

ENVIRONMENT | PLANNING | DEVELOPMENT SOLUTIONS, INC.

Victorville Landfill Solar
APN 0472-011-34

Construction Management Plan and Trip Generation Analysis

June 27, 2014

EPD Solutions, Inc. has prepared this construction management plan and trip generation analysis for the proposed Victorville Landfill Solar project. The project is located in unincorporated San Bernardino County, within the City of Victorville sphere of influence.

SUMMARY PROJECT DESCRIPTION

The Victorville Landfill Solar project is a 10-megawatt solar photovoltaic energy generation facility proposed on a portion of the Victorville Landfill's 472 acres. The project would cover less than 60 acres in the southwestern portion of the broader landfill parcel. Project facilities would include solar panels, inverters, switchgear, small storage structures, and local distribution powerlines. No permanent administrative or other occupied buildings are proposed. During operations, project operations would be automated and unmanned. Occasional visits to the project by maintenance and security personnel would be required to do repairs, clean equipment, and monitor the site.

Access to the project would be from an extension of the existing landfill access road, a paved roadway located within the project parcel. The landfill access road connects to Stoddard Wells Road. Stoddard Wells Road provides access to Interstate 15, located ½ mile to the east. The project vicinity generally consists of vacant land, with a small number of commercial properties to the southeast. The site location is depicted in Figure 1 (Vicinity Map).

CONSTRUCTION MANAGEMENT PLAN

Construction Phasing

A 6-month construction period is planned. Construction would include two phases: Phase 1, Site Preparation (2 months) and Phase 2, PV System Installation (4 months). Phase 1 includes grubbing, grading, and placement of fencing and onsite access roads (aggregate base). Phase 2 includes placement and assembly of solar panels, installation of other electrical components (e.g., conduits and inverters) and the storage building, and the erection of distribution lines.

Construction Routes

The primary construction access route is mapped on Figure 2 (Construction Vehicle Routes). All project construction vehicles would access the site from I-15 via Stoddard Wells Road.

Construction Truck and Other Vehicular Trips

This analysis of construction trips is based on the number of workers, the materials required to construct the facility, and the types of equipment used. Detailed calculations are provided in the attached trip generation table. Construction would occur during daylight hours. Peak travel times for worker vehicles accessing the site will likely coincide with peak morning and evening commute periods (7:00 am to 9:00 am and 4:00 pm to 6:00 pm, respectively), while truck trips would be more distributed during the day.

Large trucks use more roadway capacity than passenger vehicles due to their larger size and reduced maneuverability. To account for their increased demands on roadways, passenger car equivalent (PCE) factors are used. A PCE of 2.5 is applied to all large trucks accessing the site (meaning each truck is counted as equivalent to 2.5 smaller vehicles).

Up to 60 workers would arrive at the project site daily during Phase 1; this increases to 150 workers daily during Phase 2. Some workers would be based in nearby Victorville and Apple Valley, with others commuting longer distances from areas such as Adelanto, Hesperia, San Bernardino, and Lancaster. Carpooling is likely to occur, particularly for workers coming from distant locations. A conservative occupancy rate of 2.0 workers per vehicle is assumed.

Other vehicles required during construction include freight trucks, gravel end dump trucks, equipment transports, and service trucks. Based on prior solar project development experience, large trucks would make an average of 8 roundtrips per day during Phase 1 and 3 roundtrips per day during Phase 2.

Pursuant to the above assumptions, and as detailed in the attached Construction Trip Generation Analysis, it is estimated that a maximum of 50 PCE trips would occur during each of the AM and PM peak hours during Phase 1, and 81 PCE trips would occur during each of the peak hours during Phase 2. This conservatively assumes that all truck trips occur during peak hours, rather than being more evenly distributed throughout the day.

The only County-maintained road that would be affected by the project is Stoddard Wells Road, a two-lane undivided roadway. Stoddard Wells Road west of I-15 is identified in the San Bernardino County General Plan Land Use Plan Circulation and Transportation Map for the Victor Valley Region as a Secondary Highway. Based on a capacity of 1,600 vehicles per hour per lane (vphpl), the addition of peak-hour construction traffic of 81 PCE vehicles would represent less than 3 percent of the 3,200 vphpl capacity of Stoddard Wells Road. Traffic counts conducted by the County of San Bernardino Transportation Department show Stoddard Wells Road serving 593 average daily trips (ADTs), equivalent to a volume/capacity ratio of 0.185, at the nearest count location (the intersection of Johnson Road). Volume/capacity ratios below 0.34 equate to Level of Service "A." The addition of 81 PCE vehicles during a single hour would increase the volume/capacity ratio to 0.211, meaning the roadway will continue to operate with free-flowing traffic and a Level of Service "A" during the 4-month Phase 2 construction period. Traffic levels would be lower during the initial (Phase 1) construction period.

OPERATIONAL TRIP GENERATION

Operations and maintenance requirements associated with the project would be minimal. No permanent staff will be based at the project site. Cleaning of solar panels may occur twice annually, and would require a small work crew (fewer than 10 workers) and a small number of light trucks. Additionally, security personnel would visit the site regularly (generally, once every one to two days). Security visits would include one or two security personnel traveling in a single passenger car or light truck. Work crews and security staff are expected to travel to the site from nearby communities.

Heavy equipment will not be required during normal project operations. Solar panels and associated equipment have an operating life of several decades; replacement of large components will be rare. Based on these factors, operational traffic associated with the project would be negligible.

The San Bernardino County Congestion Management Plan (CMP) requires preparation of a Traffic Impact Analysis when operational-period traffic project is anticipated to generate over 250 two-way peak hour trips, or 50 two-way peak hour trips on a segment of CMP arterial highway or State highway. The project would produce less than 1 trip per day during operations. Therefore, none of the applicable thresholds are exceeded and preparation of a Traffic Impact Analysis is not required.

Please contact me with any questions you may have on this construction management plan and trip generation analysis.

Respectfully submitted,
EPD Solutions, Inc.

A handwritten signature in black ink, appearing to read 'Rafik Albert', with a stylized flourish at the end.

Rafik Albert, AICP, LEED AP
Senior Associate

Attachments

Figure 1: Vicinity Map

Figure 2: Construction Vehicle Routes

Trip Generation Analysis

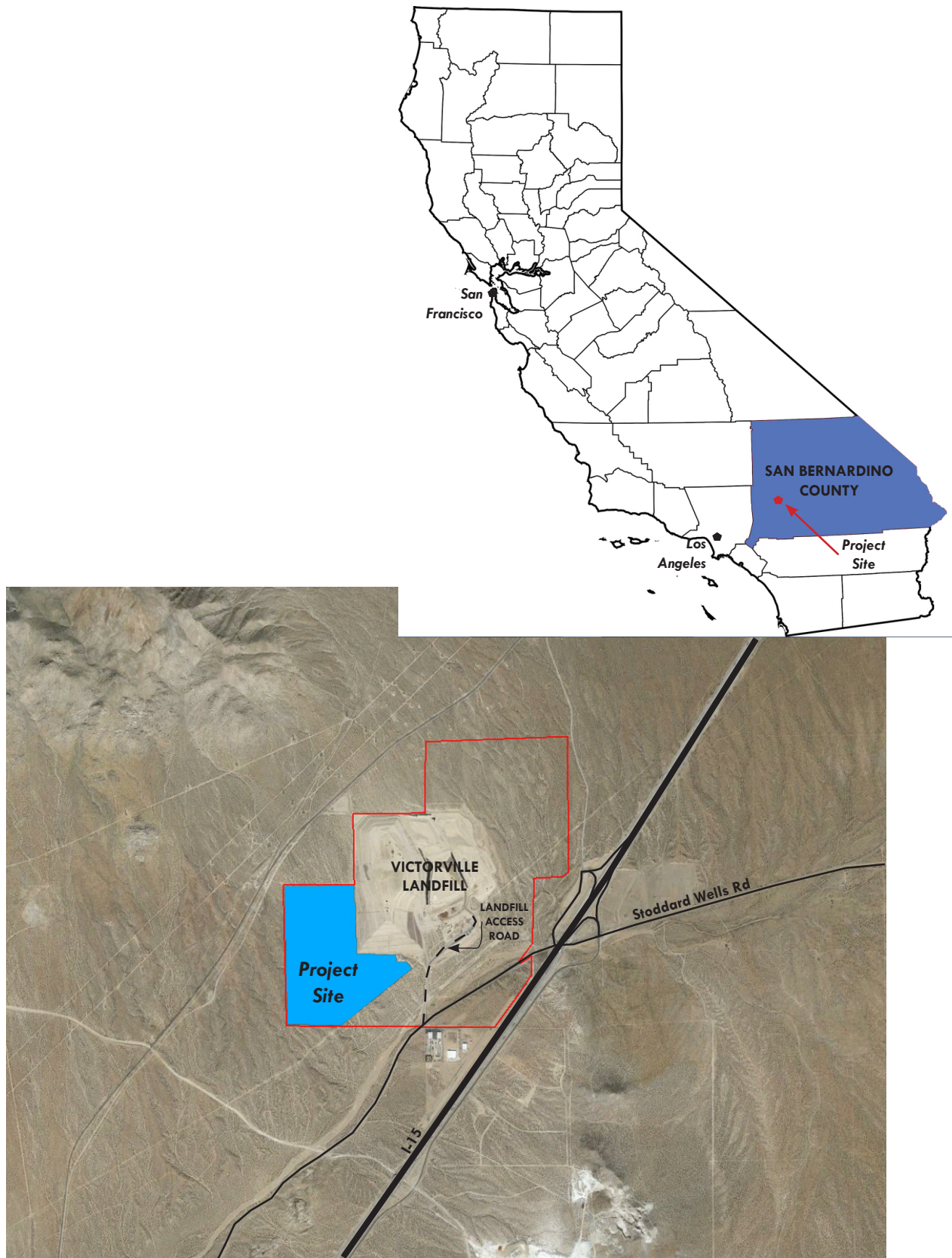
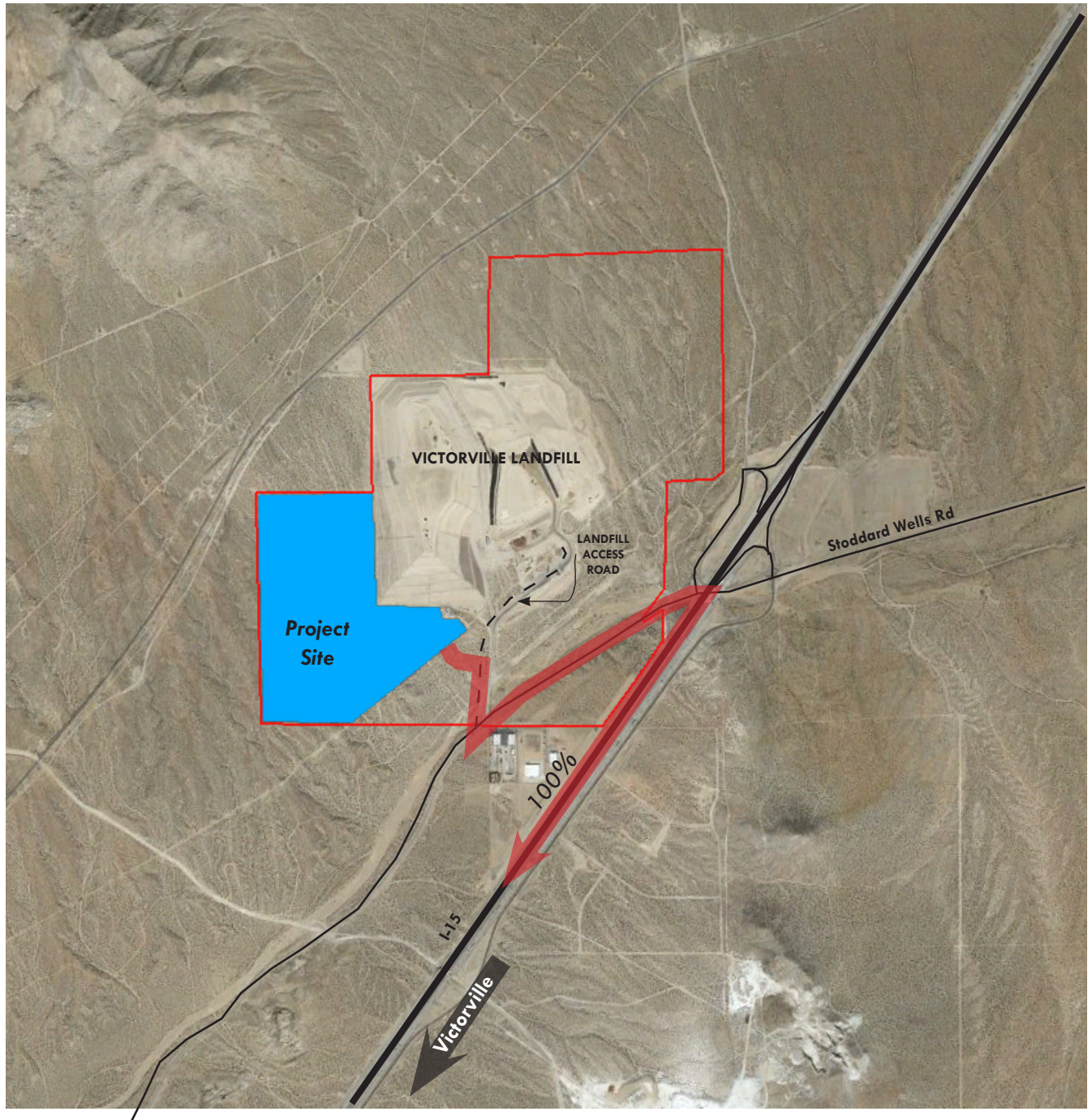


Figure 1
Vicinity Map



— Primary construction traffic routes
 xx% Percent of construction traffic

Figure 2
Construction Vehicle Routes

Victorville Landfill Solar Trip Generation Analysis
San Bernardino County, California

			Construction Vehicles				Vehicle Trip Generation							PCE Trip Generation						
			Quantity	Roundtrips	Type	PCE	ADT	AM Peak Hour			PM Peak Hour			ADT	AM Peak Hour			PM Peak Hour		
								in	out	total	in	out	total		in	out	total	in	out	total
Phase 1	Site Preparation	Duration																		
	Workers ¹	40 work	30	1	Passenger	1	60	30	0	30	0	30	30	60	30	0	30	0	30	30
	Flat Bed Trucks	days (2	1	1	Large Truck	2.5	2	1	0	1	0	1	1	5	3	0	3	0	3	3
	Gravel End Dump Truck	months)	7	1	Large Truck	2.5	14	7	0	7	0	7	7	35	18	0	18	0	18	18
	TOTAL						76	38	0	38	0	38	38	100	50	0	50	0	50	50
Phase 2	PV System Installation																			
	Workers ¹	80 work	75	1	Passenger	1	150	75	0	75	0	75	75	150	75	0	75	0	75	75
	Ready Mix Truck	days (4	1	1	Large Truck	2.5	2	1	0	1	0	1	1	5	3	0	3	0	3	3
	Flat Bed Trucks	months)	2	1	Large Truck	2.5	4	2	0	2	0	2	2	10	4	0	4	0	4	4
	TOTAL						156	78	0	78	0	78	78	165	81	0	81	0	81	81

¹ Assumed occupancy of 2.0 workers per vehicle
PCE = passenger car equivalent. A large truck has a PCE of 2.5; all other vehicles have a PCE of 1.
Totals may not sum due to rounding.