



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 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 starting 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



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