The weight of the canopy structure and solar panels atop the parking structure are within CSB load requirements and require no additional strengthening in the parking structure (telecom. Sassi, 2017), such that costs per acre would be similar to canopy mounted panels at ground level.

Certain Alternatives Comparisons on Table 6.6.3 are False or Misleading

19. Loss of Non-Native Grasslands. Table 6.6.3 states the west parcel would result in the loss of no non-native gasses. This is false. The West Parcel Solar Project Biological Technical Report, May 2017, indicates the west parcel is substantially covered with non-native grasses, while other alternatives (excepting hillside alternatives) have no impacts to non-native grasses.

20. Adverse Impact. Table 6.6.3 makes the over-generalized and questionable statement that the west parcel alternative has no adverse impacts, while all other alternatives have adverse impacts. The west parcel exhibits significant impacts to non-native grasslands, coastal sage scrub, aesthetic impacts as demonstrated above, public safety issues demonstrated by active landslides, and co-mingling truck haul routes with public roadways. These are clearly adverse impacts.

21. Environmentally Superior Alternative. Table 6.3.3 states that the Parking Lot F is the environmentally superior alternative before mitigation, which is a valid conclusion based on no impacts to habitats, and no aesthetic impacts to native hillsides. However, this conclusion is inconsequential since all decision-making is based on economic benefits, at the exclusion of environmental values.

22. Conflicts with Campus Habitat Mitigation Plans (CBW/LUMA). This impact category correctly states that Lot F would not have impacts to the California Black Walnut Management Plan (CBW) and Land Use Management Areas (LUMA).

23. Earth Import Possible. This impact category implies that alternatives that dispose of dirt on the west parcel have beneficial impacts. Specifically, the west parcel project encourages disposal of dirt on its land areas from throughout the campus, which maximizes impacts to native habitats, and to public safety demonstrated by active landslides and co-mingling truck haul routes with public roadways.

Depiction of Lot D Parking Structure with Solar Panel Canopies at Roof Level

Cost Evaluation

24. Summary. The DEIR provides no back up information for the alternatives costs, makes cost adjustments generally beneficial to the west parcel costs but not to other alternatives, and when summing grading costs and export savings reduces grading costs to near zero. UWT has developed independent unit costs of grading which can be applied to major grading quantities and has developed costs of solar panels materials and installation, which together comprises the majority of project costs.

DEIR Assumptions and Cost Adjustments

25. Sensitivity of Cost Assumptions. Certain cost assumptions in Table 6.6.1 are highly sensitive to overall cost and in most cases will change the ranking of the alternatives. The most relevant assumptions and adjustments follow:

    a. Sunk Costs Should be Applicable to All Solar Generation Alternatives. Table 6.6.1 applied sunk costs to all but the west parcel. These costs should be applied to the west parcel as well, since they represent $1.5 million in legal fees of west parcel litigation.

    b. Costs to Export Stadium Hill Dirt Can be Avoided. The assumption that remaining dirt at the stadium hill must be hauled away at a cost to the project could well be erroneous. The remaining dirt, consisting mainly of good quality silty sand with some clay, may be used by contractors for off-site grading and hauled at no cost to the project. Sand and gravel suppliers and truckers may seek sources of earth borrow for customers and haul the dirt free of charge (telecom. WCSG, 2016, 2017).

In any case, a realistic effort should be made to have dirt removed at no cost and not assume it must be hauled at project cost. This assumption significantly changes relative costs of the west parcel versus solar panels mounted atop canopies or parking structures.

c. Cost of the Landslide Identified by Converse (2017) Must be Included in Total Costs. Removal and replacement of large quantities of landslide materials at the west parcel must be included in project costs. If not properly removed and replaced, these areas could experience landslides during construction or operation of the project.

d. SCE Incentives Should be Applied all Solar Alternatives. The cost incentives offered by SCE is a significant benefit to project costs and substantially affects the ranking of alternatives. The DEIR statement that SCE Incentives have been assured to the west parcel project appears to be false. SCE representatives have indicated the Net Energy Metering (NEM 1.0) program that the project is benefitting from expired on July 1, 2017, and has now become the NEM 2.0 Program. Unless applicants had their solar project installed and inspected by July 1, 2017, they will be required to reapply under the NEM 2.0 program. On this basis, any solar installation alternatives has been assumed to receive SCE solar incentive under the new NEM 2.0 program.

26. Prorated Costs of Hillside Grading are Unreliable. Prorated values are legitimate when estimates are made on uniform horizontal installations on relatively flat ground, but lose validity when applied to variable hillside topography where construction requires reasonably accurate cost estimates.

27. Costs of Grading are Unrealistic. Table 6.6.1, Solar Alternative Cost Estimates, states the cost of earthwork on the west parcel is $1,813,800, and that importing stadium hill dirt to the west parcel will result in an export savings of (-) $1,500,000 . The net earthwork costs are therefore $1,813,000 (-) $1,500,000 = $313,800, which given at least 477,500 CY of project grading discussed below results in an unrealistic unit cost around $0.66 per cubic yard.

28. Evaluation of Reliable Earthwork Unit Prices. Based on the unrealistic grading unit prices in the DEIR, an evaluation of grading unit costs based on contractor bid prices was performed to provide reasonably reliable unit costs and total grading costs of the project. The evaluation estimated (1) a mass grading import unit price of $13.76 per CY and (2) a salvage and replacement (cut/fill) earthwork unit price of $14.01 per CY (see below).

Mass Earthwork Import			
Quantity (CY)	Job No.	Contractor Bids Received	Contractor Bid Average Unit Price
70,000 CY	DWR/KSN Job. 1500-0140, July 2013	ASTA, Tiechert, Robert Burns, Granite, San Raphael, AM Stephens, Cal-Nevada, Ford	$10.26 per ton ($14.36 per CY @ 2013 price levels)
201,900 CY	DWR/MBK Job No. 2028-08-12-1	Asta, A.M. Stephens, Robert Burns, Dutra, Mass X, MCI, Tiechert, Woods	$8.91 per ton ($12.48 per CY @ 2012 price levels)
191,900 CY	WGI, 2007	Washington Group, Intl.	$13 per CY @ 2007 price levels ($14.45 per CY @ 2016 price levels)
		AVERAGE UNIT PRICE	**$13.76 per CY**

Salvage, Stockpile and Replace Dirt On-Site			
Quantity (CY)	Job No.	Contractor Bids Received	Contractor Bid Average Unit Price
337,485 CY	WGI, 2006/MWD Task Order, 2006	Washington Group, Intl.	$14.45 per CY ($17.20 @ 2016 price levels **(excavation, haul to stockpile + haul from stockpile, spread, compact)**
1,318, 753 CY	LACPWD, 2015, Job No. FCC00001147	W.A. Rasic Construction, C.A. Rasmussen, Griffith, Ames Construction, Pulice Construction, Shimmick, Myer and Sons	$6.09 per CY @ 2015 price levels **(excavation, haul to stockpile)**
337,485 CY	WGI, 2006	Washington Group, Intl.	$4.45 per CY @ 2006 price levels ($4.92 per CY @ 2015 price levels) **(haul from stockpile, spread, compact)**
		AVERAGE UNIT PRICE	**$14.01 per CY**

29. Total Project Grading Cost: Total project grading costs are composed of the following elements:

Grading Quantities

A description of the grading quantities for construction of the west parcel earthfill is provided in the following table. The quantities were (1) identified in the 2017 DEIR documents and (2) estimated within landslide areas to depths of at least 20 feet (Terrestrial Solutions, Inc. (TSI), June 2017) by D. Majors, P.E. (2017). Background data was reviewed in Converse Consultants study reports (2014, 2017). Streambed materials were recommended for removal and replacement to similar depths (TSI, 2017) and quantities estimated as a separate line item, below (D. Majors, 2017).

Summary of Earthwork Quantities		
Description	Quantity	Source
On-site hillside cut	177,500 CY	DEIR, 2017
Imported fill from stadium hill	139,000 CY	DEIR, 2017
On-site landslide removal, stockpile and replacement fill with 15% bulking, in addition to DEIR 55 feet cut on central hill (consulted DEIR Psomas/Converse mapping, 2017)	103,000 CY	TSI, UWT, 2017
On-site excavation, stockpile and replacement for stability key with 15% bulking (consulted DEIR Converse mapping, 2017)	58,000 CY	TSI, UWT, 2017
TOTAL EARTHWORK QUANTITIES WITH LANDSLIDE REMOVALS	**477,500 CY**	
On-site streambed excavation, stockpile and replacement fill with 15% bulking (consulted TSI, 2017)	109,000 CY	TSI, UWT, 2017
TOTAL EARTHWORK QUANTITIES WITH LANDSLIDE/STREAMBED REMOVALS	**586,500 CY**	

Grading Costs

30. Given realistic unit prices in the range of $14 per cubic yard, and earthwork quantities described above, the total grading cost was determined to be $6,685,000 (see below), making the west parcel significantly more costly than solar panels mounted atop parking canopies or parking structures.

Summary of Earthwork Costs			
Description	Quantity	Unit Price	Cost
On-site hillside cut and fill (SEIR, 2012)	177,500 CY	$14/CY	$2,485,000
Imported fill from stadium hill (DEIR, 2017)	139,000 CY	$14/CY	$1,946,000
On-site landslide removal, stockpile and replacement fill (est. from Converse, 2017)	103,000 CY	$14/CY	$1,442,000
On-site excavation, stockpile and replacement for stability key (TSI, 2017)	58,000 CY	$14/CY	$812,000
TOTAL WITH LANDSLIDE REMOVALS			**$6,685,000**
On-site streambed excavation, stockpile and replacement fill (TSI, 2017)	109,000 CY	$14/CY	1,526,000
TOTAL WITH LANDSLIDE & STREAMBED REMOVALS			**$8,211,000**

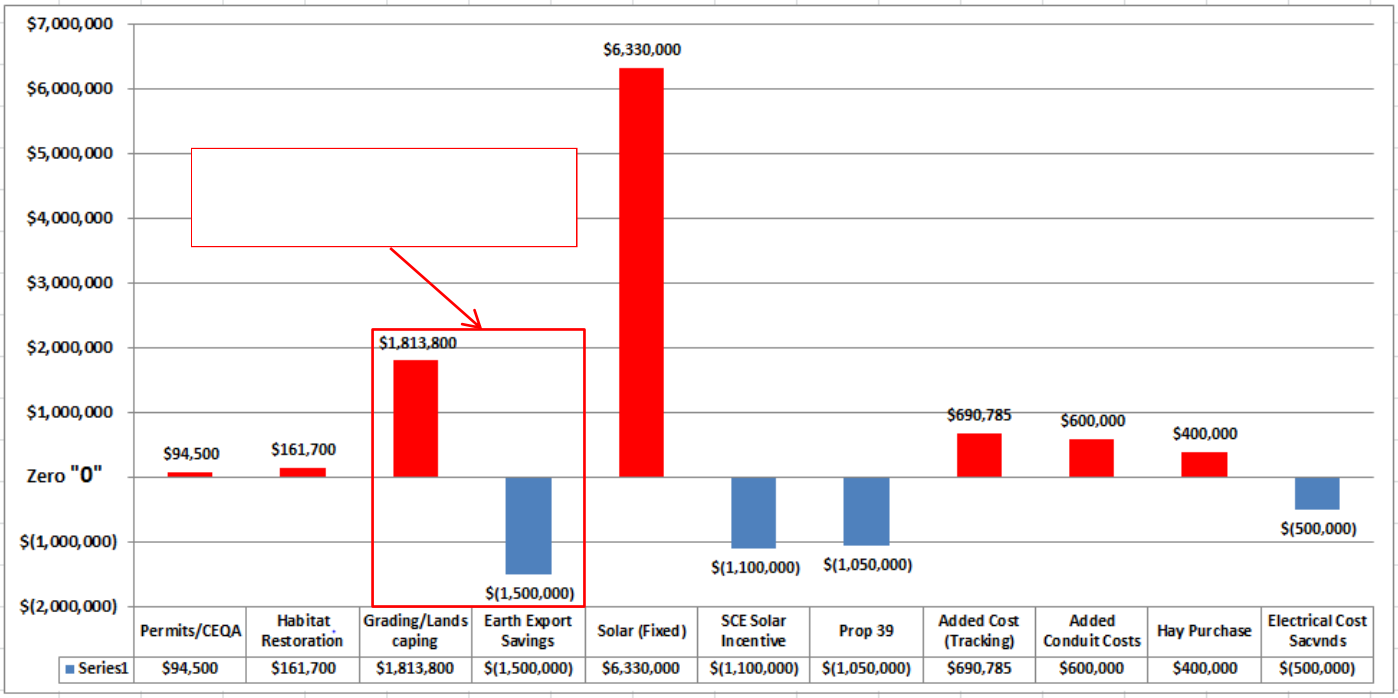
Examination of West Parcel Costs

31. The first chart shows the raw WPSP costs in the DEIR. It includes the various costs adjustments and credits applied by Mt. SAC after the construction costs are developed. The third vertical bar is the grading cost. The fourth bar is grading savings (a negative cost) if the stadium hill dirt is exported to the west parcel and not off-site.

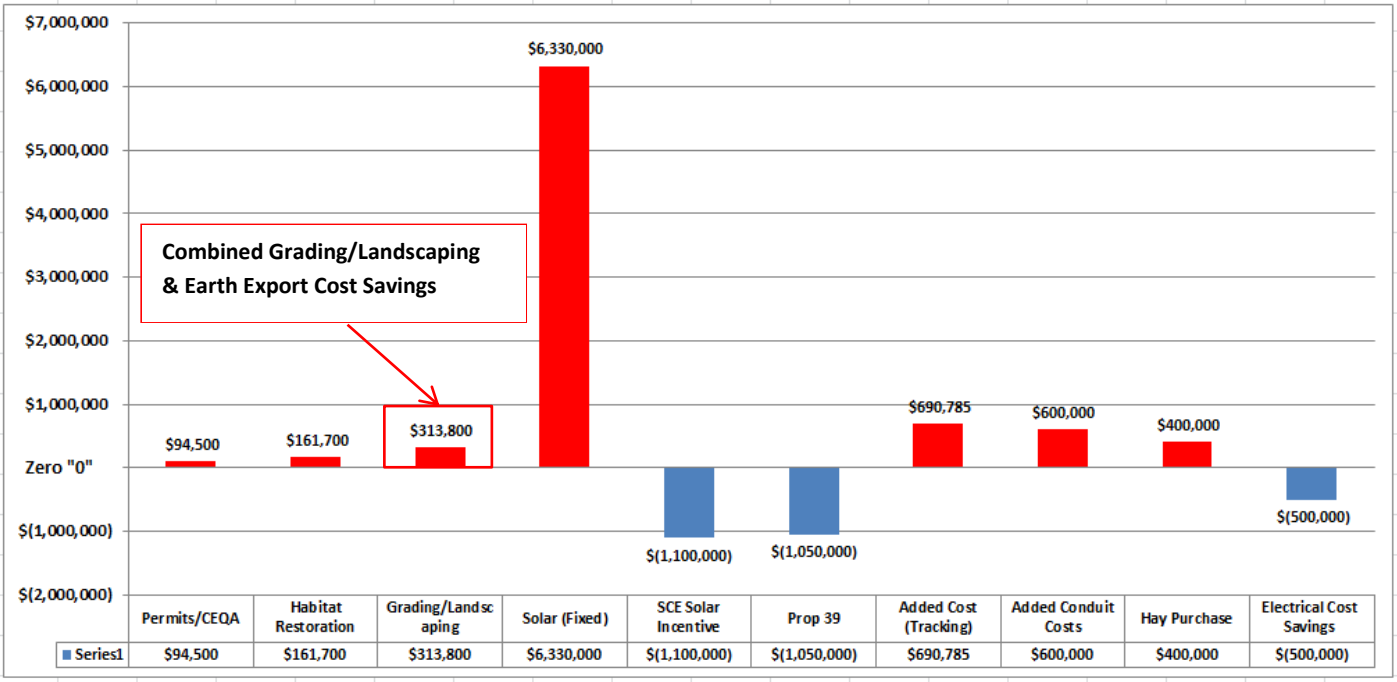
32. The second chart shows what happens when the grading cost and the export savings are combined into a net grading cost. The cost of grading virtually disappears because of combining a positive and a negative cost. As indicated above, it may not be necessary to export dirt off site, which eliminates the export cost savings and results in a further increase to west parcel costs.

33. These costs also do not account for possible additional remediation of landslides associated with High Landslide Potential lands identified on the LA County Engineer mapping for the City of Walnut General Plan and on the California Geological Survey CGS 88-21 Map No. 12 for this region, designating most lands at the west parcel at “close to their stability limits”.

Total Project Cost – West Parcel (DEIR)
Grading/Landscaping & Earth Export Savings



Total Project Cost – West Parcel (DEIR)
Combined Grading/Landscaping & Earth Export Savings



Comparative Cost Studies of Alternatives

General

35. DEIR Table 6.6.1 presents a what appears to be first costs of the west parcel at price levels varying from 2012 to 2016, referencing previous cost estimates with no supporting cost data, solar power installations of differing electrical output, which would make it necessary to compare alternatives on a cost per MW basis.

36. To simplify the comparisons, a representative 2.2 MW peak capacity project at the west parcel is compared to a 2.2 MW peak capacity system of canopy mounted solar panel systems generally near Lot B/B3 or Lots D/D1. In this way, the cost of these alternatives can be compared based on total cost. Either canopy mounted solar systems or solar panels atop parking structures have been shown to fit within these parking areas within or near the Primary Instructional Zone.

37. The alternative that generally ranked above others is the parking canopy mounted solar panels, which is understandable since it requires no grading, substantially eliminates environmental permits, and requires no import of export of dirt, whereas to the contrary, the west parcel requires all of these cost elements.

38. At equivalent electrical output, the principal cost elements to be evaluated are the grading costs and the cost of acquisition and installation of the solar panels, which amount to at least 80% of overall project costs.

Table 6.6.1 Alternatives Cost Comparison (Sensitivity of Cost to Mt. SAC Assumptions)

39. The total project costs depicted on Table 6.6.1 of the DEIR provides inadequate back-up information to evaluate the project costs. As such and as shown above, the development of costs for grading and for canopy-mounted solar arrays have been developed by UWT for comparison purposes.

40. In the chart below, there are 6 pairs of vertical cost bars, each with a red bar (west parcel) and blue bar (parking canopy panels). Per DEIR Table 6.6.1 assumptions, the parking canopies include sunk cost and Prop 39 incentives, but no SCE incentives. In the last column, the effects of adding in SCE Incentives to the parking canopies are shown. Per Table 6.6.1, the west parcel includes no sunk costs, no hay purchase, an export savings credit, Prop 39 incentives and SCE incentives, but virtually no earthwork costs when combining grading/landscaping with earth export savings. Sunk costs, hay purchase costs, grading costs and SCE incentives are progressively added into the cost chart to show the sensitivity of these cost items to total costs and ranking. See the Vertical Bar pairs A, B, C, D, E and F, which displays this process.

    a. Vertical Bars A. The red bar is the west parcel DEIR data. The blue bar is an equivalent power canopy type solar panel option developed by Sunvalley/RBI Solar, 2016 under supervision of H. Sassi, P.E.

    b. Vertical Bars B. Sunk cost and hay cattle feed replacement for loss of hillside grass are added to the red bar, which were left off the west parcel in Table 6.6.1.

    c. Vertical Bars C. West parcel earthwork, landslide removal and dirt import from the stadium, identified in or characterized in the DEIR, are added to the red bar costs. The third set of bars

shows the effects to grading costs by including published earthwork quantities in the DEIR and estimates of landslide removal, multiplied by historical earthwork unit prices locally and statewide. This amounts to at least 477,500 CY and over $6,685,000 in additional costs.

d. Vertical Bars D. Additional earthwork consisting of streambed materials removal and replacement, recommended by Terrestrial Solutions, Inc. (TSI) are added to the red bar.

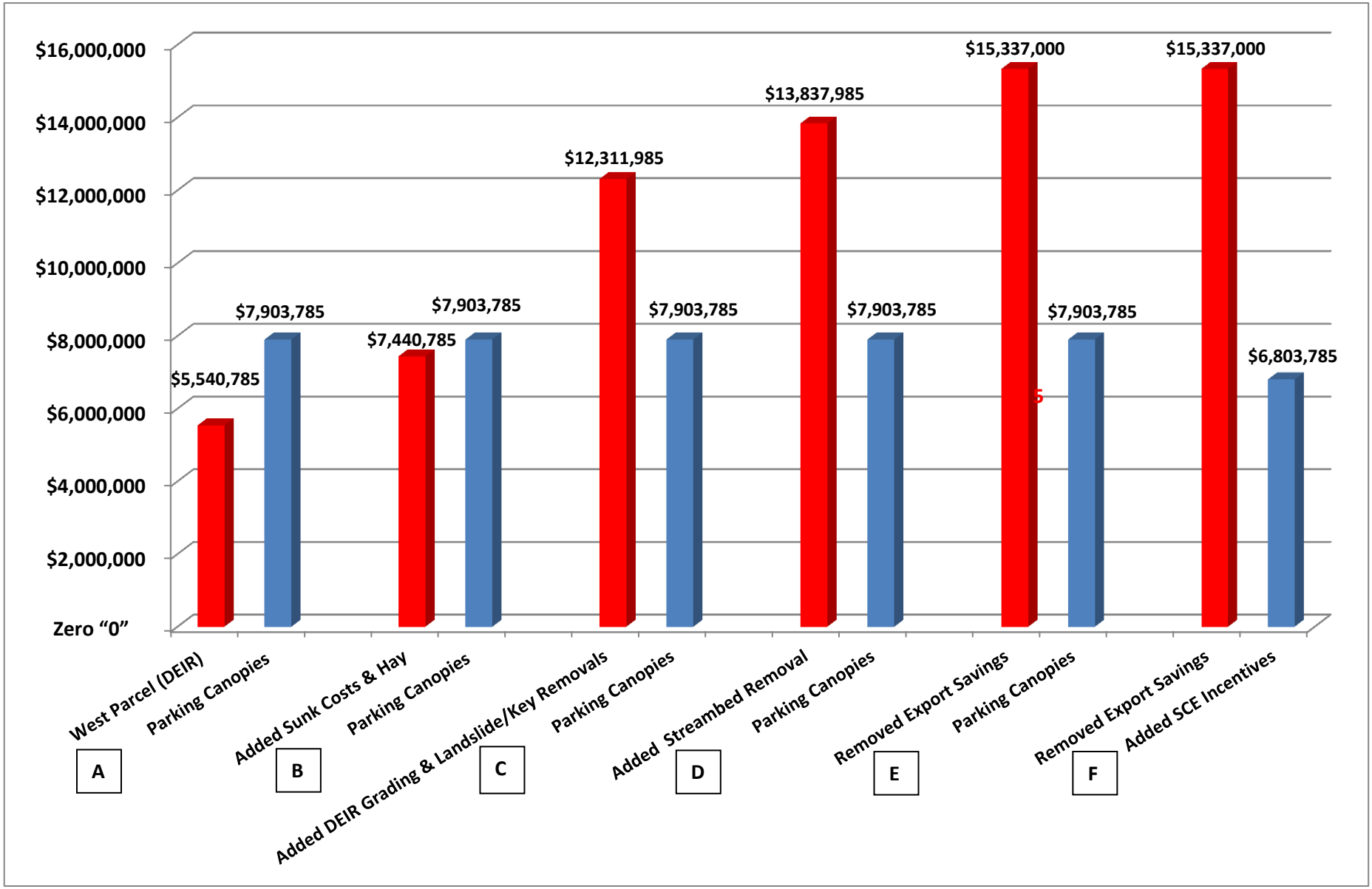
e. Vertical Bars E. Offsite export savings (a reduction in costs applied to the west parcel) are removed from the red bar since methods are available to disposed of stadium hill dirt free of charge though the needs of regional contractors .

f. Vertical Bars F. A credit is added to the blue bar for a SCE incentive program (a reduction in cost) since a new SCE Net Energy Metering (NEM 2.0) program was initiated on July 1, 2017.

41. Within the following table, the total west parcel cost in Vertical Bars C is $12,311,985. This cost includes the cost adjustments and credits applied by Mt. SAC, which if excluded, would yield the hard dollar construction costs of the project equal to $13,271,300. This cost is based on grading quantities from Psomas grading plans and landslide removals characterized in the DEIR. When multiplying these quantities by unit costs of local and statewide contractor bids for similar work and quantities, it produces the $13,271,300 value. This value compares favorably to the $13,723,645 Total Project Budget including Site Improvements and Earthwork identified in the Mt. SAC Board of Trustees Action for Professional and Design and Consulting – added Services (contract Amendments), page 37, October 12, 2016.

42. Economic studies to assess ROI & Payback (Table 6.6.2) have been based on the west parcel project Net Cost of $5,440, 785. Because these costs are considered unreliable as noted above, they should not be relied upon for development of ROI & Payback studies or for decision-making.

Total Project Costs
West Parcel (DEIR) vs. Parking Canopy Mounted Solar Panels



Terrestrial Solutions, Inc. (TSI) Geological and Geotechnical Review Reports

TERRESTRIAL SOLUTIONS INC. GEOTECHNICAL SERVICES

To: United Walnut Taxpayers

June 29, 2017
Project No.: 17-088

Attention: Mr. Dennis G. Majors, Board Member

Subject: Geotechnical Review of proposed Grading of the West Parcel Site for Mount San Antonio College, Walnut, California.

Primary References:
Converse Consultants, 2014, Geotechnical Study Report, Proposed Fill Placement at the West Parcel, Mount San Antonio College, Walnut, California, Project No. 13-31-339-01, dated December 19, 2014.

Psomas, Undated, South Campus Site Improvements – West, Mount San Antonio College. Sheets C0.0 through L3.10 (51 total sheets).

1.0 INTRODUCTION

Terrestrial Solutions Inc. (TSI) has conducted a geotechnical review of the available information and proposed grading at the West Parcel of Mount San Antonio College, Walnut, California. The primary document that was made available for review is a report from Converse Consultants (Converse) dated December 19, 2014. Also reviewed, was an undated grading plan, prepared by Psomas, submitted to the City of Walnut as the proposed grading plan of the site on January 24, 2017, with the ultimate intention of creating a large pad for construction of a solar panel array. It is our understanding that these documents were provided by the City of Walnut for purposes of obtaining a grading permit and represent the latest engineering and geotechnical information that have been received from the project developer, Mount San Antonio College.

The purpose of TSI's review is to assess the information presented in the primary references to determine if they provide sufficient geologic and geotechnical knowledge to provide remedial recommendations for development of the proposed project in a safe manner, and which suitably supports the proposed development while maintaining the integrity of the surrounding properties.

TSI's scope of work included review of the referenced documents, pertinent Aerial Photographs, site visits on March 30, April 12, and June 20, and preparation of this document. The site visit on March 30 included a field reconnaissance into the site through an unlocked and open gate and along a well-hiked trail to the top of the central knob.

11 Wedgewood
Irvine, CA 92620

cell: (949) 201-3388
email: dterrestrialsi@gmail.com

It is TSI's opinion that there are significant deficiencies in the subsurface investigations, discussions, and analysis presented in the Converse report. These deficiencies include: not identifying a significant landslide that is present at the site and formerly impacted Grand Avenue; insufficient geologic information to properly model the site, insufficient liquefaction analysis, and incomplete slope stability analysis which could result in undermining the stability of adjacent residential properties. In our opinion, the Converse report does not meet the minimum standards required by City, County, and State codes/guidelines and standards of practice for a geotechnical investigation of a hillside development in the southern California area. This review report further outlines the deficiencies and the consequences related to them for the proposed project and surrounding properties.

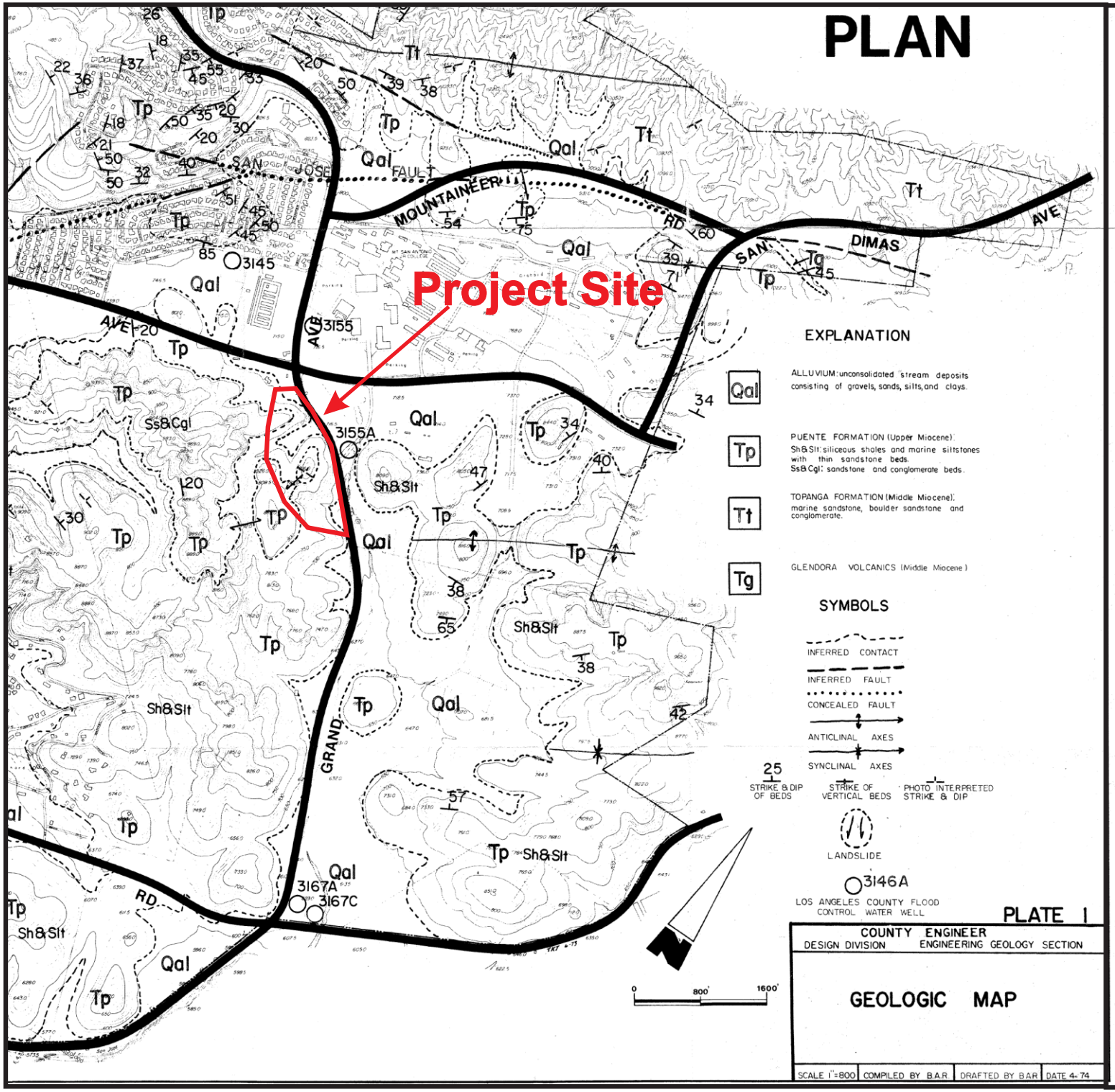
1.1 Site Description

The site is approximately 17.3 acres of undeveloped land, except at the northern end, which was previously graded to create a nearly level pad (Christmas Tree lot). The area proposed for development consists of a central hill area that is surrounded by valleys to the north and the south and a low connecting ridge between the two valleys. This irregularly shaped piece of land is surrounded to the immediate south and west by existing residential developments and to the northeast by Grand Avenue. The existing residential structures are along ridgelines that are directly above and overlook the proposed development.

Review of aerial photographs available from both Google Earth and HistoricAerials.com indicated that, other than the northern most portion, the site has remained relatively unused and undeveloped since at least 1946. A road has existed along the alignment of Grand Avenue since prior to 1946, and apparently was widened and realigned to its current four lane configuration in the late 1970's. The 1980 aerial reviewed indicates a disturbance or clearing of a portion of the east-central hill along Grand Avenue, including a landslide escarpment at the top of the hill. Apparently, the site has been used for cattle grazing in its recent history.

1.2 Proposed Project

The grading plan prepared by Psomas includes cut and fill grading to create a large pad area at an elevation ranging from 758 to 763 feet in elevation. To accomplish this, the pad area will require cutting down of the central hill, approximately 55 feet, and filling in the two valley areas up to approximately 60 feet. A large slope is proposed along Grand Avenue, which includes filling and cutting and is up to 80 feet in height. Two cut slopes are proposed along the northwestern perimeter of the site that are up to 40 feet in height. A fill slope up to 25 feet in height is also proposed along this edge. According to the grading plan approximately 139,000 cubic yards of import fill materials will be necessary to balance the cut/fill volumes proposed on the plan. The plan does not provide an estimate of remedial quantities to remove unsuitable earth materials and/or the corresponding shrinkage/bulking factors that are typically required by reviewing agencies.



Modified From Geologic Map City of Walnut General Plan, Plate I, 1974

Figure 1

Terrestrial Solutions Inc.

The Converse report preceded and therefore, did not review the Psomas grading plans provided to the City of Walnut as a part of a grading plan submittal in 2017. However, Converse did review a plan that was similar in design to the grading plan submittal and apparently developed in conjunction with the 2015 Addendum to the 2012 Facility Master Plan Final EIR. Agencies typically require that the Geotechnical Consultant review the latest plan that is prepared by the project Civil Engineer in case there have been significant changes that require additional analysis.

2.0 REVIEW OF THE GEOLOGIC AND GEOTECHNICAL INFORMATION

The Converse report (2014) was based on 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). Their investigation also included laboratory testing.

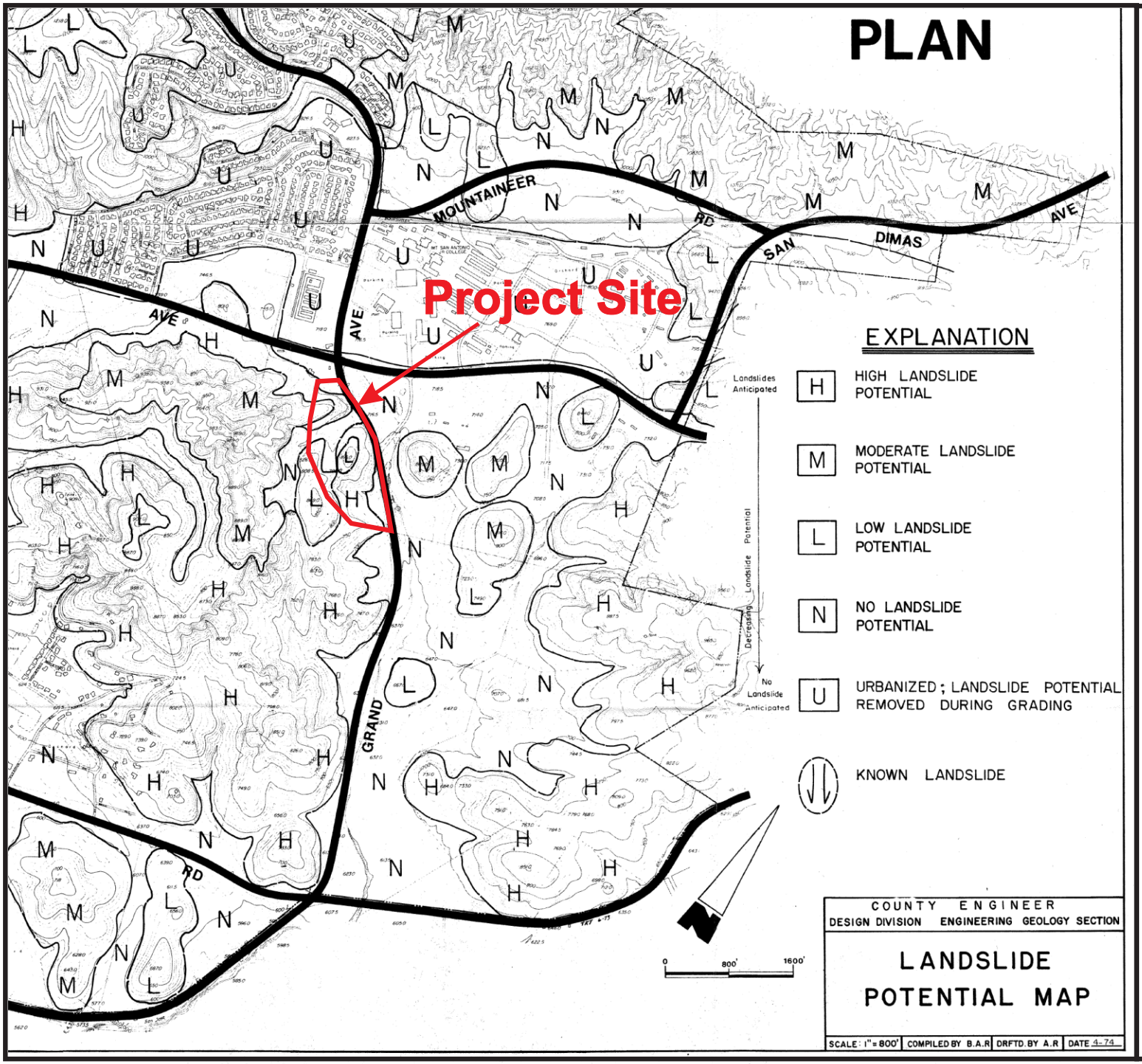
It is our understanding that supplemental trenching and possibly other field investigations were initiated by Converse (on behalf of Mt. SAC) in June 2017. Apparently, these field investigations were terminated by the US and Fish and Wildlife due to conflicts with the endangered California Gnatcatcher breeding season.

A normal review of a geotechnical report would include focused review and comments regarding specific sections of the report that are unclear, deficient in backup data, and/or of interest for other reasons. The Converse report was found to be significantly lacking in a geologic database and resulting geotechnical analysis from which to make appropriate review comments. Therefore, this review is separated into more general discussions of areas/issues of the report where there are significant concerns.

2.1 Geologic Conditions

In addition to the Converse (2014) report, several documents were reviewed by TSI to understand the geologic conditions which underlie the site. These documents include the regional Geologic map by Dibblee (1989), Geologic and Landslide Potential Maps (Plates I and II), generated by the Los Angeles County Engineer for the City of Walnut as part of their General Plan, dated April 1974 (included as Figures 1 and 2), CGS Open File Report 88-21 (Figure 3), and TSI's general knowledge of the subject geologic formations present at the site. The full references for these documents are provided at the end of this report as "Additional References".

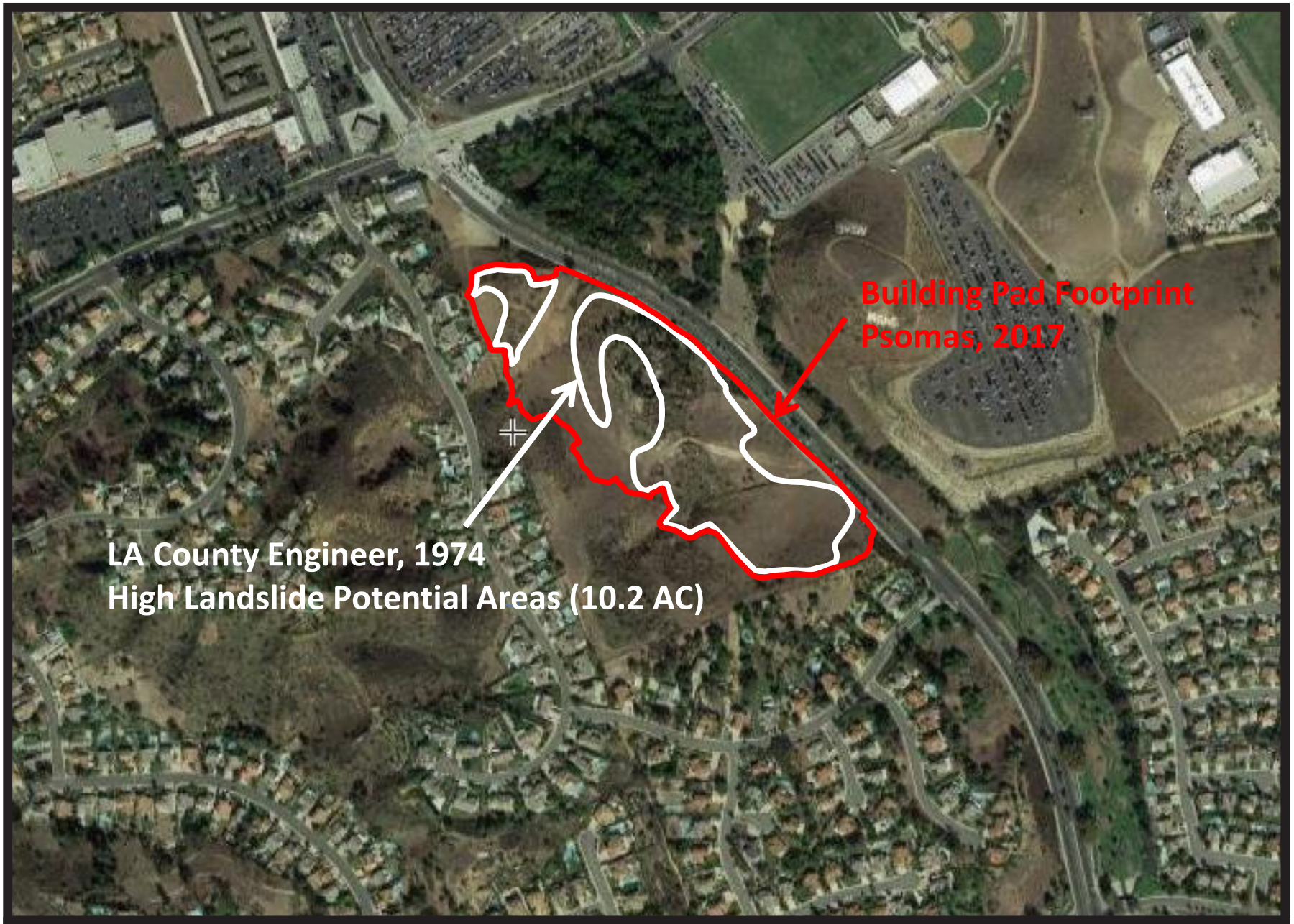
The Dibblee map (1989) was presented by Converse in their report and indicates the site is underlain by bedrock of the Tertiary Sycamore Canyon Formation which is the uppermost member of the Puente Formation, and that bedding is generally striking northwest-southeast and dipping 15 to 30 degrees to the northeast. The surrounding areas are indicated as being underlain by the Tertiary Yorba member of the Monterey (Puente Formation) with similar bedding orientations. According to the Geologic Map (City of Walnut, 1974), the site is underlain by bedrock of the Puente Formation. This map (Figure 1) indicates that the central knob and adjacent hilltops are underlain by sandstone



Modified From Landslide Potential Map City of Walnut General Plan, Plate II, 1974

Figure 2a

Terrestrial Solutions Inc.



Landslide Potential Map
City of Walnut, General Plan,
Plate II, 1974

Terrestrial Solutions Inc.

Figure 2b

and conglomerate, however, the lower portions of the hills are shown as underlain by shales and siltstones. TSI's brief observations at the site indicate sandstone and conglomerates are present as well as shales and siltstone in the central knob area. Where the shale and siltstone was observed, bedding was dipping to the east-northeast approximately 20 to 30 degrees (similar to as indicated by Dibblee [1989]).

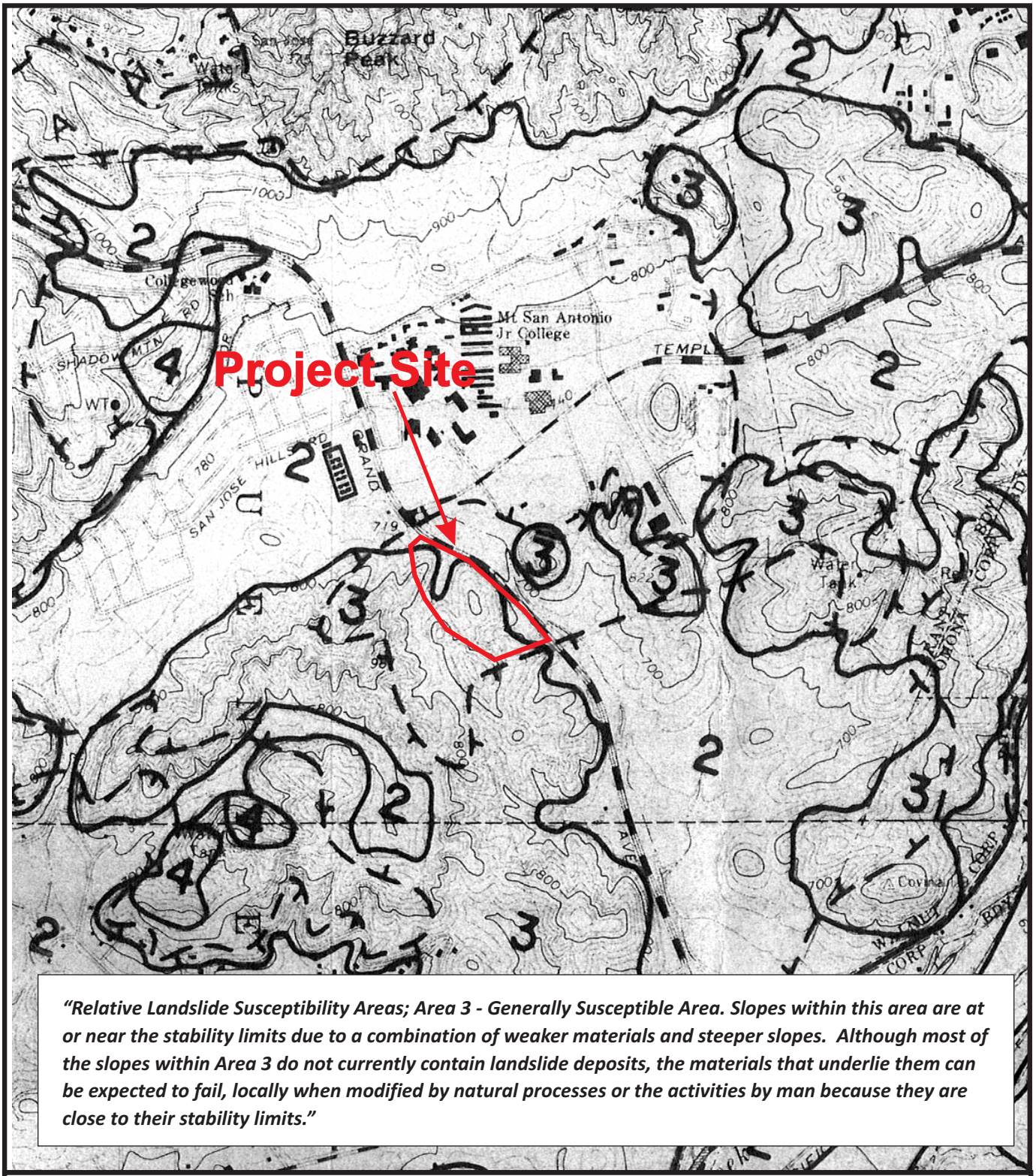
The text of the Converse report indicates, *"the majority of the proposed west Parcel site is underlain by hard, cemented sandstone pebble conglomerate bedrock".* There is no mention within the text of the report of the presence of siltstone and/or shales, which would be indicative of relatively lower strength materials rather than the "*hard, cemented sandstone pebble conglomerate"* cited in the Converse report. A detailed Geologic Map (other than Dibblee's Map) is not presented in the report. The boring logs indicate numerous observations of laminations and bedded siltstones. The cross-sections presented on Drawing No. 4 are referred to in the text (page 6) as Geologic cross-sections, but not labeled so on the drawing. The text indicates that these cross-sections indicate *"interpreted extents and limits of the different earth materials encountered"*. However, only a few notations are made of some of the earth materials encountered. Geologic contacts between the differing geologic materials are generally not indicated and no structural information (such as bedding orientations) are provided. Site-specific geologic structural information is only discussed in the text as it related to a single large-diameter bucket auger boring that was downhole logged. The observations in this boring indicated bedding that was generally striking north10 to 30 degrees east with 8 to 25 degree dips to the northwest. This bedding orientation is nearly opposite of the regional bedding orientations indicated on the Dibblee map and LA County Geologic Map (1974). In addition, Converse's observations from infrequent samples in the small diameter borings indicated bedding which had near horizontal to near vertical dips. These inconsistencies are not discussed in the text of the report or presented on the cross-sections.

The Converse report indicates that the San Jose Fault is located 3.9 kilometers (km) north of the site (Section 5.1). Based on the Dibblee map presented in their report the surface trace of this fault is less than 1.25 km to the north of the site.

2.2 Landslides/Mass Movements:

Converse correctly indicates that, according to official maps published by the State, the site is not located in an area that must be investigated for seismically induced landsliding. However, the Converse report does not reference the LA County Engineer Landslide Potential Map (Plate II, 1974) that indicates portions of the site have a high potential for landsliding (Figures 2a and 2b). In addition, Converse did not reference CGS Open File Report 88-21 that indicates the site is within Area 3 (Figures 3a and b). Area 3 is defined as;

"Relative Landslide Susceptibility Areas; Area 3 - Generally Susceptible Area. Slopes within this area are at or near the stability limits due to a combination of weaker materials and steeper slopes. Although most of the slopes within Area 3 do not currently contain landslide deposits, the materials



"Relative Landslide Susceptibility Areas; Area 3 - Generally Susceptible Area. Slopes within this area are at or near the stability limits due to a combination of weaker materials and steeper slopes. Although most of the slopes within Area 3 do not currently contain landslide deposits, the materials that underlie them can be expected to fail, locally when modified by natural processes or the activities by man because they are close to their stability limits."

Modified from CGS 88-21 Map No. 12.
Landslide Hazards in the Puente and San Jose Hills
1988

Terrestrial Solutions Inc.

Figure 3a

Landslide Susceptibility Areas
CGS 88-21, Map No. 12
1988

Terrestrial Solutions Inc.

Figure 3b

that underlie them can be expected to fail, locally when modified by natural processes or the activities by man because they are close to their stability limits."

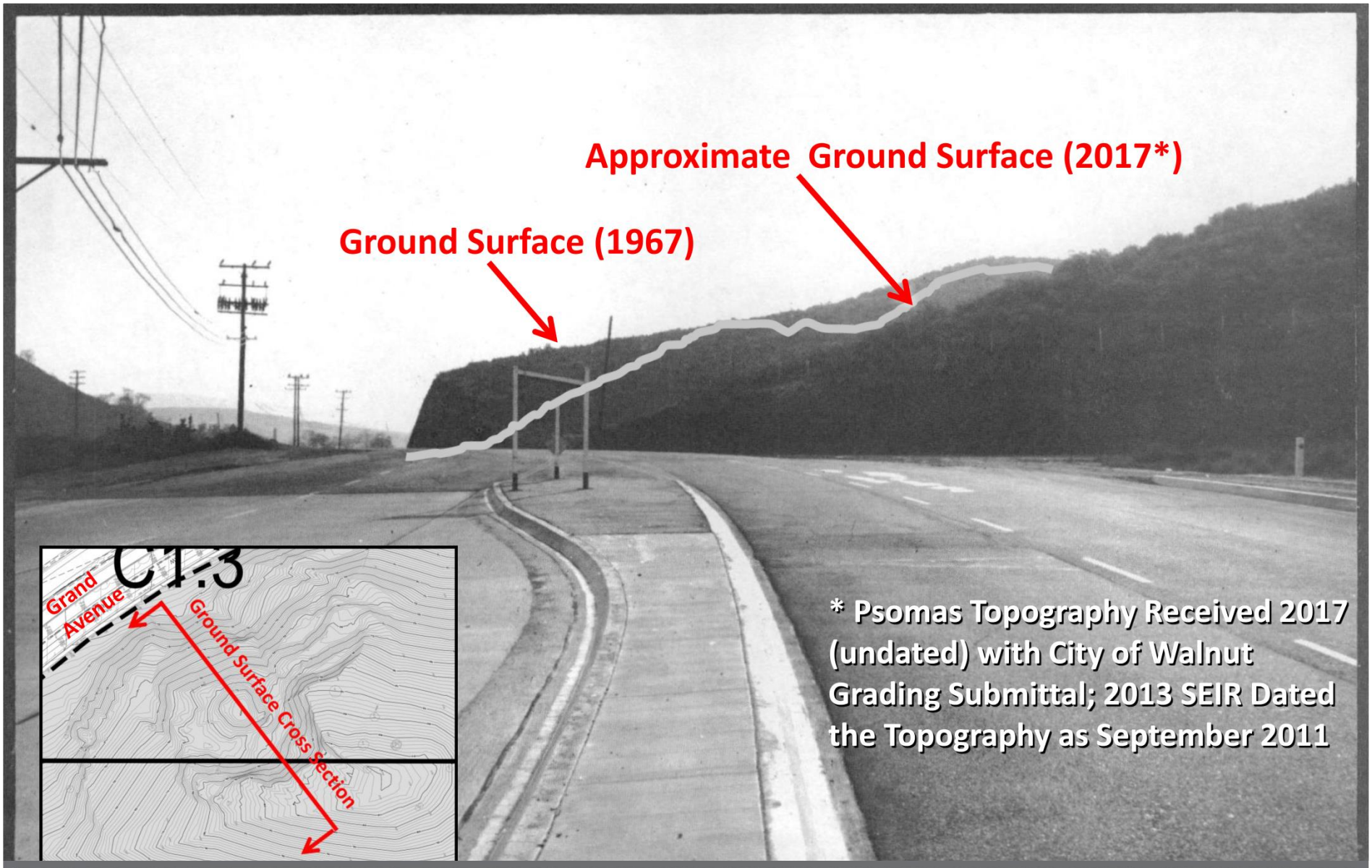
These figures clearly indicate that the proposed project is within areas that were previously determined by governing agencies to have a significant potential for slope instability and landsliding.

No discussion of mass movements/landsliding is provided in the Converse report other than relating to seismically induced landslides. State, County, and City codes/guidelines and standards of practice require a discussion of the potential for landsliding at any hillside site in California. No landslides are shown on any of their maps, cross-sections, or indicated in the text of the report. They also did not reference the LA County Engineering Map (Figures 2a and 2b) and/or the CGS Map (Figures 3a and 3b). Most of the borings excavated by Converse were outside of the areas identified on these maps as having the greatest potential for landslides or slope stability concerns. The known excavations observed on June 20, 2017 appeared to encounter disturbed and irregular bedrock debris in the area of the likely landslide, and thinly bedded, competent bedrock in the one trench located outside the limits of the landslide area.

TSI conducted a brief review of the potential for landsliding at the site. A review of aerial imagery from Google Earth clearly indicates a landslide(s) exists on the eastern side of the central hillside area descending to Grand Avenue (Photo's 1 and 2). This landslide area is present in aerial imagery dating from after 1980 until the present. The presence of this landslide complex was further confirmed based on the brief field reconnaissance on March 30, 2017. In addition, siltstone and shale bedrock with eastward dipping (toward Grand Avenue) bedding was also observed in this area.

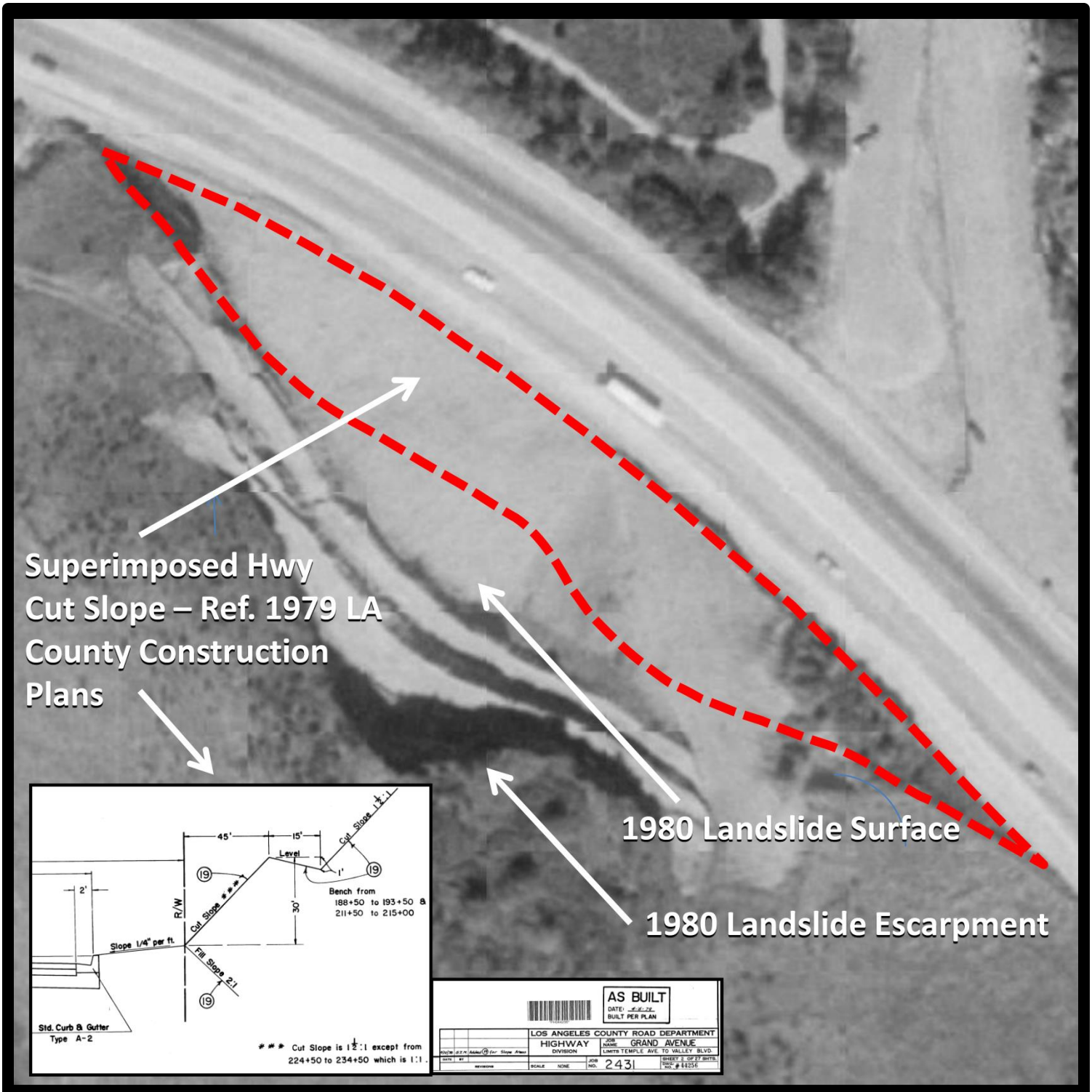
A second site walk was conducted on April 12 with the former mayor of the City of Walnut (June Wentworth). She said that at least two landslides occurred at the subject site after Grand Avenue was expanded to its current four lane configuration in the late-1970's. According to the former Mayor, at least one of the landslides closed the road (Grand Ave.) and covered all the lanes. She indicated that the landslide material was removed from the road and a small wall was constructed to reduce further debris from covering the road at one of the areas. Ms. Wentworth remembers being told by the City's Engineer that *"This hillside area was unstable and should never be developed".* Figure 4 is a compilation of a photograph showing Grand Avenue in 1967 and the current ground surface based on 2011 Psomas topography. This figure clearly shows the pre-grading conditions and that the central hillside area has significantly changed its profile due to the grading and the landslide that occurred. Figure 5 is an aerial view of the area of the landslide in 1980 with the projection of the limits of the initial cut slope based on as built drawings (1979). This figure also shows the limits of the area that failed after the slope was constructed, including the landslide escarpment at the top of the central hill. Photo's 3 and 4 show the current scarp to the landslide in the central hill area.

In addition to the landslide(s) discussed above, review of aerial imagery indicates several geomorphic features in other areas of the site which may indicate landsliding, or potential



Terrestrial Solutions Inc.

Figure 4



Aerial Showing Location of Landslide on Grand Ave. and Footprint of Original Cut Slope

Terrestrial Solutions Inc.

Figure 5

for landsliding. Essentially any of the east facing slopes (below the adjacent existing homes) that are underlain by thinly bedded (laminated) bedding have a potential for landsliding. An analysis of geomorphic features and the potential for landsliding was not provided by Converse.

2.3 Liquefaction

The Converse report identified portions of the site as having a potential for liquefaction according to the state of California (CGS, 1999). Several borings were excavated in these areas. Converse conducted analysis for liquefaction for only one of the borings (BH-15). This boring was located in the southern canyon area where the alluvial deposits were 12 feet in depth. Below the alluvial deposits was bedrock to the total depth. The Converse report concluded that the site was not susceptible to liquefaction and seismic settlement was anticipated to be negligible. Converse did not conduct specific liquefaction analysis for the northern canyon area where both borings BH-1 and BH-2 encountered alluvium to at least the total depth excavated of 21.5 feet. Neither of these borings was excavated to bedrock. Groundwater was indicated at a depth of approximately 19 feet in BH-1 and at a depth of 15.5 feet in BH-2. Neither of these borings were excavated along the axis of the canyon or at the low end of the canyon where the alluvium would be the deepest and groundwater would potentially to be the shallowest. Relatively low blow counts [Standard Penetrometer Testing (SPT)] were encountered in BH-1 at a depth of 10 feet. The observations within BH-1, loose alluvial deposits depicted by low blow counts, deeper alluvium, and shallow groundwater suggests susceptibility to liquefaction and a potential for instability of the proposed overlying earthfill.

2.4 Slope Stability

Converse did not provide specific stability analysis of the proposed or existing slopes in their report. They did comment (on page 7) that the proposed slope near BH-13 would have neutral to favorable bedding attitudes due to the bedding observed in this large diameter boring, contrary to published geologic mapping by Dibblee (1989) and the LA County Engineer (1974).

Geotechnical reports are generally required by reviewing agencies to specifically address the gross and surficial stability of proposed fill, cut, and existing/remaining natural slopes. For fill slopes, this typically includes analysis of the highest proposed slope. The surficial stability is generally based on the earth materials that are proposed for the slope. This analysis was not conducted by Converse.

Most agencies require that proposed cut slopes over approximately 10 feet in height have geologic characterization and specific analysis. This analysis requires sufficient surface and/or subsurface information to indicate the orientation of bedding, other potentially weak planes, and/or discontinuities. When there are out-of-slope geologic features, as are the conditions at this site, specific analysis of these features in relation to the proposed/existing slope is generally required by the reviewing agency. Specific slope stability analysis was not conducted for any slopes at the site in the Converse report.

Most of the proposed slopes lack sufficient geologic information to prepare a geologic cross-section and/or conduct slope stability analysis. In TSI's opinion, the slope of most concern is a cut slope that is proposed in the northwest portion of the site, which is up to 40 feet in height, and is located directly behind several existing homes. Two small diameter borings (BH-5 and BH-6) were excavated in the area of this proposed slope. These borings were sampled approximately every five feet. In both borings, at a depth of approximately 25 feet, siltstone is described as being encountered. The boring logs indicate no apparent bedding was observed in the samples collected. However, these borings were logged by an Engineer-in-Training who is not trained to analyze geologic conditions, and the observations were based on the limited sampling (every 5 feet). The cross-section (A-A', Drawing No. 4), which was prepared for this slope, does not provide geologic interpretations. Regional bedding attitudes and bedding observed by TSI elsewhere at the site indicated a significant potential for siltstone bedding that could dip 15 to 30 degrees out of the slope. The proposed cut slope up to 40 feet in height could potentially remove natural resisting forces to landsliding along these beddings planes and could represent a significant hazard to the offsite properties and existing homes at this location along Regal Canyon Drive.

The slope along Grand Avenue consists of variable cut, fill, and in some locations, fill over the existing slope. As discussed earlier, the central hill portion of the site along Grand Avenue is underlain by a landslide. The proposed cut slope in this area will most likely not remove all the landslide debris, and the underlying cause(s) of the landslide. The geologic conditions (including the presence of the landslide) have not been modeled by Converse for the differing conditions along the length of this proposed slope. No specific stability analysis was provided for any of this variable slope which is nearly 2000 feet in length and up to 80 feet in height. Grand Avenue is a major roadway within the City of Walnut and is located at the toe of this proposed slope. Therefore, understanding the stability of this slope is a critical aspect of this project.

Temporary slope conditions have generically been addressed by Converse (Page 29, Section 10.1). However, due to the potential for weak out-of-slope bedding and other potential discontinuities, proposed temporary conditions remain a hazard and have not been suitably addressed by the Converse report. Specifically, out-of-slope weak bedding planes (siltstone and shale) may be encountered for any east-facing slope where remedial removals and/or proposed cuts for keyways are proposed.

2.5 Remedial Removals

According to the Converse report;

"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 subdrains."

This statement is difficult to interpret and is not well defined as to the precise depths and/or criteria for remedial removal in the canyon bottom area. A definition of "loose and

unsuitable soils" is not provided within the report. Since the alluvial deposits are greater than 21.5 feet (BH-1 and BH-2) in depth, removal of unsuitable alluvium may be a significant issue as it relates to earthwork quantities and overall stability and cost to the project. Deep removals on the order of 20 feet or more may also result in destabilizing the adjacent natural slopes and could become a significant issue as geologic conditions are properly modeled. For example, the removal of alluvium at the south end of the project, could destabilize the adjacent properties and homes along Stonybrook Avenue (due to the potential for out-of-slope bedding within the bedrock).

If alluvial deposits are left in place beneath the deep fills proposed, then there may be significant settlement within the alluvium which could affect the proposed structures. Discussion and/or analysis of these conditions should have been provided in the report.

Page 19 indicates that soft, yielding soil conditions may be encountered. However, the report does not further elaborate where these conditions may occur. It is TSI's opinion that the extent of soft, yielding soils should be explicitly defined to address other potential impacts of these conditions.

Removal of alluvium along Grand Avenue, where the alluvium will be the thickest, has not been discussed and/or modeled. If alluvium is left in place adjacent/beneath Grand Avenue and additional filling is proposed over the alluvium, then there is potential that this condition will result in settlement under the proposed earthfill as well as induce settlement beneath Grand Avenue. Settlement of Grand Avenue and the underlying major utilities that likely exist within the road prism may be a significant issue. A discussion of this potential condition was not discussed or analyzed in the Converse report.

Remediation of the landslide materials that exist within the central hillside area, and other areas of the site, will consist of total removal of the landslide debris to competent bedrock. In addition to normal remedial removals a thorough evaluation, including subsurface investigations, of the underlying weak bedrock conditions must be conducted to determine the width and depth of a shear key that will likely be necessary to stabilize the proposed development. The Converse report indicated that a "Fill Slope Stabilization Keyway" was necessary for portions of the site (Drawing No. 2). However, their key was not based on specific slope stability analysis and was not recommended for cut slopes and/or areas of landsliding or potential slope stability issues.

2.6 Inconsistencies between Boring Logs and Laboratory Data

The boring logs for BH-1 through BH-22 describe the variable earth materials that were encountered at the site, and also present moisture and density information based on the collected soil samples. In many cases the description of the materials encountered appears to be inconsistent with the laboratory testing results. Typically, sand and gravelly sand has relatively higher dry densities and lower moisture contents than a clayey material. In borings BH-12, through BH-15, BH-17 through BH-19, BH-21, and BH-22 the moisture content within many of the samples tested ranged from 23 to 42 percent with dry densities often below 99 (pcf). These materials were often described/depicted as conglomerate and/or sandstone on the boring logs. This

combination of relatively high moisture content in conjunction with relatively low density is not typical of granular sandy materials. It is much more typical of clayey or even diatomaceous materials (common within the Yorba member of the Puente Formation). Converse does not provide a discussion of this unusual condition and the potential impacts if these materials are present near finish pad grades or are used within the fill materials near finish grades. If diatomaceous materials are present at the site, these materials are often very difficult to compact to project specifications, because they are highly sensitive to the moisture content. These earth material characteristics should have been discussed in the Converse report.

2.7 Subdrains

On Page 19 of the Converse report, recommendations for canyon bottom subdrains are provided and the approximate locations are indicated on their Drawing No. 2. The report recommends that Class 2 permeable (Caltrans) materials be used to surround the recommended subdrain pipe without filter fabric surrounding the system. While many agencies accept the use Class 2 materials, most agencies require the use of filter fabric around the gravel drain rock that surrounds the recommended pipe. This is because over time fine materials may clog the gravel drain rock (even Class 2) without the use of the filter fabric. As proposed by Converse, the potential for the long-term performance of a canyon type drain can be compromised. In addition, with remedial removals, the project requires pre-determined elevations and locations for the proposed canyon subdrain outlets and an indication how remedial removals may impact the proposed subdrain locations.

2.8 Perimeter Fill Slopes

The Converse report recommends constructing perimeter fill and cut slopes using a 2 to 1 slope cutting/benching technique where small vertical slopes are etched into these otherwise graded or natural slopes. While this method may have been based on recommendations by an environmental consultant (Helix), TSI believes that these benched slopes are very difficult to construct and result in preferential paths of erosion due to irregularities in the earth materials that the benches are cut into. Once erosional paths are formed in a slope then the erosional path expands and may undermine the integrity of a slope and/or adjacent slopes.

3.0 DEFICIENCIES AND CONSEQUENCES

TSI has reviewed the geotechnical report prepared by Converse (2014) regarding the subject project. Our review of the geotechnical report has discovered many very significant deficiencies in the baseline geologic data and geotechnical analysis. This has resulted in conclusions that are not well supported. In some cases, there is no discussion and/or analysis of significant issues that could impact the stability and safety of the subject site and equally important, the adjacent offsite properties, homes, and Grand Avenue. The primary deficiencies and consequences include:

- Geologic Model – Insufficient surface and subsurface information is available to determine/model the earth materials that are present, and the geologic structure throughout the site. The subsurface explorations conducted by Converse placed a

substantial number of boring holes outside of areas with high landslide potential and areas of potential slope instability depicted on the LA County Engineer Landslide Potential Map (1974) and California Geological Survey (CGS) Open File Report 88-21 Map No. 12 (1988). Data is lacking to create a geologic map and geologic cross-sections that illustrate the site geologic model. The report lacks subsurface data obtained from direct observations of excavations (borings and/or trenches) by a competent geologist. Most of the borings were logged by an Engineer-in-Training whom is not qualified to properly characterize bedrock conditions. Where slopes are proposed, large-diameter borings, that are downhole logged, are lacking which is the best method for observing subsurface geology and geologic structures. The existing small diameter borings indicated bedding that varied from near vertical to near horizontal. However, regional geology maps indicate bedding that dips uniformly to the east-northeast. No explanation is provided as to why there are changes in bedding (geologic structure) contrary to published geologic mapping. Faulting is not investigated and explained. If there is folding then the fold axis has not been modeled and explained. The lack of a proper geologic models has led to a lack of identification of potentially significant geologic hazards. The result is that the proposed project is likely unstable as proposed and more importantly may undermine the stability of the offsite properties including the adjacent residential properties and Grand Avenue.

- A discussion of existing, and potential landslides at the site including mitigation was not presented in the Converse report. The obvious, existing landslide at the center of the site was not identified and therefore, was not properly investigated and modeled. Geologic cross-sections were not prepared to show the subsurface projection of landslides and stability analyses were not conducted to determine if remedial measures were feasible. Geomorphic features that may represent potential landslides were not investigated and/or analyzed.

- General slope stability modelling and discussion was not provided, especially regarding the slope along Grand Avenue, the proposed cut slope below the existing homes, and the natural slopes of the project. These areas may be underlain by unstable bedrock. Based on the small diameter borings bedding is variable throughout the site. Where remedial removals are recommended, these removals may further undermine the stability of existing slopes on a temporary or long-term basis. Further, subsurface data should be obtained from direct observations of excavations (borings and/or trenches) by a competent geologist. Significant laboratory testing and analysis was omitted that would provide appropriate shear strengths of the anticipated shale, siltstone, potential weak bedding, and landslide rupture surfaces. Without comprehensive stability analyses under both static and dynamic conditions, the geotechnical integrity of the proposed earthfill and impacts to offsite properties cannot be determined.

- Liquefaction was only discussed in relation to the southern canyon area and one boring within this canyon. The northern canyon is larger and has deeper alluvium than the southern canyon leaving significant deficiencies in the liquefaction analysis. The total depth of alluvium was not modeled or investigated near Grand Avenue within the northern canyon. Additional Investigation should conducted to determine the total depth

of alluvium and to obtain subsurface information for the full length of the canyon which is necessary for a proper liquefaction evaluation and determination of remedial removals and the settlement characteristics of any alluvium proposed to be left in place. The use of CPT methods and rotary wash drilling are the most appropriate methods for gathering subsurface information below groundwater. Given the identified potential for liquefaction (State Maps), the lack of a sufficient liquefaction analysis, and the limited data provided, the stability of the proposed earthfill, and the long-term integrity of Grand Avenue cannot be demonstrated.

- Remedial removals were discussed however, estimated depths of removal and the criteria to determine when removals are sufficient were not provided. It is likely that remedial removals in the northern and southern canyons could exceed 20 feet in depth. The remedial removals of the landslide in the central knob area are also likely to exceed 20 feet in depth. The key to stabilize the cut and fill slope along Grand Avenue and the unstable landslide conditions will also generate significant remedial removals/keyways. It is likely that the required remedial removals will include 100's of thousands of cubic yards of removal and re-compaction. The remedial removal quantities have not been discussed in the Converse report or provided on the grading plans (Psomas). Typically reviewing agencies require a summary of the remedial quantities in order to assess the proper agency fees and provide an accurate schedule of grading.

- Remedial Removal depths of can affect many other issues including total and differential settlement, potential for collapse, and the stability of existing slopes. A remedial measures map is typically included in a grading plan review report, but was not present in the Converse report. The remedial map would typically indicate all the recommended remediation necessary for safely grading the site.

4.0 SUMMARY

It is TSI's opinion that there are significant deficiencies in the subsurface investigations, discussions, and analysis presented in the Converse report. In our opinion, this report does not meet the minimum standards required by City, County, and State codes/guidelines and standards of practice for a geotechnical investigation of a hillside development in the southern California area. Because of these deficiencies, the proposed project could result in unstable conditions that could significantly undermine the stability of the proposed project and offsite properties. As presented, the proposed project could also result in significant negative impacts to Grand Avenue.

It is TSI's opinion that significant additional surface and subsurface investigations are necessary to properly characterize/model site conditions. These subsurface investigations must include direct observation of geologic features by a Professional Geologist and Engineering Geologist. Further geotechnical investigations and analysis are likely to reveal other significant issues that have not been identified in this review that require further analysis and mitigation.

Terrestrial Solutions Inc. appreciates the opportunity to present this report. Should you have any questions, please contact the undersigned at (949) 201-3388.

Respectfully submitted,

Terrestrial Solutions Inc.

Don Terres, President, Principal Geologist
PG 4349, CEG 1362, Reg. Exp.: 01-31-19

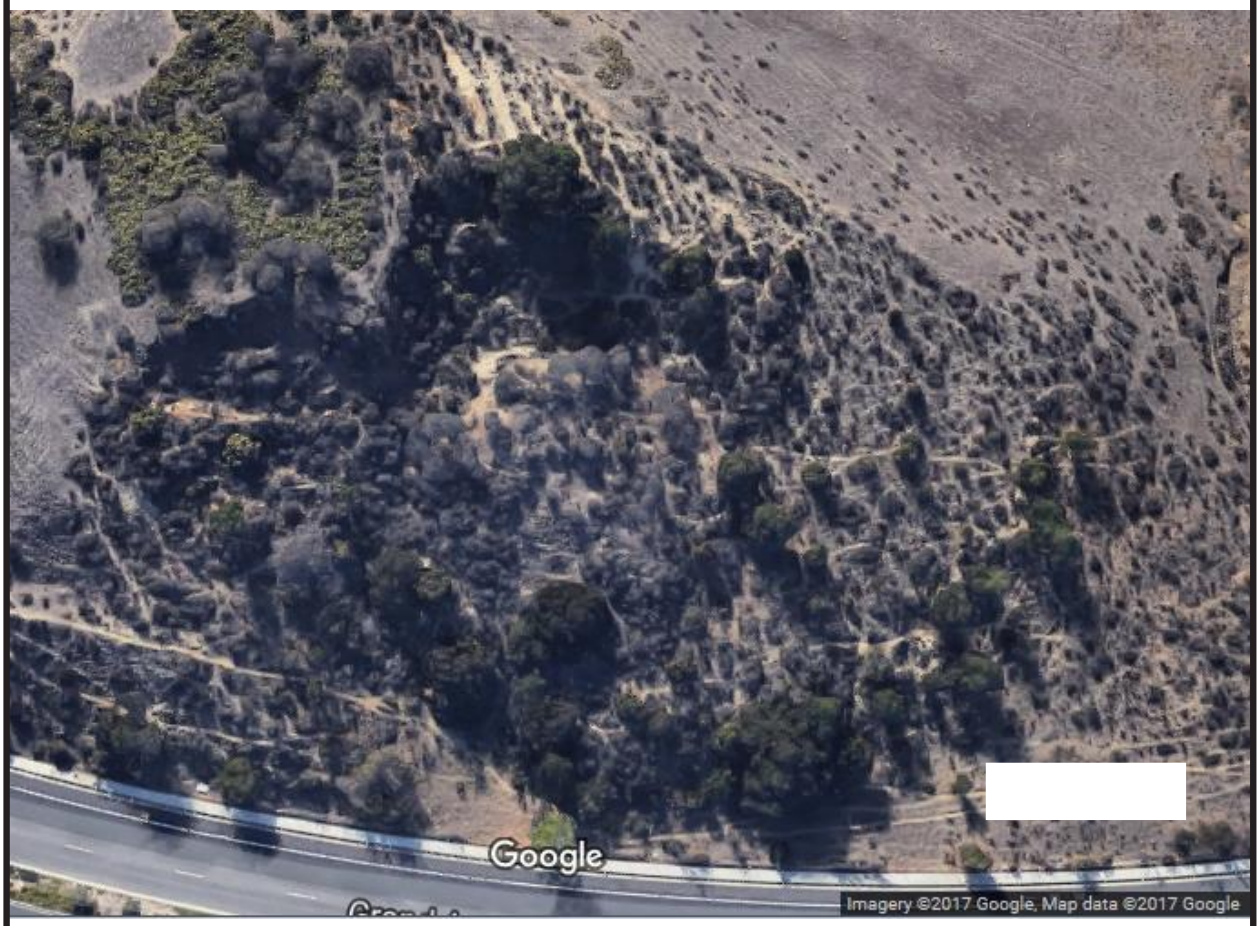
Additional References:

California Geologic Survey (CGS), 1988, Landslide hazards in the Puente and San Jose Hills, southern California, Open File Report 88-21, edited by Tan, S., 1988.

DIBBLEE, T.W. and MINCH, J.A., 2002, Geologic map of the San Dimas and Ontario Quadrangles, Los Angeles and San Bernardino Counties, California: Dibblee Geological Foundation DF-91, scale 1:24,000.

City of Walnut, General Plan Plates I and II, Prepared by the County of Los Angeles, dated April 1974.

Central Hill Landslide Area (close up and broader view)



East Side of Landslide
Escarpment (February 11, 2017)

Photo 3

West Side of Landslide
Escarpment (February 11, 2017)

Photo 4

Terrestrial Solutions Inc. Geotechnical Services

To: United Walnut Taxpayers

August 31, 2017
Project No.: 17-088

Attention: Mr. Dennis G. Majors

Subject: Geotechnical Review of Converse Report concerning The West Parcel Landslide, Mt. San Antonio College West Parcel Solar Project, Walnut, California.

Reference: Converse Consultants, 2014, Geotechnical Study Report, Proposed Fill Placement at the West Parcel, Mount San Antonio College, Walnut, California, Project No. 13-31-339-01, dated December 19, 2014.

Converse Consultants, 2017, West Parcel - Landslide Toe Test Pit Trench Study, Mt. San Antonio College West Parcel Solar Project, Walnut, California, Converse Project No. 13-31-339-30, dated July 27, 2017.

Terrestrial Solutions Inc., 2017, Geotechnical Review of proposed Grading of the West Parcel Site for Mount San Antonio College, Walnut, California. Project No. 17-088, Dated June 29, 2017.

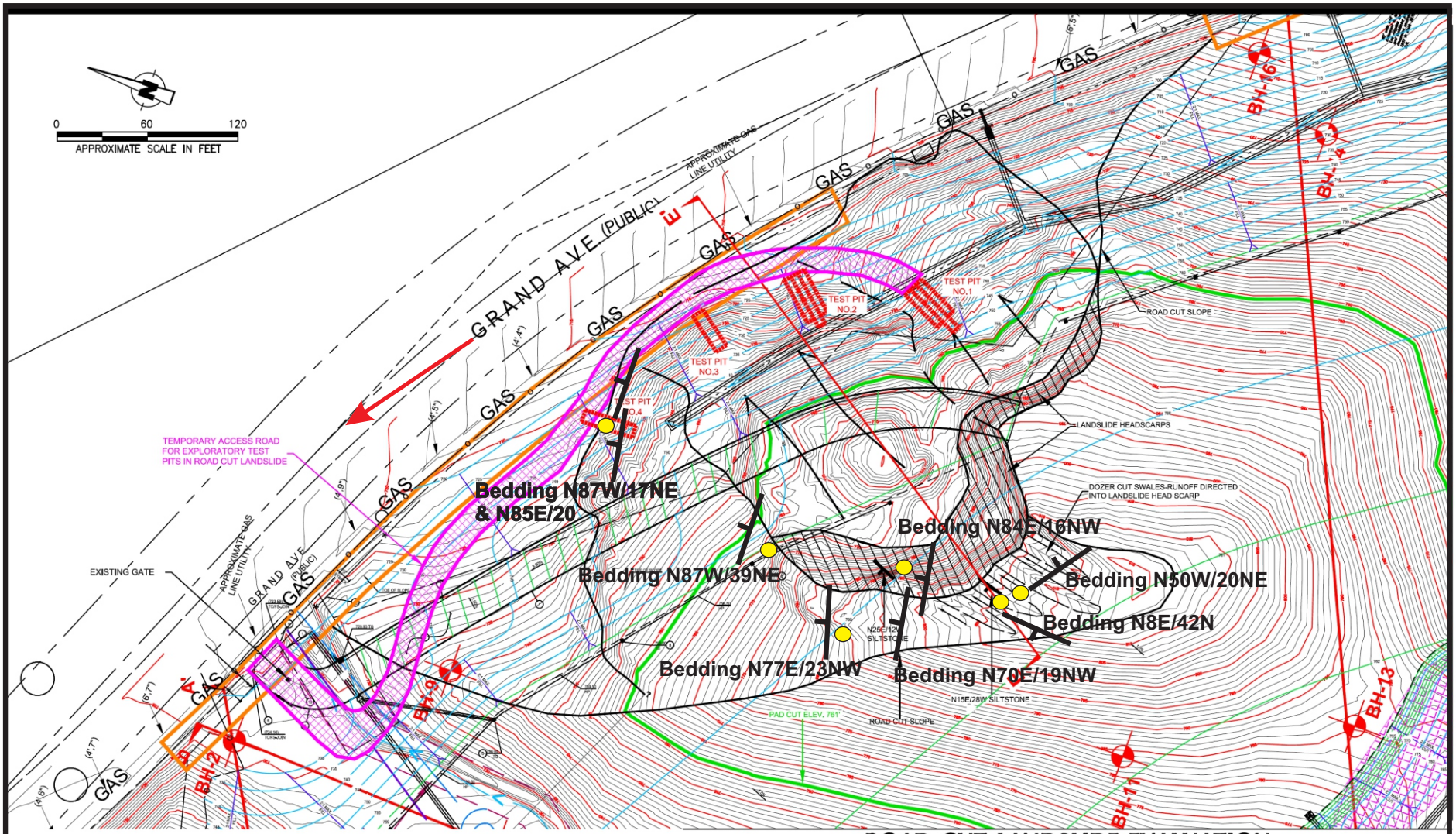
Terrestrial Solutions Inc. (TSI) has conducted a geotechnical review of the referenced 2017 Converse Consultants (Converse) document regarding an investigation of the West Parcel Landslide adjacent to Grand Avenue. This review is supplemental to the review conducted by TSI (2017) regarding the referenced 2014 Converse report. The purpose of this review is to determine if there are geotechnical issues which have not been sufficiently addressed, and/or could result in unstable conditions both for the proposed development and/or for adjacent offsite properties.

Converse Investigation:

Converse excavated 4 test pits in the area immediately adjacent to Grand Avenue where TSI (2017) previously identified a landslide. Converse had not indicated this landslide in their 2014 report. The logs for these trenches are presented at the end of their report and the locations are indicated on their Drawing No. 1 (see Figure 1). They also added two bedding attitudes to Drawing No. 1 located outside the limits of the landslide. A cross-section line is shown on this drawing but the cross-section was not presented in the report. It is our understanding that Converse did not have a permit to conduct destructive field activities (excavation of test pits) and therefore, the trenching program was halted by enforcement agencies. A test pit was still open at the time when a representative visited the site. It appears that the open test pit is in the Location of Test Pit No. 4 (Converse, 2017). The reviewed report is apparently supplemental to their previous report (Converse, 2014) although they do not specifically say that it is.

11 Wedgewood
Irvine, CA 92620

office/fax: (714) 505-2472
cell: (949) 201-3388
email: dterrestrialsi@gmail.com



ROAD CUT LANDSLIDE EVALUATION

Converse Consultants

WEST PARCEL
MT. SAN ANTONIO COLLEGE
WALNUT, CALIFORNIA

Project No.	Drawing No.
13-31-339-02	1

Bedrock Bedding Attitude by TSI

Bedding N77E/23NW

Modified From Converse Drawing No. 1

Figure 1

Terrestrial Solutions Inc.

Summary of Converse Report Data/information:

The Converse report identifies a landslide in all four of the test pits excavated, and Drawing No. 1 has several lines possibly indicating the limits of the landslide or several landslides. The limits of the landsliding is unclear because not all lines are labeled and no legend is provided for Drawing No. 1. Four arrows are shown that likely indicate the direction of landsliding (one or two landslides) however, in the area of Test Pit No. 4 there are no arrows and the line which may show the limits of landsliding is discontinuous to the west and ends with a question mark. An area that is indicated as landslide headscarp is indicated on Drawing No. 1. There is no discussion in the text of the report regarding multiple landslides, multiple pieces of the same landslide, or the limits of landsliding.

All four test pits indicate that a landslide slip plane was encountered and that the bottom portion of the test pit encountered bedrock. There were no slip plane attitudes indicated in the trench logs, or descriptions of the slip plane (except possibly Test Pit #3). Bedding attitudes were noted within the bedrock in all four of the trenches. The bedding attitudes were variable within the test pits. However, within Test Pits 2 through 4 most of the bedrock bedding attitudes had nearly east-west strikes with dips ranging from 12 to 21 degrees to the north. In Test Pit No. 1 the bedding attitudes had a strike ranging from north 52 to 65 degrees east and northwesterly dips ranging from 12 to 22 degrees. The two attitudes near the headscarp had strikes that ranged from north 15 to 25 degrees east with dips of 12 and 28 degrees.

Converse (2017) Findings/Conclusions/Recommendations:

Converse concluded that the landslide observed occurred in the late 1970's due to previous grading activities and was likely triggered by higher than normal rainfall. In addition, they conclude that cuts made above the landslide channeled water into the headscarp area. They stated that the landslide has not been repaired and that it has continued to grow/move since the initial movement. They also conclude that additional movement is possible and it poses a potential hazard to Grand Avenue.

Converse provided recommendations to be implemented during rough grading of the site in relation to the landslide. Their recommendations repeated throughout the report included total removal of the landslide material and construction of a key near the toe of the slope. They indicate that the size, width and depth of the key will be increased during grading to remove the disturbed landslide deposits as necessary. They also indicate that subdrains will be installed to prevent build-up of hydrostatic pressure behind the compacted fills. There is no mention of conducting slope stability analysis or that a specific factor of safety will be achieved.

The Converse report also states that "the proposed grading of the West Parcel Solar Project will improve the overall slope stability along the west side of Grand Avenue and for the adjacent offsite properties and the homes along the west side of the property".

TSI review of the Converse 2017 Report:

The Converse (2017) report was specifically titled as addressing the West Parcel Landslide above Grand Avenue that was previously observed during our brief site visits on March 30, April 12, and June 20, 2017. This landslide was not indicated in the previous Converse report (2014). The recent report has many inconsistencies with their previous report and does not provide sufficient information and/or analysis to provide a conclusion whether or not the designed project will result in a stable slope condition. TSI's review will address the significant areas where there are inconsistencies, a lack of data, and/or where additional analysis is necessary according to agency guidelines/requirements.

The primary purpose of the Converse report was to investigate the landslide adjacent to Grand Avenue and provide recommendations for remedial grading. The first step in this process would normally be to model the landslide and the underlying bedrock conditions. Converse's investigation of the landslide did not generate sufficient information to provide a proper analysis of the landslide(s). They provide a map view of possible limits of landsliding however, as previously pointed out, the lines which provide the limits of the landslide are not clearly labeled and/or end suddenly. No cross-section is presented that shows the structural relationship between the landslide the underlying bedrock, the existing topography, and the proposed grading plan. Governing agencies, state, and local guidelines for geologic/geotechnical reports require geologic cross-section(s) be presented to model geologic conditions in hillside areas. In this case, several cross-sections would likely to be necessary to properly model the geotechnical conditions within the area of the landslide and to the east and west along Grand Avenue. Governing agencies, state and local guidelines also require that a Geotechnical Engineer (or a qualified Civil Engineer) conduct slope stability analysis of the modeled geologic conditions. This analysis must consider the various geologic conditions, including slip plane inclinations, bedding inclinations, the strength of the differing earth and bedrock materials, and the potential for deeper, weak bedding planes. Conducting slope stability analysis is the only way to determine the proper size of keys and other remedial measures that are necessary to stabilize a slope to meet the agency codes and standards of practice. The referenced report is not signed by a Geotechnical Engineer and therefore, does not meet agency requirements for a complete geotechnical report. Other areas of deficiencies include:

- No slip plane attitudes are presented on the test pit logs. The test pits only penetrate a few feet into the bedrock. Standard of practice for these geologic conditions would be to excavated large diameter borings that are down hole logged in order to identify bedding planes well below the landslide. The large diameter borings are also useful in identifying potential weak clay or bedding planes that may represent deeper potential failure planes. Borings would

typically be necessary above the landslide and adjacent to the landslide to verify the consistency of the bedrock conditions. The information presented so far by Converse indicates inconsistent geologic conditions.

- Converse states that the bedrock bedding attitudes found in the four test pits are "similar to the previously measured bedding attitudes measured for the project site". However, the previous report indicated (page 7, Converse 2014) that "Bedding attitudes ranged from 10 to 30 degrees east with bedding dips 8 to 25 degrees northwest". As indicated previously Test Pits 2 through 4 had bedding attitudes that generally had an east-west strike and northerly dip. Therefore, the bedding attitudes described in the test pits are not similar to those previously reported.
- TSI conducted brief mapping of the area above the landslide where Converse mapped bedding that strikes north 15 to 25 degrees east (similar to the previous report). Within this same area TSI observed bedrock bedding attitudes that were striking from north 50 degrees west to nearly east-west with northerly dips (see attached figure 1). These attitudes are similar to other bedrock attitudes indicated in the test pits 2 through 4. The Converse report (page 3) concluded that bedrock attitudes represent bedding that is favorable or neutral in relation to the proposed/existing slope. This statement is false as many/most of the attitudes presented in the test pits and observed in the ground surface have an out-of-slope (proposed and existing) dip component.
- The Converse report does not indicate that the out-of-slope bedding is a contributing factor to the landsliding that occurred, yet it is a likely a significant contributing factor.
- The hill near the landslide exposes bedrock that consists of interbedded siltstone, claystone, and sandstone, yet also visible at the top of the hill and to the south are conglomeratic bedrock materials. Converse (2107) has not modeled these bedrock conditions, indicated the different geologic units on their Drawing No.1, or provided any discussion of these differing bedrock materials in their recent report. Converse has not provided any geologic information of the bedrock conditions offsite and beneath Grand Avenue. Is it possible for the bedding inclinations to change in this area. There are many projects throughout southern California where bedding orientations are different offsite and resulted in less favorable geologic conditions. As indicated in TSI's previous review report (TSI, 2017) many of the hollow stem borings excavated by Converse (2014) encountered siltstones which are thinly bedded, and described as having vertical to horizontal bedding. The reasons for the variable bedrock materials and bedding orientations, and the potential impacts of the variable bedding has not been discussed or explained by Converse in either report.
- Test Pit No. 4 (Drawing 1d) indicates the presence of landslide debris in the upper portion of the test pit and along the back wall of the excavation. TSI's observation of this excavation did not indicate the presence of any significant landslide debris along the west wall or the back wall of this excavation. Photo 1 (A and B) clearly shows fractures within similar looking bedrock, that extend from near the surface to the total depth of the test pit. The test pit log describes the material above the slip plane (approximately 7 feet above the bottom of the pit)

as "disturbed, loose, broken" yet as indicated in the photos the material above and below this depth is very similar in consistency, and was not observed to be significantly disturbed, loose and broken. Bedding was observed to be consistent in the rear and side wall from near the surface to the bottom. TSI's interpretation of this Test Pit is that it is primarily bedrock which is significantly different than as presented by Converse on Drawing No. 1d. The bedrock at this location has out-of-slope dipping bedding.

- The logs for test pits No. 1 through 3 indicate that bedrock was encountered in the bottom few feet of each excavation. TSI is concerned that there may be additional slip planes below the depth of excavation. For example, the slip plane indicated in Test Pit 3 is shown as being encountered within a foot of the bottom of the excavation and nearly 20 feet below the top of the excavation. The structural relationship between the slip plane and the underlying bedrock is not provided in any of the test pits. Because geologic cross-sections are not provided the interpreted relationship between these geologic units is also not apparent. Therefore, Converse interpretation of this area as being part of the landslide may be wrong.
- The sequence of how the landslide(s) occurred as described by Converse is not consistent with the information provided by the former Mayor of the City of Walnut (TSI, 2017). According to the former mayor, a first landslide occurred after the road was widened. The failure apparently blocked the entire roadway, which was shut down. The County then cleared the roadway and re-graded the area of the landslide (visible in 1980 aerials from historicaerials.com). A second failure occurred at a later date (after 1980) that resulted in the current conditions.
- Converse's statements that the landslide continues to enlarge and represents a continued hazard to Grand Avenue, is not supported by specific evidence or slope stability analysis in their report. It is however, consistent with statements of the former Mayor of the City of Walnut that at least two landslides occurred at the subject site after Grand Avenue was expanded to its current four lane configuration in the late-1970's. According to the former Mayor, at least one of the landslides closed the road (Grand Ave.) and covered all the lanes (TSI, 2017).

Since the early 1980's when the second landslide likely occurred (approximately 35 years) there have been no reported road closures due to movement of the current landslide. In addition, no observations of movement was documented over this past winter which had significantly higher than normal rainfall. An examination of the current escarpment compared to the escarpment observed in the 1980 historicaerials.com photo, shows some erosion/raveling from 1980 to the present.

Conclusions and Recommendations:

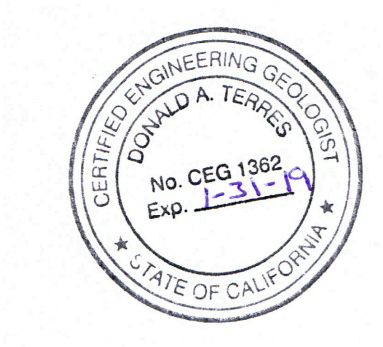
The Converse report was for the purpose of presenting a geologic model of the West Parcel Landslide that is adjacent to Grand Avenue. They also provided recommendations for stabilization of the landslide and the ultimate slope that is proposed for the West Campus Solar project. Based on the information presented in the subject report (Converse, 2017) and the previous report (Converse 2104), it is TSI's conclusion that the Registered Professional(s) that signed the report(s) have not followed state and local agencies requirements/guidelines for preparing a competent and complete geologic/geotechnical report that can be relied on to provide a project that is safe. There is not sufficient information presented in the subject report to properly model the landslide(s), the materials below the landslide, and adjacent areas. The author has not properly analyzed the data and made erroneous, misleading, and conclusionary statements that are not well supported by the data, and has not recommended or utilized other professionals which must be a part of the process. The numerous issues/deficiencies that were detailed in TSI's review of the Converse (2014) report have also not been addressed in their more recent report. The conclusions and recommendations presented in TSI's previous report are still applicable and must be addressed to provide a project that is safe and stable. Because of these deficiencies, the proposed project could result in unstable conditions that could significantly undermine the stability of the proposed project and offsite properties. As presented, the proposed project could also result in significant negative impacts to Grand Avenue.

It is TSI's opinion that significant additional surface and subsurface investigations are necessary to properly characterize/model site conditions. These subsurface investigations must include direct observation of geologic features by a competent Professional Geologist and Engineering Geologist. A Geotechnical Engineer is required by State guidelines for School sites and to provide slope stability analysis. The analysis, conclusions, and recommendations presented in the two Converse reports have not demonstrated that the registered professionals that signed these reports are capable of properly investigating and evaluating this proposed hillside development from a geotechnical viewpoint.

Terrestrial Solutions Inc. appreciates the opportunity to present this report. Should you have any questions, please contact the undersigned at (949) 201-3388.

Respectfully submitted,

Terrestrial Solutions Inc.



Don Terres CEG 1362
Reg. Exp.: 01-31-19

Test Pit No. 4

Photo 1A

Test Pit No. 4

Photo 1B

Terrestrial Solutions Inc. Geotechnical Services

To: United Walnut Taxpayers

August 31, 2017
Project No.: 17-088

Attention: Mr. Dennis G. Majors

Subject: Response to EIR planning session Comments, West Parcel Area, Mt. San Antonio College West Parcel Solar Project, Walnut, California.

Reference: Converse Consultants, 2014, Geotechnical Study Report, Proposed Fill Placement at the West Parcel, Mount San Antonio College, Walnut, California, Project No. 13-31-339-01, dated December 19, 2014.

Converse Consultants, 2017, West Parcel - Landslide Toe Test Pit Trench Study, Mt. San Antonio College West Parcel Solar Project, Walnut, California, Converse Project No. 13-31-339-30, dated July 27, 2017.

Terrestrial Solutions Inc., 2017a, Geotechnical Review of proposed Grading of the West Parcel Site for Mount San Antonio College, Walnut, California. Project No. 17-088, dated June 29, 2017.

Terrestrial Solutions Inc., 2017b, Geotechnical Review of proposed Grading of the West Parcel Site for Mount San Antonio College, Walnut, California. Project No. 17-088, dated August 29, 2017.

Introduction

Terrestrial Solutions Inc. (TSI) has reviewed Section 3.5 (Geology/Soils) of the West Parcel Solar Project, Tiered Project Draft EIR to 2012 Facilities Master Plan Program EIR (SCH 2002041161) prepared by Mt. San Antonio College, California. This review is supplemental to the previous reviews conducted by TSI (2017a and b) regarding the referenced 2014 and 2017 Converse reports. The purpose of this review is to respond to specific comments provided in the EIR documents. Some of the comments and responses are similar to those that are presented in TSI's previous reports.

Page 91: Second Paragraph

Regarding the draft comments and supporting documents: TSI has provided a geotechnical review of the two referenced reports by Converse Consultants (2104 & 2107). It is our understanding that these two review reports will be submitted by United Walnut Taxpayers (UWT) to the appropriate agency for consideration. The review reports were prepared by Don Terres whom is a Professional Geologist (PG 4349) and Certified Engineering Geologist (GEG 1362) in the State of California. His registrations are current, active, and Mr. Terres has been practicing Engineering Geology in the State of California for over 30 years. Mr. Terres vast experience includes his role as Geotechnical Reviewer for all reports submitted to the County of Orange, California.

11 Wedgewood
Irvine, CA 92620

office/fax: (714) 505-2472
cell: (949) 201-3388
email: dterrestrialsi@gmail.com

Pages 91 and 92: Executive Summary

The Executive Summary is stated as being a compilation from the 2014 Converse Consultant (Converse) Report. A specific section with all of these conclusions was not presented in the referenced reports. TSI's referenced report (2107a) provides a review of the Converse report and addresses most of the conclusions in this document. Several of the bulleted items are additionally addressed below.

Bullet #6 - While a liquefaction analysis was conducted for the site. This analysis was based on a boring that was not in one of the two areas of potential liquefaction as identified by the State of California. Boring BH-1 in the northern portion of the site would have been a more appropriate boring to analyze for liquefaction. However, to best characterize liquefaction potential, borings should have been excavated near the center of the mouth of the southern and the northern canyon areas. Until analysis of these areas is conducted, the analysis presented in the Converse report is not considered as sufficient to make a proper conclusion.

Bullet #8 – Remedial Grading of the site has not been well defined in either report. The depth of remedial removals has not been provided in the canyon areas. In addition, the keys for the designed slopes is not based on specific slope stability analysis for the variable conditions that will be encountered. These items are generally required by the governing agencies and standards-of-practice in the profession.

Bullet #9 – The statement regarding reducing the existing slope to a gradient less than 2:1 is misleading. Much of the existing slope along Grand Avenue is currently at a gradient less than a 2:1 inclination, therefore, increasing the design slope to a 2:1 slope is increasing the slope angle and height for much of this slope area. In addition, the underlying geologic conditions are much more critical than the angle of the proposed slope. The two Converse reports do not provide a geologic model that clearly indicates the underlying geologic conditions, nor do they provide complete geologic cross-sections. Complete geologic cross-sections are required by State and local guidelines and standards-of-practice for a proper geologic report.

Pages 93 through 134 in the EIR document are from sections of the Converse 2014 report that have been cut and pasted into the EIR document. For comments related to this report please see TSI's 2017a review report.

Section 3.5.2 Geology/Soil Impacts

CEQA checklist:

Item No. 1 – The conclusion is correct, although the Converse report does not provide the correct distance to the closest Active Fault (TSI 2107a).

Item No. 2 – Liquefaction: As discussed above and in TSI's referenced report (2017a), liquefaction has not been appropriately addressed. Therefore, this conclusion is not considered appropriate at this time.

Item No. 3-There is not a specific section in the Converse reports that addresses mass movements and/or landsliding in general. This is required by State and local guidelines and standards-of-practice. The referenced section E-7 only briefly addresses seismically induced landslides. There is a significant difference between addressing mass-movements/landsliding in general and the potential for seismically induced landslides. Neither has been properly and thoroughly addressed in the referenced Converse reports.

The statement regarding removing or reducing slopes to a 2:1 gradient is misleading. There is no analysis presented that indicates that a slope steeper or flatter than 2:1 is stable or not stable. The underlying geologic conditions is much more critical than the slope inclination. For the slope along Grand Avenue the geologic conditions have not been properly modeled, and much of this slope will have an increase in inclination and height. The remediation of this slope which has an active landslide, must be based on specific slope stability analysis on multiple cross-sections. Significant additional geologic information is necessary to accurately model the geologic relationships in this area, including the limits of the weak siltstone bedrock units.

The 2:1 cut slope proposed at the rear of the homes along Regal Canyon Drive is modeled by cross-section A-A'. However, this cross-section is incomplete. The hollow-stem borings in this area indicate that siltstones may be encountered near the toe of this slope. Hollow stem borings are not the appropriate tool for modeling geologic bedding conditions. However, bedding in this area is likely out-of-slope. Therefore, the homes above this slope may be exposed to unstable conditions as a result of this project. This proposed slope and the homes above could be in danger of failing if this slope is excavated. This slope area must be properly addressed prior to grading of the site.

There may be other similar areas of the site that will expose weak siltstone and clay beds that dip to the northeast and may result in unstable natural, existing, and/or designed slopes along the western edge of the site. There is no aerial photograph review of the geomorphology, and no discussion of the potential to undermine this area during remedial grading. More investigation excavations should have been conducted near the future daylight areas to address this potential condition.

Item No.4- There is a large landslide that exists on the site that was not identified by Converse in 2014. This is an unstable condition that is partly due to underlying unstable bedrock conditions. The underlying geologic unit in this area and throughout much of the site is a weak siltstone and claystone (identified in the borings) which have an out-of-slope bedding orientation. This is an "unstable geologic unit". The statement that the "project upon completion will not result in on- or off-site landslides" is a false/misleading conclusion. The section referenced (E7) only refers to seismically induced landslides. Landslides occur with and without seismic influences. The conclusionary statement provided (or either Converse report) does not address the potential for landslides to be caused by remedial removals, and does not address whether or not any of the existing slopes along the western perimeter of the site is underlain by landsliding.

If there is a potential for liquefaction at the mouth of the southern and/or the northern canyon areas as identified by the State of California, then the potential for lateral spreading and/or other seismic phenomena must also be addressed proposed in these areas.

Comments from June 7, 2017 meeting:

The text refers to comments made by Mr. Hassan Sassi as erroneous. His specific comments were not available for review. However, the indication that Mr. Sassi's statement indicating that the Converse report (2104) did not address landsliding is at least partially correct. The referenced Converse (2014) report did not address landslides that were unrelated to seismic activity. It also does not address the potential for unstable slope due to the proposed grading or remedial grading. This is a requirement of geologic reports. This same Converse report did not identify the obvious landslide that exists within the central portion of the site along Grand Avenue. Therefore, Mr. Sassi's comment is accurate and very appropriate. As discussed above Converse's statement regarding the potential for seismically induced landslide is not based on an accurate model of the underlying geology, and is also very misleading. TSI considers that the potential for landsliding related to this project is a significant geotechnical concern and has not been appropriately addressed by either report by Converse. This is consistent with Mr. Mansfield Collin's statement.

A statement is made that "*Grading for the project will result in a site with improved stability, not less, and no future landslide or substantial settlement is likely with the completion of the project*". The statement of improved stability is not supported by specific analysis. The slope to be excavated below the homes on Regal Canyon Drive will not have "improved" stability and may not be stable in it's proposed configuration. The homes above this proposed slopes could be in danger and will be less stable because of the proposed project. This is the same for the slope near BH-13 where the existing slope will be made steeper (less stable). The stability of the entire slope proposed along Grand Avenue has not been demonstrated with proper geologic modeling and slope stability analysis.

N10. Additional Trenching Investigations

TSI provided a review of the additional trenching as provided in the referenced report by Converse (2107). This investigation only addressed the specific landslide along Grand Avenue and did provide any specific information or discussion of potential for landsliding for the remainder of the site. The information presented in this report did not provide a model of this landslide nor did it provide specific slope stability analysis. It is TSI's opinion that this supplemental report did not provide sufficient information or provide well supported remedial recommendations to provide a site or slope that will be stable upon completion.

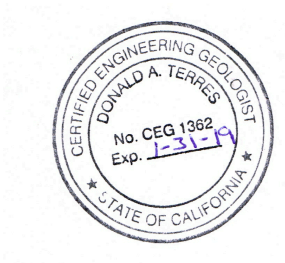
Conclusion

It is TSI's opinion that significant additional surface and subsurface investigations are necessary to properly characterize/model site conditions. These subsurface investigations must include direct observation of geologic features by a competent Professional Geologist and Engineering Geologist. A Geotechnical Engineer is required by State guidelines for School sites and to provide slope stability analysis. The analysis, conclusions, and recommendations presented in the two Converse reports have not demonstrated that the registered professionals that signed these reports are capable of properly investigating and evaluating this proposed hillside development from a geotechnical viewpoint.

Terrestrial Solutions Inc. appreciates the opportunity to present this report. Should you have any questions, please contact the undersigned at (949) 201-3388.

Respectfully submitted,

Terrestrial Solutions Inc.



Don Terres CEG 1362
Reg. Exp.: 01-31-19

DONALD A TERRES

11 Wedgewood, Irvine, CA 92620 ◆ cell (949) 201-3388 ◆ dterrestrialsi@gmail.com

ENGINEERING GEOLOGIST

EDUCATION/REGISTRATIONS

Master of Arts, Geological Science, 1984 — University of California, Santa Barbara, California
Bachelor of Sciences, Geological Science, 1981 — Principia College, Elsah, Illinois
Summer Field Camp, 1980 — Indiana University, Whitehall, Montana

Certified Engineering Geologist, California, CEG 1362, Since 1987
Professional Geologist, California, PG 4349, Since 1987
City of Los Angeles Deputy Methane Inspector – Lic. No. P031442

EMPLOYMENT HISTORY

Mr. Terres' initial career began at Leighton and Associates Inc. in 1984 where he rapidly advanced from staff geologist to Director of Geologists and assistant Office Manager for their Orange County operations. Next Mr. Terres was employed by Pacific Soils Engineering, Inc., for over 6 years, as a Certified Engineering Geologist, Manager of the Tustin office, and Manager of Geological Services of the Corona Office. Since the beginning of 2010 Mr. Terres has been the Principal Geologist for Terrestrial Solutions Inc.

PROFESSIONAL RESPONSIBILITIES

Mr. Terres' career has included many responsibilities including the following:

- Provided management and training of geologic staff.
- Financial and Marketing duties related to office operations.
- Project Management of complex and multi-million dollar projects.
- Review and Preparation of geotechnical reports.
- Conduct geotechnical field investigations and laboratory data analyses.
- Performs site reconnaissance, geologic mapping, aerial photographic analysis, detailed logging of test borings and trenches, and in-grading inspections and geologic mapping.

My Terres' 30 year career has been conducted throughout California and has included residential, Institutional, commercial, industrial, public works and other projects. While Mr. Terres' primary focus has been as a geotechnical consultant he has also experience as an Environmental Geologist. He is a professional Geologist and Certified Engineering Geologist in the State of California, and a Deputy Methane Inspector for the City of Los Angeles.

DONALD A. TERRES

11 Wedgewood, Irvine, CA 92620 ◆ (714) 505-2472 ◆ cell (949) 201-3388 ◆ dterrestrialsi@gmail.com

Highlighted Experience:

- His diversity includes large residential tracts, Custom homes, infill projects and multi-story apartment homes. He has also worked on many institutional project including school sites for the Los Angeles Unified School District, the Irvine Unified School District and the Capistrano Unified School District. Mr. Terres has worked on projects in Los Angeles County, Orange County, Inyo County, Alameda County, Riverside County, San Bernardino County and Other counties throughout southern and northern California.

- Mr. Terres' expertise includes Fault investigations, slope stability analysis in complex geologic terrain. His experience includes pre-construction site characterization and analysis, construction feasibility, and geologic mapping during construction to verify anticipated conditions. He has worked on many infill projects with restricted perimeters requiring shoring and other precautionary procedures in order to safely complete the project.

- Mr. Terres was the Interim Geotechnical Reviewer for the County of Orange, California – March 2013 through October 2013; Reviewed geotechnical aspects of all private development projects within unincorporated County of Orange sphere of influence. This was an interim position that was necessary while the County was searching for a permanent applicant.

CUSTOM HOME PROJECTS

Hidden Mountain Estates, City of San Juan Capistrano:
Multiple Custom homes were constructed in this private gated community in Southern Orange County. Each homes site had been mass graded, however the individual homes required careful evaluation of the geotechnical condition in relation to their own plan requirements. Mr. Terres was the primary contact for geotechnical services for these custom homes.

Pelican Hill:
Pelican Hill is very private community in Newport Coast. Mr. Terres was the primary geologist during multiple phases of mass grading of this project and then assisted in providing geotechnical services during design and construction of many of the large custom homes in this neighborhood. Development of the custom home frequently involved re-grading of lots, and construction of retaining structures to achieve the desired home

Ritz Cove
Ritz Cove is located adjacent to the Ritz Carlton, with amazing beachfront and ocean views. Mr. Terres was the engineering geologist for multiple custom home sites within this community. The geotechnical issues included construction on relatively narrow lots with existing constructed homes and often underground structures. Shallow groundwater conditions created challenges for several of the homes.

Vista Del Sol
Project manager and geologist during the design phase for a large custom home in South Laguna Beach. The proposed home was to be constructed on a narrow lot on a steep hillside with adverse geologic conditions beneath three exiting homes. The design concept was altered to best match the geotechnical conditions, and to provide a cost effect option for development of the lot. Multiple piles, tiebacks and other unique remediation methods were proposed to stabilize the proposed project.

South Laguna Beach Bluff Home
Geotechnical services were provided during the due diligence phase to evaluate the stability of the bluff and home site above the ocean where an existing structure was and future home planned. The evaluation included a rocky shoreline where waves actively were eroding, and included a sea cave at the base of the bluff. This home site is still in the planning stage.

11 Wedgewood
Irvine, CA 92620
Terrestrialsi.com

office/fax: (714) 505-2472
cell: (949) 201-3388
email: dterrestrialsi@gmail.com

RESIDENTIAL PROJECTS

Parcels C and D, Lomas San Juan in the City of San Juan Capistrano:
The project included development of a large (250 acre) canyon area with over 30 separate landslides and deep compressible alluvium. Unique approaches were developed to stabilize the multiple landslides and create a long term maintenance association for repair of any potential future problems. The project was graded on a lump-sum basis, based on the competency of the geotechnical documents. It was completed under budget and on time.

Standard Pacific's Development of a major ridgeline in the City of Orange:
The project was conducted from the late 1980's through the late 1990's. It included grading of more than 20-million cubic yards of earth for the construction of over 750 single-family and multi-family homes. Geologic hazards that were remediated included multiple landslides, a potentially active fault zone, slope stability issues adjacent to existing developments, unsuitable soils, settlement of deep fills, and naturally occurring tar sands. Mr. Terres was the manager for geotechnical services and project geologist for the entire project, which included multiple owners and multiple public agencies.

Glenwood at Aliso Viejo for Shea Homes:
The golf course was re-designed to incorporate the construction of approximately 500 single family and multi-family dwelling units. This project also included construction of a Clubhouse for the Golf course and a community facility with a large swimming complex. Geotechnical hazards that were remediated included cut slopes adjacent to existing developments, removal of deep unsuitable soils, and placement of diatomaceous fills for support of future structures.

Pacific Point Development in San Juan Capistrano:
This project involved development of residential structures on a single mile-wide landslide with multiple adjacent unstable slopes and existing developments. Investigation of the landslide included many deep continuous core holes and correlating an abundance of geologic information. The project was closely peer reviewed by the City and other geotechnical firms due to the sensitive nature of the project. A successful model of the landslide and adjacent terrain was generated and accepted by multiple geotechnical firms.

Multiple Projects in the Foothill/Trabuco Specific Plan area of Orange County:
From the late 1990's to the present eight projects ranging from approximately 12 lots to over 250 lots have been in various stages of development in this hillside area of Orange County. The Foothill/Trabuco Specific Plan project require special investigative methods and analysis in order to satisfy the rigorous requirements for development. Geotechnical services have been provided for all of these projects with multiple and diverse owners, public agencies and project team members. These projects are currently in various phases of the development process.

11 Wedgewood
Irvine, CA 92620
Terrestrialsi.com

office/fax: (714) 505-2472
cell: (949) 201-3388
email: dterrestrialsi@gmail.com

COMMUNITY ASSOCAITIONS

Terrestrial Solutions Inc. (TSI) staff has provided evaluations for many different community associations and homeowners throughout the Orange County area. Many of these are related to slope issues due to erosion and/or landsliding after heavy winter rainfall. Another problematic geologic condition within community associations is shallow groundwater and/or seepage. TSI provides evaluation services to determine if the seepage is a result of overwatering or natural groundwater, and provides recommendation to mitigate this common hazard. Below are brief summaries of projects that the TSI staff has worked on.

Community in the City of San Juan Capistrano:
After a winter of significant rainfall an evaluation was performed on several small landslides and erosion areas in adjacent open areas and within community association property. These areas were studied to determine the potential impact to association property. Recommendations were provided for repair and or additional maintenance.

Community Association in the City of Orange:
Movement of a landslide within the Association property was evaluated to determine if it would impact existing homes. The landslide had also destroyed drainage ditches and disrupted the irrigation system. Recommendations were provided to mitigate the hazard posed by the landslide movement.

Community Association in the City of Laguna Niguel:
An evaluation of the existing slopes within a community in the City of Laguna Niguel was performed. While the evaluation focused on the slopes other areas were also evaluated. A few areas of distress were documented and recommendation provided to investigate and/or mitigate the distress were provided.

Community Associations in Huntington Beach
A few homes within a community were experiencing seepage and shallow water conditions. Inexpensive monitoring systems were installed to determine the origin of the seepage. Based on the observation and monitoring recommendations were provided to reduce the excess subsurface water. Similar services have been provided for several community properties in the city of Huntington Beach.

Turtle Rock, Irvine Community Association.
An association was experiencing shallow groundwater problems and was concerned about how these would affect proposed additions that were being planned. The seepage was evaluated and recommendation provided to mitigate the problems during construction of the improvements.

Multifamily Dwelling unit in San Clemente
A Three story structure in San Clemente had experienced over 6 inches of differential settlement. Analysis indicated that the underlying soils were settling due to improper construction practices. Recommendations were provided and implemented to stop the structure from further settlement.

11 Wedgewood
Irvine, CA 92620
Terrestrialsi.com
office/fax: (714) 505-2472
cell: (949) 201-3388
email: dterrestrialsi@gmail.com

COMMERCIAL / INDUSTRIAL PROJECTS

Temescal Canyon Industrial Complex in South Corona, California:
This multi-phased project initiated with evaluation for and construction of a rip-rap revetment for a large mass graded parcel. The revetment was designed for prevention of bank erosion from the Temescal canyon drainage. A storage facility was constructed on a portion of the project. A later phase included evaluation of a small channel for erosion and construction of a 20 feet high reinforced earthen flexible wall system. A pending phase will be for usage as a RV storage facility.

Brea Shopping Plaza Re-development:
This project included evaluation of the existing geotechnical conditions to determine the feasibility of removing the existing retail center and rebuilding a modern two story mall, hotel, restaurants and other facilities. Geotechnical issues included saturated unsuitable soils adjacent to existing structure that were to remain. This project also included construction of a portion of the new retail center over a new box culvert over a major drainage channel.

Retail Center in Foothill Ranch, Lake Forest:
This project involved evaluation of a previously graded site where potentially unstable earth materials were left beneath engineered fill. Careful analysis indicated that the left-in-place materials were suitable for the support of the proposed retail center use. The project was completed in several phases.

Industrial Warehouse, Ontario, California:
A new 100-thousand square feet warehouse was proposed in a previously developed area. Previous uses and underlying geologic conditions were evaluated, including the potential for liquefaction. Foundation recommendations were provided to mitigate the potential for differential settlement in this large structure.

Clubhouse, Community and Aquatic Center, Aliso Viejo:
The clubhouse, community Center and Aquatic center were adjacent facilities constructed as part of the Glenwood at Aliso Viejo project. Portions of this site were proposed to be constructed over previously placed non-engineered and unsuitable fill materials. In addition the on-site soils were highly diatomaceous. Remediation and placement of engineered fills required close monitoring during the grading process. Construction of the clubhouse included a subterranean garage. The aquatic center had three separate pools and children's water play area. Heavy reinforcement of foundation elements was necessary due to the expansive nature of the underlying earth materials.

City of Villa Park Fire Station:
The proposed fire station was sited near a potentially active fault and adjacent to a large Power substation. The investigation for this site involved careful review of existing geotechnical data and exhaustive field investigations including fault trenching. The firehouse was successfully sited away from potential faulting and in a location with easy access to major roadways.

11 Wedgewood
Irvine, CA 92620
Terrestrialsi.com

office/fax: (714) 505-2472
cell: (949) 201-3388
email: dterrestrialsi@gmail.com

INSTITUTIONAL PROJECTS

Institutional projects require special knowledge and procedures as compared to typical development projects. They are considered as essential facilities that have a higher standard of care, especially in California where the potential for seismic shaking and other potential seismic hazards is prevalent. Geotechnical reports must be submitted to the California Division of State Architects and the California Geological Survey. The geotechnical issues during development of these schools often involved evaluation of previous consultant's work on the site and then providing remedial recommendation that are necessary for the essential facilities. Several projects listed have not been constructed. Services for these projects were provided during the design phase only to date.

Stonefield Elementary School – Irvine Unified School District:

Woodbury Elementary School – Irvine Unified School District

Portola Springs Elementary School – Irvine Unified School District: Design Phase

Wagon Wheel Elementary School – Capistrano Unified School District

Las Flores Middle School – Capistrano Unified School District

Vista Verde Elementary & Middle School – Irvine Unified School District

Northwood High School Aquatic Center Addition – Irvine Unified School District

Quail Hill Elementary School – Irvine Unified School District

Joplin Boys Ranch – County of Orange

St. Michael's Abby and Preparatory School – County of Orange: Design Phase

PA 40 Middle School – Irvine Unified School District; Design Phase for two potential sites.

Ocean Institute – Dana Point Harbor – County of Orange

Boy Scouts of America, Newport Beach Sea Base – City of Newport Beach.

11 Wedgewood
Irvine, CA 92620
Terrestrialsi.com

office/fax: (714) 505-2472
cell: (949) 201-3388
email: dterrestrialsi@gmail.com

WATER STORAGE PROJECTS

City of Huntington Beach Reservoir Project:
The Springdale underground reservoir was constructed to elevations below the adjacent groundwater levels. Geotechnical issues included dewatering of the site during the construction phase and the suitability of the soils to support the proposed structures. Close coordination with multiple city agencies was necessary. Unique solutions were required during construction to remediate the geotechnical conditions.

Design and Construction Phases of twin, City of San Juan Capistrano California, Reservoirs:
Construction of the above ground reservoirs included construction of an access road and installation of the utilities necessary for operation of the twin reservoir site. Geotechnical hazards that were remediated included several landslides and slope stability issues, and stabilization of soft alluvial soils. Biologically sensitive wetlands were avoided and enhanced as part of the projects scope of work.

Construction of two Municipal Emergency Water Wells, City of Palo Alto, California: These water wells were constructed to depths of 460 and 540 feet and included 18 inch diameter well casing that were capable of each producing over 1000 gallons per minute. Construction of the wells was in residential areas and involved working 24 hours a day for nearly 3 weeks each. Coordination with multiple public agencies was critical to the projects success.

Development of two Reservoir Sites in the City of Orange, California:
One of the above ground reservoir sites was along an unstable ridgeline and required realignment of the access road to provide more reliable servicing to the facility. The second reservoir was built over engineered fill that was 50 feet in depth. Selective grading and above standard compaction criteria was required to provide a uniform and stable fill column that was capable of supporting this above ground structure. As part of this work the existing nearby "Diemer" 72-inch diameter water main was evaluated to assure that settlement was not a concern.

Repair of two 5 million gallon underground reservoirs for the City of Laguna Beach: Both reservoirs were drained and evaluated for settlement and adjacent slope stability issues. Subsurface investigation methods required avoidance of existing underground utilities and structures. Remediation included grouting to mitigate slope creep and settlement concerns. Timing of geotechnical investigation and quick response times were critical to the success of this project.

Solana Ridge Reservoir Site, Las Vegas, Nevada:
active.This project included evaluation for rippability, and an active Fault near the proposed reservoir site. Rippability was characterized for proposed cuts of over 100 feet in depth in granitic-like terrain. Long fault trenches were excavated to determine the nature and location of faults. Fault zones that were previously called active were downgraded to potentially

11 Wedgewood
Irvine, CA 92620
Terrestrialsi.com

office/fax: (714) 505-2472
cell: (949) 201-3388
email: dterrestrialsi@gmail.com

TRANSPORTATION PROJECTS

Pacific Coast Highway Landslide, Dana Point/San Clemente, California:
This project involved remediation of a large landslide which closed both Pacific Coast Highway (PCH) and the rail link between Los Angeles and San Diego. This national APWA project of the year included re-construction of a natural bluff above PCH with an artificial but natural looking wall. The landslide, slope, and wall was stabilized using multiple rows of tie-backs and caissons with a shot-crete, sculptured facing. The project encompassed two cites, and Caltrans and railroad right of ways. The Caltrans roadway was opened on time and under budget.

Eastern Transportation Corridor (ETC), County of Orange, California:
Geologist in charge of all technical aspect during the final design and construction phases for mountain sections of this 700 million dollar project. The ETC project consisted of excavation of over 67-million cubic yards of earth and 23 miles of road construction. The project cut through several large hills, with cuts up 300 feet in depth in a diverse and complicated geologic terrain. The primary geotechnical issues that were resolved included slope stability, suitability of soils to support large bridge structures and earth embankments well over 200 feet in height. The toll road was opened early and was successfully completed under budget.

Sections 11, 12 and 13 of the San Joaquin Transportation Corridor:
Geologic conditions were evaluated for three sections of the toll road during this 65% design phase. These Sections were in mountainous areas and had numerous complex geotechnical issues including slope stability, foundation support for bridge structures and construction of the road adjacent to existing developments.

Design and Construction, Imperial Highway through to Cannon Street, City of Orange: This major arterial roadway was constructed over a major ridgeline. The major geotechnical issues included slope stability and construction adjacent to existing developments. The road also crossed a potentially active fault zone and a major regional water line. A bridge was constructed over the primary drainage and required coordination with multiple agencies.

Widening of Moulton Parkway-Irvine Center Drive:
A geotechnical document was created in support of the EIR for wideneing this major roadway in central and southern Orange County. This challenging project included widening the existing major arterial route through highly developed areas. Challenges included retaining walls, crossing major drainages, slope stability, and the suitability of existing soils to support the roadway.

Design and Construction of Newport Coast Drive in the City of Newport Beach:
This major roadway was constructed over and around an existing landfill. Geotechnical issues included slope stability, and suitability of existing soils to support the roadway. Portions of the landfill were stabilized using dynamic compaction methods. A second area was stabilized using geofabric due to the weakness of the native soils. Many existing pipelines were stabilized during construction activities using piles and grouting to form a support structure. Extending above and below ground drainage structures was required for the ongoing landfill operations.

11 Wedgewood
Irvine, CA 92620
Terrestrialsi.com
office/fax: (714) 505-2472
cell: (949) 201-3388
email: dterrestrialsi@gmail.com

LANDFILL AND GROUNDWATER PROJECTS

Expansion of the Coyote Canyon Landfill, Orange County, California:
Landfill expansion was accomplished in several phases. Geotechnical input was provided regarding perimeter stability issues, generation of landfill cover materials, and dynamic compaction of landfill material for construction of an arterial roadway. Services included design and implementation of a complex subdrain system beneath proposed expansion areas.

Evaluation of a City landfill in Compton, California. Geotechnical evaluation was provided for potential to convert the landfill site into a residential home development. Geotechnical issues involved evaluation of the type and distribution of the existing landfill material, evaluation of a "Alquilt-Priolo" zoned active fault within the property limits.

Forrester Canyon landfill/landslide, City of San Juan Capistrano, California:
This property was evaluated for construction of single-family homes or possible equestrian use. The site was used as a city dump for miscellaneous residential debris and waste. The site is also underlain entirely by a large landslide complex. Geotechnical evaluation included slope stability issues and characterization of the landfill material including the type of materials and distribution. Removal of portions of the landfill materials was proposed. Groundwater characterization was a critical aspect of the project, for both leachate issues and landslide stabilization issues.

Parcel C2, Lomas San Juan, San Juan Capistrano, California:
This was a groundwater extraction and induction project with the purpose of accelerating long term settlement. Approximately 40 wells were designed and installed. The wells were interconnected and automated for both induction and extraction of groundwater. The system operated daily for approximately 2 years prior to abandonment. Ground settlement was closely monitored and evaluated for correlation with groundwater induction and extraction. Accelerated settlement was achieved as predicted.

Marblehead Coastal Project, San Clemente, California:
Responsibilities included modeling groundwater and surface water flow and budgets for maintenance of a large wetland area. This analysis required characterization of current groundwater conditions, as well as predicting post development groundwater conditions. The project required review and approval from the California Coastal Commission.

Master's Thesis-1984-Thermal Water Systems of the Western Transverse Ranges:
The thesis characterized approximately ten sources (hot springs) of water in Ventura and Santa Barbara Counties. Each was mapped and analyzed to determine the groundwater source and geologic conditions present at each location. A model was developed that characterized provenance of the groundwater and linked many of the springs to similar groundwater aquifers or geologic conditions.

11 Wedgewood
Irvine, CA 92620
Terrestrialsi.com

office/fax: (714) 505-2472
cell: (949) 201-3388
email: dterrestrialsi@gmail.com

GABRIELEÑO BAND OF MISSION INDIANS - KIZH NATION
Historically known as The San Gabriel Band of Mission Indians
recognized by the State of California as the aboriginal tribe of the Los Angeles basin

Mt. Sac
1100 North Grand Ave
Walnut, CA 91789

August 30, 2017

Re: AB52 Consultation request for the Mt. San Antonio College West Parcel Solar Project located west of Grand Ave

Dear Rebecca Mitchell,

Please find this letter as a written request for consultation regarding the above-mentioned project pursuant to Public Resources Code § 21080.3.1, subd. (d). Your project lies within our ancestral tribal territory, meaning belonging to or inherited from, which is a higher degree of kinship than traditional or cultural affiliation. Your project is located within a sensitive area and may cause a substantial adverse change in the significance of our tribal cultural resources. Most often, a records search for our tribal cultural resources will result in a "no records found" for the project area. The Native American Heritage Commission (NAHC), ethnographers, historians, and professional archaeologists can only provide limited information that has been previously documented about California Native Tribes. This is the reason the NAHC will always refer the lead agency to the respective Native American Tribe of the area because the NAHC is only aware of general information and are not the experts on each California Tribe. Our Elder Committee & tribal historians are the experts for our Tribe and are able to provide a more complete history (both written and oral) regarding the location of historic villages, trade routes, cemeteries and sacred/religious sites in the project area. Therefore, to avoid adverse effects to our tribal cultural resources, we would like to consult with you and your staff to provide you with a more complete understanding of the prehistoric use(s) of the project area and the potential risks for causing a substantial adverse change to the significance of our tribal cultural resources.

Consultation appointments are available on Wednesdays and Thursdays at our offices at 910 N. Citrus Ave. Covina, CA 91722 or over the phone. Please call toll free 1-844-390-0787 or email gabrielenoindians@yahoo.com to schedule an appointment.

** Prior to the first consultation with our Tribe, we ask all those individuals participating in the consultation to view a video produced and provided by CalEPA and the NAHC for sensitivity and understanding of AB52. You can view their videos at: http://calepa.ca.gov/Tribal/Training/ or http://nahc.ca.gov/2015/12/ab-52-tribal-training/

With Respect,

Andrew Salas, Chairman

South Coast
Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 • www.aqmd.gov

SENT VIA USPS AND E-MAIL: September 1, 2017

facilitiesplanning@mtsac.edu
Rebecca Mitchell, Manager
Facilities Planning & Management
Mt. San Antonio College
1100 North Grand Avenue
Walnut, CA 91789-1399

Draft Environmental Impact Report (EIR) for the Proposed Mt. San Antonio College West Parcel Solar Project (SCH 2002041161)

The South Coast Air Quality Management District (SCAQMD) staff appreciates the opportunity to comment on the above-mentioned document. The following comments are meant as guidance for the Lead Agency and should be incorporated into the Final EIR.

2016 Air Quality Management Plan

On March 3, 2017, the SCAQMD's Governing Board adopted the 2016 Air Quality Management Plan (2016 AQMP), which was later approved by the California Air Resources Board of Directors on March 23rd. The 2016 AQMP[1] is a regional blueprint for achieving air quality standards and healthful air in the South Coast Air Basin (Basin). Built upon the progress in implementing the 2007 and 2012 AQMPs, the 2016 AQMP provides a regional perspective on air quality and lays out the challenges facing the Basin. The most significant air quality challenge in the Basin is to achieve an additional 45 percent reduction in nitrogen oxide (NOx) emissions in 2023 and an additional 55 percent NOx reduction beyond 2031 levels for ozone attainment.

SCAQMD Staff's Summary of Project Description

The Lead Agency proposes to construct a 2.2-megawatt solar panel system (Proposed Project). Approximately 17.25 acres will be graded during construction, and a total of 139,000 cubic yards of soil will be imported. The Proposed Project is bounded by a wildlife sanctuary to the north and east, and residential uses to the south and west.

Air Quality Analysis

In the Air Quality Section, the Lead Agency quantified the Proposed Project's construction and operational emissions and compared them to SCAQMD's regional and localized air quality CEQA significance thresholds. The Lead Agency found that the Proposed Project's air quality impacts would be less than significant after incorporating Mitigation Measure (MM) AQ-1 through MM AQ-11[2]. Based on a review of the modeling output[3], SCAQMD staff found that U.S. EPA Certified Tier 4 was used to calculate the emissions from off-road construction equipment as substantial evidence to support the finding that those emissions would not exceed SCAQMD's air quality CEQA significance thresholds for construction. To be consistent with the air quality modeling assumption, SCAQMD staff recommends that the Lead Agency revise MM AQ-02 as follows.

[1] SCAQMD. March 3, 2017. *2016 Air Quality Management Plan*. Accessed at: http://www.aqmd.gov/home/library/clean-air-plans/air-quality-mgt-plan.
[2] Draft EIR. Section 3.2, *Air Quality*. Pages 54.
[3] *Ibid*. Volume 2: Appendices SCH 2002041161. Truck Haul Plan (Report #17-041a). Appendix, CalEEMod Output. Version: CalEEMod.2016.3.1. Run on 7/19/2017. Page 688.

MM 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 4~~2~~ emissions standards.~~, or higher according to the adopted project start date requirements~~.

Additional Recommended Mitigation Measure for Air Quality

CEQA requires that all feasible mitigation measures that go beyond what is required by law be utilized to minimize or eliminate any significant impacts. As described above, achieving NOx emission reductions in a timely manner is critical to attaining the National Ambient Air Quality Standard (NAAQS) for ozone before the 2023 and 2031 deadlines. SCAQMD is committed to attain the ozone NAAQS as expeditiously as practicable. To further reduce NOx emissions during construction, SCAQMD staff recommends incorporating the following on-road mobile-source truck related mitigation measure in the Final EIR. For more information on potential mitigation measures as guidance to the Lead Agency, please visit SCAQMD's CEQA Air Quality Handbook website[4].

Recommended MM AQ. Require the use of 2010 and newer haul trucks (e.g., material delivery trucks and soil import/export). In the event that that 2010 model year or newer diesel haul trucks cannot be obtained, provide documentation as information becomes available and use trucks that meet EPA 2007 model year NOx emissions requirements[1], at a minimum. Additionally, consider other measures such as incentives, phase-in schedules for clean trucks, etc.

Pursuant to the California Public Resources Code Section 21092.5 and CEQA Guidelines Section 15088, SCAQMD staff requests that the Lead Agency provide SCAQMD staff with written responses to all comments contained herein prior to the certification of the Final EIR. Please contact Ryan Bañuelos, Air Quality Specialist, CEQA Section, at (909) 396-3479 if you have any questions regarding these comments.

Sincerely,

Lijin Sun

Lijin Sun, J.D.
Program Supervisor, CEQA IGR
Planning, Rule Development & Area Sources

LS:JC:RB
LAC170728-02
Control Number

[4] South Coast Air Quality Management District. http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook.

Public Comment
Mt San Antonio College
West Parcel Solar Project Scoping Session

8/9/17

To: Rebecca Mitchell
From: Denise Gallant & Sham Khan
21262 Stockton Pass Rd
Walnut CA 91789

We strongly **oppose** Mt Sac's solar farm on the corner of Grand & Amar.

There is no logic behind this monstrosity being built at the main intersection of an upscale, suburban city that has been ranked - twice - in Money's Best Places to Live.

As it is the Mt Sac campus is an eyesore with it's acres and acres of parking lots, and very poor, (and poorly maintained) planting that can be seen from the road. (As a side note, we are happy to see some progress being made in the landscaping at the "front" of the college. Long overdue!)

If the solar panels are must have for Mt Sac, we agree with our fellow Walnut residents to please change the plan to roof top panels in the parking lot(s). Not only will this supply the same amount, if not more, of the needed electricity, it will create shade for the cars, reduce the amount of heat radiating from the black top, and perhaps, best of all, it may make the ugly parking lot(s) look a little nicer.

Please be a good neighbor to Walnut. Do not discount the concerns of those of us who live here and want to keep this beautiful city as a "Best Place to Live" city.

Thank you
Denise Gallant / Sham Khan

Converse Consultants
Geotechnical Engineering, Environmental & Groundwater Science, Inspection & Testing Services

September 20, 2017

Ms. Rebecca Mitchell
Mt. San Antonio College
Facilities Planning & Management
1100 North Grand Avenue
Walnut, California 91789-5611

Subject: **RESPONSE TO TERRESTRIAL SOLUTIONS INC. (TSI) DRAFT ENVIRONMENTAL IMPACT REPORT REVIEW COMMENTS - LANDSLIDE TOE TEST PIT TRENCH STUDY**
Mt. San Antonio College West Parcel Solar Project
1100 North Grand Avenue
Walnut, California 91789
Converse Project No. 13-31-339-30

References: Converse Consultants, Geotechnical Study Report, Proposed Fill Placement at the West Parcel, Mount San Antonio College, Walnut, California, dated December 19, 2014, Converse Project No. 13-31-339-01.

Converse Consultants, West Parcel-Landslide Toe Test Pit Trench Study, Mt. San Antonio College West Parcel Solar Project, 1100 North Grand Avenue, Walnut, California, dated July 27,2017, Converse Project No. 13-31-339-01.

Terrestrial Solutions Inc., Geotechnical Review of Converse Report Concerning the West Parcel Landslide, Mt. San Antonio College West Parcel Solar Project, Walnut, California, dated August 31, 2017, TSI Project No.17-088.

Terrestrial Solutions Inc., Response to EIR Planning Session Comments, West Parcel Area, Mt. San Antonio College West Parcel Solar Project, Walnut, California, dated August 31, 2017, TSI Project No. 17-088.

Dear Ms. Mitchell,

INTRODUCTION

Converse Consultants (Converse) presents this response to review comments received from the United Walnut Taxpayers (UWT) and their consultant's, Terrestrial Solutions Inc. (TSI), Draft Environmental Impact Report (DEIR) review comments concerning the findings of four (4) exploratory test pit trenches excavated along the toe of an existing

road cut landslide that occurred during previous grading work to widen Grand Avenue in the late 1970's. The road cut landslide is located on a natural hillside slope on the central portion of the West Parcel site along Grand Avenue. The road cut landslide has continued to enlarge and creep downslope to Grand Avenue during the past 38 years. The unstable landslide deposits threaten Grand Avenue with slope instability and sudden ground movement. The unstable landslide deposits will be completely removed during grading and replaced with engineered compacted fills keyed and benched into the underlying undisturbed bedrock materials during grading for the West Parcel Solar Project.

The purpose of the four (4) exploratory test pit trenches was to determine the depth and extent of landslide deposits along the toe of the landslide along Grand Avenue and to evaluate the sedimentary bedrock structure and material properties. The four (4) exploratory test pit trenches were excavated with a Kobelco SK210-9 track-mounted excavator on June 9 and June 12, 2017. The field exploration work to further evaluate the road cut landslide and project site was stopped on June 12, 2017 due to reported concerns for the California Gnatcatcher habitat areas and breeding season. The West Parcel site field investigation work was stopped and was not completed pending further environmental evaluation of the Gnatcatcher habitat areas.

The approximate location of the four (4) exploratory test pit trenches were presented in Converse's July 27,2017 West Parcel - Landslide Toe Test Pit Trench Study and are shown on Drawing No. 1, *Road Cut Landslide Evaluation.* The four (4) test pit trench logs are presented on Drawing Nos. 1a through 1d*, Road Cut Landslide Toe - Test Pit No. 1, No. 2, No. 3, and No. 4*. This preliminary report provided information and data for the Draft Environmental Impact Report (DEIR). Additional geotechnical studies, recommendations and reports are planned for the landslide repair and restoration including slope stability analysis, temporary cut slopes, keyway designs, subdrain system designs, geosynthetic reinforcements, buttress fills, slope stabilization fills, remedial removals and site grading.

BACKGROUND

The road cut landslide occurred in the late 1970's as a result of previous grading activity by others to widen Grand Avenue. Evidence of the landslide on the road cut slope above Grand Avenue was visible in historic aerial photographs starting in 1979. No drainage control devices (brow ditches, terrace drains, down drains, catch basins, etc.) were observed or constructed on the hillside cut slope at the time it was graded to collect and control surface runoff on the slope face. The landslide was likely triggered by three (3) years of above normal rainfall between 1977 and 1980. Dozer cuts were made at the top of the hillside which directed surface runoff directly into the head scarp of the landslide.

A public records information request was made to the City of Walnut, Office of the City Clerk, on June 21, 2017 for records and information pertaining to the road cut landslide along Grand Avenue and no information responsive to the request was reported to be in the City Clerk's possession.

The road cut landslide was not repaired or restored once it occurred. The unrepaired landslide has gradually grown over the past 38 years since it occurred. The landslide growth over the years has caused significant damage to the West Parcel property. The southern toe of the landslide has moved eastward to the western edge of the Grand Avenue sidewalk. The landslide deposits are vulnerable to further sliding, ground movement and downslope creep. The landslide presents a continued hazard of slope instability and has a potential for sudden ground movement following wet weather periods along Grand Avenue and needs to be repaired.

RESPONSE TO REVIEW COMMENTS

TSI Comment: "No slip plane attitudes are presented on the test pit logs."

Converse Response: The four exploratory test pits were located along the toe of the landslide. No well-developed "slip plane" was expected at the toe of the landslide where the downslope movement and force of the landslide was stopped by the resistance of the intact slope materials resulting in a crumble zone of disturbed slope materials. The contact between the overlying disturbed landslide deposits and the underlying undisturbed bedrock materials was clearly visible in the test pits and is shown on the test pit logs. The test pits revealed that a clear and distinct "slip plane" was not encountered along the toe of the landslide. The geologic exposures in the test pits were quite consistent and characteristic of a crumple zone that commonly occurs at the toes of landslides.

Larger diameter borings and down hole logging were planned for the landslide study; however, the work was stopped over concerns for the Gnatcatcher habitat and breeding season.

TSI Comment: "Converse states that the bedrock bedding attitudes found in the four test pits are "similar to the previously measured bedding attitudes measured for the site"

Converse Response: The undisturbed bedrock bedding attitudes measured in the four test pits are similar to those encountered in Boring BH-13. The undisturbed bedding attitudes are dipping to the northwest and north. The undisturbed bedrock bedding attitudes were not measured to be dipping to the east. It would be unrealistic to expect the undisturbed bedrock bedding attitudes to be exactly the same at different bedrock exposure locations across the site.

TSI Comment: "TSI conducted brief mapping of the area above the landslide where Converse mapped bedding that strikes north 15 to 25 degrees east (similar to the previous report)."

Converse Response: The bedding attitudes measured at the top of the landslide were dipping northwest and north and are similar to the bedding attitudes and structure measured in Boring BH-13 that was down hole logged. Some variations in the bedrock bedding attitudes due to folding and deformation in the sedimentary bedrock units will occur across the project site. Grading for the West Parcel Solar project will remove and lower the hilltop and landslide down approximately 54 feet to Elevation 761 feet. The remaining landslide deposits will be completely removed during grading. The remaining bedrock bedding attitudes with out-of-slope and downslope components of dip exposed in the temporary back cut slopes of the landslide repair will be buttressed with engineered compacted fills keyed and benched into the underlying undisturbed bedrock materials.

TSI Comment: "The Converse report does not indicate that the out-of-slope bedding is a contributing factor to the landsliding that occurred, yet it is a likely a significant contributing factor".

Converse Response: Larger diameter borings with down hole logging were planned for the central portion of the road cut landslide, however, the work was stopped over concerns for the Gnatcatcher habitat and breeding season. The road cut landslide has moved downslope in an easterly direction toward Grand Avenue while the undisturbed bedrock bedding attitudes exposed at the near surface indicate northwest and northward bedding dips. The contribution of the apparent out-of-slope and downslope components of bedding dip cannot not be determined at this time and is speculative.

TSI Comment: "The hill near the landslide exposes bedrock that consists of interbedded siltstone, claystone and sandstone, yet also visible at the top of hill and to the south are conglomeratic bedrock materials".

Converse Response: The sedimentary bedrock materials underlying the project site consist of interbedded sandstone, conglomerate, siltstone and claystone. Drawing No. 1, *Road Cut Landslide Evaluation*, was prepared to show the location of the four (4) test pits excavated along the toe of the landslide. Drawing No. 1 and the West Parcel-Landslide Toe Test Pit Trench Study report was focused on the toe of the road cut landslide and only presented information and data on the exploratory test pits.

No evidence of ground movement or displacement has been observed along the sidewalk and street surface on the west side of Grand Avenue below the road cut landslide. No grading work is proposed on Grand Avenue. No subsurface field exploration was performed on Grand Avenue.

TSI Comment: "Test Pit No. 4 (Drawing 1d) indicates the presence of landslide debris in the upper portion of the test pit and along the back wall of the excavation".

Converse Response: Terrestrial Solutions, Inc. (TSI) has misinterpreted the information presented on Drawing No. 1, *Road Cut Landslide Evaluation*, and Drawing No. 1d, *Road Cut Landslide Toe – Test Pit No. 4*. The landslide debris (Qls) shown in Test Pit No. 4

has been disturbed by landslide movement. Review of Drawing No. 1, *Road Cut Landslide Evaluation*, shows clear evidence of a disturbed and mounded ground surface that has produced a topographic anomaly and break along the toe of the landslide at the Test Pit No. 4 location. No well-developed slip plane was observed in Test Pit No. 4; however, the observed geologic exposures were characteristic of a creep affected crumple zone that commonly occurs along the toes of landslides. The (Qls) landslide materials were loose and disturbed and provided a dull thud when struck with a hammer when compared to the underlying undisturbed bedrock. The undisturbed bedrock units were striking north 75 to 88 degrees west and dipping 17 to 20 degrees north. The rear wall of the Test Pit No. 4 trench excavation did have an out-of-slope component of bedding dip with respect to the rear trench wall and its orientation.

TSI Comment: "The logs for test pits No. 1 through 3 indicate that bedrock was encountered in the bottom of each excavation. TSI is concerned that there may be additional slip planes below the depth of excavation."

Converse Response: The four (4) exploratory test pits were excavated with a large Kobelco SK210-9 track-mounted excavator. The bedrock exposed in the bottom of Test Pit Nos. 1 through 3 encountered hard intact bedrock materials. The Kobelco SK210-9 excavator encountered significant resistance to excavation in the undisturbed bedrock at the bottom of the three trench excavations. The excavator had to scrape and chip the bedrock at the bottom of the trench during excavation. The trench sidewalls and bottoms were then cleaned off by hand to obtain bedding attitudes. The bedrock exposed in the bottom of the trenches was hard and intact when struck by a geologic hammer. There was no evidence observed in the bottom of the trenches to indicate that additional slip planes existed below the depth of the trench excavations.

No evidence of ground movement or displacement has been observed to date along the sidewalk and street surface on the west side of Grand Avenue below the road cut landslide.

TSI Comment: "The sequence of how the landslide(s) occurred as described by Converse is not consistent with the information provided by the former Mayor of the City of Walnut (TSI, 2017)" (Ms. June Wentworth).

Converse Response: The sequence of landslide failures on the road cut made to widen Grand Avenue in the late 1970's is approximate based on available information. No records and information on the road cut landslide failures was made available from the City of Walnut, Office of the City Clerk, during our review. The date of the first road cut landslide is unknown. The approximate date of the second landslide that was left unrepaired for the past 38 years was observed on historical aerial photographs starting as early as May 11, 1979.

TSI Comment: "Converse's statements that the landslide continues to enlarge and represents a continued hazard to Grand Avenue, is not supported by specific evidence or slope stability analysis in their report."

Converse Response: Converse's statements that the landslide continues to enlarge and represents a continued hazard to Grand Avenue is based on direct field observations, mapping and experience. As shown on Drawing No. 1, *Road Cut Landslide Evaluation*, the southern toe of the landslide has moved and creeped down slope to the edge of the sidewalk and fence along the west side of Grand Avenue. Utility companies have had to clear away the fallen landslide materials off the tops of their buried vaults which run along the sidewalk. The toe of the landslide is clearly bulging out of the slope surface along the base of the landslide. The landslide presents a continued hazard of slope instability to Grand Avenue and needs to be repaired.

Sincerely,

CONVERSE CONSULTANTS

Mark B. Schluter, PG, CEG, CHG
Senior Engineering Geologist

Dist: 1/Addressee via Email

Converse Consultants
Geotechnical Engineering, Environmental & Groundwater Science, Inspection & Testing Services

September 21, 2017

Ms. Rebecca Mitchell
Mt. San Antonio College
Facilities Planning & Management
1100 North Grand Avenue
Walnut, California 91789-5611

Subject: **RESPONSE TO TERRESTRIAL SOLUTIONS INC. (TSI) DRAFT ENVIRONMENTAL IMPACT REPORT REVIEW COMMENTS - DEIR PLANNING SESSION COMMENTS DATED AUGUST 31, 2017**
Mt. San Antonio College West Parcel Solar Project
1100 North Grand Avenue
Walnut, California 91789
Converse Project No. 13-31-339-30

References: Converse Consultants, Geotechnical Study Report, Proposed Fill Placement at the West Parcel, Mount San Antonio College, Walnut, California, dated December 19, 2014, Converse Project No. 13-31-339-01.

Converse Consultants, West Parcel-Landslide Toe Test Pit Trench Study, Mt. San Antonio College West Parcel Solar Project, 1100 North Grand Avenue, Walnut, California, dated July 27,2017, Converse Project No. 13-31-339-01.

Terrestrial Solutions Inc., Geotechnical Review of Converse Report Concerning the West Parcel Landslide, Mt. San Antonio College West Parcel Solar Project, Walnut, California, dated August 31, 2017, TSI Project No.17-088.

Terrestrial Solutions Inc., Response to EIR Planning Session Comments, West Parcel Area, Mt. San Antonio College West Parcel Solar Project, Walnut, California, dated August 31, 2017, TSI Project No. 17-088.

Dear Ms. Mitchell,

INTRODUCTION

Converse Consultants (Converse) presents this response to review comments received from the United Walnut Taxpayers (UWT) and their consultant's Terrestrial Solutions Inc. (TSI) Draft Environmental Impact Report (DEIR) review comments concerning Section 3.5 (Geology/Soils) of the proposed West Parcel Solar Project, Tiered Project Draft EIR

to 2012 Facilities Master Plan Program EIR (SCH 2002041161) prepared by Mt. San Antonio College, California. This response report provides additional information for the Draft Environmental Impact Report (DEIR).

The field exploration work to further evaluate the road cut landslide and project site was stopped on June 12, 2017 due to reported concerns for the California Gnatcatcher habitat areas and breeding season. The West Parcel site field investigation work was stopped and was not completed pending further environmental evaluation of the Gnatcatcher habitat areas. Additional geotechnical studies, recommendations and reports are planned for the landslide repair and project site including slope stability analyses, temporary cut slope evaluations, keyway designs, subdrain system designs, geosynthetic reinforcements, buttress fills, slope stabilization fills, remedial removals and site grading.

RESPONSE TO REVIEW COMMENTS

TSI Comment: "Page 91: Second Paragraph"

Converse Response: Acknowledged.

TSI Comment: "Pages 91 and 92: Executive Summary, Bullet #6-While a liquefaction analysis was conducted for the site. This analysis was based on a boring that was not in one of the two areas of potential liquefaction as identified by the State of California."

Converse Response: An additional soil boring was drilled by Leighton Consulting. on June 12, 2017 to further evaluate the potential liquefaction hazard in the northern alluvial filled canyon near Grand Avenue. Leighton performed a limited independent geotechnical and geologic study of the site relative to the proposed designs presented in Psomas' current plan. Preliminary results of the soil boring were presented in Leighton's September 11, 2017 Draft Geotechnical Review. Subsurface exploration was planned to also include several large-diameter borings and test pits on site, however, the site exploration was stopped on June 12, 2017 due to reported concerns for the California Gnatcatcher habitat areas and breeding season.

Leighton Consulting logged and sampled an 8-inch diameter hollow stem auger boring, LB-1, located in the northern canyon near Grand Avenue. Boring LB-1 was drilled to a depth of depth of approximately 45 feet below ground surface (bgs) and encountered approximately 40 feet of alluvium consisting of clayey and silty sand with gravel, gravel with sand, and sand with gravel overlaying sedimentary bedrock consisting of siltstone interbedded with sandstone. The Standard Penetration Tests (SPT) met sampling refusal at all the sample depth intervals below 20 feet indicating very dense soil materials. Groundwater was encountered at a depth of approximately 37 feet below the existing ground surface.

Leighton Consulting conducted liquefaction analysis on Boring LB-1 based on the subsurface data encountered in the boring and considered the observations made by Converse in Borings BH-1, BH-2, and BH-7, which were all located in the northern canyon. Leighton assumed alluvium to be 40 feet thick based on conditions observed in Boring LB-1, and assumed the highest historical groundwater of 16 feet below ground surface as encountered in Converse Boring BH-2. The seismic parameters used for the Leighton liquefaction analysis were based on the results of the U.S. Geological Survey's U.S. Seismic Design Maps and Unified Hazard Tool online applications. The Leighton liquefaction analysis used a Peak Horizontal Acceleration (PGAm) of 0.77g and an earthquake magnitude of Mw-6.7.

Leighton concluded, based on the assumptions described above, the soil conditions at Boring LB-1 are considered non-liquefiable due to the dense soil conditions below the assumed highest groundwater level. Leighton also performed analyses to estimate the potential for seismically induced settlement using the method of Tokimatsu and Seed (1987), and based on Martin and Lew (1999), considering the maximum considered earthquake (MCE) peak ground acceleration (PGAm). The results of the analyses suggest that the onsite soils are susceptible to approximately 0.9-inch of seismic settlement based on the MCE. These conditions are reported by Leighton to be suitable for site development.

TSI Comment: "Pages 91 and 92: Executive Summary, Bullet #8-Remedial Grading of the site has not been well defined in either report."

Converse Response: Additional geotechnical studies, recommendations and reports are planned for the landslide repair and project site that will include depths of remedial removals for the canyon areas. 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 engineered 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 subdrains.

TSI Comment: "Pages 91 and 92: Executive Summary, Bullet #9- The statement regarding reducing the existing slope to a gradient less than 2:1 is misleading"

Converse Response: The proposed cut and fill slopes on the project will not be graded steeper than 2 units horizontal to 1 unit vertical slope gradients. This is the standard slope configuration requirement for grading projects performed in most cities and counties in southern California. The 2:1 slope configuration is a grading industry standard and requirement. The fill slopes will be buttressed and supported on engineered compacted fills keyed and benched into firm natural soils and/or bedrock. Keyways with a minimum width of 25 feet and minimum depth of 5 feet will be graded along the base of the slope. The size, width and depths of the keyways and slope bench cuts will be increased during grading to remove all the disturbed landslide materials and unsuitable slope materials. Compacted fill soils will be keyed and benched into the underlying undisturbed soils and

bedrock materials in accordance with project specifications and current grading codes and requirements.

TSI Comment: "Section 3.5.2 Geology/Soil Impacts, Item No.1-The conclusion is correct, although the Converse report does not provide the correct distance to the closest active fault."

Converse Response: Acknowledged. The San Jose Fault is currently not mapped as an active fault by the California Geologic Survey (CGS). Alquist-Priolo Earthquake Fault Zones for active faults have not been mapped on the current San Dimas Quadrangle by CGS.

TSI Comment: "Section 3.5.2 Geology/Soil Impacts, Item No.2- Liquefaction: As discussed above and in TSI's referenced report (2017a), liquefaction has not been appropriately addressed."

Converse Response: Refer to response for TSI Comment: Pages 91 and 92: Executive Summary, Bullet #6 presented above.

Leighton Consulting performed a limited independent geotechnical study of the site that included logging and sampling of hollow stem auger Boring LB-1 located in the northern alluvial filled canyon near Grand Avenue. Leighton Consulting conducted a liquefaction analysis on Boring LB-1 based on the subsurface data encountered in the boring and considered the groundwater depth of 16 feet encountered in Converse Boring BH-2.

Leighton concluded, based on the assumptions for the project site location, that the soil conditions at Boring LB-1 are considered non-liquefiable due to dense soils below the assumed highest groundwater level of 16 feet below ground surface (bgs).

Based on the Converse study and the independent Leighton study findings for Boring LB-1, the project site is not considered to be susceptible to liquefaction and seismically-induced settlement is anticipated to be negligible.

TSI Comment: "Section 3.5.2 Geology/Soil Impacts, Item No.3-There is not a specific section in the Converse reports that addresses mass movements and/or landsliding in general.

Converse Response: The proposed grading for the West Parcel Solar Project will remove and lower the hillside with the road cut landslide down approximately 54 feet to an approximate elevation of 761 feet. The remaining landslide materials will be completely removed down to undisturbed bedrock. The size, width and depth of the keyways and slope benches will be increased during grading as necessary to remove all the disturbed landslide deposits and support the new engineered compacted fill soils on undisturbed bedrock materials. The new engineered compacted fills will be keyed and benched into

the underlying undisturbed bedrock materials during grading of the West Parcel Solar Project.

Stabilization fills will be graded for cut slopes with factors-of-safety less than 1.5 once slope stability analyses have been performed to model the temporary and permanent slope configurations and determine which slopes require additional mitigation measures.

Grading will be performed in accordance with current grading codes. Slopes will be graded in accordance with current grading code requirements with permanent slope gradients no steeper than 2 units horizontal to 1 unit vertical. Canyon bottom subdrain systems will be installed in the canyon bottoms to provide subsurface drainage and prevent buildup of hydrostatic pressure. The engineered compacted fill soils will fill the low-lying channel areas and will stabilize and buttress the surrounding upslope hillside areas and improve overall slope stability when filled to the solar pad grade of elevation 761 feet. The graded slope areas and pad will be constructed with non-erosive drainage control devices (including brow ditches, terrace drains, down drains, catch basins, etc.) to control surface runoff, reduce infiltration into the slopes and direct surface runoff to suitable disposal points.

TSI Comment: "Section 3.5.2 Geology/Soil Impacts, Item No.4 – There is a large landslide that exists on the site that was not identified by Converse in 2014."

Converse Response: The road cut landslide occurred in the late 1970's as a result of previous activity by others to widen Grand Avenue. The road cut landslide is located on a natural hillside slope on the central portion of the West Parcel site along Grand Avenue. Evidence of the landslide on the road cut slope above Grand Avenue was visible in historic aerial photographs staring in 1979. The road cut landslide was not repaired and has continued enlarge and creep downslope to Grand Avenue during the past 38 years. The unstable landslide deposits threaten Grand Avenue with slope instability and sudden ground movement. The landslide needs to be repaired.

The proposed grading for the solar pad will remove and lower the hilltop and landslide down 54 feet to approximate elevation 761 feet. The remaining landslide deposits will then be removed to expose undisturbed bedrock materials. The fill slope will be buttressed with engineered compacted fills that are keyed and benched into the undisturbed bedrock materials. The size, width and depths of the keyways and slope benches will be increased as necessary during grading to remove all of the disturbed landslide deposits and support the new compacted fill soils on undisturbed bedrock materials. The unstable landslide deposits will be completely removed during grading and replaced with engineered compacted fills. Grading observations and monitoring will be performed during project grading to verify that suitable bottom materials are reached and that the compacted fills are placed in accordance with project plans, specifications and grading code requirements.

TSI Comment: "Comments from June 7, 2017 meeting:"

Converse Response: Converse did not attend the June 7, 2017 meeting and is not familiar with the statements reported to have been made by others.

Additional geotechnical studies, recommendations, and reports are planned for the landslide repair and project site including slope stability analyses, temporary cut slope evaluations, keyway designs, subdrain system designs, geosynthetic reinforcements, buttress fills, slope stabilization fills, remedial removals and site grading.

TSI Comment: "N10. Additional Trenching Investigation"

Converse Response: Response to Terrestrial Solutions, Inc. review comments concerning the findings of four (4) exploratory test pit trenches excavated along the toe of the road cut landslide are presented in a separate response letter. The purpose of the four (4) exploratory test pit trenches was to determine the depth and extent of the landslide deposits along the toe of the landslide along Grand Avenue and to evaluate the sedimentary bedrock structure and material properties. This preliminary report provided information and data for the DEIR.

Sincerely,

CONVERSE CONSULTANTS

Mark B. Schluter, PG, CEG, CHG
Senior Engineering Geologist

Dist: 1/Addressee via Email

Converse Consultants
Geotechnical Engineering, Environmental & Groundwater Science, Inspection & Testing Services

September 25, 2017

Ms. Rebecca Mitchell
Mt. San Antonio College
Facilities Planning & Management
1100 North Grand Avenue
Walnut, California 91789-5611

Subject: **RESPONSE TO TERRESTRIAL SOLUTIONS INC. (TSI) DRAFT ENVIRONMENTAL IMPACT REPORT REVIEW COMMENTS - GEOTECHNICAL REVIEW OF PROPOSED GRADING OF THE WEST PARCEL SITE DATED JUNE 29, 2017**
Mt. San Antonio College West Parcel Solar Project
1100 North Grand Avenue
Walnut, California 91789
Converse Project No. 13-31-339-30

References: Converse Consultants, Geotechnical Study Report, Proposed Fill Placement at the West Parcel, Mount San Antonio College, Walnut, California, dated December 19, 2014, Converse Project No. 13-31-339-01.

Converse Consultants, West Parcel-Landslide Toe Test Pit Trench Study, Mt. San Antonio College West Parcel Solar Project, 1100 North Grand Avenue, Walnut, California, dated July 27,2017, Converse Project No. 13-31-339-01.

Terrestrial Solutions Inc., Geotechnical Review of Proposed Grading of the West Parcel Site for Mount San Antonio College, Walnut, California, dated June 29, 2017, TSI Project No.17-088.

Dear Ms. Mitchell,

INTRODUCTION

Converse Consultants (Converse) presents this response to review comments received from the United Walnut Taxpayers (UWT) and their geologic consultant Terrestrial Solutions Inc. (TSI) Draft Environmental Impact Report (DEIR) review comments concerning geotechnical review of proposed grading of the West Parcel Solar Project site at Mt. San Antonio College in Walnut, California. This response report provides additional information for the Draft Environmental Impact Report (DEIR).

The field exploration work to further evaluate the road cut landslide and project site was stopped on June 12, 2017 due to reported concerns for the California Gnatcatcher habitat areas and breeding season. The West Parcel site field investigation work was stopped and was not completed pending further environmental evaluation of the Gnatcatcher habitat areas. Additional geotechnical studies, recommendations and reports are planned for the landslide repair and project site including slope stability analyses, temporary and permanent cut slope evaluations, keyway designs, subdrain system designs, geosynthetic reinforcements, buttress fills, slope stabilization fills, remedial removals and site grading.

The June 29, 2017 Terrestrial Solutions Inc. review report includes 12 pages of text, 7 figures and 2 pages of photographs. The Converse responses are directed to Section 3.0 of the TSI report entitled “Deficiencies and Consequences” presented on pages 9, 10 and 11 of the report.

RESPONSE TO REVIEW COMMENTS

TSI Comment: “Geologic Model – Insufficient surface and subsurface information is available to determine/model the earth materials that are present, and the geologic structure throughout the site.”

Converse Response: The December 19, 2014 Geotechnical Study Report prepared by Converse Consultants presented the findings of 22 exploratory borings drilled, logged and sampled on the West Parcel site. The boring logs are presented in Appendix A of the report, titled Field Exploration. Nineteen (19) of the 22 exploratory borings encountered the various bedrock types on site including sandstone, conglomerate, siltstone and claystone bedrock materials. Two (2) of the borings (BH-1 and BH-2) were drilled to 21.5 feet below ground surface and did not encounter bedrock, only alluvium. Boring BH-13 did not encounter siltstone bedrock. The various soil and sedimentary bedrock types are identified on the boring logs based on material classifications and depths encountered. Geologic contacts between the differing geologic materials are shown on the borings logs. Sampling blow counts for each sample taken in the bedrock materials are presented on the boring logs.

The Geologic Map of the San Dimas and Ontario Quadrangles by Thomas Dibblee, Jr., DF-91, dated 2002, and other published maps do not show bedding attitudes on the West Parcel site. Bedding attitudes are shown on off-site areas some distance from the project site and do not represent the West Parcel site bedding attitudes and geologic structure. The bedding attitudes presented by Converse are based on direct field measurements performed on the West Parcel site. The bedding attitudes were measured on undisturbed bedrock materials located on the project site. Additional bedding attitudes have been measured around the perimeter or the Road Cut Landslide and in four (4) exploratory test pits excavated along the toe of the landslide

along Grand Avenue. These bedding attitudes are similar to the previously measured bedding attitudes and bedrock structure.

No evidence of faulting was found on the West Parcel site. Published maps by the California Geologic Survey (CGS) and Thomas Dibblee, Jr. do not show or mention faults on or near the West Parcel site. No evidence of faulting was found on the project site during the field investigation.

Sampling blow counts for each sample taken in the 22 exploratory borings in the soil and bedrock materials were presented on the boring logs. The strength of the soil and bedrock materials varied depending on several factors, including material type, rock type, degree of weathering and depth of burial. The deeper alluvium and bedrock materials provided high Ring sampler and Standard Penetration Test (SPT) blow counts and refusals to sampler penetration. The underlying alluvium and sedimentary bedrock materials will provide suitable support for the proposed fill soils and solar pad as it does throughout the local site area for residential hillside homes, highways, roads, businesses and colleges.

The proposed grading of the West Parcel Solar Project will improve overall site stability by placing engineered compacted fills in the low-lying canyon areas and lowering the hilltop slopes. The grading of the West Parcel Solar Project will remove the areas of "Low Landslide Potential", "Medium Landslide Potential" and "High Landslide Potential" as shown on the 1974 County Engineer Landslide Potential Map - Plate II, during grading and then become an "Urbanized Zone" classification with the landslide potential removed during proposed grading for the West Parcel project. As stated in the 1974 County Engineers Report, "*modifications to the topography by grading would greatly affect landslide potential. For example, subdivisions graded under present engineering geologic technology would become areas of low landslide potential and therefore could be zoned as "Urbanized: Landslide Potential Removed During Grading".*

TSI Comment: "A discussion of existing, and potential landslides at the site including mitigation was not presented in the Converse report."

Converse Response: The unstable Road Cut Landslide was recognized on the central hillside above Grand Avenue on the project site. The Road Cut landslide occurred in the late 1970's as the result of previous grading activities by others to widen Grand Avenue. No slope drainage control devices (brow ditches, terrace drains, down drains, catch basins, etc.) were constructed on the hillside cut slope to control surface runoff. Multiple landslide failures were reported to have occurred on the road cut slope. The landslides were likely triggered by three (3) years of above normal rainfall between 1977 and 1980. The landslide was not repaired, but left to gradually increase in size during the past 38 years resulting in significant damage to the West Parcel property and posing a continued threat of slope instability and sudden ground movement to Grand Avenue.

The proposed grading for the West Parcel Solar Project will completely remove the unstable landslide deposits and replace them with engineered compacted fills that are keyed and benched into the underlying undisturbed bedrock materials. The proposed grading will remove and lower the hillside with the Road Cut Landslide down approximately 54 feet to an approximate elevation of 761 feet. The remaining landslide materials will then be completely removed down to undisturbed bedrock. The size, width and depth of the keyways and slope benches will be increased as needed during grading to remove all the disturbed landslide deposits and support the new engineered compacted fill soils on undisturbed bedrock materials. The new engineered compacted fills will be keyed and benched into the underlying undisturbed bedrock materials during grading of the West Parcel Solar Project.

Hillside slope areas in the environmentally sensitive habitat areas of the West Parcel site were not investigated. No grading is planned for these areas. The environmental habitat areas will be kept in their natural conditions.

Additional geotechnical studies, recommendations, and reports are planned for the Road Cut Landslide and West Parcel site including slope stability analyses, temporary and permanent cut slope evaluations, keyway designs, subdrain system designs, geosynthetic reinforcements, buttress fills, slope stabilization fills, remedial removals and site grading.

TSI Comment: "General slope stability modelling and discussion was not provided, especially regarding the slope along Grand Avenue, the proposed cut slope below the existing homes, and the natural slopes of the project."

Converse Response: Field exploration work to further evaluate the Road Cut Landslide and West Parcel site was stopped on June 12, 2017 due to reported concerns for the California Gnatcatcher habitat areas and breeding season. The West Parcel site field investigation work was stopped and was not completed pending further environmental evaluation of the Gnatcatcher habitat areas. Additional geotechnical studies, recommendations, and reports are planned for the landslide repair and project site including slope stability analyses, temporary and permanent cut slope evaluations, keyway designs, subdrain system designs, geosynthetic reinforcements, buttress fills, slope stabilization fills, remedial removals and site grading.

TSI Comment: "Liquefaction was only discussed in relation to the southern canyon area and one boring within this canyon. The northern canyon is larger and has deeper alluvium than the southern canyon leaving significant deficiencies in the liquefaction analysis."
Converse Response: An additional soil boring was drilled by Leighton Consulting on June 12, 2017 to further evaluate the potential liquefaction hazard in the northern alluvial filled canyon near Grand Avenue. Leighton performed a limited independent geotechnical and geologic study of the site relative to the proposed designs presented

in Psomas' current plan. Preliminary results of the soil boring were presented in Leighton's September 11, 2017 Draft Geotechnical Review. Subsurface exploration was planned to also include several large-diameter borings and test pits on site, however, the site exploration was stopped on June 12, 2017 due to reported concerns for the California Gnatcatcher habitat areas and breeding season.

Leighton logged and sampled an 8-inch diameter hollow stem auger boring, LB-1, located in the northern canyon near Grand Avenue. Boring LB-1 was drilled to a depth of approximately 45 feet below ground surface and reported to have encountered approximately 40 feet of alluvium consisting of clayey and silty sand with gravel, gravel with sand, and sand with gravel overlaying sedimentary bedrock consisting of siltstone interbedded with sandstone. The Standard Penetration Tests (SPT) met sampling refusal at all the sample depth intervals below 20 feet indicating very dense alluvial soil materials. Groundwater was encountered at a depth of approximately 37 feet below the existing ground surface.

Leighton conducted liquefaction analysis on Boring LB-1 based on the subsurface data encountered in the boring and considered the observations made by Converse in Borings BH-1, BH-2, and BH-7, which were all located in the northern canyon. Leighton assumed alluvium to be 40 feet thick based on conditions observed in Boring LB-1, and assumed the highest historical groundwater of 16 feet below ground surface as encountered in Converse Boring BH-2. The seismic parameters used for the Leighton liquefaction analysis were based on the results of the U.S. Geological Survey's U.S. Seismic Design Maps and Unified Hazard Tool online applications. The Leighton liquefaction analysis used a Peak Horizontal Acceleration (PGAm) of 0.77g and an earthquake magnitude of Mw-6.7.

Leighton concluded, based on the assumptions described above, the soil conditions at Boring LB-1 are considered non-liquefiable due to the dense soil conditions below the assumed highest groundwater level. Leighton also performed analyses to estimate the potential for seismically induced settlement using the method of Tokimatsu and Seed (1987), and based on Martin and Lew (1999), considering the maximum considered earthquake (MCE) peak ground acceleration (PGAm). The results of the analyses suggest that the onsite soils are susceptible to approximately 0.9-inch of seismic settlement based on the MCE. These conditions are reported by Leighton to be suitable for site development.

TSI Comment: "Remedial removals were discussed however, estimated depths of removal and the criteria to determine when removals are sufficient were not provided."

Converse Response: Additional geotechnical studies, recommendations and reports are planned for the landslide repair and project site that will include depths of remedial removals for the canyon areas. 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 engineered 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 subdrains.

Four (4) exploratory test pit trenches were excavated along the toe of the Road Cut Landslide on June 9 and June 12, 2017. The purpose of the four (4) exploratory test pit trenches was to determine the depth and extent of landslide deposits along the toe of the landslide along Grand Avenue. The exploratory test pit trenches were excavated with a large Kobelco SK210-9 track-mounted excavator. The bedrock exposed in the bottom of Test Pit Nos.1 through 3 encountered hard intact bedrock materials beneath the disturbed landslide materials. The excavator had to scrape and chip the bedrock exposed at the bottom of the trench during excavation. The trench sidewalls and bottoms were then cleaned off by hand to obtain bedding attitudes. The undisturbed bedrock exposures in the bottom of the trenches were hard and intact when struck by a geologic hammer. There was no evidence observed in the bottom of the trenches to indicate that additional slip planes existed below the bottom depths of the trench excavations. The bedrock exposed in the bottom of the trenches was undisturbed, hard and intact.

There has been no observed evidence of ground movement or displacement observed along the sidewalk and street surface on the west side of Grand Avenue below the road cut landslide.

The depths of the keyways along Grand Avenue for the landslide repair are anticipated to range from 5 to 15 feet below the Grand Avenue sidewalk grades. The excavations for the keyways will be safely set back from the sidewalk, street and buried utility lines for lateral support. The keyway bottoms will be leveled, stepped and back tilted for improved buttress stability. The deepest excavations for the keyways will be made along the back-cut slopes of the keyway and for the subdrain systems that will be safely set back from the sidewalk and street along the west side of Grand Avenue.

TSI Comment: “Remedial removal depths can affect many other issues including total and differential settlement, potential collapse, and the stability of existing slopes.

Converse Response: Additional geotechnical studies, recommendations and reports are planned for the landslide repair and project site that will include depths of remedial removals for the canyon areas, slopes and landslide area. Loose, disturbed or unsuitable alluvial soils and bedrock materials encountered in the canyons or on the slopes shall be removed to firm and unyielding natural soils and/or bedrock and then replaced as engineered compacted fill. Loose and unsuitable alluvial soil and bedrock materials shall be cleaned out of the canyon bottoms prior to placement of compacted fills and canyon bottom subdrains. Bedrock cut pad areas will be over-excavated and recompacted.

Grading will be performed in accordance with current grading codes. Grading observations and monitoring will be performed during project grading to verify that suitable bottom materials are reached and the compacted fills are placed in accordance with project plans and specifications and applicable grading codes. These mitigation measures will reduce the potential for differential settlement, potential collapse and instability to negligible and/or acceptable levels.

Sincerely,

CONVERSE CONSULTANTS

Mark B. Schluter, PG, CEG, CHG
Senior Engineering Geologist

Dist: 1/Addressee via Email

STATE OF CALIFORNIA

Governor's Office of Planning and Research

State Clearinghouse and Planning Unit

Edmund G. Brown Jr.
Governor

Ken Alex
Director

September 15, 2017

Rebecca Mitchell
Mt. San Antonio Community College District
1100 North Grade Avenue
Walnut, CA 91789

Subject: West Parcel Solar Project
SCH#: 2002041161

Dear Rebecca Mitchell:

The State Clearinghouse submitted the above named Draft EIR to selected state agencies for review. The review period closed on September 14, 2017, and no state agencies submitted comments by that date. This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act.

Please call the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process. If you have a question about the above-named project, please refer to the ten-digit State Clearinghouse number when contacting this office.

Sincerely,

Scott Morgan
Director, State Clearinghouse

1400 TENTH STREET P.O. BOX 3044 SACRAMENTO, CALIFORNIA 95812-3044
TEL (916) 445-0613 FAX (916) 323-3018 www.opr.ca.gov

Document Details Report
State Clearinghouse Data Base

SCH# 2002041161
Project Title West Parcel Solar Project
Lead Agency Mt. San Antonio Community College

Type EIR Draft EIR

Description The project will remove native vegetation on 17.25 acres of the project site and develop a 2.2 MW solar panel system on a 9.9-acre pad with an interconnect to the campus electrical system. Restored and replacement coastal sage habitat will be provided on and off site for the coastal California gnatcatcher. Approximately 139,000 cubic yards of earth will be imported to the project site from the stadium area on campus.

Lead Agency Contact

Name Rebecca Mitchell
Agency Mt. San Antonio Community College District
Phone 909-274-5175 **Fax**
email
Address 1100 North Grade Avenue
City Walnut **State** CA **Zip** 91789

Project Location

County Los Angeles
City Walnut
Region
Lat / Long 34° 03' N / 117° 52" W
Cross Streets Grande Avenue and Temple Avenue
Parcel No.
Township **Range** **Section** **Base**

Proximity to:

Highways Hwy 57, 60
Airports
Railways
Waterways
Schools Westhoff, Collegewood
Land Use Retail & Solar (Campus Zoning) Single family Residential/Residential Planned Development (City of Walnut)

Project Issues Aesthetic/Visual; Agricultural Land; Air Quality; Archaeologic-Historic; Biological Resources; Drainage/Absorption; Geologic/Seismic; Noise; Public Services; Cumulative Effects; Landuse; Sewer Capacity; Soil Erosion/Compaction/Grading; Traffic/Circulation; Vegetation; Water Quality; Wetland/Riparian

Reviewing Agencies Resources Agency; Department of Fish and Wildlife, Region 5; Department of Parks and Recreation; Department of Water Resources; California Highway Patrol; Caltrans, District 7; Air Resources Board, Major Industrial Projects; Regional Water Quality Control Board, Region 4; California Energy Commission; Native American Heritage Commission; Public Utilities Commission

Date Received 08/01/2017 **Start of Review** 08/01/2017 **End of Review** 09/14/2017

Note: Blanks in data fields result from insufficient information provided by lead agency.

Leighton Consulting, Inc.
A LEIGHTON GROUP COMPANY

September 11, 2017

Project No. 11672.001

Mount San Antonio College
Facilities Building 46
1110 North Grand Avenue
Walnut, California 91789

Attention: Mr. Gary Gidcumb, Architect, LEED AP

Subject: **Geotechnical Review**
Mount San Antonio College South Campus-West Parcel
West of Grand Avenue and Approximately 500 Feet Southeast of Temple Avenue/Amar Road
City of Walnut, California

INTRODUCTION

Leighton Consulting, Inc. (Leighton) presents this geotechnical review of the preliminary review by the United Walnut Taxpayers (UWT, 2017) of the Converse Consultant's (Converse) Geotechnical Study Report (Converse, 2014); and Converse's "West Parcel – Landslide Toe Test Pit Trench Study, Mt. San Antonio College West Parcel Solar Project, 1100 North Grand Avenue, Walnut, California 91789, Converse Project No. 13-31-339-30", dated July 27, 2017. The Converse reports (2014 and 2017) were prepared for the proposed rough grading in the West Parcel of the South Campus of Mount San Antonio College in the City of Walnut, California. The site of the proposed development is located west of Grand Avenue approximately 500 feet southeast of Temple Avenue/Amar Road.

Converse conducted a subsurface investigation of the site for their 2014 Geotechnical Study Report and presented their findings, conclusions, and geotechnical recommendations as they relate to the rough grading design depicted in the preliminary site plan titled "Grand Avenue Parcel Earthwork, Exhibit D-5," dated November 4, 2013,

and a revised drawing annotated by Newcomb/Anderson/McCormick, dated January 7, 2014. We have been provided undated "South Campus Site Improvements – West" plans produced by Psomas, which include the proposed rough grading design. It is our understanding that the grading plan by Psomas is similar to the plan referenced in Converse's report and the plan referenced during UWT's review of Converse's report.

The United Walnut Taxpayers (UWT) reviewed Converse's 2014 Geotechnical Study Report and presented their preliminary review comments in a letter dated May 8, 2017. A summary of their review comments are presented below.

We performed a limited independent geotechnical and geologic study of the site relative to the design presented in Psomas' plan. We excavated one hollow stem boring in the canyon located in the northern portion of the site. Our subsurface exploration was planned to also include several large-diameter borings and test pit onsite, however, our site exploration was terminated before the large-diameter borings and test pits were excavated.

Converse excavated four exploratory test pits at the toe of an existing landslide (Test Pit Nos. 1 through 4), adjacent to Grand Avenue, in the West Parcel of the proposed South Campus solar project. Converse's purpose for the four test pits was to determine the depth and the lower extents of the existing landslide, and to observe the structure of the underlying intact bedrock. Leighton observed the conditions exposed in three of Converse's four test pits (Test Pit Nos. 2, 3, and 4).

Our geotechnical review of UTW's comments and Converse's 2017 Test Pit Trench Study was based on our limited subsurface data and findings from Converse's 2014 and 2017 reports. Our findings and conclusions presented below address some of the issues presented in the preliminary review by UWT. Considering this, our responses to the UWT review presented below are preliminary, and may change based on future geotechnical exploration or plan reviews.

LIMITED INDEPENDENT GEOTECHNICAL EXPLORATION BY LEIGHTON

1) Scope and Purpose

We were initially retained by Mount San Antonio College to conduct an independent geotechnical study considering the rough grading plan depicted in the referenced undated improvements plan by Psomas. However, our subsurface exploration was terminated before we excavated our proposed large-diameter borings and test pits.

Based on the tasks we were able to perform, our limited geotechnical exploration included:

- We reviewed of pertinent reports, maps, and aerial photographs including the 1974 Geologic-Seismic Study for the General Plan, City of Walnut (County of Los Angeles, 1974) as well as a subsurface investigation.

- We drilled, sampled, and logged one hollow-stem auger boring (LB-1) in the northern canyon onsite in a location near Grand Avenue, where the thickest amount of surficial soils in the entirety of the project site was anticipated. This hollow-stem auger boring was sampled and logged by a staff geologist under the field supervision of a Professional Geologist.

The initial purpose of our study was to investigate the site geologic and geotechnical conditions with respect to the proposed rough grading plan and provide preliminary geotechnical recommendations for the proposed improvements. Because we weren't able to complete our subsurface exploration, our limited study could not completely address the analysis of landslide and mass movements, analysis of the stability of proposed slopes including the design slope adjacent to the existing residences on Regal Canyon Drive, clarifying remedial removals and measures to mitigate landslide mass movements, and other geotechnical issues. Our hollow-stem-auger boring (LB-1) allowed us to evaluate liquefaction. The log for boring LB-1 is attached.

The scope of our limited subsurface exploration addresses some, but not all of the issues presented in UTW's review of Converse's 2014 study. Future geotechnical investigations should include observations of the geologic conditions of the site by a Professional Geologist and/or Certified Engineering Geologist. Future geotechnical investigations should also address all significant geotechnical issues relating to the design and construction of the site in order to adequately support the County of Los Angeles Building Code Section 111 statement.

2) <u>Preliminary Findings</u>

Plate II of the Geologic-Seismic Study for the General Plan for the City of Walnut (County of Los Angeles, 1974) indicates that portions of the site range from having low to high landslide potential. We conducted an aerial photograph review of the site and observed geomorphic expressions of a landslide in the central hill in photographs ranging in date from 1980 through 2016. We also observed the conditions of that landslide during a field reconnaissance. Converse Consultants excavated four test pits

at the toe of this landslide on June 9 and 12, 2017. We observed three (of four) of their test pits, which exposed landslide debris overlaying intact claystone, siltstone, and sandstone bedrock. Based on the observations made during Converse's test pits, the landslide debris appears to terminate downslope at the geomorphological toe of the landslide, and does not cross Grand Avenue. Future geotechnical studies of the site should include exploration through the middle portion of the landslide extending into the underlying bedrock. The observations made in these borings would indicate an estimate of the depth and the nature of the failure and provide data regarding the geologic conditions beneath the landslide. Understanding these elements would also indicate removal recommendations for the landslide debris and slope stability analysis of the proposed grading design in the area of the landslide.

We have also reviewed three published geologic maps that cover the project site (County of Los Angeles, 1974, Dibblee, 2002, and Shelton, 1965). All three maps indicated that bedding within and around the site dips towards the northeast, east-northeast, and north-northeast at angles ranging from approximately 20 to 30 degrees. Additionally, the test pits conducted by Converse at the toe of the landslide in the central hill exposed intact bedrock with bedding planes dipping towards the north and east-northeast at angles ranging from 12 to 32 degrees. Future geotechnical studies of the site should include work to develop a better understanding of the geologic structure onsite.

We logged and sampled a hollow-stem auger boring, LB-1, located in the northern canyon near Grand Avenue. In LB-1, we found approximately 40 feet of alluvium consisting of clayey and and silty sand with gravel, gravel with sand, and sand with gravel overlaying siltsone interbedded with sandstone. Groundwater in LB-1 was encountered at a depth of approximately 37 feet below the existing ground surface.

3) Slope Stability Analysis

Our current understanding of the geologic structure onsite suggests that bedding potentially dips north and northeast. This is an out-of-slope condition for the approximately 35-foot-tall, 2:1 gradient (horizontal:vertical) design cut slope beneath the existing residences along Regal Canyon Drive in the northwestern portion of the project site. Considering this, we have prepared a preliminary cross section representing that slope, but with what we believe are conservative assumptions (the design slope is a 60-foot-tall, 2:1 gradient cut constructed in predominantly interbedded claystone, sandstone, and siltstone dipping directly out-of-slope at an angles of 10 to 16 degrees). We assumed what we believe are representative to conservative along-bedding

strength parameters for the bedrock - a cohesion of 250 psf and an angle of internal friction of 10 degrees. Our preliminary slope stability analysis yielded a factor of safety of less than 1.5 with these parameters. To provide adequate stability for the analyzed slope, our preliminarhy analysis indicates that an approximately 40-foot-wide stability buttress founded in a 5-foot deep key would need to be constructed for the slope. This preliminary analysis was conducted only to check whether stabilization of the slope is feasible.

The conditions of all design slopes and any natural slopes with potential instability should be further evaluated in future geotechnical studies of the site. Slope stability analysis should be conducted for cut, fill, and natural slopes in order to adequately support the County of Los Angeles Building Code Section 111 statement.

The spatial extents and depths of the existing landslide should be modelled in future geotechnical studies of the site to evaluate the temporary stability of the excavation once landslide debris removal have been completed.

4) Liquefaction Analysis

The State of California has mapped a portion of this site to be in an area of liquefaction potential. Converse has analyzed the potential for liquefaction based on their boring BH-15. This boring was located in the southern canyon onsite, and was observed to have drilled through approximately 12 feet of alluvium with perched groundwater in the bedrock 16 feet below the surface. The northern canyon onsite was observed by Converse to contain alluvium greater than 21.5 feet deep, with groundwater 15.5 to 21.25 feet below the surface. These borings did not extend to bedrock, and Converse did not use data from the deeper northern canyon while performing liquefaction analysis.

Alluvium extended to a depth of approximately 40 feet below the existing ground surface in our boring LB-1, located in the middle of the northern canyon near Grand Avenue. The alluvium encountered consisted of clayey sand, silty sand with gravel, and gravel with sand, and was very dense at a depth of approximately 20 feet below the surface. Groundwater in our boring was encountered at a depth of approximately 37 feet below the ground surface.

We conducted liquefaction analysis based on the subsurface data from our boring LB-1 and considered the observations made by Converse in their borings BH-1, BH-2, and BH-7, which were all located in the northern canyon. We assumed alluvium to be 40

feet thick based on conditions observed in LB-1, and we assumed a highest historical groundwater of 16 below the ground surface based on the highest groundwater encountered in the site (Converse boring BH-2). The seismic parameters used for our liquefaction analysis were based on the results of the U.S. Geological Survey's U.S. Seismic Design Maps and Unified Hazard Tool online applications. For our liquefaction analysis, we used an adjusted Peak Horizontal Acceleration (PGA_M) of 0.77g and an earthquake magnitude of M_w=6.7.

Based on the assumptions described above, the conditions at boring LB-1 are considered non-liquefiable due to the dense soil below the assumed highest groundwater level.

We also have performed preliminary analyses to estimate the potential for seismically induced settlement using the method of Tokimatsu and Seed (1987), and based on Martin and Lew (1999), considering the maximum considered earthquake (MCE) peak ground acceleration (PGA_M). The preliminary results of our analyses suggest that the onsite soils are susceptible to approximately 0.9 inch of seismic settlement based in the MCE. These conditions are preliminarily considered suitable for the development.

5) Remedial Removals

Based on the conditions encountered in our boring LB-1, remedial removals extending to depths approaching 20 feet below the existing ground surface in the northern canyon should be recommended. Recommended depths of removals of the existing landslide in the central hill will be provided once a subsurface exploration through the landslide and subsequent analysis has been completed. Remedial removal recommendations considering differential settlement as well as collapse potential and the stability of existing slopes should be addressed in future geotechnical studies of the site. A geologic/ geotechnical map that includes approximate depths of remedial removals onsite should be included in future geotechnical studies of the site.

GEOTECHNICAL ISSUES PRESENTED IN THE UWT REVIEW OF CONVERSE'S 2014 STUDY

The UWT preliminary review of Converse's Geotechnical Study Report addresses several geotechnical or geologic issues related to the proposed rough grading. In general, the review identified the following issues:

- Lack of geologic and geotechnical data presented in Converse's report.
- Geologic conditions onsite were not observed by a Professional Geologist and/or Engineering Geologist for Converse's investigation.
- A landslide in the central portion of the site was not addressed in Converse's report.
- No slope stability analysis was included in Converse's report.
- Liquefaction analysis in Converse's report did not represent the most critical area of the site.
- The impact of the load of design fills was not addressed in Converse's report.
- Specific remedial removal recommendations were not presented in Converse's report

This letter addresses some of the issues identified in the UWT review as well as other significant geotechnical issues relating to the development of the South Campus-West Parcel site. We have attached an annotated copy of the UWT review indicating in which sections of the summary of our limited geotechnical exploration each UWT comment is addressed.

REVIEW OF CONVERSE'S 2014 WEST PARCEL -LANDSLIDE TOE TEST PIT TRENCH STUDY

Findings

Converse observed the basal plane of the landslide along the toe at elevations roughly similar to the elevations of Grand Avenue. Leighton also observed the basal plane of the landslide roughly at a similar elevation as Grand Avenue in Test Pit Nos. 2, 3, and 4. Above the landslide basal plane, landslide debris was observed to be loose, disturbed, and broken earth materials. Intact bedrock beneath the landslide basal plane consisted of siltstone, claystone, and sandstone dipping 14 to 30 degrees towards the northwest, north, and northeast.

Preliminary Conclusions

Converse concluded that the toe of the existing landslide is situated onsite just west of Grand Avenue. Based on our review of their findings and our limited observations onsite, the location of the toe of the landslide as described in Converse's Landslide Toe Test Pit Trench Study is reasonable.

Converse recommended that the existing landslide debris and slip plane should be completely removed during remedial grading of the project. Additionally, Converse recommended to construct the slope designed in the area of the existing landslide for the proposed solar project with a 25 to 40-foot-wide buttress founded 5 feet below the ground surface. Neither Converse's 2014 Geotechnical Study nor their 2017 Landslide Toe Test Pit Trench Study included slope stability analysis.

Preliminary Recommendations

Without slope stability analysis, Converse's recommendation for the construction of the design slope in the area of the existing landslide with a 25 to 40-foot-wide buttress founded 5 feet below the ground surface cannot be evaluated. Slope stability analysis should be conducted for cut, fill, and natural slopes in order to adequately support the County of Los Angeles Building Code Section 111 statement.

The spatial extents and depths of the existing landslide should be modelled to evaluate the temporary stability of the excavation of landslide debris removal. According to Los Angeles County specifications, the minimum factor of safety for temporary excavations is 1.25.

CLOSING

Our geotechnical review is based on limited data from our boring, limited observation of the surface of the site, the 2014 and 2017 reports by Converse, and our limited observations made during a portion of the fieldwork conducted by Converse for their Landslide Toe Test Pit Trench Study. Our findings, conclusions, and recommendations are preliminary in nature, and may change based on future geotechnical exploration or plan reviews.

We appreciate the opportunity to be of services to you. Should you have any questions, please do not hesitate to contact either of the undersigned.

Respectfully submitted,

LEIGHTON CONSULTING, INC.

Jason D. Hertzberg, GE 2711
Priicipal Engineer

SGO/JDH/rsm

Attachments: References
Annotated UWT Preliminary Review
Leighton Boring LB-1 Log
Converse Borings BH-1, BH-2, and BH-7 Logs

Distribution: (1) Addressee

Leighton

REFERENCES

California Geological Survey (CGS), 1999, State of California Seismic Hazard Zones, San Dimas Quadrangle, Official Map, Released: March 25, 1999, scale 1:24,000.

CivilTech Software, 2008, LiquefyPro, Version 5.5j

Converse Consultants, 2014, Geotechnical Study Report, Proposed Fill Placement at the West Parcel, Mount San Antonio College, Walnut, California, Converse Project No. 13-31-339-01, December 19, 2014.

Converse Consultants, 2017, West Parcel – Landslide Toe Test Pit Trench Study, Mt. San Antonio College West Parcel Solar Project, 1100 North Grand Avenue, Walnut, California 91789, Converse Project No. 13-31-339-30, July 27, 2017.

County of Los Angeles, 1974, Geologic-Seismic Study for the General Plan, City of Walnut, prepared by Department of County Engineer, Engineering Geology Section, Los Angeles, California, July 25, 1974.

Dibblee, T.W., Minch, J.A., 2002, Geologic Map of the San Dimas and Ontario Quadrangles, Los Angeles and San Bernardino Counties, California, Dibblee Foundation Map DF-91, 2002, scale 1:24,000.

Martin, G. R., and Lew, M., ed., 1999, "Recommended Procedures for Implementation of DMG Special Publication 117, Guidelines for Analyzing and Mitigating Liquefaction Hazards in California," Southern California Earthquake Center, dated March 1999.

Nationwide Environmental Title Research, 2017, NETR Online, Historic Aerials, website: https://www.historicaerials.com, accessed June 8, 2017.

Shelton, J.S., 1965, Glendora Volcanic Rocks, Los Angeles Basin, California, Bulletin of the Geological Society of America, vol. 66, pp.46-90, January 1965.

United Walnut Taxpayers (UTW), 2017, Preliminary Review of Negative Geotechnical and Geological Aspects of Constructing Earthfill Pad for a Solar Farm on the West Parcel – Draft, May 8, 2017.

ANNOTATED UNITED WALNUT TAXPAYERS PRELIMINARY REVIEW OF NEGATIVE GEOTECHNICAL AND GEOLOGICAL ASPECTS OF CONSTRUCTING EARTHFILL PAD FOR A SOLAR FARM ON THE WEST PARCEL - DRAFT

1. Introduction

A licensed Engineering Geologist has been retained by United Walnut Taxpayers (UWT) to review of the report from Converse Consultants, dated December 19, 2014, from a geotechnical perspective, and grading plans prepared by Psomas and submitted to the City of Walnut on January 24, 2017. The purpose of this work was to assess the general geological setting of the site, assess the hazards and issues related to placement of earthfill at the site in accordance with grading plans received, and determine if it is possible to develop a project in a safe manner suitable to support the proposed earthfill development and maintain the integrity of the surrounding properties. Licensed Civil Engineers from United Walnut Taxpayers are overseeing this work and have prepared this draft summary document.

2. Initial Summary of Preliminary Expert Opinion of Converse and Psomas Reports

a. Significant Deficiencies in Converse Subsurface Investigations, Analysis and Baseline Geologic Data

i. Conclusions are not well supported and there is no discussion and/or analysis of significant issues.

See Sections 1 through 5 in Leighton's geotechnical review.

Issues relating to settlement should be evaluated in future geotechnical studies of the site.

ii. Poorly supported conclusions could impact the stability and safety of the project site and the safety of adjacent offsite properties and homes.

See Section 3 (Slope Stability Analysis) in Leighton's geotechnical review.

iii. Subsurface investigations did not provide for direct observation of geologic field conditions by a Professional Geologist and/or Engineering Geologist.

See Section 1 (Scope and Purpose) in Leighton's geotechnical review.

iv. Complex observations were performed by an Engineer-in-Training who is not trained or qualified to analyze geologic conditions and log field investigation borings.

See Section 1 (Scope and Purpose) in Leighton's geotechnical review.

v. Observations were based on the limited field sampling that was conducted. Data is lacking to create a geologic map and geologic cross-sections that illustrate the site geologic conditions.

See Section 1 (Scope and Purpose) in Leighton's geotechnical review.

vi. Insufficient surface and subsurface information is available from the Converse report to determine the earth materials that are present, and the geologic structure of the site.

See Sections 1 (Scope and Purpose) and 2 (Preliminary Findings) in Leighton's geotechnical review.

vii. The Converse report did not recognize a significant landslide in the central hill of the project site present for more than thirty years (see Google Earth attachment), which is vulnerable to further sliding.

See Section 2 (Preliminary Findings) in Leighton's geotechnical review.

viii. Orientations of bedding planes at northwest portion of site were based on limited borings and are opposite to all relevant published geologic mapping.

See Sections 1 (Scope and Purpose) and 2 (Preliminary Findings) in Leighton's geotechnical review.

ix. Inconsistencies in bedding plane orientation reported by Converse versus published geologic mapping is not explained or reconciled.

See Sections 1 (Scope and Purpose) and 2 (Preliminary Findings) in Leighton's geotechnical review.

x. Converse concludes bedding planes near Regal Canyon Drive homes are oriented into the slope and stable, while all relevant, published geologic mapping shows bedding is oriented out of the slope and unstable to these homes and properties.

See Sections 2 (Preliminary Findings) and 3 (Slope Stability Analysis) in Leighton's geotechnical review.

xi. The project results in potential significant negative impacts to Grand Avenue, including effects of potential liquefaction and induced settlement from adjacent earthfill over alluvial materials if left in place.

See Section 4 (Liquefaction Analysis) in Leighton's geotechnical review.

Issues relating to settlement should be evaluated in future geotechnical studies of the site.

xii. Poorly defined and inadequate removal of unsuitable soils proposed can result in earthfill and foundation instability of the project, including placement of earthfill over an active landslide.

See Sections 2 (Preliminary Findings), and 5 (Remedial Removals) in Leighton's geotechnical review.

Issues relating to settlement should be evaluated in future geotechnical studies of the site.

3. Review of the Geologic and Geotechnical Information

Several documents were reviewed in order to understand the geologic conditions underlying the site. The Converse report was based on subsurface exploration consisting of drilling, logging, and sampling various diameter borings in May 2014. Their investigation also included laboratory testing.

a. Partial Listing of Geologic and Engineering Documents Reviewed

i. Regional Geologic Map Generated by T.W. Dibblee (1989).
See Section 2 (Preliminary Findings) in Leighton's geotechnical review.

ii. Geologic and Landslide Potential Maps (Plates I and II), generated by the Los Angeles County Engineer for the City of Walnut as part of their General Plan (1974).
See Section 1 (Scope and Purpose) and 2 (Preliminary Findings) in Leighton's geotechnical review.

iii. Converse Consultants, Geotechnical Study Report, Proposed Fill Placement at the West Parcel, December 19, 2014.

iv. Psomas, Undated, South Campus Site Improvements - West, Mount San Antonio College, Undated.

v. UWT Engineering Geologist expert knowledge of geologic formations present at the site.

c. Preliminary Findings of Relevant Geological Mapping Review of West Parcel - T.W. Dibblee (1989), LA County Engineer (1974) and UWT Engineering Geologist (2017)

i. The Dibblee Regional Geologic map (1989) indicates the site is underlain by bedrock of the Tertiary Sycamore Canyon Formation and that bedding is generally striking northwest southeast and dipping to the northeast. The surrounding areas are indicated as being underlain by the Tertiary Yorba member of the Monterey (Puente Formation) with similar bedding orientations.

See Section 2 (Preliminary Findings) in Leighton's geotechnical review.

ii. The LA County Engineer, 1974, geologic map indicates, the site is underlain by bedrock of the Puente Formation. The central knob and adjacent hilltops are indicated as being underlain by sandstone and conglomerate, however, the lower portions of the hills are indicated as being underlain by the shales and siltstones.

See Section 2 (Preliminary Findings) in Leighton's geotechnical review.

iii. UWT Engineering Geologist observations confirm findings of the LA County Engineer (1974) and T.W. Dibblee (1989) geologic mapping.

See Section 2 (Preliminary Findings) in Leighton's geotechnical review.

iv. UWT Engineering Geologist observes bedding dip is generally east and sandstone and conglomerates are present. Where the shale and siltstone was observed, bedding dips to the east-northeast (similar to as indicated by T.W. Dibblee [1989]).

See Section 2 (Preliminary Findings) in Leighton's geotechnical review.

d. Converse Geological Investigation Does not Reveal Low Strength Silts and Shales and Presents Other Significant Omissions

i. Converse report indicates, *"the site is underlain by hard, cemented sandstone pebble conglomerate bedrock"*. There is no mention of the presence of siltstone and/or shales, indicative of lower strength materials, which could result in unstable conditions in overlying earthfill.

See Section 2 (Preliminary Findings) in Leighton's geotechnical review.

ii. The low strength of numerous observed laminations and bedded siltstones are not emphasized as they affect the stability of the overlying earthfill.

See Section 2 (Preliminary Findings) in Leighton's geotechnical review.

iii. There are few notations of earth materials encountered.

See Section 2 (Preliminary Findings) in Leighton's geotechnical review.

iv. Geologic contacts between the differing geologic materials are not indicated and no structural information (such as bedding orientations) is provided.

See Section 2 (Preliminary Findings) in Leighton's geotechnical review.

v. Site-specific geologic structural information is only discussed in the text as it relates to a single large-diameter bucket auger boring , indicating bedding that was generally dipping northwest

See Section 1 (Scope and Purpose) in Leighton's geotechnical review.

vi. The above cited northwest bedding dip by Converse is nearly opposite of the regional bedding orientations indicated on the T.W. Dibblee Regional Geology map (1989) and LA County Engineer geologic mapping (1974).

See Sections 1 (Scope and Purpose) and 2 (Preliminary Findings) in Leighton's geotechnical review.

ix. Converse's observations from infrequent samples in the small diameter borings indicated bedding which had near horizontal to near vertical dips. These inconsistences are not presented or explained in the report.

See Sections 1 (Scope and Purpose) and 2 (Preliminary Findings) in Leighton's geotechnical review.

The above statements and observations by Converse could potentially lead to conclusions that bedding orientations are generally into the slope and westerly, suggesting hillsides and hillside cuts are stable. In fact, there is evidence that actual bedding orientations dip out of the slope, as represented on all relevant geologic maps and field observation by our Engineering Geologist, resulting in unstable conditions.

4. Need for Qualified Personnel to Perform Geologic Field Observations

i. Inadequacies of Converse Field Observation Personnel

i. A Geologist or Engineering Geologist should perform a geological study, including direct observations of geologic field conditions such that field conditions are not overlooked or misinterpreted.

See Section 1 (Scope and Purpose) in Leighton's geotechnical review.

ii. An Engineer-in-Training who is not trained to analyze geologic conditions logged borings and performed field observations.

See Section 1 (Scope and Purpose) in Leighton's geotechnical review.

iii. Field observations were based on the limited field sampling that was conducted.

See Sections 1 (Scope and Purpose) and 2 (Preliminary Findings) in Leighton's geotechnical review.

iv. Converse field personnel overlooked an obvious and significant landside that occurred on the central hill area of the site that by expert review of historical photographs took place several decades ago.

See Section 2 (Preliminary Findings) in Leighton's geotechnical review.

v. Improper field observations can lead to conclusions affecting the safe installation the project, but also the safety of adjacent properties and residences.

See Sections 1 (Scope and Purpose), 2 (Preliminary Findings), and 3 (Slope Stability Analysis) in Leighton's geotechnical review.

The practical consequence of inadequate field observations is that up to seventy (70) feet of earthfill would be placed over unmitigated landslide rupture surfaces, typically exhibiting low strength and subject to further movement, adjacent to a highly-travel public road. As noted below, limited sampling in other areas compromised liquefaction analyses and the consequences of bedding plane orientations on adjacent properties and residents.

5. Landslides/Mass Movements

a. Deficient Landslide Analysis Overlooked a Significant Existing Landslide at Grand Avenue and Other Adverse Geologic Features

i. Government codes and guidelines require a discussion of the potential for landsliding at any hillside site in California.

See Sections 1 (Scope and Purpose), 2 (Preliminary Findings), and 3 (Slope Stability Analysis) in Leighton's geotechnical review.

ii. No landslide analyses of mass movements/landsliding were conducted by Converse nor were landslides shown on any of their maps, cross-sections or indicated in the text of the report.

See Sections 1 (Scope and Purpose), 2 (Preliminary Findings), and 3 (Slope Stability Analysis) in Leighton's geotechnical review.

iii. No discussion is provided in the report other than relating to seismically induced landslides, which by site evidence does not account for existing landsliding that has occurred along Grand Avenue more than thirty years ago after the four-lane road was established.

See Sections 1 (Scope and Purpose), 2 (Preliminary Findings), and 3 (Slope Stability Analysis) in Leighton's geotechnical review.

iv. Aerial imagery from Google Earth clearly indicates landslide(s) exists on the eastern side of the central knob descending down to Grand Avenue (see attachment). The landslide area on the central hill is present in aerial imagery dating from after 1980 until the present.

See Section 2 (Preliminary Findings) in Leighton's geotechnical review.

v. The above referenced landslide is further validated through field visits to the site by our Engineering Geologist and former City officials with first-hand knowledge of at least two landslides that occurred at the subject site after Grand Avenue was expanded to four lanes.

See Section 2 (Preliminary Findings) in Leighton's geotechnical review.

vi. At least one of the above landslides at the central hill of the site closed the road (Grand Ave.) and covered all the lanes. In addition, siltstone and shale bedrock with eastward dipping bedding subject to landsliding was observed in this area.

See Section 2 (Preliminary Findings) in Leighton's geotechnical review.

vii. In addition to the landslide(s) discussed above, review of aerial imagery indicates other areas of the site, which may be underlain by landslides, or have the potential for landsliding.

See Section 2 (Preliminary Findings) in Leighton's geotechnical review.

viii. Geologic cross-sections were not prepared to show landslide extent and no stability analyses were conducted to determine if earthfill slopes or cuts in natural slopes were feasible.

See Section 3 (Slope Stability Analysis) in Leighton's geotechnical review.

ix. The Converse report did not reference the LA County Engineer Landslide Potential Map (1974) that indicates significant portions of the site have a High Landslide Potential (Plate II). Such a report is typical of city planning initiatives and is an obvious document to be sought out and reviewed.

See Section 2 (Preliminary Findings) in Leighton's geotechnical review.

x. Essentially any of the east facing slopes that are underlain by thinly bedded (laminated) bedding has a potential for landsliding. There are also several geomorphic features of the site that may be indicative of landsliding, but not investigated and analyzed by Converse.

See Section 3 (Slope Stability Analysis) in Leighton's geotechnical review.

The consequence of not identifying the landslide was that significant earthfill would have been placed over landslide rupture surfaces without any remedial measures, making it subject to future landsliding. The public safety consequences of a potential landslide on the highly traveled Grand Avenue are apparent.

6. Liquefaction

a. Abbreviated and Poorly Scoped Liquefaction Analysis Overlooked Liquefaction Potential Below the Proposed Earthfill and Near Grand Avenue

i. The Converse report identified portions of the site as having a potential for liquefaction according to the state of California (CGS, 1999).

See Section 4 (Liquefaction Analysis) in Leighton's geotechnical review.

ii. Several borings were excavated in these areas, but Converse conducted liquefaction analysis for only one of the borings.

See Section 4 (Liquefaction Analysis) in Leighton's geotechnical review

iii. This boring was located in the southern canyon area where the alluvial deposits were the shallowest, and analyses concluded that the site was not susceptible to liquefaction and significant seismic settlement.

See Section 4 (Liquefaction Analysis) in Leighton's geotechnical review

iv. Converse did not conduct liquefaction analysis for the northern canyon area where alluvium was deepest and more indicative of conditions subject to liquefaction.

See Section 4 (Liquefaction Analysis) in Leighton's geotechnical review

v. Two borings that were excavated closer to the northern canyon were terminated without encountering bedrock.

See Section 4 (Liquefaction Analysis) in Leighton's geotechnical review

vi. Groundwater was encountered in both these borings along with some loose alluvium typical of liquefiable materials. However, these boring were not analyzed for liquefaction potential.

See Section 4 (Liquefaction Analysis) in Leighton's geotechnical review

vii. None of the above borings were excavated along the axis of the canyon or at the lower end of the canyon where the alluvium would be the deepest, groundwater would potentially be the shallowest, the potential for liquefaction would be the greatest.

See Section 4 (Liquefaction Analysis) in Leighton's geotechnical review

viii. The total depth of alluvium was not modeled or investigated near Grand Avenue within this canyon.

See Section 4 (Liquefaction Analysis) in Leighton's geotechnical review

ix. No analyses were conducted to determine the total depth of alluvium and obtain subsurface information the full length of the canyon for a proper liquefaction evaluation.

See Section 4 (Liquefaction Analysis) in Leighton's geotechnical review

The groundwater observations, loose alluvial deposits encountered and deeper alluvium suggest susceptibility to liquefaction and potential instability in the overlying proposed earthfill and nearby Grand Avenue.

7. Slope Stability

a. Vital Slope Stability Analyses Were Omitted Throughout the Converse Document

i. Geotechnical reports generally require slope stability analyses for cut and fill slopes, including the highest fill slopes.

See Section 3 (Slope Stability Analysis) in Leighton's geotechnical review

ii. Most agencies require proposed cut slopes over about 10 feet in height to be analyzed for geologic conditions and to determine orientation of bedding or other weak features.

See Section 3 (Slope Stability Analysis) in Leighton's geotechnical review

ii. Out-of-slope bedding, as is the case at the West Parcel, requires specific analyses of these features.

See Section 3 (Slope Stability Analysis) in Leighton's geotechnical review

iii. No geologic cross sections or geologic interpretations were prepared. Regional bedding attitudes and bedding observed by our Engineering Geologist elsewhere at the site indicated a significant potential for weak siltstone bedding dipping out of the slope.

See Sections 1 (Scope and Purpose) and 3 (Slope Stability Analysis) in Leighton's geotechnical review

b. No Stability Analysis Was Conducted for Cut Slopes, Including Critical Cut Slope Near Homes at Regal Canyon Drive

i. There are several proposed slopes that lack sufficient geologic information to prepare a geologic cross-section and/or conduct slope stability analysis.

See Section 3 (Slope Stability Analysis) in Leighton's geotechnical review

iv. No stability analyses were conducted near homes at the northwest portion of the site, despite published adverse out of slope bedding recorded at the highest cut slope on the project.

See Section 3 (Slope Stability Analysis) in Leighton's geotechnical review

v. The slope of most concern is the cut slope described above, proposed in the northwest portion of the site up to 40 feet in height, and located directly behind several existing homes.

See Section 3 (Slope Stability Analysis) in Leighton's geotechnical review

vi. The report stated that the proposed cut slope would have neutral to favorable bedding attitudes due to the bedding observed in only one large diameter boring and very limited field sampling.

See Section 3 (Slope Stability Analysis) in Leighton's geotechnical review

vii. However, published geologic mapping by T.W. Dibblee (1989) and the LA County Engineer (1974) show near opposite and adverse bedding orientation out of the slope similar to other bedding orientations on the project.

See Sections 2 (Preliminary Findings) and 3 (Slope Stability Analysis) in Leighton's geotechnical review

viii. Converse provides no explanation of the above inconsistency.

See Sections 1 (Scope and Purpose) and 2 (Preliminary Findings) in Leighton's geotechnical review

ix. Two smaller borings in this area found siltstone with no apparent bedding. However, an Engineer-in-Training who is not trained to analyze geologic conditions logged these borings, and the observations were based on the limited sampling that was conducted.

See Sections 1 (Scope and Purpose) and 2 (Preliminary Findings) in Leighton's geotechnical review

x. The proposed high cut slope would potentially remove natural resisting forces to landsliding along these beddings planes and could represent a significant hazard to offsite properties and existing homes at this location along Regal Canyon Drive.

See Section 3 (Slope Stability Analysis) in Leighton's geotechnical review

c. Vulnerable Orientation of Easterly Dipping Bedding Planes are Not Highlighted in Converse Report

i. The landslide at the central hill along Grand Avenue likely took place along easterly out of slope bedding orientations.

See Section 2 (Preliminary Findings) in Leighton's geotechnical review

ii. Necessary removals of loose alluvium or removals in areas with High Landslide Potential could concurrently remove hillside materials that provide resisting forces to landsliding.

See Sections 2 (Preliminary Findings) and 3 (Slope Stability Analysis) in Leighton's geotechnical review

iii. The above condition would likely apply to homes and properties on Regal Canyon Drive (to the west) and on Stonybrook Drive (to the east) since slopes near these

properties have essentially the same bedding orientation observed at the central hill.

See Section 3 (Slope Stability Analysis) in Leighton's geotechnical review

d. Existing Landslide at Grand Avenue Posing Risk to Earthfill Project Was Overlooked

i. The slope along Grand Avenue consists of variable cut, fill, and in some locations, fill over the existing slope.

See Section 3 (Slope Stability Analysis) in Leighton's geotechnical review

ii. The central portion of the Grand Avenue site is underlain by the landslide.

See Section 2 (Preliminary Findings) in Leighton's geotechnical review

iii. The proposed cut slope in this area will most likely not remove all the landslide debris, and the underlying cause(s) of the landslide.

See Sections 3 (Slope Stability Analysis) and 6 (Remedial Removals) in Leighton's geotechnical review

iv. Additional landslide movement can potentially occur with the placement of overlying earthfill and without removing all landslide rupture surfaces.

See Sections 2 (Preliminary Findings) and 3 (Slope Stability Analysis) in Leighton's geotechnical review

v. The geologic conditions have not been modeled by Converse for the differing conditions along the length of this slope nor has the existence of the landslide been identified.

See Sections 2 (Preliminary Findings) and 3 (Slope Stability Analysis) in Leighton's geotechnical review

8. Remedial Removals and Measures to Mitigate Landslide Mass Movements

a. Project Description of Remedial Soil Removals is Poorly Defined

i. Converse report states that "loose, disturbed or unsuitable alluvial soils" is to be removed from the surface of the West Parcel site before placing earth fill.

ii. The above statement is difficult to interpret and is not well defined as to the precise depths and/or criteria for remedial soil removals on the project site. A definition of "loose and unsuitable soils" is also not provided within the report.

See Section 5 (Remedial Removals) in Leighton's geotechnical review

iii. Based on the alluvial deposits encountered in Converse borings, remedial soil removal would likely be at least 20 feet in depth.

See Section 5 (Remedial Removals) in Leighton's geotechnical review

iv. Removal of landslide materials are likely greater than 20 feet in depth and could at least double earthwork quantities for the project.

See Sections 2 (Preliminary Findings) and 6 (Remedial Removals) in Leighton's geotechnical review

b. Remedial Soil Removals May Result in Destabilizing Adjacent Natural Slopes

i. At the south end of the project, hillsides would be undercut by remedial soil removals and preparations for earthfill placement, and would potentially be destabilized because of out of slope bedding, along with adjacent properties and homes along Stonybrook Drive.

See Sections 3 (Slope Stability Analysis) and 5 (Remedial Removals) in Leighton's geotechnical review.

ii. UWT Engineering Geologist recommends that the extent of soft, yielding soils cited by Converse should be explicitly defined in order to address remedial removals.

See Section 5 (Remedial Removals) in Leighton's geotechnical review.

iii. Similar to the above soft, yielding soil conditions, the LA County Engineer Geologic and Landslide Potential Maps (1974) depict unsuitable soil and geologic conditions over a substantial portion of the site.

See Sections 2 (Preliminary Findings) and 5 (Remedial Removals) in Leighton's geotechnical review.

iv. The occurrence of an existing landslide at the site suggests potential for landslides with similar east facing slopes, underlain by thinly bedded (laminated) east-facing bedding.

See Section 3 (Slope Stability Analysis) in Leighton's geotechnical review.

v. The need to remove unsuitable alluvial soils is demonstrated in areas with High Landslide Potential on the 1974 maps, which left unmitigated could lead to instability in proposed earthfill and foundation materials.

See Sections 2 (Preliminary Findings), 3 (Slope Stability Analysis), and 5 (Remedial Removals) in Leighton's geotechnical review.

c. Placement of Earthfill over Alluvium Poses Potential Risk of Settlement of Earthfill and Induced Settlement of Grand Avenue

i. Removal of alluvium along Grand Avenue, where the alluvium will be the thickest, has not been discussed and/or modeled.

See Section 3 (Slope Stability) in Leighton's geotechnical review.

ii. If alluvium is remaining adjacent/beneath Grand Avenue and additional filling is proposed over the alluvium, then there is potential that this proposed condition will result in settlement under the earthfill, as well as induce settlement beneath Grand Avenue.

See Section 5 (Remedial Removals) in Leighton's geotechnical review.

Issues relating to settlement should be evaluated in future geotechnical studies of the site.

iii. Potential induced settlement of Grand Avenue and the underlying major utilities that likely exist within the road prism may be a significant issue.

See Section 5 (Remedial Removals) in Leighton's geotechnical review.

Issues relating to settlement should be evaluated in future geotechnical studies of the site.

iv. The above potential settlement conditions were not discussed or analyzed in the Converse report, leaving significant settlement issues and consequences unaddressed.

Issues relating to settlement should be evaluated in future geotechnical studies of the site.

.

d. Plan for Remedial Soil Removals Omitted from Plans

i. Remedial soil removals were discussed by Converse however, estimated depths of removal and the criteria to determine if removals are sufficient were not provided.

See Section 5 (Remedial Removals) in Leighton's geotechnical review.

ii. Remedial soil removal can affect many other issues including total and differential settlement, potential for collapse, and the stability of existing slopes.

See Sections 3(Slope Stability) and 5 (Remedial Removals) in Leighton's geotechnical review.

iii. A remedial measure map was omitted that would indicate all the recommended remediation necessary for safely grading the site.

See Section 5 (Remedial Removals) in Leighton's geotechnical review.

iv. Lacking clear definition of remedial removals, the integrity of the underlying foundation materials and proposed overlying earthfill cannot be determined, and remedial removals when defined can become a significant cost issue.

See Section 5 (Remedial Removals) in Leighton's geotechnical review.

e. Potential for Similar Landsliding from Slope Undercutting and Adverse Bedding Orientations Exists at Central Hill and Near Regal Canyon Drive

i. The landslide at Grand Avenue occurred about 1980 shortly after Grand Avenue was widened to four lanes in the late 1970's, likely from the undercutting of the central hill near the roadway.

See Section 2 (Preliminary Findings) in Leighton's geotechnical review

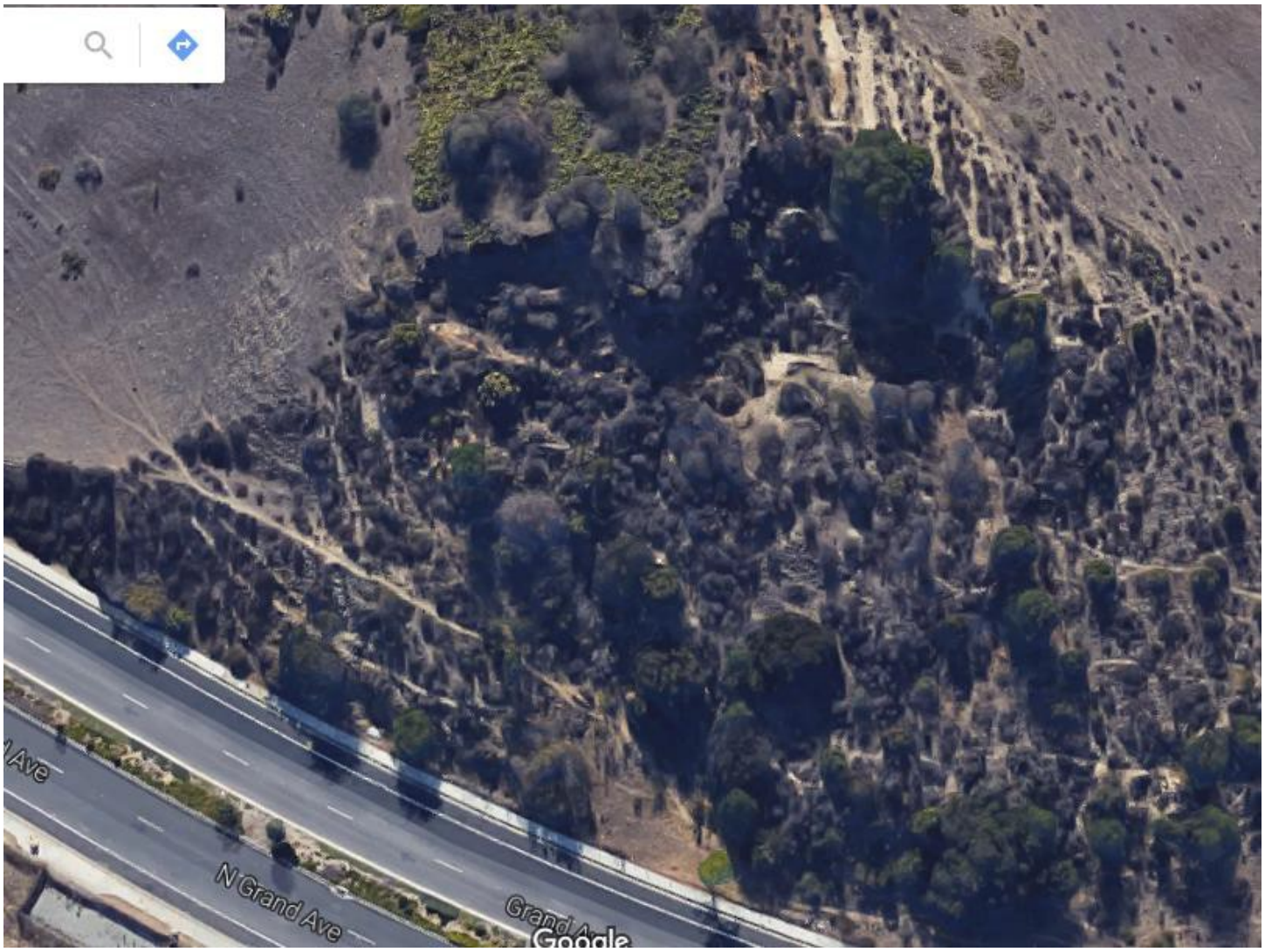
ii. Homes on Regal Canyon Drive were built between 1980 and 1995, separated by about 0.15 miles from the central hill by an intervening canyon.

See Section 2 (Preliminary Findings) in Leighton's geotechnical review

iii. The proposed project grading would undercut hillside slopes north of these homes by up to 40 feet, potentially causing similar landsliding along out of slope bedding planes.

See Section 3 (Slope Stability Analysis) in Leighton's geotechnical review

Attachment
Google Earth Image of Existing Landslide at West Parcel Site



GEOTECHNICAL BORING LOG LB-1

Project No.	11672.001	**Date Drilled**	6-12-17
Project	Mt. SAC South Campus Improvements - West Parcel	**Logged By**	BER
Drilling Co.	2R Drilling	**Hole Diameter**	8""
Drilling Method	Hollow Stem Auger - 140 lbs.lb - Autohammer - 12" Drop	**Ground Elevation**	729'
Location		**Sampled By**	BER

Elevation Feet	Depth Feet	Graphic Log (N S)	Attitudes	Sample No.	Blows Per 6 Inches	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	SOIL DESCRIPTION	Type of Tests
	0			B-1/B-2					**Alluvium (Qal)**	
725				R-1	5 7 7	113	8		CLAYEY SAND with gravel (SC), medium dense, dark reddish brown, wet, coarse sand, gravel approximately 0.5" to 1.0" in dimension.	M&D, PP
	5			R-2	5 6 7	123	12		CLAYEY SAND with gravel (SC), medium dense, dark reddish brown, very moist, coarse sand, gravel approximately 0.5" to 1.0" in dimension.	M&D, PP
720										
	10			R-3	7 9 14	121	9		CLAYEY SAND with gravel (SC), medium dense, reddish brown, moist, coarse sand, gravel approximately 0.5" in dimension.	M&D, PP
715										
	15			R-4	10 15 20	122	13		SILTY SAND / CLAYEY SAND with gravel (SM-SC), dense, brown, moist, medium sand, gravel approximately 1.5" in dimension.	M&D, PP
710										
	20			S-5	50/6"				GRAVEL with sand (GP), very dense, brown, slightly moist, medium to coarse sand, gravel approximately 0.75" in dimension.	
705										
	25			R-6	50/4"	106	13		SAND with gravel (SP), very dense, brown, slightly moist, medium to coarse sand, gravel approximately 0.75" to 1.0" in dimension.	M&D, PP
700										
	30									

This Soil Description applies only to a location of the exploration at the time of sampling. Subsurface conditions may differ at other locations and may change with time. The description is a simplification of the actual conditions encountered. Transitions between soil types may be gradual.

SAMPLE TYPES:

- B BULK SAMPLE
- C CORE SAMPLE
- G GRAB SAMPLE
- R RING SAMPLE
- S SPLIT SPOON SAMPLE
- T TUBE SAMPLE

TYPE OF TESTS:

- -200 % FINES PASSING
- AL ATTERBERG LIMITS
- CN CONSOLIDATION
- CO COLLAPSE
- CR CORROSION
- CU UNDRAINED TRIAXIAL
- DS DIRECT SHEAR
- EI EXPANSION INDEX
- H HYDROMETER
- MD MAXIMUM DENSITY
- PP POCKET PENETROMETER
- RV R VALUE
- SA SIEVE ANALYSIS
- SE SAND EQUIVALENT
- SG SPECIFIC GRAVITY
- UC UNCONFINED COMPRESSIVE STRENGTH

GEOTECHNICAL BORING LOG LB-1

Project No.	11672.001	**Date Drilled**	6-12-17
Project	Mt. SAC South Campus Improvements - West Parcel	**Logged By**	BER
Drilling Co.	2R Drilling	**Hole Diameter**	8""
Drilling Method	Hollow Stem Auger - 140 lbs.lb - Autohammer - 12" Drop	**Ground Elevation**	729'
Location		**Sampled By**	BER

Elevation Feet	Depth Feet	Graphic Log (N S)	Attitudes	Sample No.	Blows Per 6 Inches	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	SOIL DESCRIPTION	Type of Tests
	30			S-7	50/5"				SILTY SAND with gravel (SM), very dense, brown, moist, coarse sand, gravel approximately 0.75" in dimension.	
695										
	35			R-8	50/2"	113	18		SAND with gravel (SP), very dense, brown, wet, coarse sand, gravel approximately 0.5" in dimension.	M&D, PP
									Groundwater encountered at 36'11"	
690										
	40			S-9	50/3"	121	16		**Puente Formation, Sycamore Canyon Member (Tscs)** SILTSTONE, very dense, gray, moist, Interbedded with sandstone	M&D
685										
	45			R-10	50/3.5"					PP
									Total Depth = 45'3" Groundwater encountered at 36'11" Backfilled with soil cuttings	
680										
	50									
675										
	55									
670										
	60									

SAMPLE TYPES:

- B BULK SAMPLE
- C CORE SAMPLE
- G GRAB SAMPLE
- R RING SAMPLE
- S SPLIT SPOON SAMPLE
- T TUBE SAMPLE

TYPE OF TESTS:

- -200 % FINES PASSING
- AL ATTERBERG LIMITS
- CN CONSOLIDATION
- CO COLLAPSE
- CR CORROSION
- CU UNDRAINED TRIAXIAL
- DS DIRECT SHEAR
- EI EXPANSION INDEX
- H HYDROMETER
- MD MAXIMUM DENSITY
- PP POCKET PENETROMETER
- RV R VALUE
- SA SIEVE ANALYSIS
- SE SAND EQUIVALENT
- SG SPECIFIC GRAVITY
- UC UNCONFINED COMPRESSIVE STRENGTH

Log of Boring No. BH- 1

Dates Drilled: 5/6/2014 Logged by: MM Checked By: WHC

Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): 734 Depth to Water (ft): 19.25

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES DRIVE	SAMPLES BULK	BLOWS/FT	MOISTURE (%)	DRY UNIT WT. (pcf)	TEST
		ALLUVIUM (Qa): **SILTY SAND (SM):** fine to medium-grained, some clay, with gravels up to 1.5" in maximum dimension, brown.						ei
5		-with cobbles			16/19/14	8	99	c
10		-with clay			5/5/6			
15		**GRAVELLY SAND (SP):** medium to coarse-grained, some silt, brown.			14/12/15	26	103	
20					12/9/12			
		End of boring at 21.5 feet. Groundwater encountered at 19.25 feet. Borehole backfilled with soil cuttings on 5-6-14.						

Converse Consultants

Project Name
MT. SAN ANTONIO COLLEGE
WEST PARCEL
WALNUT, CALIFORNIA

Project No. 13-31-339-01

Drawing No. A-2

Log of Boring No. BH- 2

Dates Drilled: 5/6/2014 Logged by: MM Checked By: WHC

Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): 734 Depth to Water (ft): 15.5

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES DRIVE	SAMPLES BULK	BLOWS/FT	MOISTURE (%)	DRY UNIT WT. (pcf)	TEST
		ALLUVIUM (Qa): **SILTY SAND (SM):** fine to medium-grained, some clay, with gravels up to 1.5" in maximum dimension, dark brown.						
5		-brown			15/14/13	9	98	
10		**GRAVELLY SAND (SP):** medium to coarse-grained, gravels up to 2" in maximum dimension, trace silts, few cobbles, brown.			11/13/15	13	105	
15					17/15/12			
20		-with cobbles			50(3")	16	107	
		End of boring at 21.5 feet. Groundwater encountered at 15.5 feet. Borehole backfilled with soil cuttings on 5-6-14.						

Converse Consultants

Project Name
MT. SAN ANTONIO COLLEGE
WEST PARCEL
WALNUT, CALIFORNIA

Project No. 13-31-339-01

Drawing No. A-3

Log of Boring No. BH- 7

Dates Drilled: 5/6/2014 Logged by: MM Checked By: WHC

Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): 744.5 Depth to Water (ft): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES DRIVE	SAMPLES BULK	BLOWS/FT	MOISTURE (%)	DRY UNIT WT. (pcf)	TEST
		ALLUVIUM (Qa): **SILTY SAND (SM):** fine to medium-grained, some clay, few gravels up to 1.5" in maximum dimension, brown.						r
5			■		10/11/14	8	103	
10		**BEDROCK - PUENTE FORMATION (Tscs):** **SANDSTONE, SILTSTONE:** weathered, no apparent bedding, with gravels up to 2.5" in maximum dimension, few cobbles, orangish brown.	■		13/33/50(4")	6	115	
15			⊠		27/48/50(5")			
20			■		50(5")	8	112	
		End of boring at 21.5 feet. No groundwater encountered. Borehole backfilled with soil cuttings on 5-5-14.						

Converse Consultants

Project Name
MT. SAN ANTONIO COLLEGE
WEST PARCEL
WALNUT, CALIFORNIA

Project No. 13-31-339-01

Drawing No. A-8

Table 1
2017 West Parcel Solar Mitigation Monitoring Program
SCH 2002041161

First determine if each Mitigation Measure is required for the Project and assign the Responsible Party. Add comments if needed and retain the original MM Index. If desired, to simplify the Worksheet, delete the entire row for each Mitigation Measure that is not required. The Worksheet is retained permanently.
The Responsible Party must verify that each mitigation measure was completed; state when it was completed, and sign that it was completed. Section 15097 of the CEQA Guidelines lists the requirements for Mitigation Monitoring Programs.

Project Name:	West Parcel Solar
Date of Adoption of Project MMP:	October 11, 2017
Identification Number in 2012 Facility Master Plan:	Retail & Solar
Project Manager:	Gary Gidcumb
Initial Worksheet Prepared by:	Sid Lindmark, AICP
Date Worksheet Prepared:	September 22, 2017
Phone:	(909) 274-5739
E-Mail:	ggidcumb@mtsac.edu

Mitigation Measures	Other Firms Agencies Involved	Date Completed	Responsible Party Signature	Comments
1. LAND USE				
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.				ASF does not apply to PEP Project.
LU-07. The District shall submit 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	City of Walnut			

all requirements of an approved grading plan. Facilities Planning and Management shall ensure compliance. Projects that are exempt from City of Walnut local building, construction and land use controls will comply with City of Walnut 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.				
2. TRAFFIC/CIRCULATION				
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, 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.	City of Walnut			
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.				
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.				
TR-34. Demolition and construction contracts shall include plans for construction worker parking areas on campus. Facilities Planning and Management shall monitor compliance.				
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.				
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.				
TR-59. The Public Safety Department shall keep the Sheriff Department informed of anticipated major changes in circulation patterns, parking, and any special security needs related to campus construction and operation. Public Safety shall monitor compliance.	Sheriff Department			
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	City of Walnut			

Walnut shall ensure compliance.				
3. AIR QUALITY				
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 4 emissions standards. 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 SCAQMD 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-09. All off-road diesel-powered construction equipment greater than 50 hp (e.g., excavators, graders, dozers, scrappers, tractors, loaders, etc.) used during construction of PEP (Phase 1) shall comply with EPA-Certified Tier 4 emission controls where commercially available. The requirements shall be placed in construction contracts. 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.				

AQ-12. The District shall require the use of 2010 and newer haul trucks (e.g. material delivery trucks and soil import/export). In the event that the 2010 model year or newer diesel haul trucks cannot be obtained, provide documentation as information becomes available and use trucks that meet EPA 2007 model year NOx emission requirements, at a minimum. Facilities Planning and Management shall ensure compliance.				
5. NOISE				
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.				
6. GEOLOGY/SOILS				
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.				
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.				
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-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.				
7. HYDROLOGY/FLOODING				
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.				
9. 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				Applies east of Grand in HMP

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 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.				
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				Could apply to HMP east of Grand.

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 West Parcel 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	USFWS			

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.				
12. AESTHETICS				
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.				Project has its own Landscape Plan (BIO-21).
13. SHERIFF				
TR-59. The Public Safety Department shall keep the Sheriff Department informed of anticipated major changes in circulation patterns and parking, and any special security needs related to campus construction and operation. Public Safety shall monitor compliance.	Sheriff Department			
15. WATER				
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.	Three Valleys MWD			

17. PUBLIC UTILITIES				
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.	SCE			
Source: Facilities Planning and Management, September 7, 2017				

Table 1.0
2018 Mt. SAC MITIGATION MONITORING PROGRAM MASTER FILE
CEQA Guidelines Section 15097
October 11, 2017

Notes: Includes all mitigation measures from certified Final EIRS to date cited
Titles revised to conform to revised CEQA Checklist, OPR, August 2016
All prior indices for mitigation measures have been changed

Mitigation Measures	Monitoring Action	Department Responsible
1. Aesthetics		
AES-01. All athletic field lighting (excluding the PEP: Phase 1, 2)) must employ automatic shutoff devices to ensure that facilities are not illuminated unless desired. Lighting levels and design shall comply with the recommendations of the Illuminating Engineers Society Standards of North America (IESN) *Recommended* Practice *for Sports and Recreational Area Lighting* (IESNA RP-6-01), Facilities Planning and Management shall monitor compliance.	Assure light and glare is minimized outside of the athletic fields.	Facilities Planning and Management
AES-02. All new construction contracts shall implement those provisions of the latest Facility Master Plan Landscape Plan applicable to their projects. Facilities Planning and Management shall ensure compliance.	Assuring the campus landscaping plans and guidelines are implemented.	Facilities Planning and Management
AES-03. Hilmar Lodge Stadium (D6) lighting fixtures shall be designed, located, installed, aimed downward or toward structures, and maintained in good order to prevent glare, light trespass, and light pollution offsite. Lighting fixtures shall be mounted, aimed and shielded so that their beams fall within the primary playing area and their immediate surroundings, and so that no significant off-site light trespass is produced. Stadium Lighting (D6) shall adhere to NCAA Lighting Guidelines, the Flex Field (D5) to 50 FC: 2:1 Uniformity, and the Practice Field (D5) to 30 FC 22:1 Uniformity Standards. The Stadium sports lighting shall be turned off as soon as possible following the end of the event and players and spectators are leaving the Stadium. Where feasible, a low-level lighting system shall be used to facilitate spectators leaving the facility, cleanup, nighttime maintenance and other closing activities. Facilities Planning and Management shall ensure	Assure light and glare is minimized outside of the athletic fields.	Facilities Planning and Management

compliance.		
AES-04. The lighting and programming for the soccer fields south of the Observatory (Building 60) shall be reviewed to determine if light and glare can be reduced for Observatory activities on the first Friday of each month for public viewing and on Tuesday, Wednesday nights for student research activities. Facilities Planning and Management shall ensure compliance.	Minimizing conflicts with observatory activities and soccer field lighting.	Facilities Planning and Management
AES-05. Exterior building materials, colors and signage shall be reviewed by the Campus Master Plan Coordinating Team (CMPCT). All construction contracts shall specify these items and implement CMPCT final recommendations. Facilities Planning and Management shall monitor compliance.	Ongoing provision for consistency between projects and the local built environment.	Facilities Planning and Management
AES-06. All future projects included in the 2015 FMPU that are located near the perimeter of the campus shall conform to the Campus Perimeter Night Lighting Guidelines (Table 3.7.12 in Draft EIR). The Guidelines do not supersede California Building Code Section 1205.6, the California Administrative Code Section for the LZA Z, or the Illuminating Engineering Society (IES) G-1-03 Standards for parking and sidewalks/walkway security illumination levels. Facilities Planning and Management shall ensure compliance.	Project compliance to reduce light or glare impacts off-campus.	Facilities Planning and Management
AES-07. All lighting shall be directed site and not spill over into offsite areas. Al construction contracts shall include provisions for defining the lighting for each project and direct light onsite. Facilities Planning and Management shall ensure compliance.	Project compliance to reduce light or glare impacts on and off-campus.	Facilities Planning and Management
2. Air Quality		
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	Ongoing compliance with Rule 403 to reduce air quality emissions.	Purchasing

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 Planning 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 the 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 off-road 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 4. 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.	Ongoing compliance with CARB and EPA regulations to reduce air quality emissions.	Purchasing

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.	Ongoing compliance with recommendations to reduce air quality emissions.	Facilities Planning and Management
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.	Ongoing compliance with recommendations to reduce vehicle trips during peak hours.	Facilities Planning and Management
AQ-05. During project construction, all off-road diesel-powered construction equipment greater than 50 hp shall meet the EPA-Certified Tier 4 emission standards where available. All 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.	Ongoing compliance with EPA and CARB regulations to reduce diesel particulate emissions.	Facilities Planning and Management
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.	Ongoing compliance with recommendations to reduce diesel engine air quality emissions.	Purchasing
AQ-07. 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. Grading sites of more than ten gross acres shall be watered at least three times daily. The project shall comply with Rule 403: Fugitive Dust (South Coast Air Quality Management District). Project contractors shall	Ongoing compliance with SCAQMD regulations to reduce particulate emissions.	Facilities Planning and Management

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-08. To reduce VOC emissions, all construction contracts shall limit painting to eight hours per day, specify the use of paints and coatings with a VOC content of 80 grams per liter (g/l) or less. Facilities Planning and Management shall ensure compliance.	Ongoing compliance with SCAQMD regulations to reduce VOC/ROG particulate emissions.	Purchasing
AQ-09. All off-road diesel-powered construction equipment greater than 50 hp (e.g., excavators, graders, dozers, scrappers, tractors, loaders, etc.) used during construction of PEP (Phase 1) shall comply with EPA-Certified Tier 4 emission controls where commercially available. The requirements shall be placed in construction contracts. Facilities Planning and Management shall ensure compliance.	Ongoing compliance with SCAQMD regulations for construction NOx emissions.	Purchasing
AQ-10. The college shall obtain all required permits for the Fire Training Academy from the South Coast Air Quality Management District. Fire Technology shall ensure compliance.	Compliance with SCAQMD permits for operation of fire suppression activities at the Training Academy.	Fire Technology
AQ-11. Construction equipment onsite for the West Parcel 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.	Ongoing compliance with SCAQMD regulations for construction emissions.	Facilities Planning and Management
AQ-12. The District shall require the use of 2010 and newer haul trucks (e.g. material delivery trucks and soil import/export). In the event that the 2010 model	Ongoing compliance with SCAQMD regulations for haul truck emissions.	Facilities Planning and Management

year or newer diesel haul trucks cannot be obtained, provide documentation as information becomes available and use trucks that meet EPA 2007 model year NOx emission requirements, at a minimum. Facilities Planning and Management shall ensure compliance.		
3. 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.	Minimize light intrusion in open space areas.	Facilities Planning and Management
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.	Project compliance with CDFG regulations for burrowing owls.	Facilities Planning and Management
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.	Project compliance with CDFG regulations for rare and sensitive biological resources.	Facilities Planning and Management

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.	Project compliance with CDFG regulations for rare and sensitive biological resources.	Project compliance with CDFG regulations for rare and sensitive biological resources.
BIO-05. The college shall adopt a Land Management Plan to minimize impacts on California Black Walnut trees on campus. Any walnut trees with a diameter of six inches four feet above ground damaged or removed by construction activities shall be replaced according to the standards in Table 4 of the Mt. SAC California Black Walnut Management Plan (Helix Environmental Planning, September 2012). Replacement habitat shall be completed prior to project completion. The required mitigation acreage for replacement walnut trees is 2.018 acres. The replacement specimens shall be preserved, maintained and monitored for a period of five years to ensure vitality. Facilities Planning and Management shall ensure compliance.	Project compliance with CDFG regulations for rare and sensitive biological resources. Mitigation Measure 1b. above provides the Conservation Area for replacement of California Black Walnut trees removed elsewhere on campus.	Facilities Planning and Management
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.	Project compliance with Migratory Bird Treaty Act (MBTA).	Facilities Planning and Management
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.	Project compliance to reduce impacts on wetland habitat areas.	Facilities Planning and Management
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	Project compliance to reduce intrusion of construction equipment into sensitive adjacent habitats.	Facilities Planning and Management

monitor clearing and grading of (and near) native habitat to prevent unauthorized impacts. Facilities Planning and Management shall monitor compliance.		
BIO-10. Impacts to California Black Walnut trees, if they cannot be avoided, should be mitigated by the replacement of each impacted tree that has a diameter of 6 inches at 4 feet, 6 inches above the ground by a 24-inch boxed specimen (Table 5 in Appendix G1). These trees should be planted in the approved California Black Walnut Management Plan area and preserved, maintained and monitored for two years. Planning and Management shall ensure compliance.	Compliance with impacts on California Black Walnut trees.	Facilities Planning and Management
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.	Compliance with efforts to reduce impacts on native habitat and sensitive bird species.	Facilities Planning and Management
BIO-12. When a preliminary site plan for the Fire Training Academy is available, the college shall have a qualified noise consultant evaluate the potential construction and operational noise impacts of the Fire Training Academy on threatened and special status birds in the adjacent coastal sage scrub on MSAC Hill and riparian habitat along Snow Creek. The study shall also assess any noise impacts on residential uses to the south. All recommended mitigation measures of the final report shall be implemented. Facilities Planning and Management shall monitor compliance.	Compliance with efforts to reduce impacts on a threatened or special status bird species.	Facilities Planning and Management
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.	Compliance with efforts to reduce impacts on a threatened or special status bird species.	Facilities Planning and Management
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.	Compliance with efforts to reduce impacts on a threatened or special status bird species.	Facilities Planning and Management

BIO-15. Project construction activities shall comply with all requirements included in the Section 401, 404 permits and the 1602 Agreement for the West Parcel Solar Project. Facilities Planning and Management shall ensure compliance.	Compliance with requirements of state agencies.	Facilities Planning and Management
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.	Minimizing impact on native habitat from invasive plant species.	Facilities Planning and Management
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.	Project compliance to reduce construction noise impacts on raptors nesting sites.	Facilities Planning and Management
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.	Project compliance to provide replacement habitat for coastal cactus wrens.	Facilities Planning and Management

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.	Project compliance to reduce construction noise impacts on coastal California gnatcatchers.	Facilities Planning and Management
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.	Project compliance to reduce intrusive lighting in sensitive habitat areas.	Facilities Planning and Management
BIO-21. The Planting Plan, EPT Design (Sheet L3.01), January 15, 2015 or an update shall be implemented for the West Parcel project. Facilities Planning and Management shall ensure compliance.	Installation of project landscaping following grading of native habitat.	Facilities Planning and Management
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.	Compliance with state and federal regulations for habitat loss and taking of sensitive species.	Facilities Planning and Management
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.	Installation of project landscaping following grading of native habitat.	Facilities Planning and Management
4. Cultural Resources		
CR-01 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	Actions if cultural resources are discovered during grading.	Facilities Planning and Management

avoidance, preservation in place, excavation, documentation, curation, data recovery, or other appropriate measures. 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.	Actions if human remains are discovered during grading.	Facilities Planning and Management
CR-03. The recommended action for the adverse impact on historic resources and on the Mt. SAC Historic District due to buildout of the 2015 FMPU and the PEP is revision of the Land Use Plan to avoid demolition of a CEQA historic resource. An evaluation of feasible options shall be prepared for CMPCT prior to certification of the Final EIR. The college shall evaluate whether the impacts on 3CD or 3CB buildings proposed for removal or demolition in the recommended District may be reduced to Less than Significant. The alternatives to be considered include: (1) Redesign of the 2015 Facility Master Plan Update to avoid impacting the 3CD or 3CB buildings, (2) Redesign of the 2015 Facility Master Plan Update to reduce the project impacts on 3CD or 3CB buildings to Less than Significant, (3) Redesign of phases of the project to reduce impacts on 3CD or 3CB buildings to Less than Significant as more detailed planning for each phase comes up for review before the Campus Master Plan Coordinating Team (CMPCT), and (4) Evaluation of adaptive reuses of 3CD or 3CB buildings prior to construction. Planning Facilities & Management shall monitor compliance. The Facilities Planning and Management Department shall ensure compliance.	Assuring future projects have been assessed for cultural resource impacts.	Facilities Planning and Management

CR-04. If project redesign is not feasible to achieve the Project and College's educational goals and facility needs, the following mitigation shall be implemented to reduce the significant impacts on historical resources: (a) HABS Level II History Report for the (1) Mt. SAC Historic District and for (2) Hilmer Lodge Stadium consistent with the *Historic American Buildings Survey Guidelines for Historical Reports* (National Park Service 2007); (b) HABS Level II Standard Photography following the *Secretary of Interior Standards and Guidelines for Architectural and Engineering Documentation* and HABS specific guidelines for the Mt. SAC Historic District and Hilmer Lodge Stadium; (c) Reproduction of select existing drawings for each building proposed for demolition or alteration following HABS Level II guidelines; (d) Creation of a interpretative exhibit within Heritage Hall (HH) including not only the history of Hilmer Lodge Stadium, but the entire Historic District as well, and (e) Development of a "Mt. SAC History" section on the campus website. The Facilities Planning and Management Department shall ensure compliance	Compliance with mitigation requirements for historic resources.	Facilities Planning and Management
CR-05. Prior to demolition, removal, or remodeling of any 3CD or 3CB building on campus, the college shall enlist the services of a qualified architectural historian to prepare the HABS Narrative Historical Report as well as CA DPR 523 forms. Documentation through HABS is an important measure because it allows documentation of the resource before alterations begin. Given the relative historic significance of the resources, Level II HABS is the recommended documentation standard, to be prepared in accordance with the *Secretary of Interior Standards and Guidelines for Architectural and Engineering Documentation* and HABS specific guidelines (http://www.nps.gov/hdp/standards/habsguidelines.htm). A narrative historical report following the *Historic American Buildings Survey Guidelines for Historical Reports* (National Park Service 2007) should be prepared for the (1) Mt. SAC Historic District and (2) Hilmer Lodge Stadium. The college shall enlist the services of a qualified architectural historian to prepare the HABS Narrative Historical Report as well as CA	Compliance with mitigation requirements for historic resources.	Facilities Planning and Management

DPR 523 forms. The DPR forms shall be submitted to the State Office of Historic Preservation (via the SCCIC) for their records. All other historic documents shall be made available to the public in the collection of the College's Learning Technology Center, including: the HABS Narrative Historical Report, DPR 523 forms, the *Historic Resources on the Campus of Mt. San Antonio College, Walnut, California* (The Building Biographer, June 1, 2003) and *The Historical Resources Analysis for Five Buildings at Mount San Antonio College, Los Angeles County, Walnut, California* (Davis 2012), and a copy of this report. Facilities Planning and Management shall ensure compliance.		
CR-06. Prior to demolition, removal or remodeling of any 3CD or 3CB building, the college shall hire a qualified HABS photographer to provide photo-documentation for the properties on campus identified as 3CD or 3CB which are proposed for removal or demolition in the 2012 Facilities Master Plan or 2015 FMP Update. The photo-documentation shall be made available to the public in the collection of the College's Learning Technology Center. The documentation should be done in accordance with the Guidelines provided in the *Photographic Specifications: Historic American Building Survey, Historic American Engineering Record, Division of National Register Programs, National Park Service, Western Region*. Facilities Planning and Management shall ensure compliance.	Project compliance with CEQA regulations and SHPO guidelines for historic resources.	Facilities Planning and Management
CR-07. Prior to demolition, removal or remodeling of any 3CD or 3CB building, the college shall prepare archivally stable reproduction of original as-built drawings. Reproductions of drawings shall be done in accordance with the *Secretary of the Interior's Guidelines for Architectural and Engineering Documentation*. Select existing drawings, where available, may be photographed with large-format negatives or photographically reproduced on Mylar in accordance with the U.S. Copyright Act, as amended. Facilities Planning and Management shall ensure compliance.	Project compliance with CEQA regulations and SHPO guidelines for historic resources.	Facilities Planning and Management

CR-08. To recognize the history of Mt. SAC, part of the facilities for the new Stadium will include Heritage Hall, an area dedicated to historical interpretation of the history of Hilmer Lodge Stadium and the college. The interpretative panels could utilize information from the HABS Level II Narrative Historical Report and large-format photographic documentation. Facilities Planning and Management shall ensure compliance.	Compliance with mitigation requirements for historic resources.	Facilities Planning and Management
CR-09. To further recognition of the history of Mt. SAC, a page or series of pages should be developed for inclusion on the college's website. This project could be completed as a multi-disciplinary school project, prepared by students in the Technology and History departments utilizing the information from the HABS Level II Narrative Historical Report and large-format photographic documentation. Facilities Planning and Management shall ensure compliance.	Compliance with mitigation requirements for historic resources.	Facilities Planning and Management
CR-10. An architectural historian or historical architect meeting the SOI Professional Qualification Standards for either discipline shall review the proposed architectural drawings and renderings of the Library (6), Bookstore (9A) and Technology Center (28 A/B) to ensure compliance with the SOI Treatment of Historic Properties. The person should be consulted during the early design of the renovation projects to ensure adherence to the Standards and to minimize plan alternations during the design process. Facilities Planning and Management shall ensure compliance.	Compliance with mitigation requirements for historic resources.	Facilities Planning and Management
5. Energy		
EN-01. An energy management system shall be installed in all new facilities to reduce energy consumption and related pollutant emissions. Facilities Planning and Management shall monitor compliance.	Ongoing compliance with recommendations to reduce energy and air quality emissions.	Facilities Planning and Management
6. Greenhouse Gas Emissions		
GH-01. Future buildings exceeding 20,000 ASF shall have building roof coverings with a minimum three-year aged solar reflectance and thermal emittance, or a minimum reflectance index (SRI) greater than or equal to the values specified in Sections A5.106.11.2.1 and A5 106.11.2.2 or a minimum aged Solar Reflectance	Ongoing compliance with CalGreen regulations to reduce cumulative GHG emissions in the SCAB.	Facilities Planning and Management

Index (SRI) 3 complying with Sections A5.106.11.2.3 as shown in Table A5.106.11.2.1 or A5.106.11.2.2 in Appendix A5 for Non-Residential Voluntary Measures in the 2010 California Green Building Standards Code (CalGreen). Facilities Planning and Management shall ensure compliance.		
GH-02. Future buildings exceeding 20,000 ASF shall include occupant sensors, motion sensors and vacancy sensors capable of automatically turning off all the lights in an area no more than 30 minutes after the area has been vacated and shall have a visible status signal indicating that the device is operating properly or that it has failed or malfunctioned. The visible status signal may have an override switch that s turns the signal off. In addition, ultrasonic and microwave devices shall have a built-in mechanism that allows the calibration of the sensitivity of the device to room movement in order to reduce the false sensing of occupants and shall comply with either Subsection A5.209.1.4.1 or A5.209.1.4.2 as applicable. These measures are included in Appendix A5 for Non-Residential Voluntary Measures in the 2010 California Green Building Standards Code (CalGreen). Facilities Planning and Management shall ensure compliance.	Ongoing compliance with CalGreen regulations to reduce cumulative GHG emissions in the SCAB.	Facilities Planning and Management
GH-03. Future buildings exceeding 20,000 ASF shall include installation of field-fabricated fenestration (i.e. windows) and field-fabricated exterior doors only if the compliance documentation demonstrates compliance for the installation using U-factors from Table A5.205.1-A and Solar Heat Gain Coefficient (SHGC) values from Table A5.205.1-B included in Appendix A5 for Non-Residential Voluntary Measures in the 2010 California Green Building Standards Code (CalGreen). Facilities Planning and Management shall ensure compliance.	Ongoing compliance with CalGreen regulations to reduce cumulative GHG emissions in the SCAB.	Facilities Planning and Management
GH-04. Future buildings exceeding 70,000 ASF shall either have an energy efficiency of 30 percent above Title 24. Part 6 (e.g. Exceed CEC requirements (Performance Approach), based on the 2008 Energy Efficiency Standards by 30 percent and meet the requirements of Division A45.6) or exceed the latest	Ongoing compliance with CalGreen regulations to reduce cumulative GHG emissions in the SCAB.	Facilities Planning and Management

edition of "Savings by Design, Healthcare Modeling Procedures" by 15 percent, in accordance with Section A.5.203.1.2 CalGreen Tier 2 (OSHPD), as listed in Appendix A5 for Non-Residential Voluntary Measures in the 2010 California Green Building Standards Code (CalGreen). Facilities Planning and Management shall ensure compliance.		
7. Hazards & Hazardous Materials		
HAZ-01. Prior to demolition or remodeling, onsite inspection and sampling in all buildings included in the 2015 Facility Master Plan Update for renovation or demolition shall be completed by a qualified OSHA professional for asbestos contaminated building materials and the presence of lead-based paint. All final recommendations of the final approved report(s) shall be included in construction contracts and implemented. Facilities Planning and Management shall monitor compliance.	Ongoing compliance with OSHA and SCAQMD regulations for ACBM materials or lead-based paint hazards.	Facilities Planning and Management
HAZ-02. All building plans for laboratories on campus shall be reviewed by the Department of State Architect, the State Fire Marshall and the County of Los Angeles Fire Department (Fire Prevention-Engineering Unit) for fire and hazard safety. All final recommendations of the final approved plan(s) shall be included in construction contracts and implemented. Facilities Planning and Management shall monitor compliance.	Ongoing compliance with DSA regulations for fire and hazard safety in campus laboratories.	Facilities Planning and Management
HAZ-03. Prior to construction all proposed storage areas onsite of potential hazardous chemicals and materials and operational plans shall be reviewed by the County of Los Angeles Fire Department. All recommendations of the final approved plans shall be included in construction documents, if applicable and implemented. Facilities Planning and Management shall monitor compliance.	Ongoing compliance with County of Los Angeles Fire Department regulations for storage of potential hazardous chemicals and materials on campus.	Facilities Planning and Management
HAZ-04. All materials generated onsite for the Fire Training Academy that are classified as hazardous by state regulations shall be disposed of consistent with OSHA, CALEPA, and LACHA. Fire Technology shall ensure compliance.	Compliance with OSHA, CALEPA, and LACHA requirements for operation of fire suppression activities at the Fire Training Academy.	Fire Technology

8. Hydrology/Water Quality		
HYD-01. Future development occurring for buildout of the 2015 FMPU shall install the drainage facilities required by the Utilities Master Plan Infrastructure Plan, as modified by the 2016 Hydrology Study, Psomas May 2016, and Future Hydrology Figure 2d, (Ibid) prior to occupancy. Facilities Planning and Management shall monitor compliance.	Providing adequate drainage facilities for all future development on campus.	Facilities Planning and Management
HYD-02. 7a. The *Master Campus Drainage Plan* shall be updated prior to commencement of grading for the Fire Training Academy and Athletics Education Building projects. The plan shall comply with the *State of California National Pollutant Discharge Elimination System (NPDES) Construction Activities Storm Water Discharge Permit (Construction Permit*) regulations. When construction activities on campus constitute acreage at or above the threshold acreage, the college shall prepare a *Storm Water Pollution Prevention Plan (SWPPP)* and a *Monitoring Program* for the 2012 Facility Master Plan. The *Master Campus Drainage Plan* shall meet any requirements of the County of Los Angeles Department of Public Works and the City of Walnut. All recommendations of the approved final drainage plan(s) shall be included in construction contracts and implemented. Facilities Planning and Management shall monitor compliance.	Ongoing provisions for compliance with Water Quality Management Plans.	Facilities Planning and Management
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.	Ongoing provisions for compliance with campus drainage plans.	Facilities Planning and Management
HYD-04. Prior to excavation onsite for which the preliminary soils/geology report indicated groundwater may be encountered; any required permit for de-watering shall be obtained from the California Regional Water Quality Control Board, Los Angeles Region. If effluent concentrations exceed permit requirements, a carbon treatment system or equivalent system to remove pollutants shall be utilized prior to discharge. Facilities Planning and Management shall monitor compliance.	Ongoing provisions for compliance with RWQCB regulations.	Facilities Planning and Management

HYD-05. 21b. The college shall obtain all required permits for the Fire Training Academy from the Los Angeles Regional Water Quality Control Board. Fire Technology shall ensure compliance.	Compliance with RWQCB permits for wastewater disposal for Fire Training Academy fire suppression activities.	Fire Technology
9. Land Use/Planning		
LU-01. All future land uses on campus, building locations and square footage (ASF) shall be in substantially consistent with the 2015 Facilities Master Plan Update. Facilities Planning and Management shall monitor compliance.	Ongoing review of consistency between individual projects and 2015 Facility Master Plan Update.	Facilities Planning and Management
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 and Parking Plan. Facilities Planning and Management shall monitor compliance.	Assuring consistency between the 2015 FMPU Land Use Plan and other elements.	Facilities Planning and Management
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.	Resolving inconsistencies between General Plan designations and campus land uses.	City of Walnut
LU-04. The Facility Master Plan Conservation Plan shall be revised to include approximately 25.6 acre Habitat Mitigation Area for removal of existing California Black Walnut, Coastal Sage Scrub and Non-Native Grassland habitats. Facilities Planning and Management shall monitor compliance.	The adopted Mt. San Antonio College California Black Walnut Management Plan, Helix Environmental Planning, Inc., September 21, 2012 defines the large 25.6 acres area and the smaller initial CBW replacement habit of 2.02 areas (Figure 4).	Facilities Planning and Management
LU-05. Prior to building construction for the Fire Training Academy, the CMPCT shall review the Preliminary Landscaping Plan and a Preliminary Operation and Management Plan for the Fire Training Academy. Facilities Planning and Management shall ensure compliance.	CMPCT oversight of the preliminary plans for the Fire Training Academy.	Facilities Planning and Management
LU-06. Programming for the Auditorium should establish if an adjacent Parking Structure is desirable in Lot B within six months of certification of the Final EIR. A site specific study is required for the Auditorium and/or an adjacent parking structure. Facilities Planning and Management shall ensure compliance.	Provision for potential future parking structure near the Auditorium.	Facilities Planning and Management

LU-07. The District shall submit 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. Projects that are exempt from City of Walnut local building, construction and land use controls will comply with City of Walnut 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.	Comply with City of Walnut grading standards.	Facilities Planning and Management
10. Noise		
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 off-site 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.	Ongoing of limitation on construction hours to reduce construction noise impacts on adjacent areas.	Facilities Planning and Management
NO-02. Loudspeaker and other public address systems on campus shall be located and adjusted to register no more than 70 dB Lmax at the nearest offsite residences. Facilities Planning and Management shall monitor compliance.	Ongoing restriction of loudspeaker and public address system noise levels to minimize noise impacts on adjacent areas.	Facilities Planning and Management
NO-03. Weekend special events within any athletic field complex such as tournaments, day-long meets, etc. shall be planned to not begin before 7 am on Saturday or 8 am on Sunday. Event Services shall monitor compliance.	Ongoing restriction of event hours to minimize early morning noise impacts on adjacent areas.	Event Services
NO-04. Concrete pouring for Parking Structure J shall be located as far away from residences as possible. Concrete trucks shall use Bonita Drive and Walnut Drive for access. Construction of the parking structure is limited to the hours of 7 am to 7 pm Monday-Saturday. Planning and Management shall monitor compliance.	Ongoing limitations on location of concrete pouring to minimize noise impacts on adjacent offsite residential areas.	Facilities Planning and Management

NO-05. The college shall adopt policies and post signs in the parking structure indicating vehicles with alarms may be towed from parking areas if alarms sound for more than five minutes. The Public Safety Department shall ensure compliance.	Ongoing restriction on vehicle alarms to minimize noise impacts on adjacent areas.	Public Safety
NO-06. Construction contracts shall specify that construction equipment vibration impacts with a peak particle velocity (PPV) of 0.04 inches per second or more occurring offsite in a sensitive receptor area shall not exceed 15 minutes in any one hour. Facilities Planning and Management shall monitor compliance.	Minimization of vibration offsite for sensitive receptors from construction equipment operations.	Facilities Planning and Management
11. Open Space, Managed Resources and Working Landscapes		
MR-01. All recommendations in the final geotechnical report(s) for projects included in the 2015 Facility Master Plan Update shall be included in construction contracts and implemented. Facilities Planning and Management shall monitor compliance.	Ongoing requirements to assure public safety from seismic hazards.	Facilities Planning and Management
MR-02. During construction grading and site preparation activities, the Contractor shall monitor all construction activities. In the event a paleontological find or a potential paleontological find is discovered, construction activities shall cease and the Contractor shall inform the Project Manager. A qualified paleontologist shall be contacted to analyze the find and recommend further appropriate measures to reduce further impacts on paleontological resources. Facilities Planning and Management shall monitor compliance.	Ongoing during construction.	Facilities Planning and Management
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	Ongoing during construction. Please note MR-03 is a duplicate of CR-01.	Facilities Planning and Management

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.	Ongoing during West Parcel construction.	Facilities Planning and Management
12. Population/Housing		
PH-01. Beginning on January 2016, on January 2020 and every five years, projections of future campus employment shall be forwarded to the Southern California Association of Governments. Human Resources shall monitor compliance.	Ongoing provision for employment projections for SCAG forecasts.	Human Resources
13. Public Services		
PS-01. The net increase in campus wastewater flows shall be projected whenever the Mt. SAC Utility Infrastructure Master Plan (UIMP) is updated for a new campus Facility Master Plan, or within ten years of the last UIMP Update. The District shall obtain the required permits from the Consolidated Sanitation District of Los Angeles County, and pay the required capital facilities fees for the net increase projected in the UIMP Update. Facilities Planning and Management shall ensure compliance.	Ongoing provision for adequate sewage capacity in local lines and treatment at regional facilities.	Facilities Planning and Management
PS-02. The Public Safety Department shall project their Department personnel and equipment needs to accommodate the student, staff and facility increases projected in the 2015 Facility Master Plan Update**.** The plan shall provide for student, staff and visitor security upon buildout of the 2015 Facility Master Plan Update. (Expansions of the Code Blue Emergency Phone System and revisions to the assignment of Evening Escorts shall be included in the plan). Public Safety shall ensure compliance	Ongoing provision for maintaining safety for personnel and equipment to serve campus needs at buildout.	Facilities Planning and Management
PS-03. Within six (6) months of certification of the 2015 Final EIR, the Public Safety Department shall complete a security construction plan to address direct and	Ongoing provision for maintaining safety for personnel and equipment to serve campus needs during construction.	Facilities Planning and Management

indirect security needs for all construction activities on campus associated with the 2015 Facility Master Plan Update. The special public safety needs of buildings (i.e. demolition, new construction and remodeling), construction sites, transport of construction materials and equipment, construction parking and use of construction equipment shall be addressed. Facilities Planning and Management shall ensure compliance.		
PS-04. The Athletics Division and the Campus Security Department shall prepare a Security Plan for all new Special Events (i.e. does not include the 2020 Olympic Track & Field Trials) with a maximum daily attendance of 10,000 persons or more. The Security Plan shall be approved by the Board of Trustees a minimum of three (3) months prior to the event. Facilities Planning and Management shall ensure compliance.	Ongoing provision for maintaining safety for personnel and equipment for any future new special events. None are currently planned.	Facilities Planning and Management
PS-05. The Athletics Division and the Campus Security Department shall prepare a Security Plan for the 2020 Olympic Track & Field Trials. The Security Plan shall be approved by the Board of Trustees a minimum of nine (9) months prior to the event. Facilities Planning and Management shall ensure compliance.	Provision for maintaining safety for guests, athletes, students, faculty, staff and volunteers during the event.	Facilities Planning and Management
14. Transportation		
TR-01 to TR-14 are intersection improvements or ramp improvements required for buildout of the 2015 Facilities Master Plan Update		
TR-01. A second EB right-turn lane shall be added to the Grand Avenue and Cameron Avenue intersection. The City of Industry is the Lead Agency and the County of Los Angeles is an interested agency. The City of Industry shall ensure compliance.	Complete required traffic improvements by 2020.	Facilities Planning and Management
TR-03. The EB right-turn lane at the Grand Avenue and Temple Avenue intersection shall be converted to a through/right-turn lane. The City of Walnut is the Lead Agency.	Complete required traffic improvements by 2020.	Facilities Planning and Management
TR-04. The signal phasing for the Grand Avenue and La Puente Road intersection shall be modified to include an EB right-turn overlap phase (i.e. a right-turn protected arrow). The City of Walnut shall ensure	Complete required traffic improvements by 2020.	Facilities Planning and Management

compliance.		
TR-05. The EB approach shall be restriped to include a dedicated right-turn lane at the Temple Avenue and Mt. SAC Way intersection. The City of Walnut is the Lead Agency.	Complete required traffic improvements by 2020.	Facilities Planning and Management
TR-07. When a site plan is completed, a site-specific analysis shall be completed for the Public Transit Center. All recommendations of the traffic analysis shall be completed and the project coordinated with the college, the City of Walnut, the Foothill Transit Agency and if required, the County of Los Angeles Metro Transit Authority. Facilities Planning and Management shall ensure compliance.	Complete required traffic improvements by 2020.	Facilities Planning and Management
TR-09. The NB approach of the Grand Avenue and Baker Parkway intersection shall be restriped to include a third through-lane. However, this improvement would not fully mitigate the cumulative impact. The City of Industry is the Lead Agency.	Complete required traffic improvements by 2025.	Facilities Planning and Management
TR-10. When the preliminary design of the pedestrian bridge on Temple east of Bonita Avenue is available, it shall be reviewed by the Executive Board of Officers of Associated Students, by CMPCT, by the City of Walnut, and DSA. All recommendations of a site-specific traffic analysis shall be implemented. The Lead Agency is the City of Walnut.	Complete required traffic improvements by 2025.	Facilities Planning and Management
TR-11. Convert the existing EB right-turn lane to a through/right-turn lane at the Nogales/Amar Road intersection (#1). There is sufficient roadway width at the intersection departure lane in the eastbound direction to accommodate the third through-lane. The City of Walnut is the Lead Agency.	Complete required traffic improvements by 2025.	Facilities Planning and Management
TR-12. Restripe the EB approach lane to include a dedicated right-turn lane at the Lemon Avenue and Amar Road intersection (#2). The City of Walnut is the Lead Agency.	Complete required traffic improvements by 2025.	Facilities Planning and Management
TR-13. Convert the existing NB right-turn lane to a shared through/right-turn lane at the Grand Avenue and SR-60 EB Ramps (#13). There is sufficient roadway width at the intersection departure in the northbound direction to accommodate the third through lane. The California Department of Transportation is the Lead	Complete required traffic improvements by 2025.	Facilities Planning and Management

Agency.		
TR-14. Modify the traffic signal at the Bonita Avenue and Temple Avenue intersection (#15) to include a NB right-turn overlap phase. The City of Walnut is the Lead Agency.	Complete required traffic improvements by 2025.	Facilities Planning and Management
TR-16 to TR-27 are requirements for hosting the 2020 Olympic Track & Field Trials		
TR-16. Facilities Planning and Management, along with the Local Organizing Committee (LOC) shall prepare a Transportation and Parking Management Plan for the 2020 Olympics Track & Field Trials. All campus parking locations and parking or shuttle fees shall be included in the Plan. If needed, additional security shall be provided at off-campus shuttle lots. All parking attendants (i.e. a minimum of one for each lot) shall have communication devices to communicate with a Campus Parking Supervisor. The Executive Board Officers of the Associated Students (AS) of Mt. SAC shall be given an opportunity to review and comment on the preliminary plan. The Plan shall be substantially complete at least a year (12 months) before the Trials begin and be approved by the Board of Trustees. The timeframe relates to the preparation of registration materials and event websites. Facilities Planning and Management shall ensure compliance.	Implement a traffic and parking plan that provides adequate parking, minimizes congestion and provides opportunities for shuttle use.	Facilities Planning and Management
TR-17. Parking lot locations, vehicle occupancy requirements, and Parking Pass fees shall be published in all registration and event materials, on the event websites, and included in all media information. The Local Organizing Committee (LOC) shall hire students part-time as parking attendants or if qualified, as shuttle drivers. Event Services shall monitor compliance.	Distributing information to all registrants, media and the public on parking availability.	Facilities Planning and Management
TR-18. The Local Organizing Committee (LOC) shall provide shuttle bus service as described in Section 3.11.2. The off-campus shuttles shall operate at least three (3.0) hours before the first event of the day for the 2020 Olympic Track & Field Trials and for at least three (3.0) hours after the last event ends. Event Services shall monitor compliance.	Provision for shuttle bus service to reduce vehicle trips during Trials.	Facilities Planning and Management

TR-19. The Local Organizing Committee (LOC) shall conduct two or more workshops for local Chamber of Commerce members and area Hotel Managers at least nine (9) months before the 2020 Olympic Track & Field Trials to inform them of the events, Shuttle Routes and time tables, distribute media packets, answer questions and encourage hotel managers to offer special hotel packages and morning and evening hotel shuttle services between their hotel and the campus free or for a limited fee. The Director of the Local Organizing Committee (LOC) shall ensure compliance.	Distributing information to businesses that provide services to athletics and guests during the event.	Facilities Planning and Management
TR-20. The Transportation and Parking Management Plan for the 2020 Olympic Track & Field Trials shall be based on the information in the Parking Plan in Section 3.11.2. With the stated minimum persons per vehicle, the designated lots provide parking for at least 14,174 guests and 490 faculty/staff on campus during the 2020 Summer Intersession if classes are not in session. The Planning Plan provides sufficient parking without Parking Structure J. The plan shall be refined when the Shuttle Route system is finalized (i.e. TR-19). Facilities Planning and Management shall ensure compliance.	Implement a traffic and parking plan that provides adequate parking, minimizes congestion and provides opportunities for shuttle use.	Facilities Planning and Management
TR-21. If the 2020 Olympic Track & Field Trials are held during the Summer Intersession and classes are in session, the Local Organizing Committee (LOC) shall implement a Parking Plan based on Section 3.11.2. The Plan shall pre-register faculty and staff for parking on-campus for the week (i.e. not daily). Faculty and staff do not need to pre-register for the weekend. This procedure assures all faculty and staff have easy access to reserved parking during the week. Facilities Planning and Management shall ensure compliance.	Implement a traffic and parking plan that provides adequate parking, minimizes congestion and provides opportunities for shuttle use.	Facilities Planning and Management
TR-22. During registration for the 2020 Olympic Track & Field Trials, registrants may purchase a Parking Pass for a specific on-campus Parking Lot (e.g. Lot F) for an off-campus Parking Pass (e.g. Cal Poly Pomona, Lanterman Developmental Center, Diamond Bar High School or Walnut High School etc.). Parking Passes will be sold for the entire 10-day event, for Session 1 (Day 1 – 4), Day 5 - 6 or Session 2 (Day 7 – 10). No Parking Passes will be issued for the other off-campus	Implement a traffic and parking plan that provides adequate parking, minimizes congestion and provides opportunities for shuttle use.	Facilities Planning and Management

shuttle locations. Each registrant who purchases a Parking Pass shall receive a windshield Parking Pass for a specific Parking Lot. Each Parking Pass shall state the Minimum Persons per Vehicle (e. g., Minimum 3.0 Persons per Vehicle). Registration for Athletes and Officials shall begin two (2) weeks before registration for the general public. Facilities Planning and Management shall ensure compliance.		
TR-24. With classes scheduled in the Summer Intersession, the recommenced parking plan for the 2020 Olympics Track & Field Trials is Plan C in Section 3.11.2. The plan shall be refined when the Shuttle Route system is finalized (i.e. SE-04). An updated focused traffic analysis is required. Facilities Planning and Management shall ensure compliance.	Implement a traffic and parking plan that provides adequate parking, minimizes congestion and provides opportunities for shuttle use.	Facilities Planning and Management
TR-25. For additional reduction in pm peak period conflicts between area commuter traffic and 2020 Olympics Track & Field Trials traffic leaving the final event on Friday or Monday during Session 1, the event schedule shall be revised so guest traffic leaves before the commute period begins after the pm peak commute period ends. Either event schedule revision results in reducing the number of pm peak period conflicts by two days, and only two of the ten event days during Session 2 have pm peak conflicts (Table 3.11.8). Facilities Planning and Management shall ensure compliance.	If feasible, revising the preliminary schedule to reduce traffic congestion weekdays during the pm peak period.	Facilities Planning and Management
TR-26. Prior to installation of the Lot F traffic signal, the City of Walnut shall consider lowering the posted travel speed along Temple Avenue near Lot F from 50 mph to 35-40 mph to facilitate access to the Lot F east entry driveway. The Public Works Department of the City of Walnut shall monitor compliance.	Consideration of lower posted travel speeds on Temple Avenue when a signal is warranted at Lot F and Temple Avenue.	City of Walnut
TR-27. Prior to completion of Parking Structure J, the northside leg at the Lot F and Temple Avenue driveway shall be widened. Facilities Planning and Management shall ensure compliance.	Complete required traffic improvements when required.	Facilities Planning and Management
TR-28 to TR-40 are requirements for general parking, construction, and transportation impacts		
TR-28. Beginning in 2015, whenever a traffic/parking study for a FMP has not been completed in five (5) years, a new parking study shall be completed. The parking study shall specify the total parking supply required and a timeframe for providing the required number of campus parking spaces. Facilities Planning	Ongoing provision for adequate parking based on the college's recommended most recent headcount parking standard.	Facilities Planning and Management

and Management shall ensure compliance.		
TR-29. Site specific traffic and parking studies are required by the District for all new Special Events (i.e. excluding the 2020 Olympic Track & Field Trials) with projected maximum daily attendance above 15,000 weekdays (excludes Summer Intersession and campus holidays). Facilities Planning and Management shall ensure compliance.	Studies for new Special Events other than the 2020 Olympics Track & Field Trials.	Facilities Planning and Management
TR-30. The following recommendations from the 2002 Mt. San Antonio College Parking Lot and Access Study shall be implemented for onsite improvements: (1) Preferential carpool parking permits and spaces for Special Events and/or special recognition of student and faculty achievements, (2) Additional parking spaces for motorcycles, (3) Additional bicycle racks, (4) Bicycle lockers and/or showers and lockers for cyclists, and (5) Evaluation of reduction in free parking, raising parking fees and/or demand parking prices. The evaluation shall be completed by July 1, 2017 and CMPCT shall issue a recommendation to the Board of Trustees by September 1, 2017. Facilities Planning and Management shall ensure compliance.	Provision for parking for alternative modes of transportation.	Facilities Planning and Management
TR-31. For hauling operations of more than 15 trucks per hour or more than 100,000 cubic yards in cities other than the City of Walnut, a Truck Haul Plan (THP) approved by the Director of Facilities Planning and Management, with consultation with adjacent cities, shall be implemented. The Plan shall consider traffic counts, routes, hours/day of hauling, avoidance of am and pm peak hours, intersection geometrics, access/egress constraints, and pieces construction equipment onsite. Recommendations shall be made concerning all hauling operations to minimize traffic and pedestrian congestion on-campus and off-campus and included in construction logistics plans. If required, all haul trucks shall be radio-dispatched. Light duty trucks with a weight of no more than 8,500 pounds are exempt from the THP requirements. Facilities Planning and Management shall ensure compliance.	Assure pedestrian safety and reduce vehicular congestion along haul routes for campus construction hauling during peak hour traffic. See TR-50 for City of Walnut.	Facilities Planning and Management
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.	Ongoing assurance of public safety at or near project construction sites.	Facilities Planning and Management

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.	Ongoing assurance of public safety at or near project construction sites.	Facilities Planning and Management
TR-34. Demolition and construction contracts shall include plans for construction worker parking areas on campus. Facilities Planning and Management shall monitor compliance.	Ongoing provisions for construction employee parking areas near construction sites or in designated areas with permits.	Facilities Planning and Management
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.	Ongoing provisions for construction security for individual projects and assurance of public safety.	Facilities Planning and Management
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.	Ongoing provision for public safety from truck hauling activities near pedestrian paths.	Facilities Planning and Management
TR-37. Upon completion of construction documents, the Public Safety Department shall complete a parking, pedestrian, circulation and signage plan to address direct and indirect public safety needs for parking on campus during the construction period. For each major project, the changing parking demands created by construction, increased student enrollments and new building locations shall be addressed. Facilities Planning and Management shall ensure compliance.	Ongoing provision for maintaining adequate parking during construction periods.	Facilities Planning and Management
TR-38. During the preparation of campus grading, landscape and street improvement plans, the sight distance at each project access on campus shall be reviewed with respect to Caltrans standards. Facilities Planning and Management shall monitor compliance.	Provision for sight distances for public safety on campus near construction sites.	Facilities Planning and Management
TR-39. Onsite traffic signing and striping shall be implemented in conjunction with detailed construction plans for the project. Facilities Planning and Management shall monitor compliance.	Provision for required onsite traffic signs and striping.	Facilities Planning and Management
TR-40. The *Master Facilities Transportation Plan* shall be updated and shall specify all revisions and additions to parking areas, parking controls, public bus stops,	Provision for adequate transportation facilities and services for buildout of the 2015 Facility Master Plan Update.	Facilities Planning and Management

private shuttle operations, shuttle stops, and signage within the campus needed for buildout of the 2015 Facility Master Plan Update. All recommendations of the approved transportation plan shall be included in construction contracts and implemented. Facilities Planning and Management shall monitor compliance.		
TR-41 to TR-48 are requirements for public transit impacts		
TR-41. The Bursar Office at Mt. San Antonio College shall participate in the Metrolink College Student Discount Pass Program. Registration materials for each term shall inform student of its availability. Auxiliary Services shall monitor compliance.	Ongoing provision for bus passes for campus students.	Auxiliary Services
TR-42. Schedule/fee information for Foothill Transit (including the Go Pass), Metrolink and the County of Los Angeles Metropolitan Transit Authority shall be made available for students for each semester. Auxiliary Services shall monitor compliance.	Ongoing provision for up to date information on area transportation services.	Auxiliary Services
TR-43. The Campus Master Plan Coordination Team (CMPCT) shall review the preliminary site plan for the Public Transportation Center and recommend any changes needed in the Pedestrian Circulation and Vehicular Circulation exhibits in the 2015 Facility Master Plan Update to provide safe pedestrian paths, including Americans with Disability Act requirements for students to access the Public Transportation Center. Facilities Planning and Management shall ensure compliance.	Ongoing provision for adequate pedestrian paths and vehicular circulation near the Public Transit Center.	Facilities Planning and Management
TR-44. The Student Senate shall be given an opportunity to review and comment on all campus public transit center projects prior to CMPCT final review. Facilities Planning and Management shall ensure compliance.	Provision for student comment on the Public Transit Center facilities and services.	Facilities Planning and Management
TR-45. The Mt. San Antonio College District shall complete a Memorandum of Understanding (MOU) with participating transit agencies for campus public transit center projects. The MOU shall specify all financial, legal, insurance, operation and maintenance responsibilities for each party. Facilities Planning and Management shall ensure compliance.	Provision for legal agreements for operation and funding of the Public Transit Center.	Facilities Planning and Management

TR-46. The District shall negotiate an agreement with additional transit agencies serving the campus to provide an unlimited bus pass for a fixed student transportation fee per semester by January 1, 2018. Facilities Planning and Management shall ensure compliance.	Complete required traffic improvements by 2018.	Facilities Planning and Management
TR-47. The Executive Board of Associated Students shall be given an opportunity to review and comment on campus public transit center issues prior to CMPCT final review. Facilities Planning and Management shall ensure compliance.	Provide opportunities for student feedback on preliminary plans for the public transit center.	Facilities Planning and Management
TR-48. The College shall meet with Cal Poly to discuss a joint Cal Poly campus shuttle service by July 1, 2017. Facilities Planning and Management shall monitor compliance.	Explore opportunities for shuttle use between Mt. SAC and Cal Poly.	Facilities Planning and Management
TR-49 to TR-58 are requirements for other transportation issues		
TR-49. When traffic access is allowed (gate controlled) at the south side leg of the Temple Avenue and Lot F driveway, manual traffic control (campus or City provided traffic control personnel) shall be utilized. The Athletics Department and Facilities Planning and Management shall ensure compliance.	Provision for required traffic controls along Temple Avenue at the Lot F intersection during special events when the Lot F intersection is not signalized.	Athletic Department and Facilities Planning and Management
TR-50. 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, 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.	Compliance with requirement to submit Grading Plan and Truck Hauling Plan for City of Walnut review.	Facilities Planning and Management
TR-51. Programming for the Auditorium should establish if an adjacent Parking Structure is desirable in Lot B within six months of certification of the Final EIR. A site specific study is required for the Auditorium and/or an adjacent parking structure. Facilities Planning and Management shall ensure compliance.	Explore advance planning needs for an additional parking structure near the Auditorium.	Facilities Planning and Management
TR-52. The City of Walnut shall consider restricting left-turn movements eastbound along Amar Road east of Country Hollow during the am peak hour, implementation of a resident parking program or restrictions on street parking during certain hours, to	Provision for required vehicle turning movement restrictions for vehicular safety.	City of Walnut

minimize student-related traffic in the adjacent neighborhoods west of Grand Avenue south of Collegewood Drive. The Public Works Department of the City of Walnut shall monitor compliance.		
TR-53. Truck hauling for Phase 2 grading of the PEP site shall be limited to 8 hours a day and a maximum of 18 trucks per hour. Facilities Planning and Management shall ensure compliance.	Truck hauling for PEP (Phase 2).	Facilities Planning and Management
TR-54. When a site plan is completed, a site specific analysis shall be completed for the Public Transit Center. All recommendations of the traffic analysis shall be completed and the project coordinated with the college, the City of Walnut, the Foothill Transit Agency and if required, the County of Los Angeles Metro Transit Authority. Facilities Planning and Management shall ensure compliance.		
TR-55. The Public Safety Department shall update their evacuation plans for an extreme emergency by January 1, 2017. The updated emergency evacuation plan shall refine the preliminary plan included in the Final EIR and distribute vehicular traffic from campus lots to Grand Avenue and Temple Avenue in the most efficient and safe manner as possible. Public safety officers shall be deployed to pre-assigned locations and tasks to direct vehicular traffic in pre-determined directions defined in the plan. Facilities Planning and Management shall ensure compliance.	Update emergency evacuation plans for immediate campus evacuation of all parked vehicles.	Facilities Planning and Management
TR-57. Beginning in 2015, whenever a traffic/parking study for a Facilities Master Plan has not been completed in five (5) years, a new parking study shall be completed. The parking study shall specify the total parking supply required and a timeframe for providing the required number of campus parking spaces. Facilities Planning and Management shall ensure compliance.	Providing ample parking supply when enrollment changes.	Facilities Planning and Management
TR-59. The Public Safety Department shall keep the Sheriff Department informed of anticipated major changes in circulation patterns, parking, and any special security needs related to campus construction and operation. Public Safety shall monitor compliance.	Communication with Sheriff Department	Public Safety Department
TR-60. A new traffic signal at the Kellogg Drive and Interstate-10 intersection shall be operational by 2020. *The California Department of Transportation District 7 is t*he Lead Agency.	Reduce cumulative impact to acceptable LOS	California Department of Transportation District 7

TR-61. The westbound approach at the Campus Drive and Temple Avenue intersection shall be restriped to convert the westbound right-turn lane to a shared through/right-turn lane by 2020. The District shall fund this improvement. The City of Pomona is the Lead Agency.	Reduce project impact at local intersection off-campus.	City of Pomona
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.	During truck hauling period for the West Parcel Solar project only.	Facilities Planning and Management
15. Utilities/Service Systems		
SS-01: Within six months of certification of the Final EIR, the Utilities Master Infrastructure Plan shall be updated to accommodate the projected 2019 – 2020 student enrollment and the facilities included in the buildout of the Facilities Master Plan Update in 2020. Facilities Planning and Management shall monitor compliance.	Resolution of phasing issues related to infrastructure, new facilitates and student enrollment increases.	Facilities Planning and Management
SS-02. The *Master Facilities Infrastructure Plan* shall be revised for buildout of the 2015 Facility Master Plan Update. The plan shall specify all revisions and additions to water lines from Three Valleys Municipal Water District's PM-1 connector to the campus, and lines within the campus needed for buildout of the 2015 Facility Master Plan Update. All recommendations of the approved infrastructure plan shall be included in construction contracts and implemented. Facilities Planning and Management shall monitor compliance.	Ongoing provision for ample water supplies on campus.	Facilities Planning and Management
SS-03. The college shall obtain permits and water commitments required by the Three Valleys Municipal Water District for water service to all projects. These requirements shall be included I 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.	Ongoing provision for ample water supplies on campus.	Facilities Planning and Management

SS-04. The *Master Facilities Infrastructure Plan* shall be updated and shall specify all revisions and additions to sewer lines within the campus needed for buildout of the 2015 Facility Master Plan Update. All recommendations of the approved infrastructure plan shall be included in construction contracts and implemented. Facilities Planning and Management shall monitor compliance.	Ongoing provision for adequate sewer line capacity on campus.	Facilities Planning and Management
SS-05. The *Master Facilities Infrastructure Plan* shall be updated and shall specify all revisions and additions to the electrical distribution system within the campus needed for buildout of the 2015 Facility Master Plan Update. All recommendations of the approved infrastructure plan shall be included in construction contracts and implemented. Facilities Planning	Provision for adequate electrical system for buildout of the 2015 Facility Master Plan Update.	Facilities Planning and Management
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.	Ongoing provision for electrical service for new projects from SCE.	Facilities Planning and Management
SS-07. For each project**,** the college shall obtain all permits required by the Southern California Gas Company for natural gas service. These requirements shall be included in construction contracts and implemented. Facilities Planning and Management shall monitor compliance.	Ongoing provision for natural gas service for new projects from SCG.	Facilities Planning and Management
SS-08. The *Master Facilities Infrastructure Plan* shall be updated and shall specify all revisions and additions to solid waste collection systems, storage and transfer within the campus needed for buildout of the 2015 Facility Master Plan Update. All recommendations of the approved infrastructure plan shall be included in construction contracts and implemented. (Contracts with independent trash haulers are not included in these requirements). Facilities Planning and Management shall monitor compliance.	Provision for adequate solid waste facilities on campus for buildout of the 2015 Facility Master Plan Update.	Facilities Planning and Management
Source: SID LINDMARK, AICP, September 22,2017		