

From: [Megan Lawson](#)
To: [Gungle, Ashley](#); [Fogg, Mindy](#)
Cc: [Patrick BROWN \(Patrick.BROWN@soitec.com\)](#); [Patrick.BROWN@soitec.com](#)
Subject: Visual Tech Reports & Aesthetics section (1of3)
Date: Monday, September 09, 2013 11:09:26 AM
Attachments: [Ch 2.1 Aesthetics.docx](#)
[Soitec Memorandum Landscape Screen v4_9_6_2013.docx](#)

Hi Ashley,

Attached is the Aesthetics section and the Landscape Screening memo. Visual tech reports will follow.

Please let us know if you have any questions during your review so that we can begin working with you immediately to resolve them.

Thanks,
Megan

Below are responses to County comments:

Attachment A EIR comments on Aesthetics – responses:

4 - 1	Chapter 2.1- Aesthetics	The visual analysis has not been completed in accordance with the County visual guidelines. The visual analysis must include LanEast and LanWest. Impact determinations must be made for the entire project (all four sites). Measures to reduce impacts including modification of the project to add a landscape buffer where needed should be proposed because they are feasible.	LE and LW are analyzed at a program level. This issue has been discussed with County staff at prior meetings.	5/31/2013	
4 - 2	Chapter 2.1- Aesthetics	The Visual Simulations that were provided are not in conformance with the Report Requirements for Visual Resources (See Attachment A). Please revise accordingly or get a written exception from staff. Additional Visual Simulations are also needed to accurately assess the visual impacts from the following locations: (1) Westbound from Interstate 8 to assess the Rugged Solar project; (2) If the LandEast and LanWest projects remain in the EIR, additional visual simulations from Interstate 8, Old Hwy 80, and SR-94 going east and west are needed. Be sure to include visual simulations that look directly south from I-8 and northeast and northwest from Old Highway 80.	As discussed at County meeting on July 3 2013, Dudek has prepared and submitted a memorandum discussing the use of broad visual simulations that deviate from the County Report Requirements for Visual Resources. Preparation of the memorandum was prepared at the request of the County.	5/31/2013	
4 - 3	Chapter 2.1- Aesthetics	The Visual Simulations that were provided demonstrate to staff that the project would substantially detract from valued vista's from public roadways. Based on the visual sims provided to date, the discussion and analysis needs to be revised to reflect this determination with the conclusion that there would be a Significant impact pursuant to the guideline. The extent of impacts cannot be determined until all the analysis has been done and submitted.	Within the scenic vista analysis, the EIR discusses the anticipated visibility of the individual projects from public roads, trails, scenic vistas and highways, and recreational areas. As stated in the analysis, Tierra del Sol and Rugged solar farm components including but not limited to CPV trackers and transmission lines "would be visible from public roadways but "valued" focal or panoramic vista would not be substantially impaired or obscured (see Section 2.1.3.1). However, due to the proximity of the LanEast and LanWest solar farm sites, existing broad views from Old Highway 80 and Interstate 8 would likely be impaired and therefore, Proposed Project impacts are identified as potentially significant.	5/31/2013	
4 - 4	Chapter 2.1- Aesthetics	The Visual Simulations that were provided demonstrate to staff that the proposed project would introduce features that detract from and contrast with the existing visual character of the community. More specifically, the project introduces visual elements (large swaths of man-made structures) that conflict with the natural vegetation, colors and rolling topography from several vantage points. The discussion and analysis needs to be revised to reflect this determination and the EIR shall conclude that there would be a Significant impact pursuant to this guideline.	The EIR concludes that project impacts to existing visual character and quality would be potentially significant. See Section 2.1.3.2, 2.1.5, and 2.1.7.	5/31/2013	
4 - 5	Chapter 2.1- Aesthetics	Key View 8 and Key View 9 discussed on page 2.1.67 are not shown on Key View Location Map Figure 2.1-2. Presumably, this discussion refers to Visual Simulations provided in the Tierra del Sol Visual Resources Report. Similarly, Key Views 10, 11 and 12 refer to simulations provided in the Rugged Solar Visual Resources Report. Please revise Figure 2.1-2 to show the location of these Visual Simulations and add these Visual Simulations into the Draft Environmental Impact Report.	Figure 2.1-2 has been revised to include the location of Key Views 1 through 14. In addition, the EIR has been revised to include a discussion of all Key Views considered in the individual tech reports for the Tierra del Sol and Rugged solar farms.	5/31/2013	
4 - 6	Chapter 2.1- Aesthetics	If the Overhead GenTie Line for Tierra del Sol remains (e.g. if staff agrees the entire line does not need to be undergrounded), please schedule a meeting with County staff to identify appropriate Key View Locations for additional Visual Simulations. Key View #7 identified in the Visual Report for Tierra del Sol, may be appropriate, but the Visual Simulation needs to be modified to look more east/northeast to provide a more appropriate assessment. Additional Key View Locations will need to be identified.	Dudek has discussed the key view locations with County staff. It should be noted that while the visual simulation for Key View #7 (and the simulations for all key views) is a static image, the EIR text includes a dynamic analysis of the full landscape and the true impact associated with the introduction of the proposed project is described thoroughly in the text. Visual simulations are just one tool to depict the anticipated visual impacts associated with a given project - by including a dynamic analysis the EIR text captures and describes the impact to a degree that cannot be done through reliance solely on static images.	5/31/2013	
	Chapter	There needs to be a discussion of additional mitigation	Dudek has prepared and submitted to	5/31/2013	

4 - 7	2.1- Aesthetics	measures that could potentially reduce the visual impact of these facilities (e.g. buffering, screening, and/or smaller solar facilities or smaller development footprint). If a particular mitigation measure is infeasible, than the aesthetics chapter needs to discuss why it is not feasible. However, the project needs to include all feasible mitigation measures that would reduce impacts. Previous solar projects have relied on landscaping for screening (Tecate Cyprus for example), and buffering to mitigate for visual impacts. Please strengthen this discussion throughout the report and include additional mitigation measures that are feasible.	County staff a Memorandum titled "Landscape Screening Design for the Soitec Solar Development Program EIR". The content of the memorandum and intent of landscape screens has been discussed with County staff. In addition, Mitigation Measure MM-AES-PP-11 has been incorporated into the EIR and requires the installation of landscape screens as specified in the Landscape Screening Design for the Soitec Solar Development Program EIR which has been included as an appendix to the EIR.		
4 - 8	Chapter 2.1- Aesthetics	The Plot Plans identify mesh material on fencing. Please ensure that Visual Simulations (Key View #2 and Key View #3) show mesh and/or whatever other screening materials that are shown on the Plot Plan.	Details regarding the mesh material to be installed on perimeter fencing have not been determined at this time. However, simulation of a chain link fence represents a worst case scenario in which maximum visibility to the project site would be available to passing motorists.	5/31/2013	
4 - 9	Chapter 2.1- Aesthetics	Section 2.1.1.3 Tierra del Sol. On page 2.1-6 please include the height of the existing Southwest Powerlink transmission structures.	Dudek was unable to locate this information in the Sunrise Powerlink EIS/EIR and other documents covering the project area. We request that County provide this information.	5/31/2013	
4 - 10	Chapter 2.1- Aesthetics	Section 2.1.1.3 Tierra del Sol Gen-Tie Line. Table 2.1-2 Please provide Visual Simulations of the gen-tie line from Tierra del Sol Road and Jewel Valley Road and specify if it is SB/EB or NB/WB. The reader should be able to see what would be seen for 2 minutes and 3.9 minutes.	Visual simulations of the Tierra del Sol gen-tie line are provided in the EIR. Please see Key Views 7, 8, 9 and 10.	5/31/2013	
4 - 11	Chapter 2.1- Aesthetics	Section 2.1.1.4 Rugged Solar Table 2.1-3 In the text that follows this table, please refer the reader to Visual Simulation #6 which shows I-8 Motorist traveling eastbound.	A note has been added to Table 2.1-3 that refers the reader to the discussion of key viewpoints from Interstate 8 and McCain Valley Road. The note also refers the reader to the visual simulations of the Rugged Solar Farm located on Interstate 8 and McCain Valley Road (Figures 2.1-13 through 2.1-16).	5/31/2013	
4 - 12	Chapter 2.1- Aesthetics	Section 2.1.1.4 Rugged Solar Table 2.1-3 Please provide a Visual Simulations showing westbound views of the Rugged Solar Facility from I-8 and reference it in the text following this table.	A visual simulation of the Rugged Solar Farm from the westbound travel lanes of Interstate 8 has been prepared and is included in the analysis presented in Section 2.1.3.2. A note referring the reader to Section 2.1.3.2 has been added to Table 2.1-3.	5/31/2013	
4 - 13	Chapter 2.1- Aesthetics	Section 2.1.3.1 Scenic Vista's: Tierra del Sol Solar Farm. Please revise the paragraph to conclude that visual impacts would be Significant . The relatively wide, expansive and continuous views of the project area from Key Views 1, 4, and 5, and the duration of these views, introduce built features that contrast with the natural landscape of the area.	While broad views of the Tierra del Sol solar farm are available from Tierra del Sol Road, existing views consist of a relatively flat middleground horizon line lacking particularly interesting background elements (see Figures 2.1-3, 2.1-6, and 2.1-7). In addition, as viewed from Key Views 1, 4, and 5, CPV trackers would appear relatively low in vertical profile and would not substantially impair or obstruct background elements contributing to the scenic qualities of the existing view. While the EIR concludes that project components would contrast with the natural landscape of the area (see Section 2.1.3.2 Visual Character or Quality), scenic vista impacts associated with the Tierra del Sol solar farm were determined to be less than significant. See Section 2.1.3.1.	5/31/2013	
4 - 14	Chapter 2.1- Aesthetics	Section 2.1.3.1 Scenic Vista's: Tierra del Sol Gen-Tie Line. The analysis concludes that views of the Tierra del Sol gen-tie line would be briefly available to east and westbound motorists on Interstate 8. If the "above-ground" gen-tie line remains, please provide a Visual Simulation traveling eastbound and westbound on Interstate 8 showing the most prominent view of the above ground Gen-Tie line. You should also quantify the amount of time the gen-tie line will be visible (e.g. "briefly" means different things to different people). Once this simulation is provided, then determine if it would be Significant or Less Than Significant .	A simulation of the Tierra del Sol gen-tie line from Interstate 8 has not been provided however, additional information regarding interstate motorists viewer exposure to the Tierra del Sol gen-tie line has been incorporated into the EIR.	5/31/2013	
4 - 15	Chapter 2.1- Aesthetics	Section 2.1.3.1 Scenic Vista's: Tierra del Sol Gen-Tie Line. Please provide a Visual Simulation traveling eastbound and westbound on Old Hwy 80 showing the most prominent view of the above ground Gen-Tie line. Once this simulation is provided, please determine if it would be Significant or Less Than Significant .	A visual simulation of the Tierra del Sol gen-tie line from Tierra del Sol Road has not been provided. An analysis of potential effects to existing views from Old Highway 80 was however provided in the EIR which determined that impacts would be less than significant due to the brief duration of views and partially screening of structures by topography and vegetation.	5/31/2013	
4 - 16	Chapter 2.1- Aesthetics	Section 2.1.3.1 Scenic Vista's: Tierra del Sol Gen-Tie Line. Please provide a Visual Simulation traveling eastbound SR-94 showing the most prominent view of the above ground Gen-Tie line. Once this simulation is provided, please determine if it would be Significant or Less Than Significant .	A visual simulation of the Tierra del Sol gen-tie line from SR-94 has not been provided however, the visibility of the gen-tie line from the roadway is discussed in Section 2.1.3.1. Further, due to intervening vegetation and a lack of particularly bold focal points in the landscape located south of the highway, the gen-tie would not substantially interrupt or impair valued focal or panoramic vistas. Therefore, the EIR concludes that impacts would be less than significant.	5/31/2013	
4 - 17	Chapter 2.1- Aesthetics	Section 2.1.3.1 Scenic Vista's: Tierra del Sol Gen-Tie Line. Please provide a Visual Simulation traveling Southbound on Tierra del Sol Road showing the most prominent view of the above ground Gen-Tie line. Once this simulation is provided, please determine if it would be Significant or Less Than Significant .	Key View 9 (Figure 2.1-11) is provided in the EIR and is located on southbound	5/31/2013	
	Chapter 2.1-			5/31/2013	

4 - 18	Aesthetics	Section 2.1.3.1 Scenic Vista's: Tierra del Sol Gen-Tie Line. Please provide a Visual Simulation traveling southbound on Jewel Valley Road showing the most prominent view of the above ground Gen-Tie line. Once this simulation is provided, please determine if it would be Significant or Less Than Significant .	Jewel Valley Road. While broad, long views of Jewel Valley are available from the road, most gen-tie structures would be backscreened by topography and vegetation. References to the visual simulations from Jewel Valley Road are included in the Section 2.1.3.1 scenic vista analysis associated with the gen-tie line and impacts were determined to be less than significant.		
4 - 19	Chapter 2.1- Aesthetics	The information in Figure 2.1-1 is not clear to read, especially for areas with views to two of the sites. The Tierra del Sol site should be blue. Perhaps the scale should be increased (11 X 17 inches).	Figure 2.1-1 has been revised. A hatched symbology indicates locations where views of more than one project would be available.	5/31/2013	
4 - 20	Chapter 2.1- Aesthetics	The glare guideline states that offsite glare is significant. Glare by its definition is a "periodic intense light that is greater than the luminance to which the eyes are adapted and may cause annoyance, discomfort or visual impairment." The County guideline is exceeded if the project creates any daytime glare visible from roadways, pedestrian walkways or areas frequently used for outdoor activities on adjacent properties. As described, the project has a significant glare impact. Glare on roads may also be a safety issue. Please address under the appropriate County significance guideline in the Transportation and Traffic section. PDS will contact the FAA regarding potential glare impacts to aviation.	As requested, a glare discussion has been added to Transportation and Traffic section of the EIR. In addition, the glare discussions in the EIR have been updated to reflect the August 2013 Glare Behavior Analysis report prepared by Power Engineers which considered potential glare effects to motorists.	5/31/2013	
4 - 21	Chapter 2.1- Aesthetics	Section 2.1.3.4 Light and Glare. PDF-AES-5 which requires a Glare Study for the LanEast and LanWest Solar projects should not be listed as a design feature or mitigation measure because it is a study and deferral of the analysis. The impact conclusion appears to be significant and unmitigated , if there is evidence to support it. Otherwise it would be "too speculative to determine." To be less than significant, the study would have to have specific enforceable performance measures to clearly reduce potential impacts to a less than significant level.	LE and LW are analyzed at a program level. This issue has been discussed with County staff at prior meetings.	5/31/2013	
4 - 22	Chapter 2.1- Aesthetics	For PDF3, identify staging areas on grading plans with determine how high and where screening will be and specify for each solar farm. This needs to be done now to determine if it works	PDF-AES-3 refers to buildings on site and not staging areas. The specific location of staging areas has not been determined at this time	5/31/2013	
4 - 23	Chapter 2.1- Aesthetics	Glare Study - Refer to the attached Engineer's review summary.	An attachment was not included in comments received from the County. In addition, the Glare Study was prepared by Power Engineers and a revised version dated August 2013 to address several comments identified by the County during the July 3 meeting has been incorporated into the EIR and visual resource technical studies for the Tierra del Sol and Rugged solar farms.	5/31/2013	
4 - 24	Chapter 2.1- Aesthetics	The EIR conclusions indicate that there are significant and unmitigated visual impacts. Both CEQA and the County's EIR Guidelines require "adverse affects to be mitigated to the maximum extent feasible, even if the effect is still concluded to be significant after mitigation" (pg. 30). Therefore, the project must incorporate all feasible design or mitigation measures. Tierra del Sol Solar Farm Visual Study referred to mitigation measures including a vegetated screen to block glare from four residences along the western project boundary. This measure may also mitigate for the potential change in visual character of the area (guideline B) along Tierra del Sol Road. The measure should include landscape details (plant types, height of proposed vegetation at installation and maturity, length of time to maturity, etc.). If it is a project design feature it should be included in the landscape plan. Please consider and include additional measures to avoid or reduce these impacts.	Dudek has prepared and submitted to County staff a Memorandum titled "Landscape Screening Design for the Soitec Solar Development Program EIR". The content of the memorandum and intent of landscape screens has been discussed with County staff. In addition, Mitigation Measure MM-AES-PP-1 has been incorporated into the EIR and requires the installation of landscape screens as specified in the Landscape Screening Design for the Soitec Solar Development Program EIR which has been included as an appendix to the EIR.	5/31/2013	
4 - 25	Chapter 2.1- Aesthetics	The glare effects must also be evaluated by FAA and Caltrans. Staff will provide details.	No response necessary	5/31/2013	
4 - 26	Chapter 2.1- Aesthetics	Conclusions related to Scenic Vistas must be supported by substantial evidence. Mitigation with visual screening would not be infeasible because of the FPPs. However, the project design may need to be adjusted.	The EIR and technical report scenic vista analyses utilize the County significance guidelines to determine potential effects. A detailed discussion of the visibility of project components from public roads, trails, scenic highways/vistas, and recreation area is provided in Section 2.1.3.1 of the EIR. Dudek has prepared and submitted to County staff a Memorandum titled "Landscape Screening Design for the Soitec Solar Development Program EIR". The content of the memorandum and intent of landscape screens has been discussed with County staff. In addition, Mitigation Measure MM-AES-PP-1 has been incorporated into the EIR and requires the installation of landscape screens as specified in the Landscape Screening Design for the Soitec Solar Development Program EIR which has been included as an appendix to the EIR.	5/31/2013	
	Chapter	When the corrected guidelines are applied, cumulative	The correct guidelines have been	5/31/2013	

4 - 27	2.1- Aesthetics	impacts will be reviewed again. Mitigation for significant cumulative impacts should be proposed, proportional to the project's contribution of the cumulative impact.	incorporated in Chapter 2.1, Aesthetics, of the EIR. In addition, the visual resources technical reports for the Tierra Del Sol and Rugged Solar Projects also refer to established County determination of significance guidelines.		
4 - 28	Chapter 2.1- Aesthetics	Staff will discuss required changes to this section at a scheduled meeting.	No response necessary.	5/31/2013	

Attachment B – TDS responses:

21 - 17	Visual Resources	Section 6.3 Guideline 4. This section should be updated upon completion of the Wind Energy Ordinance. 9/21/2012- Second Request (pending completion of the Wind Energy Ordinance).	Addressed in Land Use section.	7/16/2012 9/21/2012 5/07/2013	
21 - 18	Visual Resources	Section 6.3 Guideline 5. The mitigation measures detailed in this section refer to a vegetated screen to block glare from four residences along the western project boundary. Please include additional details of the proposed landscaping in both this section of the visual study (plant types, height of proposed vegetation at installation and maturity, length of time to maturity, etc.) as well as the requested landscape plan. 9/21/2012- Second Request. 5/07/13 3rd Request. Not addressed.	Dudek has prepared and submitted to County staff a memorandum titled "Landscape Screening Design for the Soitec Solar Development Program EIR". The content of the memorandum and intent of landscape screens has been discussed with County staff. In addition, Mitigation Measure VIS-1 has been incorporated into the visual resources technical report and requires the installation of landscape screens along Tierra del Sol Road as specified in the Landscape Screening Design for the Soitec Solar Development Program EIR. Plant types, height of proposed vegetation at installation and maturity and length of time maturity is indicated in the landscape screening design memorandum.	7/16/2012 9/21/2012 5/07/2013	
21 - 21	Visual Resources	Section 7.0 Visual Mitigation and Design Considerations. The mitigation measures and design considerations discussed in this section have not been incorporated into the project design. Please see major project issue comment 1-4 above. 9/21/2012- Second Request. 5/07/13 3rd Request. Not addressed.	The majority of mitigation measures included in previous iterations of the visual resources technical report are no longer considered as they have been determined to be infeasible. See Section 6.6 for discussion of additional mitigation measures considered but not ultimately included in the technical report. Landscape screening along Tierra del Sol Road has been included in the technical report and EIR as Mitigation Measure VIS-1.	7/16/2012 9/21/2012 5/7/2013	

Attachment C – Rugged – responses:

21 - 1	Visual Resources	Executive Summary: Please confirm that the trackers would be located on 455-acres of the project site and the remaining 337-acres would be open space. 8/28/12 Please put back in information that states 455-acres would include the trackers and associated equipment and 337-acres would be for open space. Staff asked you to confirm these figures. not remove them.	Confirmed. The original language has been re-inserted into the technical report.	6/20/2012 8/28/2012	5/7/2013
21 - 35	Visual Resources	Executive Summary Page V. Please revised 3rd Paragraph last sentence to read "...and depict proposed effects accurately by illustrating the typical visual experience..."	The revision has been made as requested.	8/28/2012	5/7/2013
21 - 36	Visual Resources	Key Issues Page 1. 3rd bullet point. Please remove the first set of parenthesis from the first sentence.	The revision has been made as requested.	8/28/2012	5/7/2013
21 - 37	Visual Resources	3.3 Landscape Units 1st Paragraph Page 33. The last sentence reads "Four individual LCUs have been identified...", but it appears you have consolidated the LCU's into two distinct units (e.g. Mountain LCU and McCain Valley LCU). Please revise to reflect two LCU's, or make sure the reader can identify what the four LCU's are.	The discussion has been revised to reflect two individual LCUs - the Mountain LCU and the McCain Valley LCU.	8/28/2012	5/7/2013
21 - 38	Visual Resources	Page 34. Please keep the McCain Valley LCU as a title, if this is the second LCU.	McCain Valley LCU has been retained as the title of the second LCU.	8/28/2012	5/7/2013
21 - 39	Visual Resources	Please delete "Similar to the Mountain LCU" as a title on page 35.	The revision has been made as requested.	8/28/2012	5/7/2013
		Section 5.5 Determination of Significance pages 73 to 75. Under Mitigation Measures for Guidelines 1, 2, and 3, explain how the mitigation measure reduces the significance. For Guideline 1, Identify the relevant Mitigation Measures that would reduce features that would detract or contrast with the visual character. For Guideline 2, what mitigation measures help contribute to the overall valued visual character. For Guideline 3, how do the specific mitigation measures reduce impacts to panoramic vista's along a scenic highway and public			

21 - 40	Visual Resources	roads? 5/06/13 Last sentence on page 63 under Construction heading, replace Tierra del Sol solar farm with Rugged Acres solar farm. On page 64 under Operation heading, 2nd page states that the O&M building and water tanks would be visible from Key View 3, but they are not shown in the Figure 8 Visual Simulation. Please revise the Figure 8 to show the O&M building and the water tanks. The purpose of Visual Simulations is to show reader what the visual impact would look like. Similarly, the 34.4-k.V overhead collection cable system should be shown on Figure 2.1-16. It is important to have the visual simulations accurately depict what will be seen by viewers.	Where applicable, discussions regarding the effectiveness of PDFs and mitigation measures have been added to the document. Potential impacts to scenic vistas resulting from operation of the Rugged solar farm were determined to be less than significant and therefore, no mitigation has been provided.	8/28/2012 <u>5/7/2013</u>	
21 - 41	Visual Resources	Page 75 Guideline 4. Under Impact Analysis, please revise to add the word "help". The middle sentence should read "Doing so would help protect existing views, blend development..."	Revision has been made as requested. See Impact Analysis, Guideline 4 (1st paragraph) .	8/28/2012	5/7/2013
21 - 42	Visual Resources	Table 4 Summary of Visual Quality Ratings on Page 89. Add in 4th column under each key view that is titled "After Mitigation". This column should add the "with project" column with "change" column to produce a new total.	Revision to Table 4 has been made as requested.	8/28/2012	5/7/2013
21 - 43	Visual Resources	6.0 Visual Mitigation and Design Alternatives. More details are needed to better understand and assess the various mitigation measures. For VIS-2, how many acres of "Leave Islands" are proposed? For VIS-3, VIS-4, etc. how tall will vegetative screening be? What will be the depth of the proposed buffering? Will the project include a conceptual landscape plan? For VIS-13, what will be the effect of limiting the tracker mast to 16 in height? Will the overall structure still be 35 feet tall. Please provide additional details on each proposed mitigation measure. 5/6/2013 2nd REQUEST. All of the Visual Mitigation measures were eliminated from Chapter 6. County staff requested additional details on these measures, we did not ask you to remove them. Please include previously identified mitigation measures or design considerations and include additional details so that the reader can better understand and assess them. Please see Chapter 5 of the Visual Guidelines for examples of standard mitigation measures and design considerations.	With the exception of landscape screens and limitation of grading on the southernmost project parcel (i.e., the Thibedeau parcel), mitigation measures included in previous iterations of the Visual Resources Technical (including "leave islands") are no longer considered in the analysis. The infeasibility of several mitigation measures previously considered is discussed in Section 5.6. Mitigation Measure VIS-1 would require the project applicant to install landscape screens along McCain Valley Road (to partially screen trackers from passing motorists) as specified in the Landscape Screening Design Report for the Soitec Solar Development Program EIR. The report is listed as a reference in Section 7.0 of the technical report and is included as an appendix to the EIR. Also, the report includes a recommended plant list, details plant box size to be installed, identifies plant heights at installation and at maturity and provides information regarding water usage and maintenance protocol.	8/28/2012 <u>5/7/2013</u>	

Megan Lawson, LEED GA
Environmental Planner

DUDEK | *Natural Resource Management* | *Infrastructure Development* | *Regulatory Compliance*
T 760.479.4243
605 THIRD STREET
ENCINITAS, CALIFORNIA 92024
WWW.DUDEK.COM

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MEMORANDUM

To: Robert Hingten, County of San Diego
From: Michael Sweesy, Michael Huff
Subject: Landscape Screen Design for the Soitec Solar Development Program EIR
Date: July 26, 2013
cc: Ashley Gungle, County of San Diego
Patrick Brown, Soitec Solar Inc.
Attachment(s): Figures 1, 2, 3 and 4

At the July 3, 2013, meeting with County staff to discuss the Visual Resources section of the Soitec Solar Development Program Environmental Impact Report (EIR), staff and Soitec discussed measures to create landscape screens that block views of the project and are compatible with fire protection requirements. This memorandum provides an approach and typical design for landscape screens that maintain site defensibility for wildfire protection.

Landscape screens are recommended along Tierra Del Sol (TDS) Road, McCain Valley Road, and Old Highway 80 to screen views of proposed solar facilities from motorists, bicyclists, and pedestrians in public rights-of-way. The landscape screen is a mitigation measure that has been proposed to reduce impacts to visual quality and character from public viewpoints within the communities of Tierra Del Sol and Boulevard.

Features of the solar facility to be screened include the 50-foot-wide fire buffer with 6-foot-tall perimeter fence, concentrated PV (CPV) solar panels, and other associated features that exceed the perimeter fence height. The perimeter fence will be constructed of chain link slats or other attached material that block views through the fence. The fence will be topped with 3 strands of barbed wire. Although the perimeter fence is designed to screen views of the solar panels as well as provide site security, the fence is not consistent with the community character and therefore requires screening to reduce impacts to visual quality within these communities.

Complete screening of views from public viewpoints to the proposed solar facilities is not possible due to the plant density limitation that is required to achieve wildfire protection standards. These standards include limitations on plant density to reduce the potential for surface-to-crown fire spread (laddering), crown-to-crown fire, ember-bed formation, and to maintain fire equipment and personnel access to the project perimeter.

Memorandum

Subject: Landscape Screen Design for the Soitec Solar Development Program EIR

Landscape screens will help break-up the mass and scale of the solar projects from key viewpoints rather than screen the entire view. Foreground detail helps to attract viewer attention away from the facility behind the landscaped area. However, the CPV Trackers will remain partially visible beyond the landscape screen. Visual interest and landscape detail will vary depending upon the viewer and viewing distance. For example, at Tierra Del Sol solar farm, the landscape screen will address foreground views of motorists on TDS Road and hikers on the community trail. In addition to tree and shrub vegetation, the landscape buffer may include fields of cobble rock or other non-organic materials (i.e., native soil and/or decomposed granite) that create visual interest on the ground plane. These details would be omitted at Rugged Solar Farm where public viewpoints are more distant.

Table 1 provides a list of plant species that were selected from the County of San Diego (2004) “Suggested Plant List for a Defensible Space.” The listed plants are compatible with the climate zone of the Boulevard area as presented by the *Western Garden Book* (Brenzel 1995). The table indicates the range of expected heights of the each species at the time of planting and after 10 years of growth. These height estimates assume that trees will be planted from 36- to 42-inch nursery boxes and shrubs will be installed from 5-gallon, 15-gallon, and/or 24-inch boxed materials depending upon availability. Larger nursery container sizes are recommended in recognition of the need to establish a beneficial visual screen at the time of construction.

Table 1
Recommended Plants for Landscape Screening on Soitec Solar Projects

Botanical Name	Common Name	Estimated Height at Planting ¹	Estimated Height at 10 Years
<i>Trees</i>			
<i>Arbutus unedo</i>	Strawberry Tree	6'-8'	16'-20'
<i>Cercis occidentalis</i>	Western Redbud	6'-8'	16'-20'
<i>Cornus stolonifera</i>	Redtwig Dogwood	5'-6'	8'-10'
<i>Gleditsia triacanthos</i>	Honey Locust	10'-12'	30'-40'
<i>Juglans californica</i>	California Walnut	6'-8'	16'-20'
<i>Juglans hindsii</i>	California Black Walnut	6'-8'	20'-25'
<i>Quercus agrifolia</i>	Coast Live Oak	6'-8'	16'-20'
<i>Quercus engelmannii</i>	Engelmann Oak	8'-10'	16'-20'
<i>Rhus lancea</i>	African Sumac	8'-10'	16'-20'
<i>Shrubs</i>			
<i>Arbutus menziesii</i>	Madrone	3'-5'	12'-16'
<i>Elaeagnus pungens</i>	Silverberry	3'-5'	6'-10'
<i>Encelia californica</i>	Coast Sunflower	1'-1.5'	3'-4'

Table 1
Recommended Plants for Landscape Screening on Soitec Solar Projects

Botanical Name	Common Name	Estimated Height at Planting ¹	Estimated Height at 10 Years
<i>Encelia farinose</i>	White Brittlebush	1'-1.5'	3'-4'
<i>Fremontodendron californicum</i>	Flannelbush	4'-6'	10'-16'
<i>Fremontodendron mexicanum</i>	Southern Flannelbush	4'-6'	10'-14'
<i>Garrya elliptica</i>	Coast Silktassel	3'-4'	6'-10'
<i>Heteromeles arbutifolia</i>	Toyon	4'-5'	6'-10'
<i>Nolina parryi</i>	Parry's Nolina	2'-3'	3'-4'
<i>Nolina parryi</i> ssp. <i>wolfii</i>	Wolf's Bear Grass	2'-3'	4'-5'
<i>Prunus caroliniana</i>	Carolina Laurel Cherry	4'-5'	18'-24'
<i>Prunus ilicifolia</i>	Hollyleaf Cherry	4'-5'	8'-16'
<i>Prunus lyonii</i>	Catalina Cherry	4'-6'	8'-16'
<i>Rhamus alaternus</i>	Italian Blackthorn	5'-6'	8'-16'
<i>Rhamus californica</i>	Coffee Berry	4'-5'	8'-10'
<i>Rhus ovata</i>	Sugarbush	4'-5'	6'-12'
<i>Salvia leucantha</i>	Mexican Bush Sage	2'-3'	3'-4'
<i>Salvia leucophylla</i>	Purple Sage	2'-3'	2'-4'
<i>Yucca schidigera</i>	Mojave Yucca	4'-6'	3'-4'
<i>Yucca whipplei</i>	Foothill Yucca	2'-3'	3'-4'

¹ Assumes 36-inch or 42-inch box trees and 5-, 15 gallon, and 24-inch box shrubs

Figure 1 provides a landscape screen plan view of a typical plant configuration. Plant densities are designed to maintain ignition resistant vegetation, low fuel loads that are less likely to carry a fire through the landscape screen area and will result in a flame length that does not threaten fire buffer integrity and/or fire personnel and apparatus access. In order to provide effective visual screening balanced with fire defensibility, the landscape buffer should be a minimum of 50 feet wide to provide for necessary layering of vegetation that will juxtapose as viewers move past the project. In addition to the plant species listed in Table 1, existing [native vegetation may remain in place within the landscape buffer area in a limited amount subject to approval and maintenance requirements of the County Fire Authority.](#)

Figure 2 depicts the extent of visual screening that can reasonably be expected for the landscape screen of the solar facilities after a 10-year grow-in period. The exhibited plant heights are based on ambient environmental conditions and growth rates described in the *Western Garden Book* (Brenzel 1995) and *Landscape Plants for Western Regions* (Perry 1992). The depicted growth rate also assumes the plants will be irrigated using irrigation measures that promote deep rooted plants (i.e., deep, infrequent watering). In addition, irrigation will be permanent to support plant

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growth, vigor and longevity for the duration of the solar facility operation. Irrigation water will be applied at optimum intervals, appropriate to each species and plant maturity to maintain healthy plant material through typical environmental and climatic variations that are typical for the area.

In addition to irrigation, landscape screen maintenance will include periodic plant fertilization, soil cultivation and amendment, integrated weed and pest control, trash removal, vegetation pruning and/or plant removal to maintain defensible space as plants increase in size, and plant shape and structure, and plant replacement in the case of plant mortality.

Figure 2 depicts the landscape screen for a static position and at a perpendicular angle to the project. The depicted condition essentially provides a view across the 50-foot-wide landscaped area. However, viewers are most likely to be moving at various rates of speed depending upon the transportation mode (e.g., car, bicycle, pedestrian traffic, etc.). The movement would constantly change the viewpoint relative to the solar facility and the landscape vegetation.

In addition, views to the solar facility along adjacent roadways are more likely to be at acute angles rather than perpendicular as depicted. The acute view angle essentially cause the viewer to look through a greater distance of landscape screen area than when viewed at a perpendicular angle (Figure 1). For example, the view distance through the landscape screen area is 100 feet at a 30-degree view angle, as opposed to 50 feet at a perpendicular angle. This corresponds to a 60-degree view area centered on the direction of travel. Thus, the viewer is looking through more landscaped area before the eye encounters the solar facility. This effect would further strengthen the screening effect that is not depicted in Figure 2.

Figures 3 depicts the landscape buffer condition that is anticipated at the Tierra Del Sol project site running the length of Tierra Del Sol Road where the road is adjacent to the project site. A dedicated County trail easement is present at the edge of Tierra Del Sol Road, consisting of a 10-foot wide trail and 5-foot wide landscape area that is incorporated into the overall 50-foot wide landscape buffer area. As previously discussed, the Tierra Del Sol landscape buffer would incorporate boulder groupings and “fields” of rock cobbles into the planted area. These features provide visual benefits by enhancing the foreground view of motorists and trail users on Tierra Del Sol Road. In addition, the rock cobbles would act as noncombustible “mulch” that will protect soil moisture from evaporation, conserving the moisture for use by the landscape plants.

Figure 4 depicts the typical landscape buffer condition at Rugged Solar project site. Landscape buffers are recommended along the outer edge of the project east and west of McCain Valley Road as shown in the Visual Resources Technical Report. Due to the viewing distance from the

roadway to the landscape screen, rock features have been eliminated from these landscape buffer areas.

Landscape Buffer Irrigation

Irrigation is necessary to promote plant growth that will attain 10-year plant screen heights. Irrigation for the Soitec solar facilities will consist of drip irrigation components that may be above or below ground surface. Irrigation water will be sourced from a local groundwater well. The system will be automated with a solar irrigation clock that is programmable for monthly adjustments using published California Irrigation Management Information System (CIMIS) data for the local area. Irrigation will be schedule monthly to correspond with the Reference Evapotranspiration as reported by CIMIS for the mountains east and west of Imperial Valley.

Water Demand Calculation

Water demand associated with the landscape screen was calculated in accordance with County of San Diego Ordinance 10032 (County of San Diego, 2010) relating to water conservation in landscaping (Landscape Water Ordinance). The maximum applied water allowance (MAWA) and estimated total water use (ETWU) were calculated for Tierra Del Sol and Rugged project sites. Table 2 summarizes the estimated water use in annual acreage feet of water use. Water volume shown in Table 2 is anticipated to occur during initial plant establishment, to promote growth, and maintain leaf area to maximize screening effects. Once established, plant materials will have a root system capable of accessing a greater soil volume and associated water resources at depth. Therefore, water use for mature plants will decrease from the annual volume shown.

The significant water conservation attained by the project is attributable to the use of drought tolerant plant species, low density defensible space planting, and use of water-efficient drip irrigation. Upon completion of final construction drawings for the actual planting layout and irrigation system to be installed, a final water use calculation should be prepared in accordance with the Landscape Water Ordinance.

Table 2 Estimated Annual Water Use for Landscape Buffers

Project Site	Total Estimated Landscape Area	Maximum Applied Water Allowance (AF/Year)	Estimated Total Water Use (AF/Year)	Estimated Water Conservation (AF/Year)
Tierra Del Sol Solar	6.89 acres	24.98	1.56	23.42
Rugged Solar	6.8 acres	24.68	1.56	23.12
Total	13.69	49.66	3.12	46.54

Plant Installation and Maintenance Standards

Plant installation should occur in the spring months concurrent with project construction or during the spring season immediately following installation of a groundwater well and completion of the permanent perimeter fence when the potential for freezing weather and/or frosts have passed.

A minimum of 5 soil samples shall be collected at each project site and tested for agricultural suitability using a saturated extract process to determine the recommended amendment type(s) and application rate(s) by volume of soil to optimize soil backfill to support plant establishment and long term growth. Plant installation shall include excavating a planting pit that is twice the width and depth of the nursery container dimensions. Backfill soil shall be amended with fertilizer and organic amendments per agricultural soil test results. A watering basin should be built around newly installed plants to provide for supplementary water in case the drip system does not fully support plant survival and growth during the initial 120-day grow-in period.

Maintenance shall include irrigation system operation, maintenance and repair to maintain optimum system operations including but not limited to relocation and/or adding drip emitters to optimize water distribution around plants to maximize water availability to the current root system. Other adaptive maintenance actions may include, but are not limited to, pest and herbivory control, weed control, pruning/thinning, staking for temporary structural support for weak plants during windy conditions, trash removal, etc. Maintenance frequency will vary by season and maturity of plant material. Initial plantings will likely require monthly maintenance that can taper to quarterly maintenance when plants are established. Once mature, the landscape may only require bi-annual or annual maintenance.

Mitigation Monitoring and Reporting

The applicant shall install landscape screens as specified herein. The applicant shall also be responsible for continued maintenance of the landscape screens, including installation and maintenance of a drip irrigation system, and implementation of and consistency with, plant installation and maintenance standards identified above.

Monitoring of the landscape buffer/screen planting shall be performed during the 10 years after installation. The purpose of the monitoring is to observe and assess the maintenance regime and implementation of appropriate measures to promote plant survival, growth, overall health and vigor. Monitoring will assess plant survival and growth toward achieving the intended level of landscape screening as depicted in Figures 1-4.

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In addition, monitoring shall assess landscape plants and maintenance regime with regard to fire protection and the maintenance of defensible space. Monitoring shall include an assessment of individual and overall plant density to determine if thinning is necessary to maintain appropriate plant spacing and fuel loads within the landscape buffer area consistent with County fire ordinances.

Monitoring shall be performed once annually during the monitoring period. Following each monitoring site visit, the applicant shall coordinate with the maintenance entity to adjust maintenance procedures to address project deficiencies. Adaptive measures should be implemented in the subsequent spring season to address project deficiencies. These measures may include, but not be limited to, fertilizer applications, modification of the irrigation schedule, trimming and pruning to adjust fuel loads and plant spacing, replanting where plant mortality has occurred, etc.

The applicant shall maintain records that document the landscape status, attainment of the desired landscape screening effect, and maintenance of defensible fire protection features. These records shall include a description of project deficiencies and remedial actions, if any, that were observed or occurred during the monitoring period, and will be available for County review upon request. Project compliance with landscaping maintenance will be ensured through compliance with the condition of approval in the Major Use Permit.

REFERENCES CITED

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