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Applicant's Data Responses Set 3A (Nos. 186-190) for the APPLICATION FOR CERTIFICATION for the Rio Mesa Solar Electric Generating Facility (Rio Mesa SEGF)

(11-AFC-04)




Submitted to:

CALIFORNIA ENERGY COMMISSION
1516 9th Street, MS15
Sacramento, CA 95814-5504

Submitted by:

RIO MESA SOLAR I, LLC
RIO MESA SOLAR II, LLC
1999 Harrison Street, Suite 2150
Oakland, CA 94612

October 19, 2012

URS

October 19, 2012

Pierre Martinez
Project Manager
Systems Assessment & Facility Siting Division
California Energy Commission
1516 Ninth Street, MS-15
Sacramento, CA 95814

Subject: Applicant's Data Responses Set 3A (Nos. 186-190)
Rio Mesa Solar Electric Generating Facility (11-AFC-04)

Dear Mr. Martinez:

On behalf of Rio Mesa Solar I, LLC and Rio Mesa Solar II, LLC, collectively the "Applicant" for the Rio Mesa Solar Electric Generating Facility project ("Rio Mesa SEGF"), we submit the Applicant's Data Responses Set 3A (Nos. 186-190).

Sincerely,

Angela Leiba, Vice President
Senior Project Manager/ Environmental Department Manager

Enclosure

cc: POS List
Project File

Applicant's Response to Data Requests, Set 3A (Nos. 186-190)

for the

Application for Certification

for the

Rio Mesa Solar Electric Generating Facility (Rio Mesa SEGF)

(11-AFC-04)

Submitted to the

California Energy Commission

Submitted by

Rio Mesa Solar I, LLC
and Rio Mesa Solar II, LLC

October 19 2012

Contents

Introduction

Attached are responses from Rio Mesa Solar I, LLC, Rio Mesa Solar II, LLC, and Rio Mesa Solar III, LLC (collectively the "Applicant") to the California Energy Commission (CEC) Staff's Data Requests Set 3A (Nos. 186-190). Staff served these data requests on September 21, 2012. The responses are for the discipline Traffic and Transportation. Responses are presented in the same order provided by CEC staff, and are keyed to the data request number (186 through 190). Tables and attachments are numbered in reference to the data request number.

Traffic and Transportation (Nos. 186-190)

Data Request

186. Please provide a map of the proposed 34th Avenue access (secondary access) showing the exact location of the County ROW and any public or private easements, the location and type of any project access improvements, and property ownership (County, private, BLM, etc.) of the land on which improvements would occur. This map should commence at the connection of State Route 78 to its termination within the project site.

Response:

The attached Figure 1 depicts the entire extent of the 34th Avenue access road improvements, from the connection at State Route 78 to the termination within the project site. The entire access road will be located on private lands. There are no existing easements along the access road through Section 24, Township 8 South, Range 21 East. The Riverside County, 60-foot wide right-of-way (ROW) ends at the western Boundary of Section 24 and is located south of and abutting the proposed project access road ROW. The project access road will be constructed in accordance with applicable County road and safety standards.

Data Request

187. Please provide a map of the 30th Avenue/Bradshaw Trail access showing the exact location of the County ROW and any public or private easements, the location and type of any project access improvements, and property ownership (County, private, BLM, etc.) of the land on which improvements would occur. Indicate on the map the portion of the road proposed to be paved. Also, indicate whether any agricultural lands would be impacted and if so, indicate by Prime Farmland and Farmland of Statewide Importance.

Response:

Per Figure 1, attached, the Applicant intends to utilize 30th Avenue/Bradshaw Trail as its primary access, from State Route 78 (SR 78) westerly to a point which is approximately 3.85 miles west of SR 78 and 400 feet north of the project boundary. From that point, an access spur road will be built which runs south for approximately 400 feet until it enters the Project. While Riverside County does not hold a recorded ROW in the form of a dedication and acceptance, it maintains the above-described portion of 30th Avenue/Bradshaw Trail. Such maintenance is confirmed in Riverside County's Transportation Department Road Maintenance Book, and is recognized by the BLM. The County currently maintains this road to a width of 80 feet. The road is maintained in a paved state for a distance of 1 mile from SR 78 westerly to Ludy Boulevard. Continuing west from Ludy Boulevard for a distance of approximately 2.85 miles, the County maintains the road in an unpaved state. The Applicant proposes to pave the entire portion of its primary access lying west of Ludy Boulevard, so that the entire primary access from SR 78 to the project boundary is paved.

30th Avenue/Bradshaw Trail from SR 78 to a point which is 1 mile east of that intersection crosses agricultural lands owned by Metropolitan Water District of Southern California. These lands are not designated as Prime Farmland or Farmland of Statewide Importance. From that point west to the access spur road running south into the pProject, 30th Avenue/Bradshaw Trail crosses BLM lands and a 40-acre private parcel owned by Victor Holchak (the northeast [NE] ¼ of the NE ¼ of Section 14, Township 8 North, Range 21 East). Mr. Holchak's parcel is unimproved, non-irrigated desert, and is not designated as Prime Farmland or Farmland of Statewide Importance. The access spur road running south from 30th Avenue into the project site crosses BLM land before it enters the project boundary. The Applicant has applied to the BLM for a Grant of ROW for the segments of the access route that cross BLM lands.

Data Request

188. Please provide: the estimated number of employees during each month of construction and a traffic analysis determining the threshold number of individually commuting construction employees that would cause LOS at SR-78 (Neighbours Blvd.)/28th Ave. and SR-78 (Rannells Blvd.)/28th Ave. to degrade to LOS D. If the applicant submits this information to staff prior to publication of the Final Staff Assessment (FSA), staff will refine the proposed condition of certification to require implementation of the park-and-ride plan during only those months where construction employment would cause LOS at the affected intersections to reach LOS D. Alternatively, staff would be willing to consider a different measure to address the congestion issue.

Response:

In preparing this response, Applicant has provided the following three attachments:

- DR 188-1 Staffing Profile illustrates the Project monthly staffing profile showing the number of employees each month during Project construction.

- DR 188-2 Worker Vehicle Trip Summary describes the resultant worker vehicle trips each month and on a daily basis during Project construction. Corresponding construction delivery vehicles were shown as separate line items.

- DR 188-3 Project Construction Traffic Calculations provides the worksheets used to model Project construction traffic impacts.

As shown in DR 188- 2, the peak Project construction month is Month 22, with 1,370 worker vehicles each day and eight project delivery vehicles each day. The vehicles were used as the basis of Table 5.12-6 Project Construction Trip Generation in the Environmental Enhancement Proposal.

In response to this data request, a traffic analysis using the worker vehicle trip data shown in DR 188-2 was conducted to determine the construction months during which LOS at SR 78 (Neighbours Blvd.)/28th Avenue and SR 78 (Rannells Blvd.)/28th Avenue is to degrade from LOS C to LOS D. This analysis also forecasts when LOS levels at the study intersections are expected to return to LOS C.

As shown in Table 1, only Months 22 (peak Month) and Month 23 will result in LOS D at the study intersections, with 1,370 and 1,369 daily worker vehicles each month, correspondingly. All other construction months are forecast to operate at LOS C or better. The traffic model calculation worksheets are provided in DR 188-3 Project Construction Traffic Calculations.

The results of the analysis are as follows:

Table DR 188-1 LOS D Threshold Analysis

Intersection	Month 21	Month 22[1]	Month 23	Month 24
	Daily worker vehicle = 1265	Daily worker vehicle = 1370[2]	Daily worker vehicle = 1369	Daily worker vehicle = 1271
SR 78 (Neighbours Blvd.)/28th Avenue[3]	LOS C	LOS D	LOS D	LOS C
SR 78 (Rannells Blvd.)/28th Avenue[4]	LOS C	LOS D	LOS D	LOS C

Notes:
1 – Amended AFC Peak construction month
2 – Peak construction worker vehicles used in Table 5.12-6 Project Construction Trip Generation in the amended AFC.
3 – PM LOS D analysis
4 – AM LOS D analysis

Based on the daily worker vehicle difference on Month 23 (1,369 worker vehicles) and Month 24 (1,271 worker vehicles), a reduction of approximately 100 worker vehicles will result in improvement of LOS D conditions to LOS C conditions.

Data Request

189. *Please provide feasible proposed park-and-ride locations and the approximate number of vehicles that they would accommodate. These park-and-ride locations should be on already developed lands. Park-and-ride locations could be in the parking lots of hotels where construction employees stay, underutilized parking lots, on vacant but disturbed properties along the I-10 corridor, etc.*

Response:

There is no basis for Staff's requested park and ride locational information. Implementation of a massive employee bussing program during Project construction is not justified for a short term impact of a LOS D occurrence at the Neighbours Blvd (PM) and Rannells Blvd (AM) intersections on SR 78 given the applicable threshold of significance of LOS E.

Staff concludes that peak construction traffic impacts occur at two study intersections: SR 78 (Neighbours Boulevard)/28th Avenue (LOS D during peak PM traffic conditions) and SR 78 (Rannels Boulevard) (LOS D during peak AM traffic conditions). Staff then utilizes "the most restrictive applicable LOS standard in Riverside County[] …" (i.e., LOS C or greater) along all county-maintained roads and conventional state highways. The Applicant requests that the short term degradation to LOS D at the two aforementioned locations during certain time periods should not be considered as severe

impacts requiring the implementation of a park-and-ride plan because the applicable threshold of significance should be LOS E, for the reasons set forth below:

a. California Department of Transportation (Caltrans) has jurisdiction and maintains the right-of-way of SR 78. Caltrans District 8 maintains SR 78 from Interstate 10 (I-10) to the Imperial County Line while the remainder of SR-78 within Imperial County and San Diego County is maintained by Caltrans District 11.
b. According to the SR 78 Route Concept Report (RCR) prepared by Caltrans, the RCR "is a planning document that describes the Department's basic approach to development of a given route. Considering financial constraints, characteristics of the highway, and projected travel demand over an approximate 20-year planning period, the RCR defines the type of facility and LOS for each route. The objective of this effort is to provide a better basis for the development of the State Transportation Improvement Program (STIP) and to determine the appropriate concept for future highway projects."
c. The RCR also described the role of the Riverside County Transportation Commission (RCTC) which is responsible for programming 75 percent of the STIP per Section 188.8 of the Streets and Highway Code amended October 3, 1997. As discussed in **Page 4 CONCEPT RATIONALE** (emphasis shown in underline) "Under the mandate of State law, RCTC is responsible for preparing the County's CMP. The CMP includes all State highways as well as other roads. The CMP established LOS E as the minimum LOS Standard for intersections and segments along the CMP system of highways and roadways. Due to the transportation financing program established through Measure A in Riverside County, there are no advantages to setting a higher minimum LOS standard than required by the CMP legislation which is LOS E unless the intersection or segment had a lower LOS or LOS F in 1991. The analysis done for this RCR shows the 2020 LOS will meet the CMP standard or LOS E."
d. Within Riverside County, SR 78 is a de facto component of the CMP roadway system. As mandated by State law, Riverside County Transportation Commission's (RCTC) Congestion Management Program (CMP) requires LOS E as the minimum standard.
e. Caltrans' threshold of significance of LOS E has not been exceeded by Project traffic at the relevant intersections.

Given that the RCTC requires LOS E or above on SR 78, it is inaccurate to characterize an LOS D condition during AM and PM peak periods at one intersection on SR 78 is a significant adverse impact. Furthermore, as noted above, if SR 78 is subject to a minimum LOS of E, a LOS D condition at one intersection is not a significant adverse impact.

Finally, the Applicant proposes the following specific measures that could be cost effectively implemented and would mitigate impacts on the aforementioned intersections to less than an LOS D. The Project will explore the potential for traffic mitigation strategies such as:

- Stagger morning and evening shifts a half hour to an hour.
- Implement an evening shift.
- Provide preferred parking for workers who carpool, similar to the successful program at Ivanpah Solar Electric Generating Facility project in San Bernardino County.

- Implement a web based ride share program.

Data Request

190. For glint and glare from the heliostats, please identify potential receptors and receptor locations for both ground and airborne observers, and identify the heliostat movements and positions, including malfunctions, which could result in exposure of the identified locations to reflected solar radiation from the heliostats.

Please describe how the heliostat positioning plan algorithms (e.g., the establishment of positioning forbidden zones) would minimize direct solar reflections to known ground locations or to the anticipated intermittent presence of aircraft for either known or unknown flight paths.

Response:

Ground Based Observers

Recipients in the agricultural lands and Blythe (KOP's 1, 2, 4, 5, and 6) will not be subject to glint and glare from the heliostats. This is due to the fact that the agricultural fields are at a lower elevation than the project site. Therefore there is no way for heliostats to be directed to the ground based observers.

Recipients at KOP 3 and 6, I-10 are too far away from the Project to experience any noticeable concentration from the heliostats.

Recipients with an initial view of the Palo Verde Mesa and the Project from eastbound Bradshaw Trail to the west of the project site would first see the Project at distance of approximately 2 miles from the edge of the solar field and 3.25 miles from the nearest heliostat that is typically oriented in a westerly facing direction. At this distance the glint and glare from a heliostat in the field wound not be significant since the distance from the observer is more than 20 times the focal length of the mirror. As the observer travels down the hill towards the project site, mirrors oriented in a direction that would reflect sunlight towards the observer, would become increasingly blocked by the mirrors on the northerly and westerly sides of the solar field between the reflective surface and the observer, or by a ridge between Bradshaw Trail and the project site, hence no significant impact to the observer would be realized.

Airborne Observers

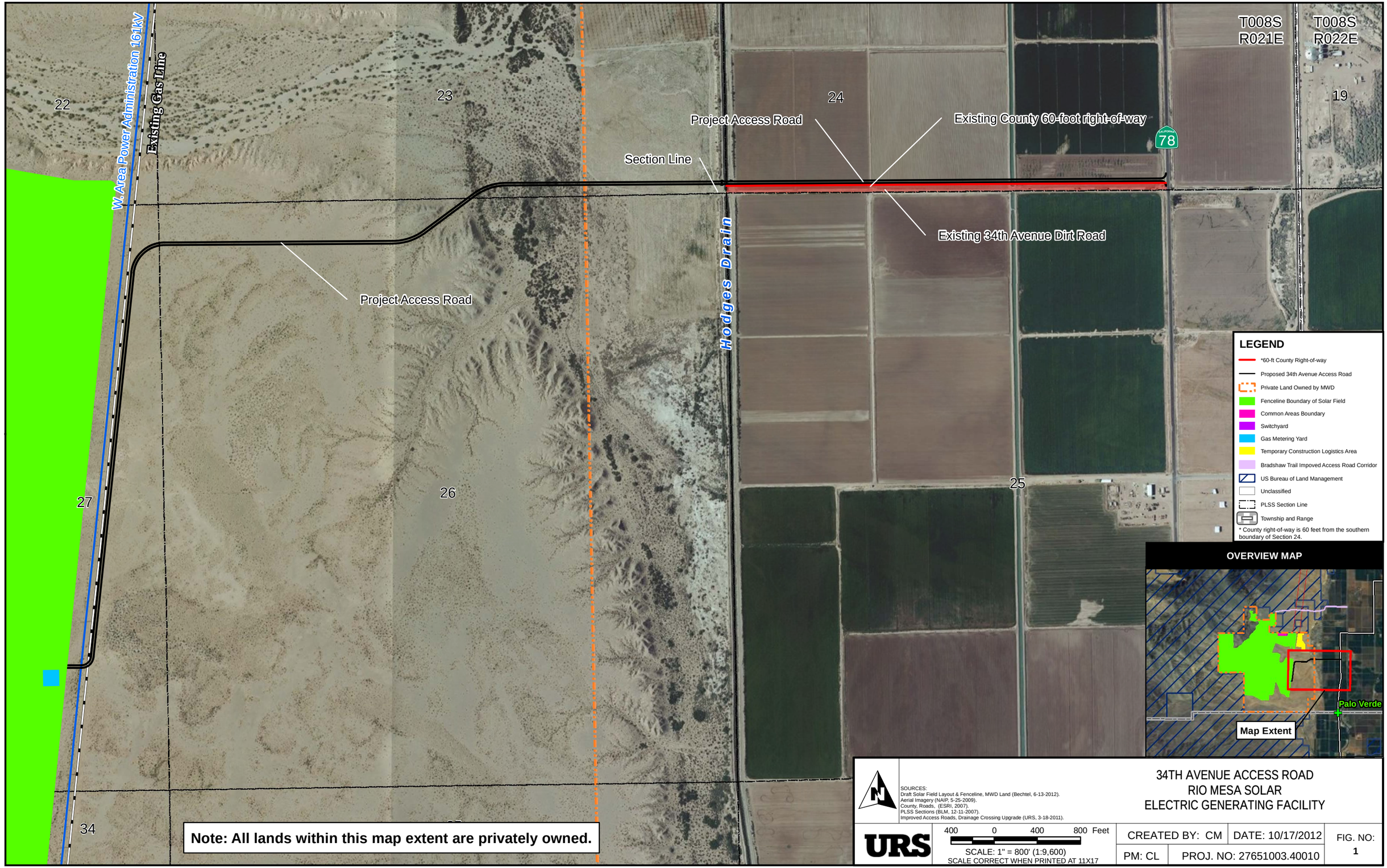
The heliostats, while appearing to be flat mirrors, are actually slightly concave. The design focal lengths for the heliostat mirrors range from 250 to 1,000 meters. Therefore, for air borne observers the only potential for impact would be from mirrors oriented in the "safe" or horizontal position. A mirror in the safe position does not concentrate reflected sunlight with other mirrors into a single point as there are no algorithms programmed to accomplish this. So the glint observe would be from directly over the Project Site at an elevation of less than 1,000 meters, and be that of only a single mirror at a time. For heliostat of 1,000 meter focal length at the focal distance of 1,000 meter, the center of the beam reflected will be

about a quarter of the sun flux (one sun flux is less than 1 kilowat per square meter [kW/m^2]) which is a fraction of what any observer will be exposed to from the sun itself.

For mirrors in the tracking mode the control system is designed to point mirrors either at the solar receiver steam generator (SRSG) or into a "standby zone". The beams from the mirrors pointed into the standby zone would continue past the SRSG and reduce in concentration to a level of less than 10 kW/m^2 at an altitude of no more than 500 feet above the tower in compliance with Federal Aviation Administration (FAA) guidelines for Maximum Permissible Exposure (MPE) and structure avoidance.

Minimization Techniques

The Applicant has a policy to make its plants as safe as possible, and the advancements in the control systems reflect this policy. If a particular location(s) are determined to require avoidance it is possible to program a "forbidden zone" within the positioning algorithm for the heliostats. This would result in heliostats to follow a safe path that avoids any forbidden zone(s) while transitioning from tracking to another mode.



Path: G:\gis\projects\1577\27651002\map_docs\mxd\Project_Alternatives\ROW\34thaccess_project_features_all.mxd, Colin_Mattison, 10/17/2012, 4:29:33 PM

Attachment DR 188-1 Staffing Profile

	2013											2014												2015												2016		
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar					
Month	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32					
Total Manual Labor	8	10	20	30	42	103	196	309	477	559	617	678	828	903	1025	1109	1174	1265	1442	1661	1867	2011	2187	2188	2027	1818	1546	1264	940	719	326	118	76					
Manual Vehicle	88	110	220	330	464	1131	2158	3403	5244	6154	6789	7455	9112	9935	11277	12203	12913	13914	15866	18271	20540	22120	24058	24070	22298	20002	17011	13899	10335	7909	3581	1296	836					
Total Subcontractors	1	2	4	6	8	19	37	58	89	104	115	126	154	168	191	207	219	235	269	309	348	374	407	407	377	339	288	235	175	134	61	22	14					
Subcontractor Vehicle	16	20	41	61	86	211	402	633	976	1146	1264	1388	1696	1849	2099	2272	2404	2590	2954	3401	3824	4118	4479	4481	4151	3724	3167	2587	1924	1472	667	241	156					
Total Non-Manual Labor	6	14	23	31	42	55	73	78	89	98	108	112	128	134	140	140	150	150	149	149	147	146	146	142	137	129	114	96	73	54	30	22	17					
Non-Manual Vehicle	62	158	255	338	462	602	801	862	977	1074	1188	1232	1408	1478	1540	1540	1646	1646	1637	1637	1619	1602	1602	1566	1505	1417	1254	1055	805	589	335	238	188					
Total Manpower (Alltype)	15	26	47	66	92	177	306	445	654	761	840	916	1111	1206	1356	1456	1542	1650	1860	2119	2362	2531	2740	2738	2541	2286	1948	1595	1188	906	417	161	107					
Total Vehicle (Alltype)	166	289	516	730	1012	1944	3361	4899	7197	8373	9241	10075	12217	13263	14916	16015	16963	18149	20456	23309	25982	27840	30139	30117	27954	25143	21432	17541	13064	9969	4582	1775	1180					

Attachment DR 188-2 Worker Vehicle Trip Summary

Forecast Monthly Site Delivery Schedule - Unit 1&2

	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
Notes:	**2013**						**2014**												**2015**									
MONTHLY (number of vehicles, not trips)													Heaviest Truck Period									Heaviest Worker Period					
CRAFT TOTAL	166	289	516	730	1012	1944	3361	4899	7197	8373	9241	10075	12217	13263	14916	16015	16963	18149	20456	23309	25982	27840	30139	30117	27954	25143	21432	17541
MATERIAL AND EQUIPMENT (ACTUAL)	12	26	52	91	112	303	268	429	605	611	666	809	935	921	911	813	690	546	448	348	203	215	172	68	21	8	22	18
MATERIAL AND EQUIPMENT (X3 PCE)	36	78	156	273	336	909	804	1287	1815	1833	1997.4	2427.6	2805	2763	2733.6	2439.6	2071.2	1638.6	1344	1043.4	609.6	644.4	515.4	205.2	62.4	23.4	66	54
TOTAL (PCE ADJUSTED)	202	367	672	1003	1348	2853	4165	6186	9012	10206	11238	12503	15022	16026	17650	18454	19034	19788	21800	24352	26592	28484	30654	30322	28016	25166	21498	17595
DAILY (number of vehicles, not trips)																												
CRAFT TOTAL	8	13	23	33	46	88	153	223	327	381	420	458	555	603	678	728	771	825	930	1059	1181	1265	1370	1369	1271	1143	974	797
MATERIAL AND EQUIPMENT (ACTUAL)	1	1	2	4	5	14	12	20	28	28	30	37	43	42	41	37	31	25	20	16	9	10	8	3	1	0	1	1
MATERIAL AND EQUIPMENT (X3 PCE)	2	4	7	12	15	41	37	59	83	83	91	110	128	126	124	111	94	74	61	47	28	29	23	9	3	1	3	2
TOTAL (PCE ADJUSTED)	9	17	31	46	61	130	189	281	410	464	511	568	683	728	802	839	865	899	991	1107	1209	1295	1393	1378	1273	1144	977	800
																						LOS	LOS	LOS	LOS			
																						C	D	D	C			

Attachment DR 188-2 Worker Vehicle Trip Summary (Continued)

Nov	Dec	Jan	Feb	Mar
28	29	30	31	32
		2016		
13064	9969	4582	1775	1180
5	6	22	23	17
15	18	66	69	51
13079	9987	4648	1844	1231
594	453	208	81	54
0	0	1	1	1
1	1	3	3	2
595	454	211	84	56

Attachment DR 188-3 Project Construction Traffic Calculations

Table 5.12-6A
Project Construction Trip Generation

Month 21 – April 2015

Vehicle Type	Peak Daily Round Trips	AM Peak Trips			PM Peak Trips		
		Inbound	Outbound	Total	Inbound	Outbound	Total
Construction Worker Vehicles[1]	2530	696	0	696	0	696	696
Delivery Vehicles (including heavy trucks)[2]	60	15	8	23	0	8	8

Source: Bechtel Power Corporation, Forecast Traffic Impact - Rio Mesa_052412_On Site Batch Plant Rev 2.xls

[1] Peak workforce was conservatively analyzed at 1265 worker vehicle trips during peak month of construction. 55% of these worker vehicle trips were assumed to commute during the morning (7-9 AM) and evening (4-6 PM) peak hours.

[2] Delivery vehicles were adjusted into Passenger Car Equivalent (1 Heavy Vehicle = 3 PCE) vehicle in the traffic impact analysis. Analysis assumed 50 percent of 10 (actual trucks) delivery vehicles arrive and 25 percent leave during the 7 to 9 AM peak hour; 25 percent leave during the 4 to 6 PM peak hour. Numbers shown on the table are passenger car equivalent adjusted.

Level of Service Analysis Results
Month 21 – April 2015

Intersection (Peak Hour Analysis)	Level of Service (LOS) Results
SR-78 (Rannels)/28th Street (AM Peak Hour Analysis) [1]	LOS C
SR-78 (Neighbours)/28th Street (PM Peak Hour Analysis) [2]	LOS C

[1] – LOS D occurs during AM peak hour, Amended RMS AFC 2012

[2] – LOS D occurs during PM peak hour, Amended RMS AFC 2012

Attachments: LOS Worksheets

Rio Mesa Solar Electric Generating Facility (SEGF)
Near Term AM Peak Hour Conditions - with Peak Project Construction
Month 21

Trip Generation Report

Forecast for AM Construction

Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	% Of Total
1	Operations	1.00	Operation	0.00	0.00	0	0	0	0.0
2	Construction	1.00	Construction	696.00	0.00	696	0	696	96.8
	Zone 2 Subtotal					696	0	696	96.8
3	Construction	1.00	Materials Truc	8.00	4.00	8	4	12	1.7
	Zone 3 Subtotal					8	4	12	1.7
4	Construction	1.00	Equipment Truc	7.00	4.00	7	4	11	1.5
	Zone 4 Subtotal					7	4	11	1.5
TOTAL						711	8	719	100.0

Rio Mesa Solar Electric Generating Facility (SEGF)
Near Term AM Peak Hour Conditions - with Peak Project Construction
Month 21

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #5 Ramells (SR-78)/28th Ave

Cycle (sec): 100 Critical Vol./Cap. (X): 0.819
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 22.2
Optimal Cycle: 0 Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0 0 1 0			0 1 0 0 0			0 0 1! 0 0			0 0 1! 0 0		
Volume Module:												
Base Vol:	0	15	8	1	11	0	0	0	0	21	1	1
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	15	8	1	11	0	0	0	0	21	1	1
Added Vol:	0	0	8	0	0	0	0	0	0	676	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	15	16	1	11	0	0	0	0	697	1	1
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	15	16	1	11	0	0	0	0	697	1	1
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	15	16	1	11	0	0	0	0	697	1	1
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	15	16	1	11	0	0	0	0	697	1	1
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.48	0.52	0.08	0.92	0.00	0.00	1.00	0.00	0.99	0.01	0.01
Final Sat.:	0	318	340	51	566	0	0	0	0	851	1	1
Capacity Analysis Module:												
Vol/Sat:	xxxx	0.05	0.05	0.02	0.02	xxxx	xxxx	xxxx	xxxx	0.82	0.82	0.82
Crit Moves:		****			****							****
Delay/Veh:	0.0	8.4	8.4	8.6	8.6	0.0	0.0	0.0	0.0	23.1	23.1	23.1
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	8.4	8.4	8.6	8.6	0.0	0.0	0.0	0.0	23.1	23.1	23.1
LOS by Move:	*	A	A	A	A	*	*	*	*	C	C	C
ApproachDel:		8.4			8.6			xxxxxx			23.1	
Delay Adj:		1.00			1.00			xxxxx			1.00	
ApprAdjDel:		8.4			8.6			xxxxxx			23.1	
LOS by Appr:		A			A			*			C	

Rio Mesa Solar Electric Generating Facility (SEGF)
Near Term PM Peak Hour Conditions - with Peak Project Construction
Month 21

Trip Generation Report

Forecast for PM Construction

Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	% Of Total
2	Construction	1.00	Construction	0.00	696.00	0	696	696	98.9
	Zone 2 Subtotal					0	696	696	98.9
3	Construction	1.00	Materials Truc	0.00	4.00	0	4	4	0.6
	Zone 3 Subtotal					0	4	4	0.6
4	Construction	1.00	Equipment Truc	0.00	4.00	0	4	4	0.6
	Zone 4 Subtotal					0	4	4	0.6
TOTAL						0	704	704	100.0

Rio Mesa Solar Electric Generating Facility (SEGF)
Near Term PM Peak Hour Conditions - with Peak Project Construction
Month 21

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #4 Neighbours (SR-78)/28th Ave

Cycle (sec): 100 Critical Vol./Cap. (X): 0.821
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 21.4
Optimal Cycle: 0 Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0 0 1 0			0 0 1! 0 0			0 1 0 0 0			0 0 1! 0 0		
Volume Module:												
Base Vol:	0	24	10	2	21	22	22	4	0	9	3	8
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	24	10	2	21	22	22	4	0	9	3	8
Added Vol:	0	0	0	0	0	0	339	331	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	24	10	2	21	22	361	335	0	9	3	8
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	24	10	2	21	22	361	335	0	9	3	8
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	24	10	2	21	22	361	335	0	9	3	8
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	24	10	2	21	22	361	335	0	9	3	8
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.71	0.29	0.04	0.47	0.49	0.52	0.48	0.00	0.45	0.15	0.40
Final Sat.:	0	445	185	29	301	315	440	408	0	334	111	297
Capacity Analysis Module:												
Vol/Sat:	xxxx	0.05	0.05	0.07	0.07	0.07	0.82	0.82	xxxx	0.03	0.03	0.03
Crit Moves:		****			****			****			****	
Delay/Veh:	0.0	8.6	8.6	8.6	8.6	8.6	23.3	23.3	0.0	7.8	7.8	7.8
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	8.6	8.6	8.6	8.6	8.6	23.3	23.3	0.0	7.8	7.8	7.8
LOS by Move:	*	A	A	A	A	A	C	C	*	A	A	A
ApproachDel:		8.6			8.6			23.3			7.8	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		8.6			8.6			23.3			7.8	
LOS by Appr:		A			A			C			A	

Table 5.12-6B
Project Construction Trip Generation

Month 22 – May 2015 (Peak Month Analyzed in Amended AFC 2012)

Vehicle Type	Peak Daily Round Trips	AM Peak Trips			PM Peak Trips		
		Inbound	Outbound	Total	Inbound	Outbound	Total
Construction Worker Vehicles[1]	2740	754	0	754	0	754	754
Delivery Vehicles (including heavy trucks)[2]	48	12	6	18	0	6	6

Source: Bechtel Power Corporation, Forecast Traffic Impact - Rio Mesa_052412_On Site Batch Plant Rev 2.xls

[1] Peak workforce was conservatively analyzed at 1370 worker vehicle trips during peak month of construction. 55% of these worker vehicle trips were assumed to commute during the morning (7-9 AM) and evening (4-6 PM) peak hours.

[2] Delivery vehicles were adjusted into Passenger Car Equivalent (1 Heavy Vehicle = 3 PCE) vehicle in the traffic impact analysis. Analysis assumed 50 percent of 8 (actual trucks) delivery vehicles arrive and 25 percent leave during the 7 to 9 AM peak hour; 25 percent leave during the 4 to 6 PM peak hour. Numbers shown on the table are passenger car equivalent adjusted.

Level of Service Analysis Results
Month 22 – May 2015 (Peak Month Analyzed in Amended AFC 2012)

Intersection (Peak Hour Analysis)	Level of Service (LOS) Results
SR-78 (Rannels)/28th Street (AM Peak Hour Analysis) [1]	LOS D
SR-78 (Neighbours)/28th Street (PM Peak Hour Analysis) [2]	LOS D

[1] – LOS D occurs during AM peak hour, Amended RMS AFC 2012

[2] – LOS D occurs during PM peak hour, Amended RMS AFC 2012

Attachments: LOS Worksheets

Rio Mesa Solar Electric Generating Facility (SEGF)
Near Term AM Peak Hour Conditions - with Peak Project Construction

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #5 Ramells (SR-78)/28th Ave

Cycle (sec): 100 Critical Vol./Cap. (X): 0.880
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 27.9
Optimal Cycle: 0 Level Of Service: D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	0 1	0	0	1 0	0 0	0	0 1!	0 0	0	0 1!	0 0
Volume Module:												
Base Vol:	0	15	8	1	11	0	0	0	0	21	1	1
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	15	8	1	11	0	0	0	0	21	1	1
Added Vol:	0	0	6	0	0	0	0	0	0	728	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	15	14	1	11	0	0	0	0	749	1	1
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	15	14	1	11	0	0	0	0	749	1	1
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	15	14	1	11	0	0	0	0	749	1	1
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	15	14	1	11	0	0	0	0	749	1	1
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.52	0.48	0.08	0.92	0.00	0.00	1.00	0.00	0.99	0.01	0.01
Final Sat.:	0	340	317	52	567	0	0	0	0	851	1	1
Capacity Analysis Module:												
Vol/Sat:	xxxx	0.04	0.04	0.02	0.02	xxxx	xxxx	xxxx	xxxx	0.88	0.88	0.88
Crit Moves:		****			****						****	
Delay/Veh:	0.0	8.5	8.5	8.7	8.7	0.0	0.0	0.0	0.0	29.0	29.0	29.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	8.5	8.5	8.7	8.7	0.0	0.0	0.0	0.0	29.0	29.0	29.0
LOS by Move:	*	A	A	A	A	*	*	*	*	D	D	D
ApproachDel:		8.5			8.7			xxxxxx			29.0	
Delay Adj:		1.00			1.00			xxxxx			1.00	
ApprAdjDel:		8.5			8.7			xxxxxx			29.0	
LOS by Appr:		A			A			*			D	

Rio Mesa Solar Electric Generating Facility (SEGF)
Near Term PM Peak Hour Conditions - with Peak Project Construction

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #4 Neighbours (SR-78)/28th Ave

Cycle (sec): 100 Critical Vol./Cap. (X): 0.883
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 27.0
Optimal Cycle: 0 Level Of Service: D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0 0	1	0	0 0	1!	0 0	0 1	0	0 0	0 0	1!	0 0
Volume Module:												
Base Vol:	0	24	10	2	21	22	22	4	0	9	3	8
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	24	10	2	21	22	22	4	0	9	3	8
Added Vol:	0	0	0	0	0	0	364	358	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	24	10	2	21	22	386	362	0	9	3	8
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	24	10	2	21	22	386	362	0	9	3	8
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	24	10	2	21	22	386	362	0	9	3	8
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	24	10	2	21	22	386	362	0	9	3	8
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.71	0.29	0.04	0.47	0.49	0.52	0.48	0.00	0.45	0.15	0.40
Final Sat.:	0	445	185	29	301	316	437	410	0	333	111	296
Capacity Analysis Module:												
Vol/Sat:	xxxx	0.05	0.05	0.07	0.07	0.07	0.88	0.88	xxxx	0.03	0.03	0.03
Crit Moves:		****			****		****				****	
Delay/Veh:	0.0	8.8	8.8	8.7	8.7	8.7	29.5	29.5	0.0	7.8	7.8	7.8
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	8.8	8.8	8.7	8.7	8.7	29.5	29.5	0.0	7.8	7.8	7.8
LOS by Move:	*	A	A	A	A	A	D	D	*	A	A	A
ApproachDel:		8.8			8.7			29.5			7.8	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		8.8			8.7			29.5			7.8	
LOS by Appr:		A			A			D			A	

Table 5.12-6C
Project Construction Trip Generation

Month 23 – June 2015

Vehicle Type	Peak Daily Round Trips	AM Peak Trips			PM Peak Trips		
		Inbound	Outbound	Total	Inbound	Outbound	Total
Construction Worker Vehicles[1]	2738	753	0	753	0	753	753
Delivery Vehicles (including heavy trucks)[2]	18	5	2	7	0	2	2

Source: Bechtel Power Corporation, Forecast Traffic Impact - Rio Mesa_052412_On Site Batch Plant Rev 2.xls

[1] Peak workforce was conservatively analyzed at 1369 worker vehicle trips during peak month of construction. 55% of these worker vehicle trips were assumed to commute during the morning (7-9 AM) and evening (4-6 PM) peak hours.

[2] Delivery vehicles were adjusted into Passenger Car Equivalent (1 Heavy Vehicle = 3 PCE) vehicle in the traffic impact analysis. Analysis assumed 50 percent of 3 (actual trucks) delivery vehicles arrive and 25 percent leave during the 7 to 9 AM peak hour; 25 percent leave during the 4 to 6 PM peak hour. Numbers shown on the table are passenger car equivalent adjusted.

Level of Service Analysis Results
Month 23 – June 2015

Intersection (Peak Hour Analysis)	Level of Service (LOS) Results
SR-78 (Rannels)/28th Street (AM Peak Hour Analysis) [1]	LOS D
SR-78 (Neighbours)/28th Street (PM Peak Hour Analysis) [2]	LOS D

[1] – LOS D occurs during AM peak hour, Amended RMS AFC 2012

[2] – LOS D occurs during PM peak hour, Amended RMS AFC 2012

Attachments: LOS Worksheets

Rio Mesa Solar Electric Generating Facility (SEGF)
Near Term AM Peak Hour Conditions - with Peak Project Construction
Month 23

Trip Generation Report

Forecast for AM Construction

Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	% Of Total
1	Operations	1.00	Operation	0.00	0.00	0	0	0	0.0
2	Construction	1.00	Construction	753.00	0.00	753	0	753	99.1
	Zone 2 Subtotal					753	0	753	99.1
3	Construction	1.00	Materials Truc	2.00	1.00	2	1	3	0.4
	Zone 3 Subtotal					2	1	3	0.4
4	Construction	1.00	Equipment Truc	3.00	1.00	3	1	4	0.5
	Zone 4 Subtotal					3	1	4	0.5
TOTAL						758	2	760	100.0

Rio Mesa Solar Electric Generating Facility (SEGF)
Near Term AM Peak Hour Conditions - with Peak Project Construction
Month 23

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #5 Ramells (SR-78)/28th Ave

Cycle (sec): 100 Critical Vol./Cap. (X): 0.869
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 26.7
Optimal Cycle: 0 Level Of Service: D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	0 1	0	0 1	0 0	0	0 0	1! 0	0	0 0	1! 0	0
Volume Module:												
Base Vol:	0	15	8	1	11	0	0	0	0	21	1	1
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	15	8	1	11	0	0	0	0	21	1	1
Added Vol:	0	0	2	0	0	0	0	0	0	720	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	15	10	1	11	0	0	0	0	741	1	1
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	15	10	1	11	0	0	0	0	741	1	1
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	15	10	1	11	0	0	0	0	741	1	1
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	15	10	1	11	0	0	0	0	741	1	1
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.60	0.40	0.08	0.92	0.00	0.00	1.00	0.00	0.99	0.01	0.01
Final Sat.:	0	390	260	52	567	0	0	0	0	853	1	1
Capacity Analysis Module:												
Vol/Sat:	xxxx	0.04	0.04	0.02	0.02	xxxx	xxxx	xxxx	xxxx	0.87	0.87	0.87
Crit Moves:		****			****					****		
Delay/Veh:	0.0	8.5	8.5	8.7	8.7	0.0	0.0	0.0	0.0	27.6	27.6	27.6
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	8.5	8.5	8.7	8.7	0.0	0.0	0.0	0.0	27.6	27.6	27.6
LOS by Move:	*	A	A	A	A	*	*	*	*	D	D	D
ApproachDel:		8.5			8.7			xxxxxx			27.6	
Delay Adj:		1.00			1.00			xxxxx			1.00	
ApprAdjDel:		8.5			8.7			xxxxxx			27.6	
LOS by Appr:		A			A			*			D	

Rio Mesa Solar Electric Generating Facility (SEGF)
Near Term PM Peak Hour Conditions - with Peak Project Construction
Month 23

Trip Generation Report

Forecast for PM Construction

Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	% Of Total
2	Construction	1.00	Construction	0.00	753.00	0	753	753	99.7
	Zone 2 Subtotal					0	753	753	99.7
3	Construction	1.00	Materials Truc	0.00	1.00	0	1	1	0.1
	Zone 3 Subtotal					0	1	1	0.1
4	Construction	1.00	Equipment Truc	0.00	1.00	0	1	1	0.1
	Zone 4 Subtotal					0	1	1	0.1
TOTAL						0	755	755	100.0

Rio Mesa Solar Electric Generating Facility (SEGF)
Near Term PM Peak Hour Conditions - with Peak Project Construction
Month 23

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #4 Neighbours (SR-78)/28th Ave

Cycle (sec): 100 Critical Vol./Cap. (X): 0.878
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 26.5
Optimal Cycle: 0 Level Of Service: D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	0 1	0	0 0	1! 0	0	0 1	0 0	0	0 0	1! 0	0
Volume Module:												
Base Vol:	0	24	10	2	21	22	22	4	0	9	3	8
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	24	10	2	21	22	22	4	0	9	3	8
Added Vol:	0	0	0	0	0	0	360	358	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	24	10	2	21	22	382	362	0	9	3	8
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	24	10	2	21	22	382	362	0	9	3	8
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	24	10	2	21	22	382	362	0	9	3	8
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	24	10	2	21	22	382	362	0	9	3	8
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.71	0.29	0.04	0.47	0.49	0.51	0.49	0.00	0.45	0.15	0.40
Final Sat.:	0	445	185	29	301	316	435	412	0	333	111	296
Capacity Analysis Module:												
Vol/Sat:	xxxx	0.05	0.05	0.07	0.07	0.07	0.88	0.88	xxxx	0.03	0.03	0.03
Crit Moves:		****			****		****				****	
Delay/Veh:	0.0	8.7	8.7	8.7	8.7	8.7	28.9	28.9	0.0	7.8	7.8	7.8
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	8.7	8.7	8.7	8.7	8.7	28.9	28.9	0.0	7.8	7.8	7.8
LOS by Move:	*	A	A	A	A	A	D	D	*	A	A	A
ApproachDel:		8.7			8.7			28.9			7.8	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		8.7			8.7			28.9			7.8	
LOS by Appr:		A			A			D			A	

Table 5.12-6D
Project Construction Trip Generation

Month 24 – July 2015

Vehicle Type	Peak Daily Round Trips	AM Peak Trips			PM Peak Trips		
		Inbound	Outbound	Total	Inbound	Outbound	Total
Construction Worker Vehicles[1]	2542	699	0	699	0	699	699
Delivery Vehicles (including heavy trucks)[2]	6	2	1	3	0	1	1

Source: Bechtel Power Corporation, Forecast Traffic Impact - Rio Mesa_052412_On Site Batch Plant Rev 2.xls

[1] Peak workforce was conservatively analyzed at 1271 worker vehicle trips during peak month of construction. 55% of these worker vehicle trips were assumed to commute during the morning (7-9 AM) and evening (4-6 PM) peak hours.

[2] Delivery vehicles were adjusted into Passenger Car Equivalent (1 Heavy Vehicle = 3 PCE) vehicle in the traffic impact analysis. Analysis assumed 50 percent of 1 (actual trucks) delivery vehicles arrive and 25 percent leave during the 7 to 9 AM peak hour; 25 percent leave during the 4 to 6 PM peak hour. Numbers shown on the table are passenger car equivalent adjusted.

Level of Service Analysis Results
Month 24 – July 2015

Intersection (Peak Hour Analysis)	Level of Service (LOS) Results
SR-78 (Rannels)/28th Street (AM Peak Hour Analysis) [1]	LOS C
SR-78 (Neighbours)/28th Street (PM Peak Hour Analysis) [2]	LOS C

[1] – LOS D occurs during AM peak hour, Amended RMS AFC 2012

[2] – LOS D occurs during PM peak hour, Amended RMS AFC 2012

Attachments: LOS Worksheets

Rio Mesa Solar Electric Generating Facility (SEGF)
Near Term AM Peak Hour Conditions - with Peak Project Construction
Month 24

Trip Generation Report

Forecast for AM Construction

Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	% Of Total
1	Operations	1.00	Operation	0.00	0.00	0	0	0	0.0
2	Construction	1.00	Construction	699.00	0.00	699	0	699	99.4
	Zone 2 Subtotal					699	0	699	99.4
3	Construction	1.00	Materials Truc	1.00	0.50	1	1	2	0.3
	Zone 3 Subtotal					1	1	2	0.3
4	Construction	1.00	Equipment Truc	1.00	0.50	1	1	2	0.3
	Zone 4 Subtotal					1	1	2	0.3
TOTAL						701	2	703	100.0

Rio Mesa Solar Electric Generating Facility (SEGF)
Near Term AM Peak Hour Conditions - with Peak Project Construction
Month 24

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #5 Ramells (SR-78)/28th Ave

Cycle (sec): 100 Critical Vol./Cap. (X): 0.805
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 21.2
Optimal Cycle: 0 Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	0 1	0	0 1	0 0	0	0 0	1! 0	0	0 0	1! 0	0
Volume Module:												
Base Vol:	0	15	8	1	11	0	0	0	0	21	1	1
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	15	8	1	11	0	0	0	0	21	1	1
Added Vol:	0	0	2	0	0	0	0	0	0	666	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	15	10	1	11	0	0	0	0	687	1	1
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	15	10	1	11	0	0	0	0	687	1	1
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	15	10	1	11	0	0	0	0	687	1	1
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	15	10	1	11	0	0	0	0	687	1	1
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.60	0.40	0.08	0.92	0.00	0.00	1.00	0.00	0.99	0.01	0.01
Final Sat.:	0	390	260	52	567	0	0	0	0	854	1	1
Capacity Analysis Module:												
Vol/Sat:	xxxx	0.04	0.04	0.02	0.02	xxxx	xxxx	xxxx	xxxx	0.80	0.80	0.80
Crit Moves:		****			****					****		
Delay/Veh:	0.0	8.4	8.4	8.5	8.5	0.0	0.0	0.0	0.0	21.9	21.9	21.9
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	8.4	8.4	8.5	8.5	0.0	0.0	0.0	0.0	21.9	21.9	21.9
LOS by Move:	*	A	A	A	A	*	*	*	*	C	C	C
ApproachDel:		8.4			8.5			xxxxxx			21.9	
Delay Adj:		1.00			1.00			xxxxx			1.00	
ApprAdjDel:		8.4			8.5			xxxxxx			21.9	
LOS by Appr:		A			A			*			C	

Rio Mesa Solar Electric Generating Facility (SEGF)
Near Term PM Peak Hour Conditions - with Peak Project Construction
Month 24

Trip Generation Report

Forecast for PM Construction

Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	% Of Total
2	Construction	1.00	Construction	0.00	699.00	0	699	699	99.7
	Zone 2 Subtotal					0	699	699	99.7
3	Construction	1.00	Materials Truc	0.00	0.50	0	1	1	0.1
	Zone 3 Subtotal					0	1	1	0.1
4	Construction	1.00	Equipment Truc	0.00	0.50	0	1	1	0.1
	Zone 4 Subtotal					0	1	1	0.1
TOTAL						0	701	701	100.0

Rio Mesa Solar Electric Generating Facility (SEGF)
Near Term PM Peak Hour Conditions - with Peak Project Construction
Month 24

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #4 Neighbours (SR-78)/28th Ave

Cycle (sec): 100 Critical Vol./Cap. (X): 0.816
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 21.1
Optimal Cycle: 0 Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0 0 1 0			0 0 1! 0 0			0 1 0 0 0			0 0 1! 0 0		
Volume Module:												
Base Vol:	0	24	10	2	21	22	22	4	0	9	3	8
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	24	10	2	21	22	22	4	0	9	3	8
Added Vol:	0	0	0	0	0	0	334	332	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	24	10	2	21	22	356	336	0	9	3	8
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	24	10	2	21	22	356	336	0	9	3	8
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	24	10	2	21	22	356	336	0	9	3	8
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	24	10	2	21	22	356	336	0	9	3	8
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.71	0.29	0.04	0.47	0.49	0.51	0.49	0.00	0.45	0.15	0.40
Final Sat.:	0	445	185	29	301	315	436	412	0	334	111	297
Capacity Analysis Module:												
Vol/Sat:	xxxx	0.05	0.05	0.07	0.07	0.07	0.82	0.82	xxxx	0.03	0.03	0.03
Crit Moves:		****			****			****			****	
Delay/Veh:	0.0	8.6	8.6	8.6	8.6	8.6	22.9	22.9	0.0	7.8	7.8	7.8
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	8.6	8.6	8.6	8.6	8.6	22.9	22.9	0.0	7.8	7.8	7.8
LOS by Move:	*	A	A	A	A	A	C	C	*	A	A	A
ApproachDel:		8.6			8.6			22.9			7.8	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		8.6			8.6			22.9			7.8	
LOS by Appr:		A			A			C			A	

BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION OF THE STATE OF CALIFORNIA
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APPLICATION FOR CERTIFICATION FOR THE RIO MESA SOLAR ELECTRIC GENERATING FACILITY

DOCKET NO. 11-AFC-04
PROOF OF SERVICE
(Revised 10/16/12)

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*indicates change

DECLARATION OF SERVICE

I, Kathleen McDowell, declare that on October 19, 2012, I served and filed a copy of the attached document Applicant's Data Responses Set 3A (Nos. 186-190), dated October 19, 2012. This document is accompanied by the most recent Proof of Service list, located on the web page for this project at: **http://www.energy.ca.gov/sitingcases/riomesa/index.html**.

The document has been sent to the other parties in this proceeding (as shown on the Proof of Service list) and to the Commission's Docket Unit or Chief Counsel, as appropriate, in the following manner:

(*Check all that Apply*)

For service to all other parties:

X Served electronically to all e-mail addresses on the Proof of Service list;

____ Served by delivering on this date, either personally, or for mailing with the U.S. Postal Service with first-class postage thereon fully prepaid, to the name and address of the person served, for mailing that same day in the ordinary course of business; that the envelope was sealed and placed for collection and mailing on that date to those addresses marked ***"hard copy required"** or where no e-mail address is provided.

AND

For filing with the Docket Unit at the Energy Commission:

X by sending electronic copies to the e-mail address below (preferred method); ***OR***

____ by depositing an original and 12 paper copies in the mail with the U.S. Postal Service with first class postage thereon fully prepaid, as follows:

CALIFORNIA ENERGY COMMISSION – DOCKET UNIT
Attn: Docket No. 11-AFC-04
1516 Ninth Street, MS-4
Sacramento, CA 95814-5512
docket@energy.ca.gov

OR, if filing a Petition for Reconsideration of Decision or Order pursuant to Title 20, § 1720:

____ Served by delivering on this date one electronic copy by e-mail, and an original paper copy to the Chief Counsel at the following address, either personally, or for mailing with the U.S. Postal Service with first class postage thereon fully prepaid:

California Energy Commission
Michael J. Levy, Chief Counsel
1516 Ninth Street MS-14
Sacramento, CA 95814
michael.levy@energy.ca.gov

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct, that I am employed in the county where this mailing occurred, and that I am over the age of 18 years and not a party to the proceeding.

Original signed by
Kathleen McDowell

*indicates change