

## **SECTION 4.3**

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# **TRANSPORTATION AND CIRCULATION**

## 4.3 TRANSPORTATION AND CIRCULATION

This section discusses the transportation and access impacts that would occur with implementation of the proposed Project. The analysis includes a discussion of the effects of Project construction and operational traffic on SR 78 as well as the potential for impacts associated with design of the proposed access off of SR 78.

The analysis is based on the “Seville Solar Farm Project – Revised Transportation Analysis” memo (Chen Ryan 2013) and “Seville Solar Farm Complex – Supplemental Construction Traffic Analysis” (Chen Ryan 2014). These documents are as provided as **Appendix B** in the attached CD of Technical Appendices of this EIR.

In order to understand the following analysis, it is important to become familiar with the concept of Level of Service (LOS) as it pertains to transportation. **Table 4.3-1** below provides the definition of each LOS found in the Highway Capacity Manual (HCM), using letters A through F, with A being the best and F being the worst. This terminology will be used throughout the discussion and analysis in this section.

**TABLE 4.3-1  
LEVEL OF SERVICE DEFINITIONS**

LOS	Definition
A	Free flow. Traffic flows at or above the posted speed limit and motorists have complete mobility between lanes. The average spacing between vehicles is about 550 feet or 27 car lengths. Motorists have a high level of physical and psychological comfort. The effects of incidents or point breakdowns are easily absorbed. LOS A occurs late at night in urban areas, frequently in rural areas, and generally in car advertisements.
B	Reasonably free flow. LOS A speeds are maintained, maneuverability within the traffic stream is slightly restricted. The lowest average vehicle spacing is about 330 feet (100 meters) or 16 car lengths. Motorists still have a high level of physical and psychological comfort.
C	Stable flow, at or near free flow. Ability to maneuver through lanes is noticeably restricted and lane changes require more driver awareness. Minimum vehicle spacing is about 220 feet or 11 car lengths. Most experienced drivers are comfortable, roads remain safely below but efficiently close to capacity, and posted speed is maintained. Minor incidents may still have no effect but localized service will have noticeable effects and traffic delays will form behind the incident. This is the target LOS for some urban and most rural highways.
D	Approaching unstable flow. Speeds slightly decrease as traffic volume slightly increase. Freedom to maneuver within the traffic stream is much more limited and driver comfort levels decrease. Vehicles are spaced about 160 feet or 8 car lengths. Minor incidents are expected to create delays. Examples are a busy shopping corridor in the middle of a weekday, or a functional urban highway during commuting hours. It is a common goal for urban streets during peak hours, as attaining LOS C would require prohibitive cost and societal impact in bypass roads and lane additions.
E	Unstable flow, operating at capacity. Flow becomes irregular and speed varies rapidly because there are virtually no usable gaps to maneuver in the traffic stream and speeds rarely reach the posted limit. Vehicle spacing is about 6 car lengths, but speeds are still at or above 50 miles per hour. Any disruption to traffic flow, such as merging ramp traffic or lane changes, will create a shock wave affecting traffic upstream. Any incident will create serious delays. Drivers' level of comfort become poor. This is a common standard in larger urban areas, where some roadway congestion is inevitable.
F	Forced or breakdown flow. Every vehicle moves in lockstep with the vehicle in front of it, with frequent slowing required. Travel time cannot be predicted, with generally more demand

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**TABLE 4.3-1  
LEVEL OF SERVICE DEFINITIONS**

LOS	Definition
	than capacity. A road in a constant traffic jam is at this LOS, because LOS is an average or typical service rather than a constant state. For example, a highway might be at LOS D for the AM peak hour, but have traffic consistent with LOS C some days, LOS E or F others, and come to a halt once every few weeks.

Source: HCM 2000.

### 4.3.1 REGULATORY FRAMEWORK

#### A. STATE

##### **California Department of Transportation**

The State of California Department of Transportation (Caltrans) is responsible for the design, construction, maintenance, and operation of the California State Highway System. Caltrans is also responsible for portions of the Interstate Highway System within the state's boundaries. Caltrans has jurisdiction over state highway right-of-way and has the authority to issue permits for work and encroachments (temporary or permanent) in these areas. Likewise, Caltrans is involved in review of traffic control plans, stoppage of traffic for placement of aerial lines, and installation or removal of overhead conductors crossing a highway. The Project does not include any components that would span Caltrans facilities (i.e. SR 78). The proposed transmission line is adjacent to the south side of SR 78 and does not cross SR 78 at any point along the alignment.

Caltrans has indicated that any traffic control for utility work will need to be addressed as part of Caltrans' permit approval. Caltrans will also be responsible for review and approval of the new access road proposed as part of the Project. In addition, Caltrans may require a Traffic Control Plan or construction traffic impact study from the Applicant prior to construction of the new access off of SR 78 (Armstrong 2013).

#### B. LOCAL

##### **Imperial County General Plan Circulation and Scenic Highways Element**

The Circulation and Scenic Highways Element is included as part of the Imperial County General Plan pursuant to requirements of law and policies of federal, state, and regional agencies. The purpose of the Element is to provide a comprehensive document which contains the latest information about the transportation needs of the County and the various modes available to meet these needs and to facilitate regional transportation coordination. This Element is also intended to provide a plan to accommodate a pattern of concentrated and coordinated growth providing both regional and local linkage systems between unique communities and the County's neighboring metropolitan regions. Additionally, the purpose of this Element is to provide a means of protecting and enhancing scenic resources within both rural and urban scenic highway corridors.

**Table 4.3-2** analyzes the consistency of the proposed Project with the applicable goals and objectives relating to transportation in the County of Imperial General Plan. While this EIR analyzes the Project's consistency with the General Plan pursuant to CEQA Guidelines Section 15125(d), the Imperial County Board of Supervisors ultimately determines consistency with the General Plan.

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**TABLE 4.3-2  
IMPERIAL COUNTY GENERAL PLAN CONSISTENCY ANALYSIS**

General Plan Goals and Objectives	Consistent with General Plan?	Analysis
<b>CIRCULATION AND SCENIC HIGHWAYS ELEMENT</b>		
<b>Safe, Convenient, and Efficient Transportation System</b>		
<b>Goal 1:</b> The County will provide and require an integrated transportation system for the safe and efficient movement of people and goods within and through the County of Imperial with minimum disruption to the environment.	Yes	Access to the proposed Project is available from SR 78. This highway provides safe and efficient access to the northwestern portion of the County and connects with SR 86 approximately eight miles east of the Project.
<b>Objective 1.2</b> Require a traffic analysis for any new development which may have a significant impact on County roads. A traffic analysis may not be necessary in every situation, such as when the size or location of the project will not have a significant impact upon and generate only a small amount of traffic. Also, certain types of projects, due to the trip generation characteristics, may add virtually no traffic during peak periods. These types of projects may be exempt from the traffic analysis requirements. Whether a particular project qualifies for any exemption will be determined by the Department of Public Works Road Commissioner.	Yes	A transportation analysis was to assess the construction and operational impacts of the proposed Project's traffic ( <b>Appendix B</b> of this EIR). The Imperial County Department of Public Works was consulted during the preparation of the transportation analysis. Therefore, the proposed Project is consistent with this objective.
<b>Objective 1.12</b> Review new development proposals to ensure that the proposed development provides adequate parking and would not increase traffic on existing roadways and intersection to a level of service (LOS) worse than "C" without providing appropriate mitigations to existing infrastructure. This can include fair share contributions on the part of developers to mitigate traffic impacts caused by such proposed developments.	Yes	The transportation analysis conducted for the proposed Project examined impacts to roadway LOS. The Project would not cause the LOS C threshold to be exceeded under any scenario. A parking area would be provided for each O&M building within each of the five solar energy project lots. On-site parking would be provided for all construction workers. Therefore, the proposed Project is consistent with this objective.

### 4.3.2 ENVIRONMENTAL SETTING

Information contained in this section is summarized from the “Seville Solar Farm Project – Revised Transportation Analysis” memo (Chen Ryan 2013). This document is provided on the attached CD of Technical Appendices as **Appendix B** of this EIR.

The analysis applies to construction and operation of the solar farm complex and transmission line. No differentiation of trips for the two components is made. The circulation network described below is the same for both the solar farm complex and the transmission line.

#### A. EXISTING CIRCULATION NETWORK

The closest intersection to the Project area (with a paved road) is located over 9 miles to the east (SR 86) and over 8 miles to the west (Split Mountain Road in San Diego County), along SR 78. SR 86 and SR 78 are described below based on the information from the Imperial County General Plan, Circulation and Scenic Highways Element (2008).

##### **State Route 86 (SR 86)**

SR 86 is generally a north-south route and begins near the Townsite of Heber south of the Project area as a two lane conventional highway, and ends north of the Project area at the Riverside County line as a four-lane expressway. In Riverside County, SR 86 extends to Interstate 10. According to the Imperial County General Plan Circulation and Scenic Highways Element, average existing daily traffic on SR 86 north of the I-8 to Keystone Road (approximately 35 miles south of the Project) can range anywhere from 14,700 to 36,000. Average existing daily traffic on this route north of Keystone Road can range anywhere from 9,400 to 21,400. This 67.8-mile route primarily provides travel for interregional, intra-regional and international trips. SR 86 north of SR 78 is a major goods movement corridor serving the Los Angeles area and other California goods movement centers from the Imperial County region. During the spring, truck traffic transporting agriculture goods constitutes 35 percent of travel on this route (Imperial County 2008c, p. 19).

##### **State Route 78 (SR 78)**

SR 78 is an east-west route that traverses a distance of 81.8 miles through Imperial County with an average daily traffic (ADT) ranging from 17,000 to 19,500 east of SR 86 and from 1,850 to 3,950 east of SR 111. The route is a two-lane conventional highway throughout its alignment, although some portions have been upgraded to a four-lane expressway and four-lane conventional highway as a result of recent improvement projects (Imperial County 2008c, p. 19).

#### B. EXISTING (YEAR 2012) TRAFFIC VOLUME AND LOS ANALYSIS

##### **Existing (Year 2012) Traffic Volume**

The most current traffic volumes available for the segment of SR 78 fronting the Project area were obtained from the Caltrans 2012 Traffic Volumes Book. Based on Caltrans 2012 count data, the segment of SR 78 that fronts the proposed Project area serves an annual average daily traffic (AADT) volume of 1,000 vehicles per day (vpd) with a two-way volume of 190 vehicles during the peak hour. The traffic counts are included in Attachment 2 to the “Seville Solar Farm Project – Revised Transportation Analysis” memo contained in **Appendix B** of this EIR.

##### **Existing LOS Analysis**

State Highway LOS and performance is based upon procedures developed by Caltrans District 11, which are derived from the 2000 Highway Capacity Manual (HCM 2000). The procedure for calculating highway LOS involves estimating a peak hour volume to capacity (V/C) ratio. Peak hour volumes are estimated

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from the application of design hour (“K”), directional (“D”) and Heavy Vehicle Factors (“HVF”) to Average Daily Traffic (ADT) volumes. The analysis assumed a capacity of 1,700 passenger-cars per hour per lane (pc/h/ln), a peak-hour factor (PHF) of 0.92, and a 60/40 directional split.

Based upon Caltrans and County of Imperial requirements, LOS C or better is used as the threshold for acceptable highway operations. As displayed in **Table 4.3-3**, this segment of SR 78 operates at LOS A under existing conditions. This is well above Caltrans and County requirements of LOS C.

**TABLE 4.3-3  
SR-78 ROADWAY SEGMENT LEVEL OF SERVICE – TYPICAL OPERATIONS**

Scenario	AADT <sup>1</sup>	K	Peak Hour Volume	D	Lanes	PHF	HVF	Volume (pc/h/ln)	V/C	LOS
Existing	1,000	24.0%	240	0.6	1	0.92	33.7%	236	0.14	A

*Source:* Chen Ryan October 2013.

**Notes:** Refer to Attachment 2 to the “Seville Solar Farm Project – Revised Transportation Analysis” memo contained in **Appendix B** of this EIR for 2012 traffic counts.

Percent of AADT that occurs during the peak hour. The source for existing K factor is the Caltrans *2012 Traffic Volumes on the California State Highway System*. It is assumed that as traffic volumes increase on the segment, the K factor will reduce to a level that is more consistent with the adjacent segments both to the east and the west.

D = Directional split, assumed value    PHF = Peak Hour Factor, assumed value

pc/h/ln = passenger-cars per hour per lane    V/C = Volume to Capacity Ratio.

HVF = Heavy Vehicle Factor, based on Caltrans *2011 Annual Average Daily Truck Traffic on the California State Highway System*.

### 4.3.3 IMPACTS AND MITIGATION MEASURES

#### A. STANDARDS OF SIGNIFICANCE

The CEQA significance criteria listed below were used to determine if the proposed Project would result in impacts to transportation and circulation during construction and operation. These criteria are the same as the significance criteria for Transportation/Traffic listed in the Environmental Checklist, Appendix G of the CEQA Guidelines. Under CEQA, a Project would have a significant impact on transportation and circulation if it would:

- a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit.
- b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways.
- c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.
- d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).
- e) Result in inadequate emergency access.
- f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

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Imperial County's goal is to have intersections and roadway segments operate at LOS C or better. In general, a location operating at LOS C or better under existing conditions that degrades to LOS D or worse is considered a significant impact. Page 55 of the Circulation and Scenic Highways Element states: "The County's goal for an acceptable traffic service standard on an ADT (average daily trips) basis and during AM and PM peak periods for all County-Maintained Roads shall be LOS C for all street segment links and intersections" (Imperial County 2008c, p 55). LOS C or better was used as the threshold for acceptable highway operations based on Caltrans and County of Imperial requirements.

### B. ISSUES SCOPED OUT AS PART OF THE INITIAL STUDY

Note that three CEQA significance criteria were scoped out as part of the Initial Study. Criterion "c" was eliminated from further analysis because the proposed Project would not result in changes to existing air traffic patterns through an increase in traffic levels or change in location. Thus, no impact is identified for this issue area.

Criterion "e" was eliminated because the proposed circulation plan for the Project will be required to provide emergency access points and safe vehicular travel. The Project site is currently accessed using a gated, private road from SR 78 which crosses approximately one-half mile of public land managed by the BLM. The existing gated, private road from SR 78 would be used for the solar development projects only for secondary, emergency access. Nominal 20-foot wide roads would be provided between the PV arrays, consistent with agency emergency access requirements.

The final site plan would be designed in accordance with the Imperial County Fire Department (ICFD) requirements for access and would not impact the ICFD's ability to provide emergency access to the site. The Project is not anticipated to hinder the ability of fire or law enforcement to access nearby properties. Thus, no impact is identified for this issue area.

Lastly, Criterion "f" was eliminated because the proposed Project is in a rural, sparsely populated portion of the County void of public transit, bike lanes and pedestrian facilities. Thus, development of the solar farm complex would not conflict with any adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities. Thus, no impact is identified for this issue area.

### C. METHODOLOGY

Traffic was modeled using the Traffix Software, 2000 HCM Unsignalized Method (Base Volume Alternative). The methodology used to determine State Highway LOS and performance is based upon procedures developed by Caltrans District 11, which are derived from the 2000 Highway Capacity Manual (HCM 2000) (refer to **Table 4.3-1**). This methodology was used to formulate peak hour V/C and peak hour volumes for all scenarios both with and without the proposed Project.

### D. SCENARIOS

The proposed Project has two distinct trip generations: construction phase and operations phase. Roadway segment analyses were conducted on SR 78, along the proposed Project frontage, under both with and without project conditions for the following scenarios:

- Project Construction
- Existing
- Existing Plus Project
- Near-Term
- Near-Term Plus Project
- Long-Term
- Long-Term Plus Project

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Existing (Year 2012) conditions are discussed in subsection 4.3.2, Existing Setting, above. All other scenarios are discussed as part of sub-section 4.3.3, Impacts and Mitigation Measures.

### E. PROJECT TRIP GENERATION

As noted above, Project trip generation consists of a construction phase and operations phase. The construction phase will have the highest traffic intensity followed by an operations phase with significantly fewer vehicle trips. Construction and operations trip generation are described below.

#### **Construction Traffic Trip Generation**

Construction of each of the five solar energy projects is expected to be completed in approximately three to four months (for each of the three smaller parcels) or five to six months (for each of the two larger parcels). Each of the proposed five solar development projects would be constructed independently, and construction of any one project is not expected to overlap the construction of another. Construction of the transmission line, switch station construction and modifications to the Anza Substation would occur concurrently with the first solar project to be built.

During construction of the Project, approximately 14 delivery trucks would arrive at and depart from the Project site at staggered times throughout the day. Project construction would require a maximum of 150 workers on-site at any given time. To provide a worst-case scenario, all construction workers were assumed to arrive during the AM peak hour and depart during the PM peak hour, and all workers were assumed to drive separate vehicles to and from the Project area. **Table 4.3-4** displays the assumed project vehicle trip generation during construction of the solar farm complex and transmission line. Construction estimates provided by Applicant are included in Attachment 1 of the “Seville Solar Farm Project – Revised Transportation Analysis” memo contained in **Appendix B** of this EIR.

**TABLE 4.3-4  
SOLAR FARM COMPLEX & TRANSMISSION LINE - CONSTRUCTION TRIP GENERATION**

Task	Total Daily trips	PVE	Total Daily Trips	AM Peak		PM Peak	
				In	Out	In	Out
Workers	300	1	300	150	0	0	150
Vendor Trucks	14	3	42	0	0	0	0
Haul Trucks	14	3	42	0	0	0	0
<b>Total</b>			<b>384</b>	<b>150</b>	<b>0</b>	<b>0</b>	<b>150</b>

*Source: Chen Ryan 2014.*

As shown in **Table 4.3-4**, Project construction is anticipated to generate 384 daily vehicle trips per day with 150 trips arriving during the AM peak hour and 150 trips departing during the PM peak hour.

During construction of the modifications to the Anza Substation, approximately three haul trucks would arrive at and depart from the Project area at staggered times throughout the day. Project construction would require a maximum of eight workers on site at any given time. To provide a worst-case scenario, all construction workers were assumed to arrive during the AM peak hour and depart during the PM peak hour, and all workers were assumed to drive separate vehicles to and from the Project area. **Table 4.3-5** summarizes the assumed vehicle trip generation associated with construction of the Anza Substation modifications.



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**TABLE 4.3-5  
ANZA SUBSTATION MODIFICATIONS - CONSTRUCTION TRIP GENERATION**

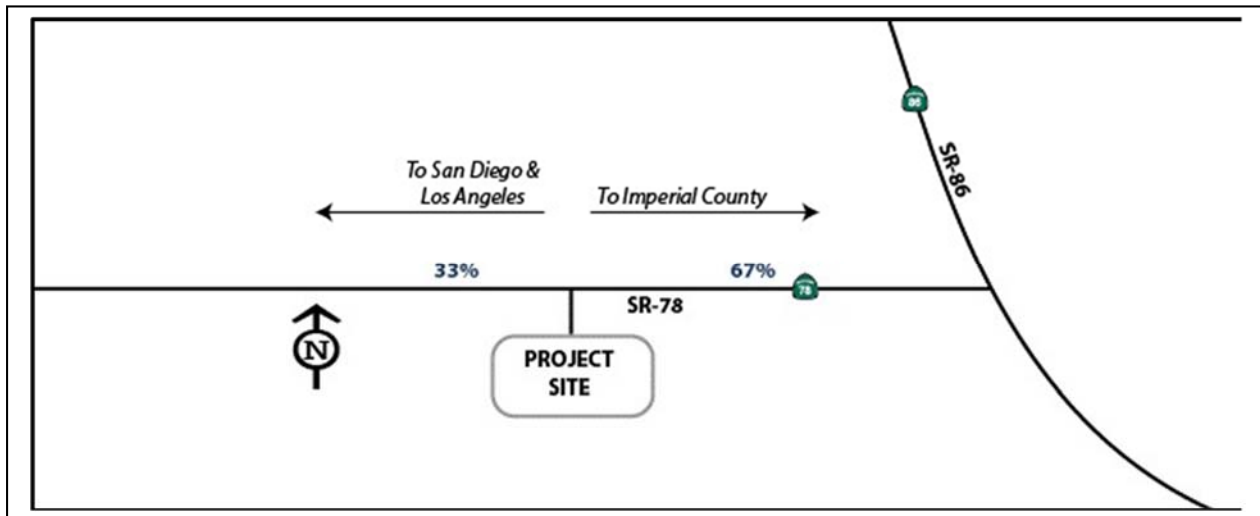
Task	Total Daily trips	PVE	Total Daily Trips	AM Peak		PM Peak	
				In	Out	In	Out
Workers	16	1	16	8	0	0	8
Haul Trucks	146	3	18	0	0	0	0
<b>Total</b>			<b>34</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>8</b>

*Source: Chen Ryan 2014.*

As shown in **Table 4.3-5**, construction of the modifications to the Anza Substation is anticipated to generate 34 daily vehicle trips per day with 8 trips arriving to the Project area during the AM peak hour and 8 trips departing from the Project area during the PM peak hour. [Note: The modifications to the Anza Substation are not anticipated to generate any additional operational traffic after construction is completed.]

### **Construction Trip Distribution and Assignment**

One-third of the construction worker traffic was assumed to travel to and from the west (i.e., in San Diego and other local residential developments) while the remaining two-thirds would originate from the various Imperial Valley cities to the east. **Figure 4.3-1** depicts the percentage of eastbound and westbound construction traffic to and from the Project area.



*Source: Chen Ryan 2013.*

**FIGURE 4.3-1  
CONSTRUCTION TRAFFIC ASSIGNMENT**

### **Project Operations Trip Generation**

The proposed Project is expected to have a small number of regular on-site staff consisting of daily maintenance personnel. Security for the Project will be handled at an off-site location and will be monitored via closed circuit cameras. Additional workers would occasionally be required to access the site to clean the solar panels as well as to perform landscaping on one of the five project sites. Deliveries would occur infrequently. As a worst-case scenario, it was assumed that: all panel cleaning and landscaping activities would be performed on the same day (for a single solar energy project site); all employees would drive separate vehicles to/from the Project; and all employees would arrive during the

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AM peak hour and depart during the PM peak hour. **Table 4.3-6** displays the assumed vehicle trip generation during day-to-day Project operations.

**TABLE 4.3-6  
TYPICAL OPERATIONAL DAILY TRIP GENERATION**

Task	Number of On-Site Employees Required	Total Daily Trips	AM Peak		PM Peak	
			In	Out	In	Out
Maintenance	5	10	5	0	0	5
Cleaning	2	4	2	0	0	2
Landscaping	2	4	2	0	0	2
Delivery	--	2	0	0	0	0
<b>Total</b>	9	20	9	0	0	9

Source: Chen Ryan 2013.

As shown in **Table 4.3-6**, the solar farm complex is anticipated to generate 20 daily vehicle trips with 9 trips arriving at the Project during the AM peak hour and 9 trips departing from the Project during the PM peak hour. As noted above, this represents a worst-case scenario during times in which all maintenance duties would be performed on the same day. In general, these trips would typically be spread out over several days during a week.

### F. PROJECT IMPACTS AND MITIGATION MEASURES

#### Conflict with an Applicable Plan/Level of Service Standard (Near-Term [Year 2015] Construction)

**Impact 4.3.1** Implementation of the proposed Project would add traffic to existing volumes on SR 78 during construction. The segment of SR 78 adjacent to the Project area would operate at LOS A with construction traffic while the intersection of SR 78 and the Project driveway would operate at LOS B. Therefore, conflicts with the General Plan Circulation and Scenic Highway Element and impacts to LOS standards would be **less than significant** during construction of the proposed Project.

#### Construction

##### Roadway Segment – Solar Farm Complex and Transmission Line

Project construction was analyzed using Near-Term Year 2015 conditions as the base condition. Traffic volumes during Project construction were developed by adding the estimated number of trips associated with Project construction (displayed in **Table 4.3-6**) to Near-Term Year 2015 roadway volumes (shown in **Table 4.3-7**).

**TABLE 4.3-7  
SR 78 ROADWAY SEGMENT LEVEL OF SERVICE - TYPICAL OPERATIONS NEAR TERM YEAR 2015**

Scenario	AADT	K	Peak Hour Volume	D	Lanes	PHF	HVF	Volume (pc/h/ln)	V/C	LOS
Near-Term Year 2015	1,050	24.0%	252	0.6	1	0.92	33.7%	248	0.15	A
Near-Term Year 2015 Plus Project	1,070	24.0%	257	0.6	1	0.92	33.7%	253	0.15	A

Source: Chen Ryan 2013.

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Notes to Table 4.3-7: Refer to Attachment 2 to the “Seville Solar Farm Project – Revised Transportation Analysis” memo contained in **Appendix B** of this EIR for 2012 traffic counts.

Percent of AADT that occurs during the peak hour. The source for existing K factor is the Caltrans *2012 Traffic Volumes on the California State Highway System*. It is assumed that as traffic volumes increase on the segment, the K factor will reduce to a level that is more consistent with the adjacent segments both to the east and the west.

D = Directional split, assumed value    PHF = Peak Hour Factor, assumed value

pc/h/ln = passenger-cars per hour per lane    V/C = Volume to Capacity Ratio.

HVF = Heavy Vehicle Factor, based on Caltrans *2011 Annual Average Daily Truck Traffic on the California State Highway System*.

As shown in **Table 4.3-8**, SR 78 is projected to continue to operate at LOS A during the construction period of the proposed Project including construction of the solar farm complex, transmission line and Anza Substation modifications.

**TABLE 4.3-8  
SR 78 ROADWAY SEGMENT LEVEL OF SERVICE – PROJECT CONSTRUCTION**

Scenario	AADT	K	Peak Hour Volume	D	Lanes	PHF	HVG	Volume (pc/h/ln)	V/C	LOS
Project Construction	1,342*	24.0%	322	0.6	1	0.92	33.7%	317	0.19	A

Source: Chen Ryan 2014.

Notes: \*More detailed construction traffic information is provided in the “Seville Solar Farm Project – Revised Transportation Analysis” memo, Chen Ryan Associates, October 22, 2013. AADT Volume (1,342 = Construction AADT volume from October 22, 2013 memo (1,308) plus additional daily construction traffic from Anza Substation (34).

D: Directional split, assumed value    PHF: Peak Hour Factor, assumed value    V/C: Volume to Capacity Ratio.

HVF: Heavy Vehicle Factor, based on Caltrans *2011 Annual Average Daily Truck Traffic on the California State Highway System*.

LOS C or better is used in this study as the threshold for acceptable highway operations based upon Caltrans and County of Imperial requirements. Therefore, impacts to the segment of SR 78 during construction would be **less than significant**.

### Intersection LOS Solar Farm Complex and Transmission Line

Due to the relatively high number of vehicles projected to arrive at and depart from the solar farm complex site during the AM and PM peak hours, respectively, a peak hour HCM 2000 analysis was conducted for the SR 78/Project Driveway intersection in the “Seville Solar Farm Project – Revised Transportation Analysis” memo (Chen Ryan 2013). (Peak hour LOS analysis worksheets are provided in Attachment 4 of the “Seville Solar Farm Project – Revised Transportation Analysis” memo contained in **Appendix B** of this EIR.) This intersection is assumed to be one-way stop controlled. **Table 4.3-9** provides a summary of the projected peak hour driveway operations during Project construction.

**TABLE 4.3-9  
PEAK HOUR INTERSECTION LEVEL OF SERVICE – PROJECT CONSTRUCTION**

Intersection	AM		PM	
	Delay	LOS	Delay	LOS
SR 78 / Project Driveway	7.6	A	10.4	B

Source: Chen Ryan 2013.

As shown in **Table 4.3-9**, the Project driveway is anticipated to operate at LOS B or better during Project construction. This is above LOS C which is the threshold for acceptable operations. All of the construction traffic associated with the Anza Substation modifications were assumed to be coming directly/from the IID which is located east of both the solar farm complex and the transmission line. As a result, traffic associated with the construction of the modifications to the Anza Substation would not

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impact operations of the solar farm complex driveway. Therefore, **no impact** would occur in association with Project construction traffic at the SR 78/Project Driveway intersection. However, a construction management plan should be prepared to address Caltrans requirements.

### **Operation**

Traffic generated in association with Project operation is specifically discussed under Impact 4.3.2, 4.3.3, 4.3.4 and 4.3.5.

### **Reclamation**

Reclamation would involve decommissioning the solar farm complex site at the end of the Project's useful life. Activities would include dismantling and removal of structures and infrastructure on the solar farm complex site. The IID-owned facilities (IID switchyard and 92 kV transmission line on the Property; 92 kV transmission line with underbuilt 12.5 kV distribution line; 12.5 kV distribution line system constructed on the Property; and the IID Anza Substation modifications) would not be decommissioned until IID determined that these improvements were no longer needed and could be retired and removed. The roads constructed on Lot B to access each of the parcels created under the major subdivision and all of the water wells would not be decommissioned or reclaimed.

Reclamation activities are anticipated to add traffic to existing traffic volumes on SR 78 similar to what would occur in association with construction. Currently, the segment of SR 78 adjacent to the Project area operates at LOS A with construction traffic while the intersection of SR 78 and the Project driveway operates at LOS B. Based on the remote location of the Project, even with the addition of traffic in the future, these intersections are not anticipated to operate beyond LOS C. As this activity would occur 25+ years in the future, further analysis will likely be required at the time of reclamation. Therefore, conflicts with the General Plan Circulation and Scenic Highway Element and impacts to LOS standards are anticipated to be **less than significant** during reclamation. In addition, following reclamation, the solar farm complex site would be reclaimed to approximate the idle farmland condition that currently exists. Therefore, less than significant impacts to with regard to the General Plan Circulation and Scenic Highway Element and impacts to LOS standards are anticipated following reclamation.

### **Mitigation Measures**

None required.

### **Significance After Mitigation**

Not Applicable.

### **Conflict With an Applicable Plan/Level of Service Standard (Existing Plus Project)**

**Impact 4.3.2** Implementation of the proposed Project would add traffic to existing traffic volumes on the segment of SR 78 north of the Project area during operations. This segment would continue to operate at LOS A with the addition of Project traffic. Therefore, conflicts with the General Plan Circulation and Scenic Highway Element and impacts to LOS standards would be **less than significant** under existing plus Project conditions.

### **Construction**

Traffic generated during Project construction is discussed under Impact 4.3.1, above.

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### Operation

#### Roadway Segment – Solar Farm Complex and Transmission Line

As described in sub-section 4.3.2, Existing Setting, above (**Table 4.3-3**), the segment of SR 78 that fronts the proposed Project area serves an AADT volume of 1,000 vpd with a two-way volume of 190 vehicles during the peak hour. The addition of Project operational traffic is summarized in **Table 4.3-10** below.

**TABLE 4.3-10  
SR 78 ROADWAY SEGMENT LEVEL OF SERVICE – TYPICAL OPERATIONS**

Scenario	AADT	K	Peak Hour Volume	D	Lanes	PHF	HVF	Volume (pc/h/ln)	V/C	LOS
Existing Plus Project	1,020	24.0%	245	0.6	1	0.92	33.7%	241	0.14	A

Source: Chen Ryan 2013.

Notes: Refer to Attachment 2 to the “Seville Solar Farm Project – Revised Transportation Analysis” memo contained in **Appendix B** of this EIR for 2012 traffic counts.

Percent of AADT that occurs during the peak hour. The source for existing K factor is the Caltrans *2012 Traffic Volumes on the California State Highway System*. It is assumed that as traffic volumes increase on the segment, the K factor will reduce to a level that is more consistent with the adjacent segments both to the east and the west.

D = Directional split, assumed value PHF = Peak Hour Factor, assumed value

pc/h/ln = passenger-cars per hour per lane V/C = Volume to Capacity Ratio.

HVF = Heavy Vehicle Factor, based on Caltrans *2011 Annual Average Daily Truck Traffic on the California State Highway System*.

As shown, SR 78 is projected to continue to operate at LOS A under existing plus Project conditions. LOS C or better is used in this analysis as the threshold for acceptable highway operations based upon Caltrans and County of Imperial requirements. Based on the good level of operations of SR 78, as well as the limited number of trips the proposed Project is estimated to generate, no transportation-related impacts would be associated with the proposed Project during typical daily operations. Therefore, impacts to the segment of SR 78 during operations (existing plus Project) would be **less than significant**.

### **Reclamation**

Reclamation would occur at the end of the Project’s useful life. Traffic associated with reclamation would be similar to construction traffic rather than operational traffic. Refer to the discussion of Reclamation under Impact 4.3.1, above.

### **Mitigation Measures**

None required.

### **Significance After Mitigation**

Not Applicable.

### **Impacts to Roadway Segment LOS (Near-Term Year 2015 / Project Opening Year)**

**Impact 4.3.3** Implementation of the proposed Project would add trips to existing traffic volumes on the segment of SR 78 north of the Project in the near-term Year 2015. This segment would continue to operate at LOS A with the addition of Project opening year traffic. Therefore, conflicts with the General Plan Circulation and Scenic Highway Element and impacts to LOS standards would be **less than significant** during the Near-Term Year 2015/Project Opening Year conditions.

### **Construction**

Traffic generated during Project construction is discussed under Impact 4.3.1, above.

## 4.3 TRANSPORTATION AND CIRCULATION

### Operation

#### Roadway Segment – Solar Farm Complex and Transmission Line

A review of recently prepared Environmental Impact Reports (EIRs) within the County and discussions with County of Imperial staff identified only one project that would contribute traffic along SR 78: the Salton City Landfill Expansion. The landfill project would add additional traffic to the segment of SR 78 adjacent to the northern boundary of the Project site prior to the construction of the proposed Project. As identified in the *County of Imperial Salton City Landfill Expansion Traffic Impact Analysis - Revised* (Kunzman Associates 2011), under Year 2017 conditions, the landfill expansion project is anticipated to contribute a “nominal” amount of traffic (less than 50 trips) to SR 78 west of SR 86. While the exact number of trips the Salton City Landfill Expansion project would contribute to SR 78 west of SR 86 in Year 2015 was not identified, the analysis for the Salton city Landfill Expansion assumes the highest number of trips (50) would be contributed to the segment. [Note: Relevant pages from the Salton City Landfill Expansion project Traffic Impact Report are provided in Attachment 1 of the “Seville Solar Farm Project – Revised Transportation Analysis” memo contained in **Appendix B** of this EIR.]

**Table 4.3-11** summarizes Near-Term Year 2015 conditions with and without the Project.

**TABLE 4.3-11  
SR 78 ROADWAY SEGMENT LEVEL OF SERVICE – NEAR-TERM YEAR 2015**

Scenario	AADT	K	Peak Hour Volume	D	Lanes	PHF	HVF	Volume (pc/h/ln)	V/C	LOS
Near-Term Year 2015	1,050	24.0%	252	0.6	1	0.92	33.7%	248	0.15	A
Near-Term Year 2015 Plus Project	1,070	24.0%	257	0.6	1	0.92	33.7%	253	0.15	A

Source: Chen Ryan 2013.

Notes: Refer to Attachment 2 to the “Seville Solar Farm Project – Revised Transportation Analysis” memo contained in **Appendix B** of this EIR for 2012 traffic counts.

Percent of AADT that occurs during the peak hour. The source for existing K factor is the Caltrans *2012 Traffic Volumes on the California State Highway System*. It is assumed that as traffic volumes increase on the segment, the K factor will reduce to a level that is more consistent with the adjacent segments both to the east and the west.

D = Directional split, assumed value PHF = Peak Hour Factor, assumed value

pc/h/ln = passenger-cars per hour per lane V/C = Volume to Capacity Ratio.

HVF = Heavy Vehicle Factor, based on Caltrans *2011 Annual Average Daily Truck Traffic on the California State Highway System*.

As shown in **Table 4.3-11**, SR 78 is projected to operate at LOS A under both Near-Term Year 2015 conditions with and without the proposed Project. As previously noted, LOS C or better is the threshold for acceptable highway operations based upon Caltrans and County of Imperial requirements. The segment of SR 78 would operate at LOS A, in part, due to the limited number of trips the proposed Project is estimated to generate during operations. The limited contribution of operational traffic would not result in any transportation-related impacts during typical daily operations of the proposed Project in the Near Term. Therefore, impacts to the segment of SR 78 during operations in the Near-Term Year 2015 would be **less than significant**.

### Reclamation

Reclamation would occur at the end of the Project’s useful life. Traffic volumes associated with reclamation activities are anticipated to be similar to traffic volumes generated during construction rather than traffic volumes generated during operation. Refer to the discussion of Reclamation under Impact 4.3.1, above.

## 4.3 TRANSPORTATION AND CIRCULATION

### Mitigation Measures

None required.

### Significance After Mitigation

Not Applicable.

### **Impacts to Roadway Segment LOS (Long-Term Year 2025)**

**Impact 4.3.4** Implementation of the proposed Project would add traffic to existing Volumes on SR 78 during long-term operation of the Project. The Project in combination with future traffic would result in the segment of SR 78 operating at LOS B. Therefore, conflicts with the General Plan Circulation and Scenic Highway Element and impacts to LOS standards would be **less than significant** under Long-Term Year 2025 conditions.

### **Construction**

Traffic generated during Project construction is discussed under Impact 4.3.1, above.

### **Operation**

#### Roadway Segment – Solar Farm Complex and Transmission Line

As shown in **Table 4.3-12**, the *County of Imperial Circulation and Scenic Highways Element, January 2008* projects that the AADT on SR 78, along the Project frontage, will increase to 8,100 vpd by Year 2025. At this volume, the segment would operate at LOS B.

**TABLE 4.3-12  
SR-78 ROADWAY SEGMENT LEVEL OF SERVICE – LONG TERM (YEAR 2025)**

Scenario	AADT	K	Peak Hour Volume	D	Lanes	PHF	HVF	Volume (pc/h/ln)	V/C	LOS
Long-Term Year 2025	8,100	10.0%	810	0.6	1	0.92	33.7%	797	0.47	B
Long-Term Year 2025 Plus Project	8,120	10.0%	812	0.6	1	0.92	33.7%	799	0.47	B

Source: Chen Ryan 2013.

Notes: Refer to Attachment 2 to the “Seville Solar Farm Project – Revised Transportation Analysis” memo contained in **Appendix B** of this EIR for 2012 traffic counts.

Percent of AADT that occurs during the peak hour. The source for existing K factor is the Caltrans *2012 Traffic Volumes on the California State Highway System*. It is assumed that as traffic volumes increase on the segment, the K factor will reduce to a level that is more consistent with the adjacent segments both to the east and the west.

D = Directional split, assumed value PHF = Peak Hour Factor, assumed value

pc/h/ln = passenger-cars per hour per lane V/C = Volume to Capacity Ratio.

HVF = Heavy Vehicle Factor, based on Caltrans *2011 Annual Average Daily Truck Traffic on the California State Highway System*.

**Table 4.3-12** also shows that the addition of Project traffic under Long-Term Year 2025 Plus Project conditions would result in the segment of SR 78 along the Project frontage continuing to operate at LOS B with no decline in service. Continued operation of the segment at LOS B is below the acceptable threshold of LOS C demonstrating that this segment would continue to have low volumes of traffic over the course of the Project’s operational life. Thus, no transportation-related impacts would be associated with the proposed Project during its typical daily Project operation in the Long Term. Therefore, impacts to the segment of SR 78 during operations in the Long-Term Year 2025 would be **less than significant** both without and with the proposed Project.

## 4.3 TRANSPORTATION AND CIRCULATION

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### **Reclamation**

Reclamation would occur at the end of the Project's useful life. Traffic associated with reclamation would be similar to construction traffic rather than operational traffic. Refer to the discussion of Reclamation under Impact 4.3.1, above.

### **Mitigation Measures**

None required.

### **Significance After Mitigation**

Not Applicable.

### **Substantially Increase Hazards Due to a Design Feature**

**Impact 4.3.5** The proposed Project includes the construction of a new access off of SR 78. This access will be required to be designed per all applicable Caltrans standards and must be reviewed and approved by Caltrans prior to construction. Therefore, the proposed Project is not anticipated to substantially increase hazards due to a design feature and this impact is considered **less than significant**.

### **Construction**

Following demolition, construction of the first project would commence with the building of the new private access road off of SR 78 and portions of the solar farm complex internal road network. The new private access road would be used as the primary construction and permanent access to all of the Project lots. **No impact** with regard to substantially increasing a hazard due to a design feature would occur in association with construction of the new private access road.

### **Operation**

#### **Driveway at SR 78 - Solar Farm Complex**

The Property is currently accessed using a gated, private road from SR 78 which crosses approximately one-half mile of public land managed by the BLM. This road would continue to be used for access to the existing residence and any on-going agricultural operations on the Property, and for secondary, emergency access to the solar development projects. The principal access to the solar farm complex will be via a new private access road from the north off of SR 78. The principal access road would be constructed approximately one-quarter mile west of the existing access road and extend south through one-half mile of public land. From this point, the access road would align east-west approximately 1,500 feet then extend south along the western boundary of Lots 4 and 5 and east-west along the northern boundaries of Lots 1, 2 and 3 of the solar farm complex site (refer to **Figure 2.0-4** in Chapter 2.0, Project Description). The new primary access road would be equipped with a minimum 30-foot double swing gate which will have a coded entry system and a "Knox Box" for emergency access. Internal to the solar farm complex site, a network of private roads would provide operations and maintenance access to each of the parcels created under the major subdivision and Project components.

The new access road would require review and approval by Caltrans. The internal circulation network and access would be reviewed by the Imperial County Public Works Department and Imperial County Fire Department to ensure the proposed Project has been designed in accordance with all applicable standards. Therefore, a **less than significant impact** would occur with regard to the proposed Project substantially increasing a hazard due to a design feature.



## 4.3 TRANSPORTATION AND CIRCULATION

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### **Reclamation**

Reclamation would occur at the end of the Project's useful life. The access constructed at the on-set of the Project would continue to be used during the reclamation process. The access would be designed per all applicable Caltrans standards prior to being constructed. Therefore, a **less than significant impact** would occur with regard to the proposed Project substantially increasing a hazard due to a design feature during reclamation.

### **Mitigation Measures**

None required.

### **Significance After Mitigation**

Not Applicable.

### **4.3.4 CUMULATIVE SETTING, IMPACTS AND MITIGATION MEASURES**

#### **A. CUMULATIVE SETTING**

The proposed Project is located in a remote portion of the County south of SR 78. As noted in the subsection 4.3.2, A. Existing Circulation Network, above, the closest intersection to the solar farm complex site with a paved road is SR 86 located over 9 miles to the east. The other closest paved intersection is Split Mountain road located in San Diego County over 8 miles to the west of the Project. Because the Project is located in a remote area of the County with sparse development and limited roadway network, the cumulative traffic setting is limited to known projects that would add traffic to SR 78. As noted above, only the Salton City Landfill Expansion project was identified to contribute additional traffic to the segment of SR 78 that fronts the Project area, prior to the construction of the proposed Project. As previously noted, the Salton City Landfill Expansion project was the only project identified to contribute traffic to SR 78 west of SR 86. Therefore, the Salton City Landfill Expansion was the only project considered in the cumulative setting. All of the cumulative projects identified in Table 3.0-1 in Chapter 3.0, Introduction to the Environmental Analysis and Assumptions Used, are either located too far from the Project or would not contribute traffic to the segment of SR 78 adjacent to the Project area (i.e. the Ocotillo Wells Solar Project in San Diego County. It should be noted that the Initial Study prepared for the proposed Ocotillo Wells Solar Project did not identify any impacts to Imperial County roadways or SR 78 in association with the Project [County of San Diego 2013]. The main access to the Ocotillo Wells Solar Project will be located at the eastern edge of the site from a private easement road that connects to Split Mountain Road which is located in San Diego County [Ldn 2013]. The majority of construction traffic generated by the Ocotillo Wells Solar Project would come from the west on SR 78 and as such would not generate substantial volumes along SR 78 north of the proposed solar farm complex site). Therefore, none of the cumulative projects were considered in the cumulative setting for traffic.

#### **B. CUMULATIVE IMPACTS AND MITIGATION MEASURES**

##### **Cumulative Impacts to Roadway Segment LOS (Year 2025)**

**Impact 4.3.6** Implementation of the proposed Project's traffic in Year 2025 in combination with projected cumulative traffic in Year 2025 would add traffic to the segment of SR 78 adjacent to the Project site. However, this segment would continue to operate at LOS B under cumulative conditions. Therefore, impacts to cumulative traffic on SR 78 during Year 2025 cumulative conditions are considered **less than cumulatively considerable**.

## 4.3 TRANSPORTATION AND CIRCULATION

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### **Construction**

The cumulative analysis is based on Year 2025. As a result, construction would have already occurred and been completed.

### **Operation**

#### Year 2025 Plus Project Plus Cumulative

According to the County of Imperial Circulation and Scenic Highways Element (Imperial County 2008c) the AADT on SR 78, along the Project frontage, is projected to increase to 8,100 vpd by Year 2025. This is a highly conservative estimate which likely overstates the actual volume of traffic that would be generated on SR 78 in Year 2025. The vpd of 8,100 includes the 50 trips per day generated by the Salton City Landfill Expansion project as well as any other development that would be constructed in this portion of the County that would utilize SR 78 north of the Project. The proposed Project would add approximately 20 trips to SR 78 during operation resulting in an AADT of 8,120 vpd in Year 2025. Thus the proposed Project's contribution to cumulative traffic volumes on SR 78 would be **less than cumulative considerable**. Furthermore, with the additional traffic generated by Project operation, the segment of SR 78 would continue to operate at LOS B. Thus, impacts to cumulative traffic volumes on SR 78 adjacent to the Project area are considered **less than cumulatively considerable** during Project operation.

### **Reclamation**

Project reclamation activities would happen 20 to 25 years in the future. As such, traffic volumes during the reclamation period would be similar to what is anticipated under year 2025 Plus Project Plus Cumulative. As noted under the operation discussion above, the segment of SR 78 would continue to operate at LOS in Year 2025. The addition of reclamation traffic would likely be slightly less than the amount generated during construction. No impacts to roadway LOS would occur in association with either construction or operational traffic based on the volumes of traffic on SR 78 as well as the temporary nature of both construction and operation. Thus, impacts to cumulative traffic volumes on SR 78 adjacent to the Project area are considered **less than cumulatively considerable** during Project reclamation.

### **Mitigation Measures**

None required.

### **Significance After Mitigation**

Not Applicable.

## 4.3 TRANSPORTATION AND CIRCULATION

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