

TRAFFIC IMPACT ANALYSIS
BIG ROCK CLUSTER SOLAR FARM
County of Imperial, California
October 10, 2017

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Prepared by:
Román Lopez
Transportation Planner I

Under the Supervision of:
Chris Mendiara
Associate Principal

**Linscott, Law &
Greenspan, Engineers**
4542 Ruffner Street
Suite 100
San Diego, CA 92111
858.300.8800 T
858.300.8810 F
www.llgengineers.com

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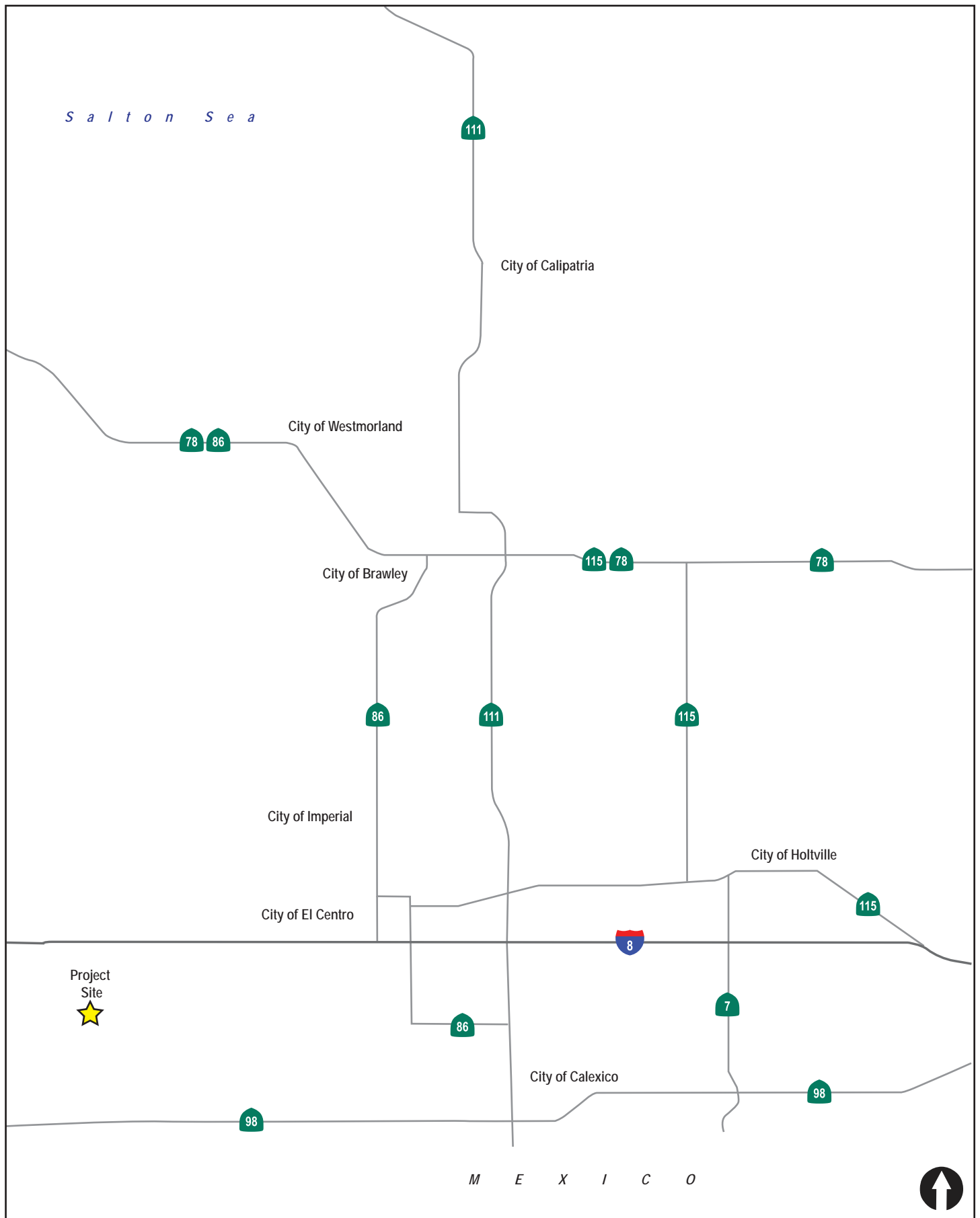
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1.0 INTRODUCTION

The following traffic impact analysis has been prepared to determine the potential impacts to the local circulation system due to truck and employee traffic related to construction of the proposed Big Rock Cluster Solar project in the County of Imperial, California. Once constructed, the project will generate a minimal amount of traffic related to operations and maintenance. Therefore, the focus of this analysis is on the potential traffic impacts related to construction. This report includes the following sections:

- Project Description
- Existing Conditions
- Analysis Approach and Methodology
- Significance Criteria
- Analysis of Existing Conditions
- Trip Generation / Distribution / Assignment
- Analysis of Construction Year Conditions
- Post-Construction Operations
- Project Access
- Conclusions and Recommendations

Figure 1-1 depicts the project vicinity.



2.0 PROJECT DESCRIPTION

92JT 8me LLC (the “Big Rock Applicant”) seeks approval of a Conditional Use Permit (CUP) for the up to 75 megawatt (MW-AC) Big Rock Solar Farm Project, a utility-scale solar farm in Imperial County, California. 90FI 8me LLC (the “Laurel Applicant”) seeks approval of three CUPs for the construction of three utility-scale solar farms, Laurel 1 Solar Farm, Laurel 2 Solar Farm, and Laurel 3 Solar Farm, totaling up to 250 MW, also in Imperial County. These four Projects together are known as the Big Rock Cluster Solar Farms. The Projects may cooperate if necessary to meet power production requirements, including by allowing one Project to utilize land designated for another Project. Each Project is intended to have O&M facilities and an on-site substation, but the Projects may also utilize shared facilities.

2.1 Project Location

The overall Project site is located west of Drew Road and south of Interstate 8 approximately eight miles southwest of the City of El Centro and three miles south of Seeley, a census-designated place, in the unincorporated area of Imperial County. Three (3) existing east/west roadways exist in the vicinity of the Project parcels: Vaughn Road, Diehl Road and Wixom Road. Similarly, four (4) north-south roadways are present in the vicinity of the parcels: Westside Road, Jessup Road, Liebert Road and Derrick Road.

2.2 Project Description

The Applicants together propose to develop four photovoltaic energy solar farms, totaling up to 325 MW-AC. Power generated by the Projects will be delivered from the Project Sites via up to 230 kV overhead and/or underground electrical transmission line(s) originating from an on-site substation(s)/switchyard(s) and terminating at the proposed Imperial Irrigation District (IID) Fern Substation. In the alternative, power may be delivered to the San Diego Gas & Electric (SDG&E) Imperial Valley Substation, Drew Switchyard, or Imperial Solar Energy Center West Substation.

The Projects may share operations & maintenance (O&M), substation, and/or transmission facilities as necessary with one another and/or with nearby solar projects, and/or may be remotely operated. Any “unused” O&M, substation, and/or transmission facility areas on-site could be covered by solar panels under such scenarios.

Big Rock 1 includes five assessor’s parcel numbers (APNs), Laurel 1 comprises two APNs, Laurel 2 comprises four APNs, Laurel 3 comprises seven APNs. The eighteen parcels together (collectively, the “Project Sites”) total approximately 1,380 gross acres. The topography of the Project Sites is relatively flat. The Project Sites have historically been used for agriculture.

Figure 2–1 shows the proposed site layout.

2.3 Construction Activities

The construction period for the Project, from site preparation through construction, testing, and commercial operation, is expected to commence as early as Q3 2018 and will extend for

approximately 12-15 months. The Projects may be phased with one or more Projects beginning in Q3 2018, and the others being built at a later time to be determined by market conditions.

Construction of the Projects will include the following activities:

- Site preparation
- Grading and earthwork
- Concrete foundations
- Structural steel work
- Electrical/instrumentation work
- Collector line installation
- Architecture and landscaping

No roadways will be affected by the Projects, except during the Projects' construction period. Construction traffic will access the Project Sites from Derrick or Liebert Road. Assuming concurrent construction of the two Projects, it is estimated that up to 350 workers per day (during peak construction periods) will be required.

Heavy construction is expected to occur between 6:00 am and 5:00 pm, Monday through Friday. Additional hours may be necessary to make up schedule deficiencies or to complete critical construction activities. Some activities may continue 24 hours per day, seven days per week. Low level noise activities may potentially occur between the hours of 10:00 pm and 7:00 am. Nighttime activities could potentially include, but are not limited to, refueling equipment, staging material for the following day's construction activities, quality assurance/control, and commissioning.

Materials and supplies will be delivered to the Project Sites by truck. Truck deliveries will normally occur during daylight hours. However, there will be offloading and/or transporting to the Project Sites on weekends and during evening hours.

Earthmoving activities are expected to be limited to the construction of the access roads, any O&M building, any substation, and any storm water protection or storage (detention) facilities. Final grading may include revegetation with low lying grass or applying earth-binding materials to disturbed areas.

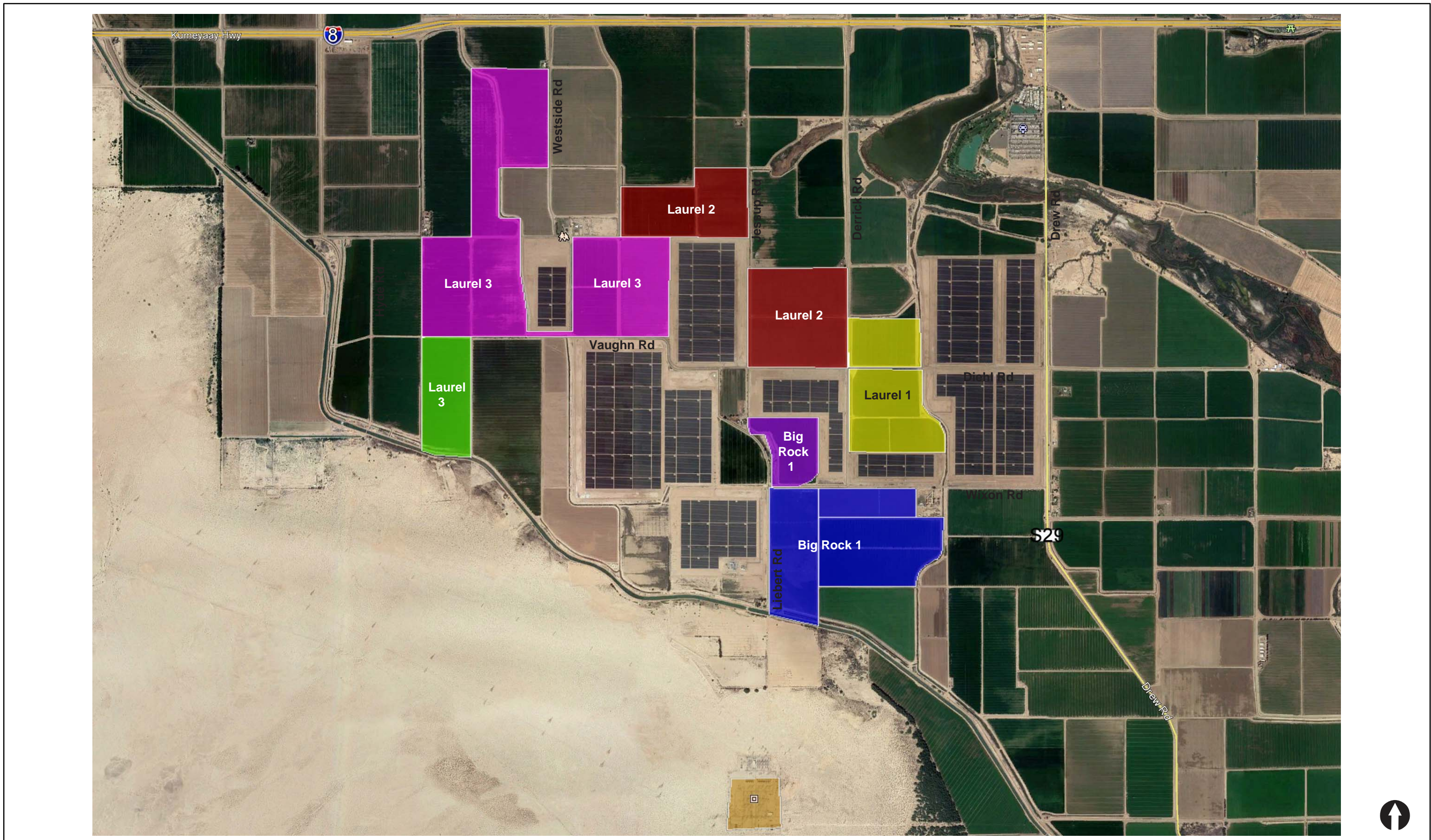
2.4 Work Force

Once the Projects are constructed, maintenance will generally be limited to the following:

- Cleaning of PV panels
- Monitoring electricity generation
- Providing Site security
- Facility maintenance - replacing or repairing inverters, wiring, and PV modules

It is expected that the Projects' facilities will require an operational staff of up to five full-time employees. As noted earlier, it is possible that the Projects would share O&M, substation, and/or transmission facilities with one another and/or nearby projects. In such a scenario, the Projects could share personnel, thereby potentially reducing the Projects' on-site staff.

The Projects would operate seven days a week, 24 hours a day, generating electricity during normal daylight hours when the solar energy is available. Maintenance activities may occur seven days a week, 24 hours a day to ensure PV panel output when solar energy is available.



3.0 EXISTING CONDITIONS

3.1 Existing Street Network

Following is a brief description of the street segments within the project area. The location of Imperial Irrigation District facilities relative to the project sites is also discussed. **Figure 3–1** illustrates the existing conditions, including the lane geometry, for the key intersections in the study area. Note that due to the location of the Project site in relation to the critical intersections and street segments in the Project study area, the Laurel 3 site is not visible on **Figure 3–1** or subsequent figures, but is fully considered in all analysis presented in this report.

Interstate 8 (I-8) is the primary east-west route through Imperial County between San Diego, California and Yuma, Arizona. Providing two travel lanes in each direction, I-8 has complete grade separations at all intersections. In this area the main functions of I-8 are to serve as an interregional route for people and goods movement, provide connection to other states, and provide access to desert recreational activities.

State Route 98 (SR-98) is an east-west route entirely within Imperial County. SR-98 is primarily a two-lane conventional highway serving interregional, intra-regional, and international travel, as well as providing an alternate route to I-8.

Drew Road is a north-south two-lane undivided roadway with a 24-foot paved width and “soft” shoulders from Evan Hewes Highway south to SR-98. Drew Road provides access to I-8. Bike lanes or bus stops are not provided and the speed limit is posted at 55 mph. A portion of Drew Road from the Townsite of Seeley to Diehl Road is designated as a Class II bike route.

3.2 Existing Traffic Volumes

Daily traffic (ADT) counts on study area street segments and peak hour turning movement counts at study area intersections were commissioned by LLG in May 2017. **Table 3–1** is a summary of the ADT volumes on study area segments.

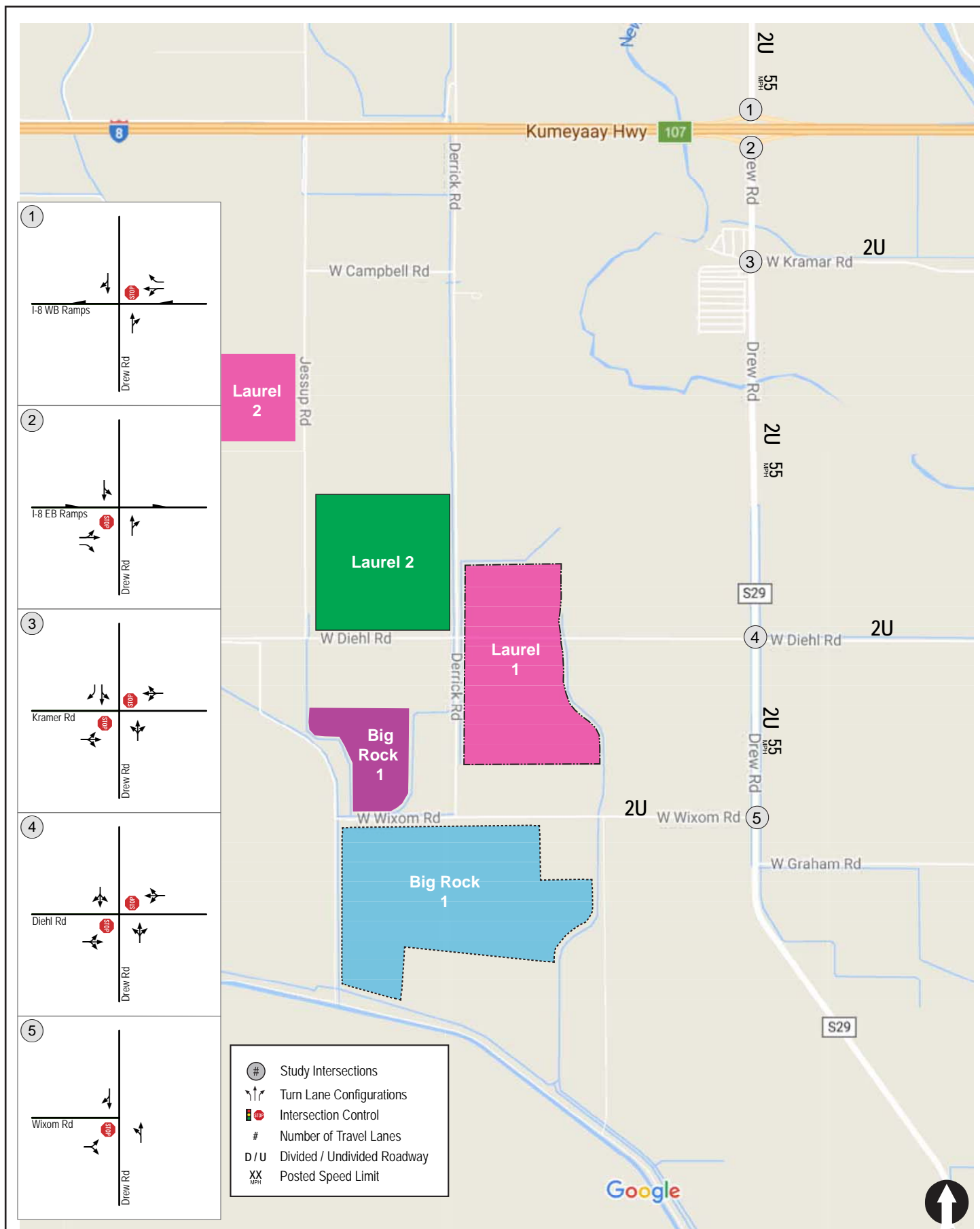
Figure 3–2 depicts the existing traffic volumes on both an ADT and peak hour basis. **Appendix A** contains the intersection and segment count sheets.

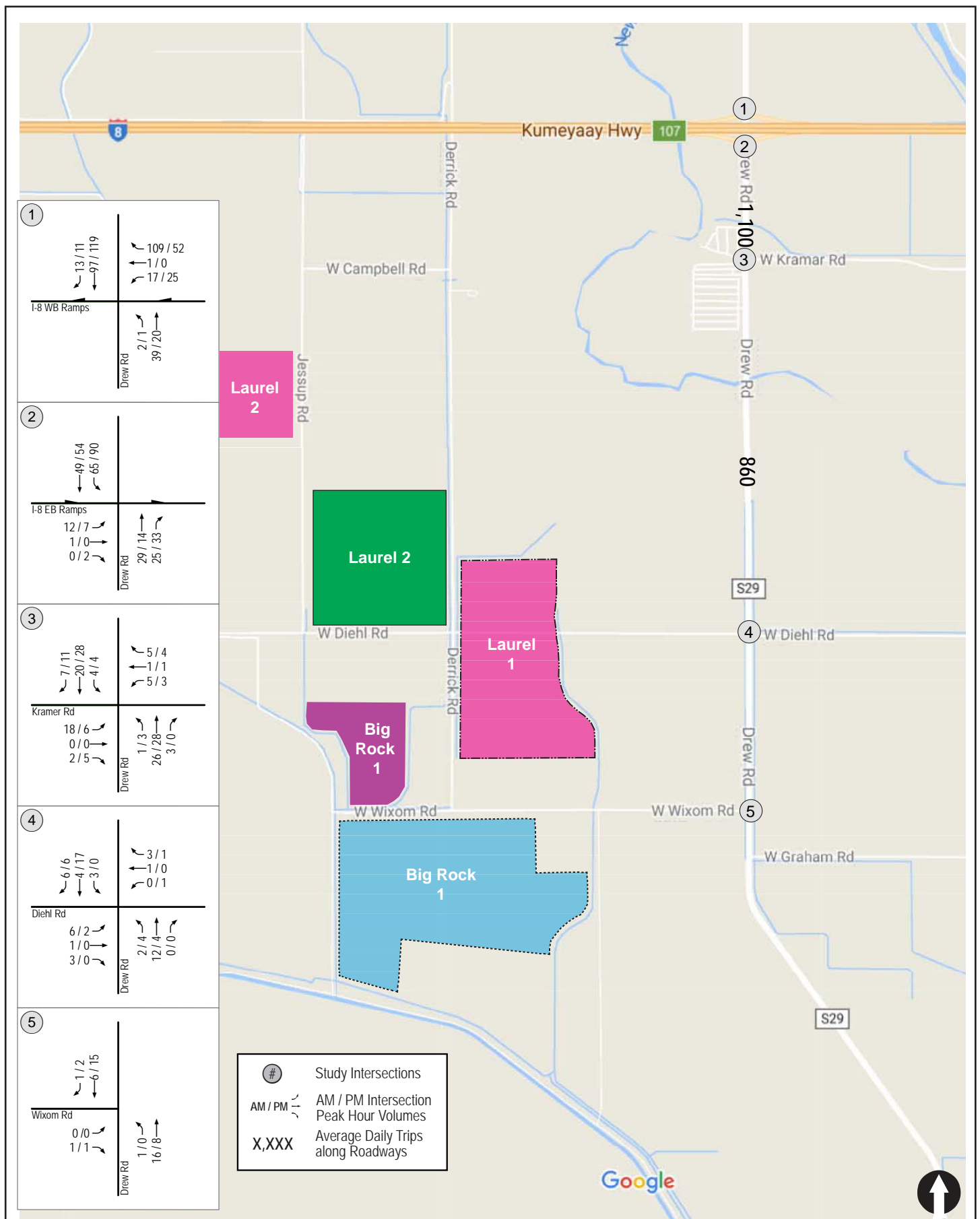
TABLE 3–1
EXISTING TRAFFIC VOLUMES

Street Segment	Source	Date	ADT ^a
Drew Road			
I-8 to W. Kramar Road	LLG	2017	1,100
W. Kramar Road to Diehl Road	LLG	2017	860

Footnotes:

a. Average Daily Traffic Volume.





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Figure 3-2

Existing Traffic Volumes

BIG ROCK CLUSTER SOLAR FARMS

4.0 ANALYSIS APPROACH AND METHODOLOGY

This report analyzes the effects of the construction portion of the development of the proposed project, based on the limited traffic contribution of the project during the subsequent Operations and Maintenance phase (see *Section 7.0* for more information related to project trip generation). For the purpose of being conservative, the concurrent construction of all ten parcels is assumed in the quantitative analyses completed for key off-site intersections and roadway segments in the study area affected by construction project traffic.

Analyses of the existing roadway volumes and network have been completed for reference. Since construction of the proposed project is scheduled for 2018, existing volumes have been increased by a 5% growth factor to account for any cumulative project development that may occur between 2017 (date of traffic counts) and 2018. *Section 8.0* discusses the *Baseline Without Construction Project* condition in further detail. Analyses have been prepared for the following scenarios:

- *Existing* (Year 2017)
- *Baseline Without Construction Project* (Year 2018)
- *Baseline With Total Construction Project* (Year 2018)

Given the very limited traffic associated with the *Shared Operations and Maintenance* of the project (50 ADT), no long-term cumulative analyses is necessary.

The operations of the project area intersections and segments are characterized using the concept of “Level of Service” (LOS). LOS is the term used to denote the different operating conditions which occur on a given roadway segment under various traffic volume loads. It is a qualitative measure used to describe a quantitative analysis taking into account factors such as roadway geometries, signal phasing, speed, travel delay, freedom to maneuver, and safety. LOS provides an index to the operational qualities of a roadway segment or an intersection. LOS designations range from A through F, with LOS A representing the best operating conditions and LOS F representing the worst operating conditions. LOS designation is reported differently for signalized and unsignalized intersections, as well as for roadway segments.

Table 4-1 summaries the description for each level of service.

4.1 Unsignalized Intersections

For unsignalized intersections, level of service is determined by the computed or measured control delay and is defined for each minor movement. Level of service is not defined for the intersection as a whole. **Table 4-2** depicts the criteria, which are based on the Average control delay for any particular minor movement.

Level of Service F exists when there are insufficient gaps of suitable size to allow a side street demand to safely cross through a major street traffic stream. This level of service is generally evident from extremely long control delays experienced by side-street traffic and by queuing on the minor-street approaches. The method, however, is based on a constant critical gap size; that is, the critical gap remains constant no matter how long the side-street motorist waits.

LOS F may also appear in the form of side-street vehicles selecting smaller-than-usual gaps. In such cases, safety may be a problem, and some disruption to the major traffic stream may result. It is important to note that LOS F may not always result in long queues but may result in adjustments to normal gap acceptance behavior, which are more difficult to observe in the field than queuing.

TABLE 4-1
INTERSECTION LEVEL OF SERVICE DESCRIPTIONS

Level of Service	Description
A	Occurs when progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.
B	Generally occurs with good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of average delay.
C	Generally results when there is fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear in this level. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.
D	Generally results in noticeable congestion. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high volume-to-capacity ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.
E	Considered to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high volume-to-capacity ratios. Individual cycle failures are frequent occurrences.
F	Considered to be unacceptable to most drivers. This condition often occurs with over saturation i.e. when arrival flow rates exceed the capacity of the intersection. It may also occur at high volume-to-capacity ratios below 1.00 with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing causes to such delay levels.

TABLE 4-2
LEVEL OF SERVICE THRESHOLDS FOR UNSIGNALIZED INTERSECTIONS

Average Control Delay Per Vehicle (Seconds/Vehicle)	Level of Service	Expected Delay to Minor Street Traffic
0.0 ≤ 10.0	A	Little or no delay
10.1 to 15.0	B	Short traffic delays
15.1 to 25.0	C	Average traffic delays
25.1 to 35.0	D	Long traffic delays
35.1 to 50.0	E	Very long traffic delays
≥ 50.0	F	Severe congestion

4.2 Street Segments

Street segments were analyzed based upon the comparison of ADT to the County of Imperial *Roadway Classifications, Levels of Service (LOS) and Average Daily Traffic (ADT)* table (see **Table 4-3** below). *Table 4-3* provides segment capacities for different street classifications, based on traffic volumes and roadway characteristics. Segment analysis is a comparison of ADT volumes and an approximate daily capacity on the subject roadway.

TABLE 4-3
IMPERIAL COUNTY STANDARD STREET CLASSIFICATION AVERAGE DAILY VEHICLE TRIPS

Road		Level of Service W/ADT*				
Class	X-Section	A	B	C	D	E
Expressway	128 / 210	30,000	42,000	60,000	70,000	80,000
Prime Arterial	106 / 136	22,200	37,000	44,600	50,000	57,000
Minor Arterial	82 / 102	14,800	24,700	29,600	33,400	37,000
Major Collector (Collector)	64 / 84	13,700	22,800	27,400	30,800	34,200
Minor Collector (Local Collector)	40 / 70	1,900	4,100	7,100	10,900	16,200
Residential Street	40 / 60	*	*	< 1,500	*	*
Residential Cul-de- Sac / Loop Street	40/60	*	*	< 1,500	*	*
Industrial Collector	76 / 96	5,000	10,000	14,000	17,000	20,000
Industrial Local Street	44 / 64	2,500	5,000	7,000	8,500	10,000

* Levels of service are not applied to residential streets since their primary purpose is to serve abutting lots, not carry through traffic. Levels of service normally apply to roads carrying through traffic between major trip generators and attractors.

5.0 SIGNIFICANCE CRITERIA

5.1 County of Imperial

The County of Imperial does not have published significance criteria. However, the County General Plan does state that the level of service (LOS) goal for intersections and roadway segments is to operate at LOS C or better. Therefore, if an intersection or segment degrades from LOS C or better to LOS D or worse with the addition of project traffic, the impact is considered significant. If the location operates at LOS D or worse with and without project traffic, the impact is considered significant if the project causes the intersection delta to increase by more than two (2) seconds, or the V/C ratio to increase by more than 0.02. These amounts are consistent with those used in the City of El Centro and the County of Imperial in numerous traffic studies.

5.2 Caltrans

A project is considered to have a significant impact if the new project traffic has decreased the operations of surrounding roadways by a defined threshold. The defined thresholds for roadway segments and intersections are defined in **Table 5-1** below. If the project exceeds the thresholds in **Table 5-1**, then the project may be considered to have a significant project impact. A feasible mitigation measure will need to be identified to return the impact within the thresholds (pre-project + allowable increase) or the impact will be considered significant and unmitigated.

TABLE 5-1
TRAFFIC IMPACT SIGNIFICANT THRESHOLDS

Level of Service with Project ^a	Allowable Increase Due to Project Impacts ^b					
	Freeways		Roadway Segments		Intersections	Ramp Metering
	V/C	Speed (mph)	V/C	Speed (mph)	Delay (sec.)	Delay (min.)
D, E & F (or ramp meter delays above 15 minutes)	0.01	1	0.02	1	2	2 ^c

Footnotes:

- All level of service measurements are based upon HCM procedures for peak-hour conditions. However, V/C ratios for Roadway Segments may be estimated on an ADT/24-hour traffic volume basis (using Table 4-3 or a similar LOS chart for each jurisdiction). The acceptable LOS for freeways, roadways, and intersections is generally "D" ("C" for undeveloped or not densely developed locations per jurisdiction definitions). For metered freeway ramps, LOS does not apply. However, ramp meter delays above 15 minutes are considered excessive.
- If a proposed project's traffic causes the values shown in the table to be exceeded, the impacts are deemed to be significant. These impact changes may be measured from appropriate computer programs or expanded manual spreadsheets. The project applicant shall then identify feasible mitigations (within the Traffic Impact Study [TIS] report) that will maintain the traffic facility at an acceptable LOS. If the LOS with the proposed project becomes unacceptable (see note a above), or if the project adds a significant amount of peak hour trips to cause any traffic queues to exceed on- or off-ramp storage capacities, the project applicant shall be responsible for mitigating significant impact changes.
- The allowable increase in delay at a ramp meter with more than 15 minutes of delay and freeway LOS E is 2 minutes and at LOS F is 1 minute.

General Notes:

- V/C = Volume to Capacity Ratio
- Speed = Arterial speed measured in miles per hour
- Delay = Average stopped delay per vehicle measured in seconds for intersections, or minutes for ramp meters.
- LOS = Level of Service

6.0 ANALYSIS OF EXISTING CONDITIONS

6.1 Peak Hour Intersection Levels of Service

The project study area is located in a rural setting and all intersections are unsignalized. As seen in **Table 6-1**, all study area intersections are calculated to currently operate at LOS B or better during both the AM and PM peak hours.

Appendix B contains the *Existing* peak hour intersection analysis worksheets.

TABLE 6-1
EXISTING INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Existing	
			Delay ^a	LOS ^b
1. Drew Road / I-8 WB Ramps	MSSC ^c	AM	9.1	A
		PM	8.9	A
2. Drew Road / I-8 EB Ramps	MSSC	AM	10.2	B
		PM	10.2	B
3. Drew Road / Kramar Road	MSSC	AM	9.0	A
		PM	8.8	A
4. Drew Road / Diehl Road	MSSC	AM	8.7	A
		PM	8.7	A
5. Drew Road / Wixom Road	MSSC	AM	8.4	A
		PM	8.4	A

Footnotes:

- a. Delay per vehicle in seconds
- b. LOS - Level of service
- c. MSSC - Minor street Stop Controlled intersection. Minor street left-turn delay is reported.

UNSIGNALIZED

Delay	LOS
0.0 < 10.0	A
10.1 to 15.0	B
15.1 to 25.0	C
25.1 to 35.0	D
35.1 to 50.0	E
> 50.1	F

6.2 Daily Street Segment Levels of Service

As described above, the project study area is located in a rural setting and all segments are two-lane facilities. As seen in **Table 6-2**, all study area segments are calculated to currently operate at LOS A.

TABLE 6-2
EXISTING STREET SEGMENT OPERATIONS

Street Segment	Functional Roadway Classification ^a	Capacity (LOS E) ^b	ADT ^c	LOS ^d	V/C ^e
Drew Road					
I-8 to Kramar Road	2-Ln Local Collector	16,200	1,100	A	0.068
Kramar Road to Diehl Road	2-Ln Local Collector	16,200	860	A	0.053

Footnotes:

- a. County of Imperial roadway classification
- b. Roadway capacity corresponding to Level of Service E from Imperial County Standard Street Classification, Average Daily Vehicle Trips table.
- c. Average Daily Traffic volumes
- d. Level of Service
- e. Volume / Capacity ratio.

7.0 TRIP GENERATION/DISTRIBUTION/ASSIGNMENT

7.1 Trip Generation

Project trip generation is based on site-specific trip generating characteristics provided by the applicant. Each phase of the project consists of two parts: *Construction*, and *Operations and Maintenance (O&M)*. The construction stage is expected to commence in 2018 and extend for approximately 12 to 15 months. The Project anticipates construction activities within the overall Big Rock Cluster to be phased with one or more Project Sites beginning in Q3 2018 and the others being built at a later time to be determined by market conditions. In the course of phased construction there may be overlap between site preparation, grading, construction, and testing and commissioning phases of each Project Site. During periods of peak construction activity, a maximum of 350 workers are anticipated to be on-site.

In calculating daily trip generation based on this level of activity, it is assumed 12.5% of construction worker trips will be by carpool. Peak hour traffic volumes assume that a majority of workers will arrive/depart in the AM/PM peak hours, respectively. However, a meaningful number of worker trips may arrive/depart outside the peak hours due to earlier start times. While detailed construction schedules for this Project have yet to be established, these assumptions are based on experience and evaluation of similar solar energy projects. The share of workers carpooling and traveling outside of peak hour may be higher and these conservative assumptions are intended to represent a reasonable worst case scenario for AM/PM peak hour traffic.

Based on these assumptions, construction of the Project is calculated to generate a maximum of 613 ADT by passenger vehicles, with 196 inbound trips during the AM peak hour and 196 outbound trips during the PM peak hour. It would also generate 55 ADT by trucks, with 11 inbound and 11 outbound trips during the AM and PM peak hours, respectively. A passenger car equivalence factor (PCE) of 2.0 is applied to these truck trips for the purposes of the analysis to account for the reduced performance characteristics (stopping, starting, maneuvering, etc.) of heavy vehicles in the traffic flow.

For the O&M stage, the following personnel would be expected:

Operations & Maintenance

- Up to twenty (20) full-time employees (five per project) split between daytime and night-time shifts
- Typically, up to twelve (12) staff (three per project) during the day shift during normal business hours

It is possible the projects would share O&M, substation and/or transmission facilities with one another and/or with nearby solar projects. In such scenarios the Project's on-site staff could be reduced.

Table 7-1 is a summary of the peak construction traffic generation for the Project.

TABLE 7-1
CONSTRUCTION TRIP GENERATION

Trip Type	Daily Total (ADT) ^a	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Employee Vehicles	613	196	0	196	0	196	196
Construction Trucks	55	11	0	11	0	11	11
Total (w/PCE ^b)	668	207	0	207	0	207	207

General Notes:

1. Source: 8minuteenergy Renewables, LLC, and Fehr & Peers, 2010.

Footnotes:

- a. ADT = Average Daily Traffic (24-hour total bi-directional traffic on a roadway segment)
- b. PCE = Passenger Car Equivalent, used to reflect the additional impacts of heavy vehicles in the technical analyses.

Table 7-2 shows the O&M traffic after construction is complete. As compared to **Table 7-1**, the construction traffic is substantially greater than the O&M traffic, which validates the assertion that analysis of the construction impacts would represent the worst-case potential traffic impacts of the project.

TABLE 7-2
OPERATIONS & MAINTENANCE TRIP GENERATION

Trip Type	Daily Total (ADT) ^a	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Employee Vehicles	100	12	8	20	8	12	20

Footnotes:

- a. ADT = Average Daily Traffic (24-hour total bi-directional traffic on a roadway segment)

General Notes:

1. Source: 8minuteenergy Renewables, LLC, and Fehr & Peers, 2010.

7.2 Trip Distribution

Local access to the sites will be from Diehl Road and Wixom Road via Drew Road. All traffic to/from the sites, including parcels located in the western portion of the site, is ultimately expected to use Drew Road for regional access. The only access to I-8 aside from Drew Road is approximately 6.5 miles west at Dunaway Road or 4 miles east at Forrester Road, both of which are inferior options for reaching the Project sites as they would entail several miles of travel on narrow local roads, with notable out of direction travel required to reach the Dunaway Road interchange.

It is anticipated that the majority of construction workers will be from the local population centers of Calipatria, El Centro, and Calexico. **Figure 7-1** shows the distribution of construction employee passenger car traffic to/from the site. The employee traffic is anticipated to be mainly to/from north and east of the site, from the local labor pool utilizing I-8 and SR-98 as their primary routes to work.

No employee traffic is oriented to the west of the site, given the long distance to major population centers located west.

Regional trip distribution for construction truck traffic is anticipated to be oriented to/from Interstate 8 with origin/destination split between local population centers to the east and the larger urban areas to the west, as it is assumed some materials and/or equipment would travel longer distances to reach the site. **Figure 7-2** shows the distribution of truck traffic.

7.3 Trip Assignment

The Project trip generation summaries for site construction shown in *Table 7-1* were multiplied by the related employee and truck distribution percentages shown on *Figures 7-1* and *7-2*, respectively.

The Project employee vehicle traffic assignment is shown on **Figure 7-3**. **Figure 7-4** shows the Project construction truck traffic assignment. **Figure 7-5** depicts the total Project site construction traffic assignment.

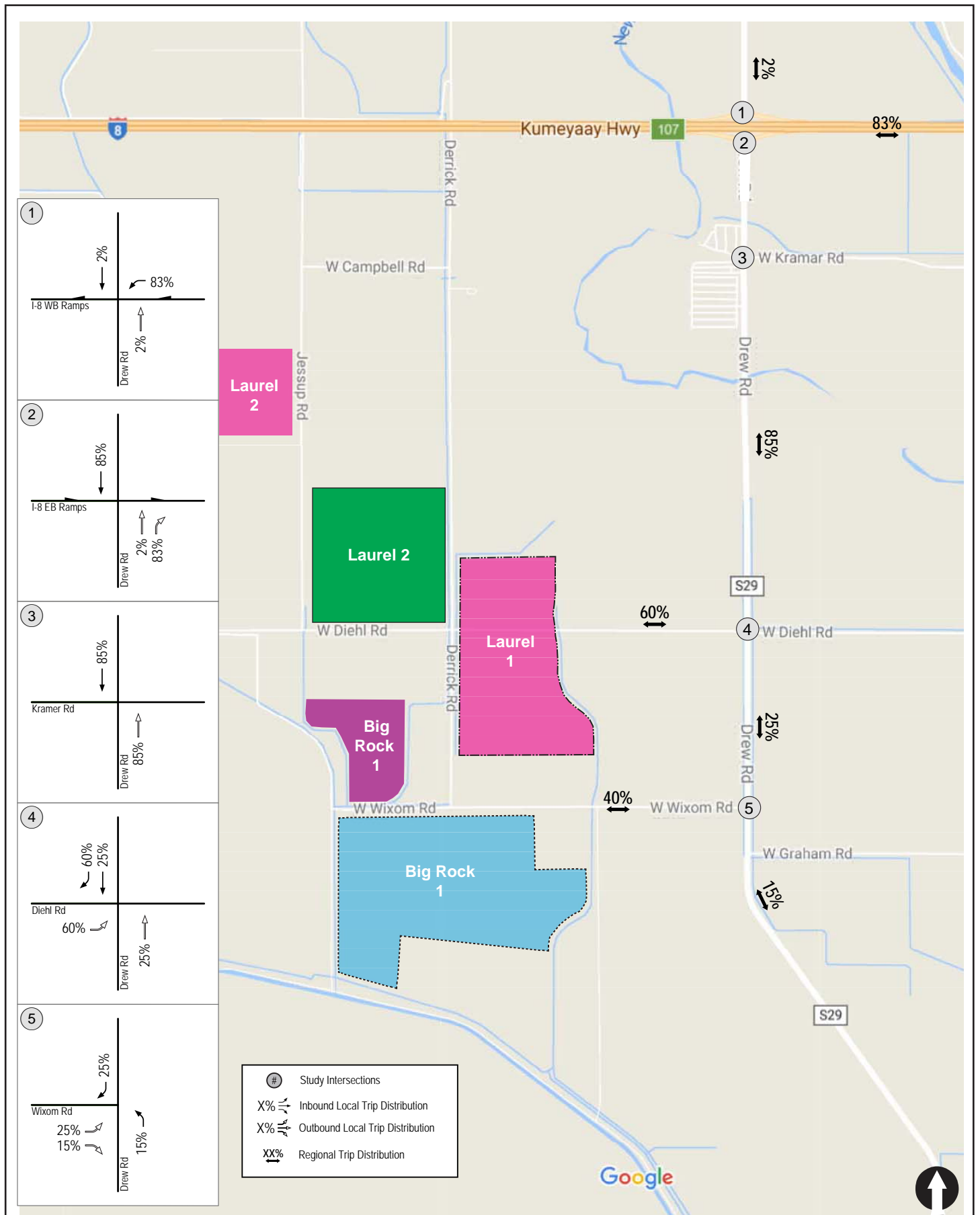
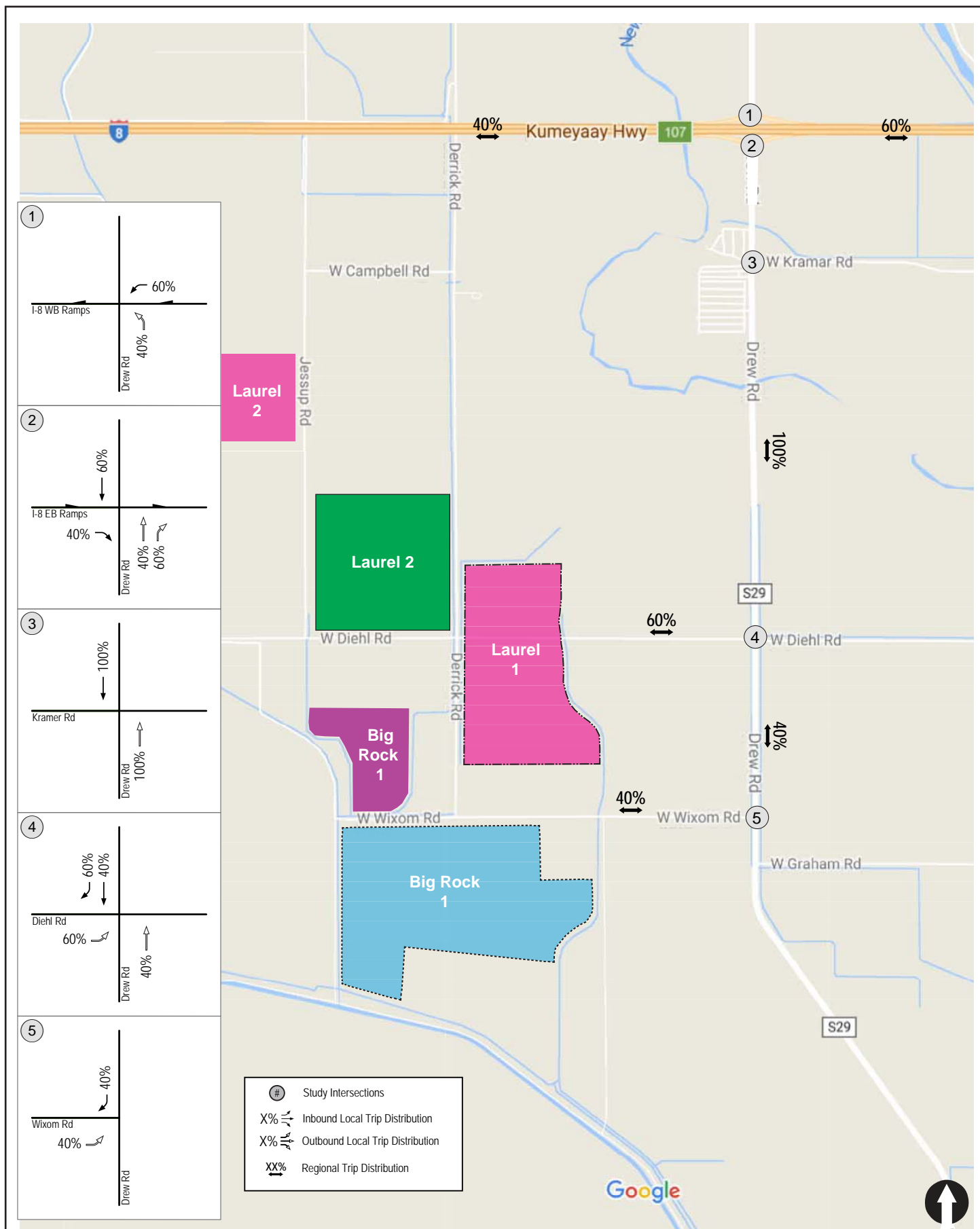


Figure 7-1

Construction Project Distribution - Employee Trips

BIG ROCK CLUSTER SOLAR FARMS



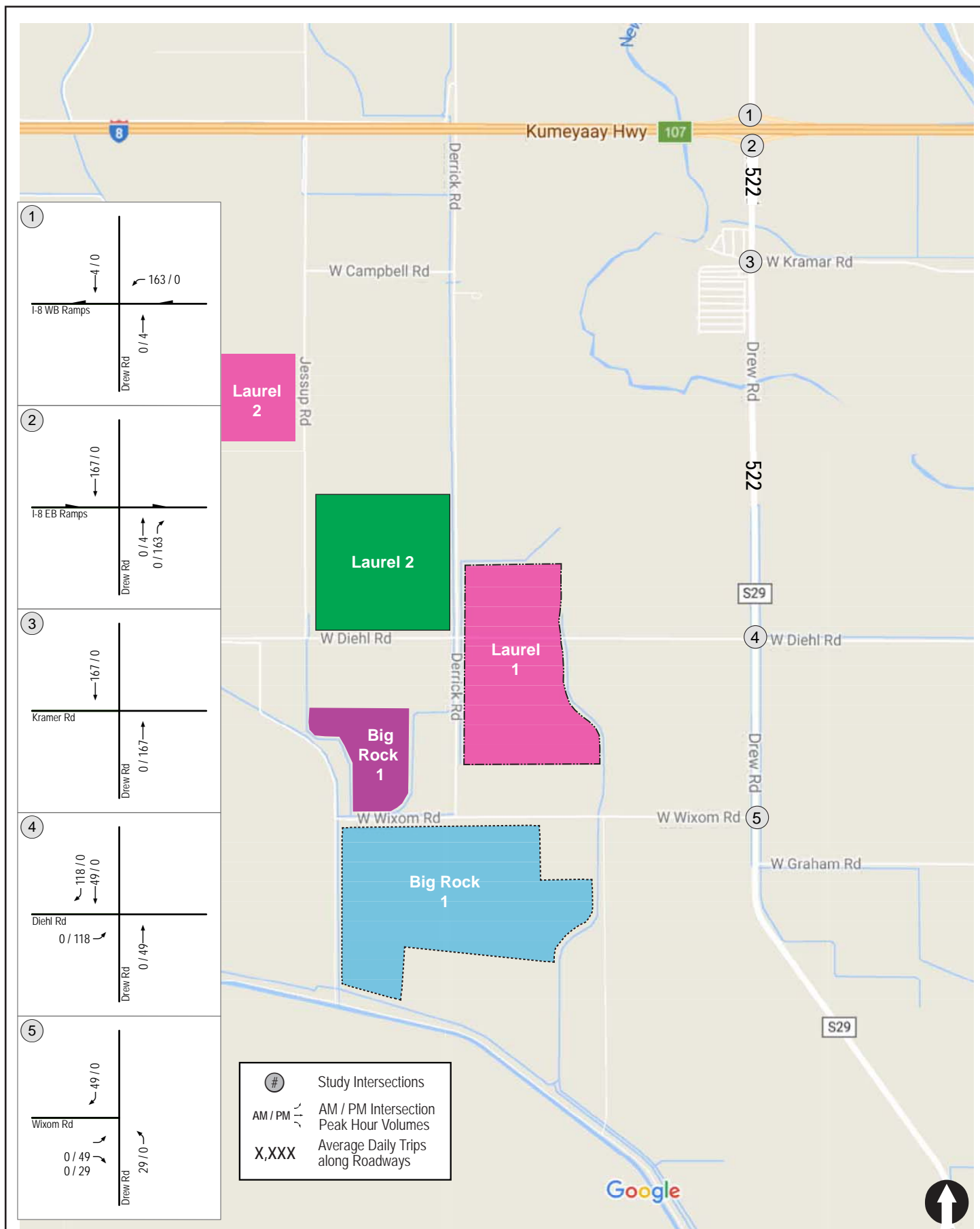


Figure 7-3
Construction Project Traffic Volumes - Employee Trips

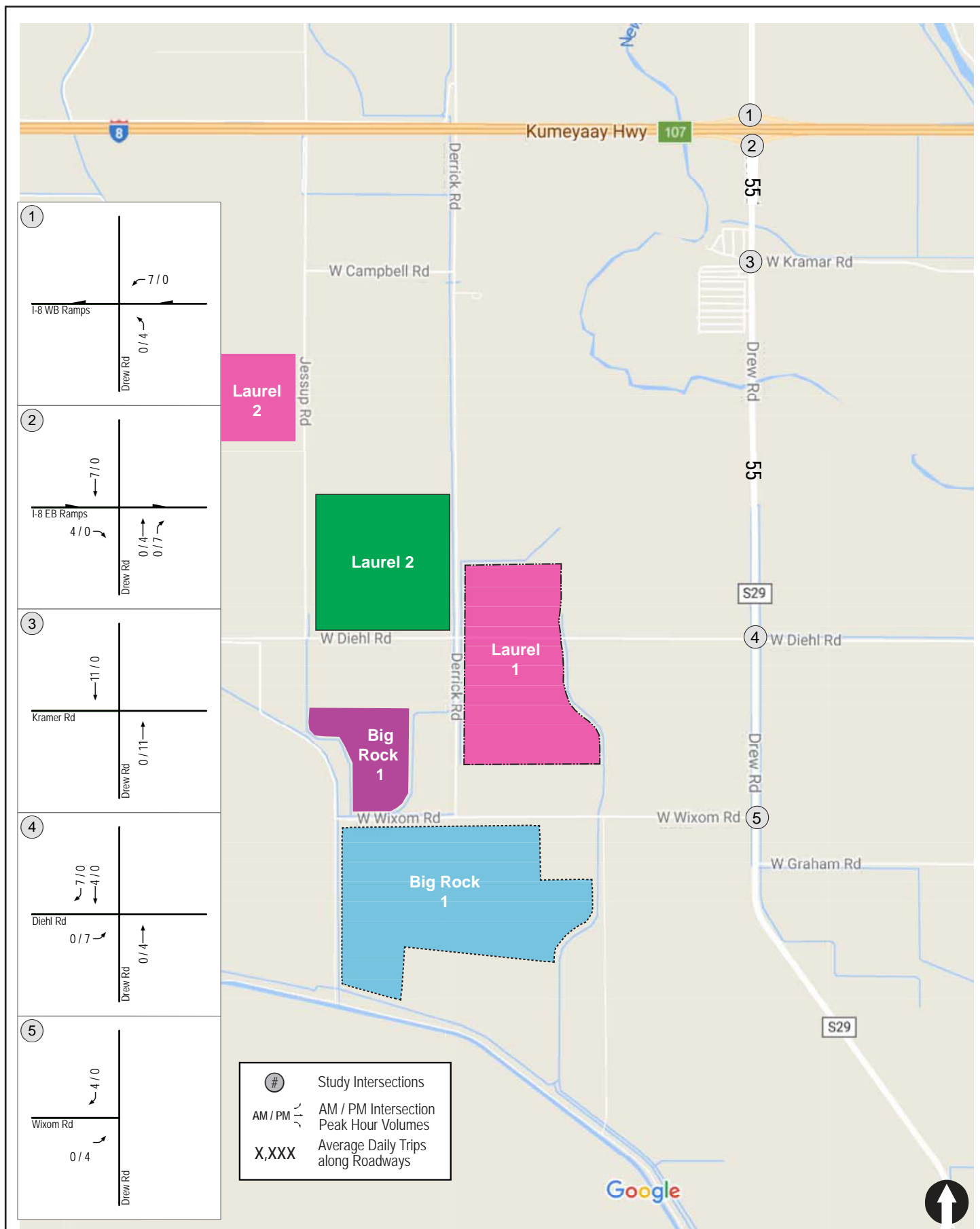


Figure 7-4
Construction Project Traffic Volumes - Truck Trips

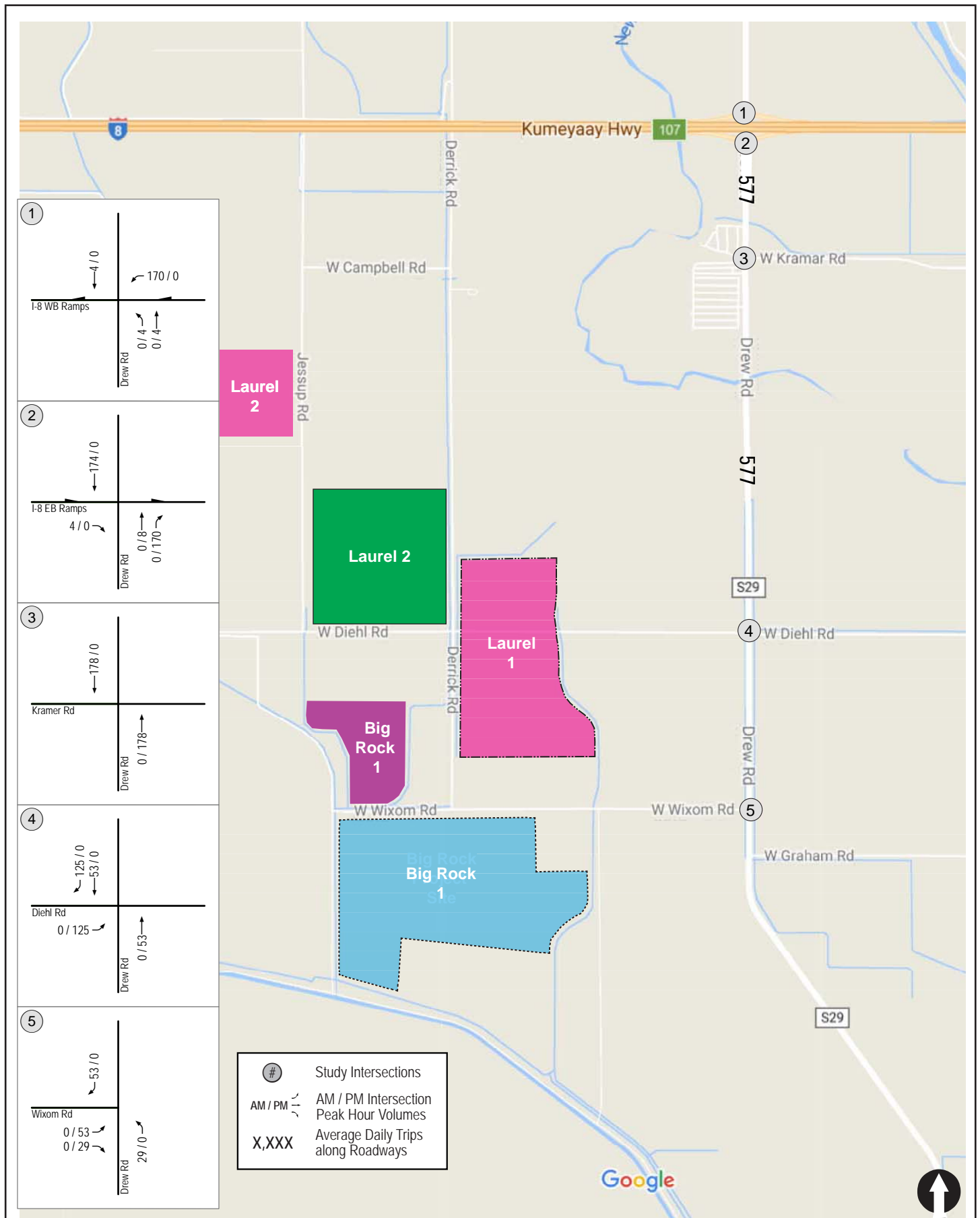


Figure 7-5
Construction Project Traffic Volumes - Total Trips

8.0 CONSTRUCTION YEAR ANALYSIS

Project construction is anticipated to start as early as 2018. Therefore, a baseline condition representing ambient traffic growth in the area was established. To account for potential cumulative project traffic increases that may occur between 2017 (date of counts) and the construction timeframe, a 5% growth factor was applied to all existing 2017 traffic volumes throughout the study area. This 5% growth would conservatively represent the amount of traffic that may utilize the street system in the project vicinity proposed from future development projects planned in Imperial County. **Figure 8-1** shows the *Baseline Without Construction Project* traffic volumes in the study area.

8.1 Baseline Without Construction Project Analysis

8.1.1 Intersection Operations

Table 8-1 summarizes the intersection operations throughout the project study area given the projected *Baseline Without Construction Project* traffic volumes. This table shows that all of the unsignalized intersections in the study area are forecasted to operate at LOS B or better during the AM and PM peak hours.

8.1.2 Segment Analysis

Table 8-2 summarizes the street segment operations throughout the project study area given the projected *Baseline Without Construction Project* traffic volumes. This table shows that all of the street segments in the study area are forecasted to operate at LOS A.

8.2 Baseline With Construction Project Analysis

The Big Rock Cluster construction project traffic was added to the *Baseline Without Construction Project* traffic, and the potential impacts associated with the proposed project were calculated by comparing the results. The following is a summary of the intersection and segment analyses. **Figure 8-2** shows the *Baseline With Construction Project* traffic volumes in the study area.

8.2.1 Intersection Analysis

Table 8-1 also summarizes the *Baseline With Construction Project* peak hour intersection operations. As seen in **Table 8-1**, all study area intersections are calculated to continue to operate at LOS B or better with the addition of the Big Rock Cluster site construction project traffic. **No significant impacts** are determined. **Appendix C** contains the both the *Baseline Without Construction Project* and *Baseline With Construction Project* peak hour intersection analysis worksheets.

8.2.2 Segment Analysis

Table 8-2 also summarizes the street segment operations throughout the project study area given the projected *Baseline With Construction Project* traffic volumes. This table shows that all study area segments are calculated to continue to operate at LOS A with the addition of construction project traffic. The increase in V/C due to the construction traffic is no greater than 0.01 at these segments, which is considered **not significant**.

TABLE 8-1
CONSTRUCTION YEAR INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Baseline Without Construction Project Traffic		Baseline With Construction Project Traffic		Δ^c Delay	Impact?
			Delay ^a	LOS ^b	Delay	LOS		
1. Drew Road / I-8 WB Ramps	MSSC ^d	AM	9.1	A	10.2	B	1.1	No
		PM	8.9	A	9.0	A	0.1	No
2. Drew Road / I-8 EB Ramps	MSSC	AM	10.3	B	11.5	B	1.2	No
		PM	10.3	B	11.1	B	0.8	No
3. Drew Road / Kramar Road	MSSC	AM	9.0	A	10.5	B	1.5	No
		PM	8.8	A	10.1	B	1.3	No
4. Drew Road / Diehl Road	MSSC	AM	8.7	A	9.5	A	0.8	No
		PM	8.7	A	9.9	A	1.2	No
5. Drew Road / Wixom Road	MSSC	AM	8.4	A	8.5	A	0.1	No
		PM	8.4	A	8.9	A	0.5	No

Footnotes:

- a. Average delay expressed in seconds per vehicle.
- b. Level of Service.
- c. Δ denotes an increase in delay due to project.
- d. MSSC – Minor Street Stop Controlled intersection. Minor street left turn delay is reported.

UNSIGNALIZED

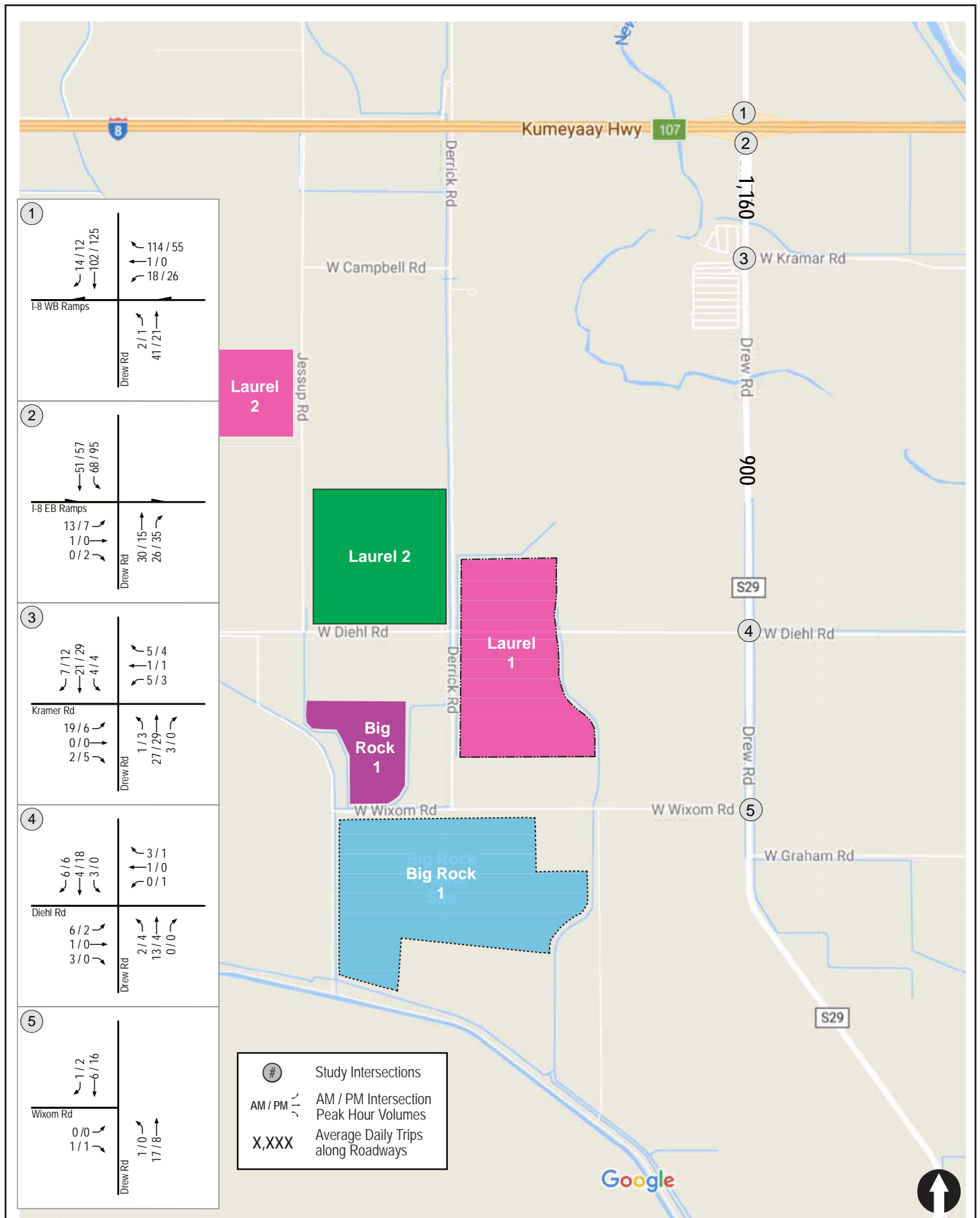
Delay	LOS
0.0 ≤ 10.0	A
10.1 to 15.0	B
15.1 to 25.0	C
25.1 to 35.0	D
35.1 to 50.0	E
≥ 50.1	F

TABLE 8-2
CONSTRUCTION YEAR STREET SEGMENT OPERATIONS

Street Segment	Functional Roadway Classification	Existing Capacity (LOS E) ^a	Baseline Without Project Construction Traffic			Baseline With Project Construction Traffic			Δ^e
			ADT ^b	LOS ^c	V/C ^d	ADT	LOS	V/C	
SR 98									
Pulliam Rd to Brockman Rd	2-Ln Local Collector	16,200	1,160	A	0.072	1,737	A	0.107	0.035
Brockman Rd to Ferrell Rd	2-Ln Local Collector	16,200	900	A	0.056	1,477	A	0.091	0.035

Footnotes:

- a. Roadway capacity corresponding to Level of Service E from Imperial County Standard Street Classification, Average Daily Vehicle Trips table.
- b. Average Daily Traffic volumes
- c. Level of Service
- d. Volume / Capacity ratio.
- e. Increase in V/C due to construction traffic.



N:\2763-2764\Figures
Date: 10/08/17

Figure 8-1
Baseline Without Construction Traffic Volumes

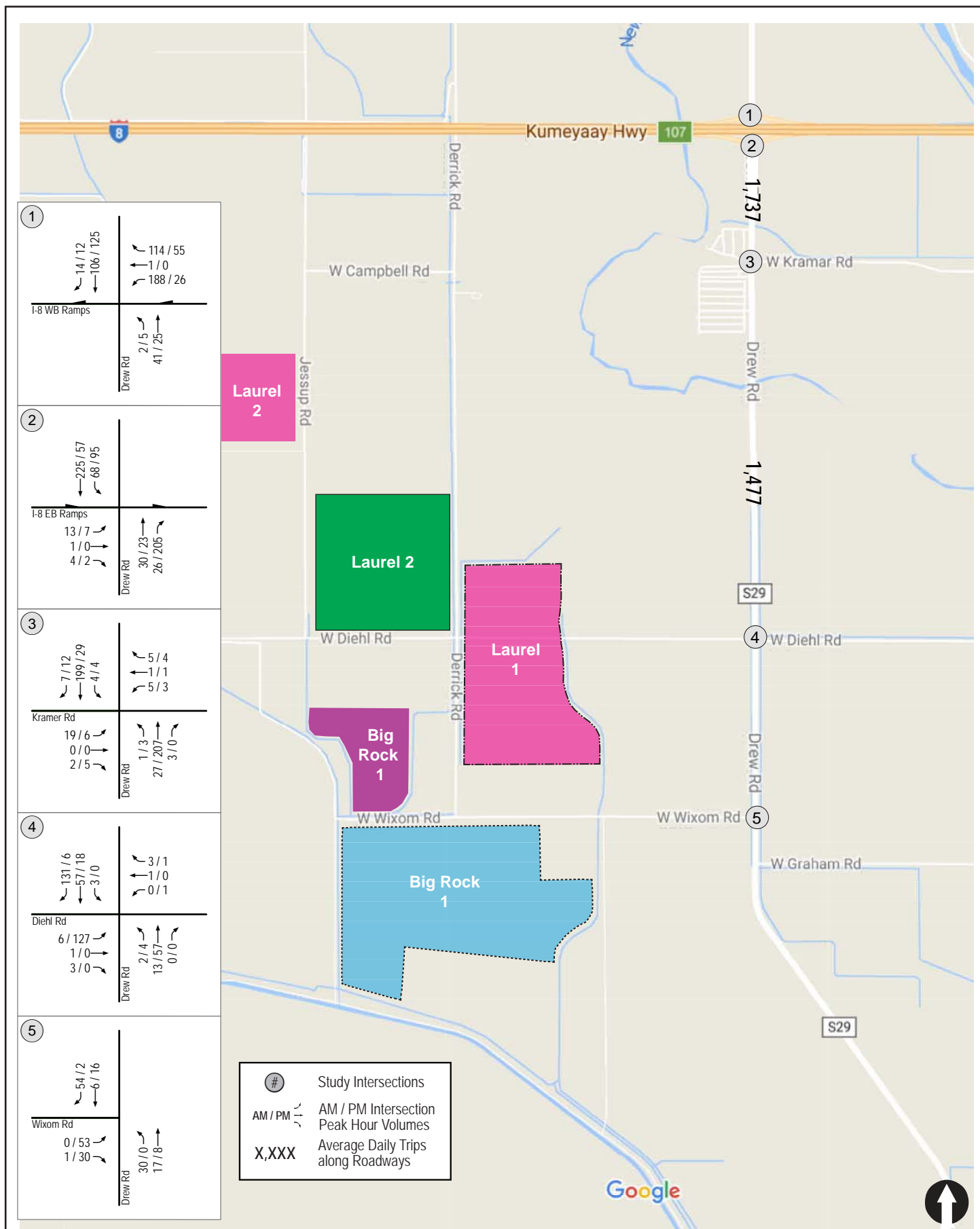


Figure 8-2
Baseline With Construction Traffic Volumes

9.0 POST-CONSTRUCTION OPERATIONAL TRAFFIC

The Operations and Maintenance of the plant subsequent to the construction of the total project will generate, at most, 50 ADT with 10 maximum total peak hour volumes during either peak hour under the shared O&M scenario. This increase is substantially less than the trips generated by the construction traffic, which were demonstrated to cause no significant impacts. Therefore, it is anticipated that the post-construction intersection and segment operations will continue to operate at acceptable levels of service. No impacts associated with Operations and Maintenance would be expected.

10.0 PROJECT ACCESS

The Project site comprises several individual sites as described in *Section 2.0*. These sites are shown as Big Rock 1 and Laurel (1-3) on *Figure 2-1*.

Access to the Project sites from the regional street system will be through two local east/west roadways from Drew Road. Diehl Road splits Laurel 1 and borders the southern portion of Laurel 2 & 3. Wixom Road is adjacent to the northern boundary of the Big Rock sites and the southern boundary of Laurel 1. Derrick Road, Jessup Road, and Westside Road are local north/south roads adjacent to the parcels that may also provide local access. Drew Road provides connection to regional facilities including I-8 and SR-98. The highest directional peak hour construction traffic associated with the Laurel site is 207 driveway trips, which will be split between Diehl Road and Wixom Road are not calculated to significantly impact the local street system, per the analysis presented in *Section 8.0*.

11.0 CONCLUSIONS & RECOMMENDATIONS

The capacity analyses performed for the key roadway segments and unsignalized intersections indicate that ***no significant impacts would occur*** during the construction of the projects comprising the Big Rock Cluster Solar Farm. The subsequent maintenance and operations stage of the project generate less traffic than does the construction phase. Therefore, no significant impacts would be associated with maintenance and operations, either.

Were the project construction schedule to be accelerated, consideration should be given to staggering AM work hours between 6 AM and 9 AM. This strategy would reduce both inbound trips during the AM peak hour and corresponding outbound trips during the PM peak hour, and thus reduce potential impacts to the local street system.

TECHNICAL APPENDICES
BIG ROCK CLUSTER SOLAR FARM
County of Imperial, California
October 10, 2017

LLG Ref. 3-17-2763

APPENDIX A

INTERSECTION & STREET SEGMENT COUNT SHEETS

Turn Count Summary

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: I-8 WB Ramps @ Drew Road

Date of Count: Tuesday, May 23, 2017

Analysts: LV/CD

Weather: Sunny

AVC Proj No: 17-0676



Vehicular Count

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: I-8 WB Ramps @ Drew Road

AM Period (7:00 AM - 9:00 AM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
7:00 AM	0	14	0	15	0	7	0	7	0	0	0	0	43
7:15 AM	5	20	0	23	0	4	0	8	1	0	0	0	61
7:30 AM	2	32	0	35	0	4	0	10	0	0	0	0	83
7:45 AM	3	22	0	38	0	7	0	14	0	0	0	0	84
8:00 AM	3	23	0	13	1	2	0	7	1	0	0	0	50
8:15 AM	2	14	0	7	0	6	0	5	0	0	0	0	34
8:30 AM	2	20	0	8	0	3	0	7	2	0	0	0	42
8:45 AM	3	21	0	7	0	1	0	6	1	0	0	0	39
Total	20	166	0	146	1	34	0	64	5	0	0	0	436

AM Intersection Peak Hour : **7:15 AM - 8:15 AM**

Intersection PHF : **0.83**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	13	97	0	109	1	17	0	39	2	0	0	0	278
PHF	0.65	0.76	#####	0.72	0.25	0.61	#####	0.70	0.50	#####	#####	#####	0.83
Movement PHF		0.81			0.71			0.73		#DIV/0!			0.83

PM Period (4:00 PM - 6:00 PM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
4:00 PM	2	38	0	13	0	6	0	7	0	0	0	0	66
4:15 PM	4	24	0	13	0	6	0	7	0	0	0	0	54
4:30 PM	3	37	0	15	0	3	0	4	0	0	0	0	62
4:45 PM	2	20	0	11	0	10	0	2	1	0	0	0	46
5:00 PM	2	17	0	20	1	6	0	9	0	0	0	0	55
5:15 PM	0	10	0	17	0	5	0	3	0	0	0	0	35
5:30 PM	0	16	0	10	0	3	0	5	0	0	0	0	34
5:45 PM	1	12	0	16	0	6	0	9	2	0	0	0	46
Total	14	174	0	115	1	45	0	46	3	0	0	0	398

PM Intersection Peak Hour : **4:00 PM - 5:00 PM**

Intersection PHF : **0.86**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	11	119	0	52	0	25	0	20	1	0	0	0	228
PHF	0.69	0.783	#####	0.867	#####	0.625	#####	0.714	0.25	#####	#####	#####	0.86
Movement PHF		0.81			0.92			0.75		#DIV/0!			0.86

Turn Count Summary

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: I-8 EB Ramps @ Drew Road

Date of Count: Tuesday, May 23, 2017

Analysts: LV/CD

Weather: Sunny

AVC Proj No: 17-0676



Vehicular Count

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: I-8 EB Ramps @ Drew Road

AM Period (7:00 AM - 9:00 AM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
7:00 AM	0	8	13	0	0	0	6	4	0	0	0	3	34
7:15 AM	0	9	15	0	0	0	3	7	0	0	1	2	37
7:30 AM	0	17	19	0	0	0	10	6	0	0	0	4	56
7:45 AM	0	13	16	0	0	0	6	11	0	0	0	3	49
8:00 AM	0	10	15	0	0	0	6	5	0	0	0	3	39
8:15 AM	0	5	15	0	0	0	7	4	0	0	0	1	32
8:30 AM	0	5	18	0	0	0	5	7	0	0	0	2	37
8:45 AM	0	9	13	0	0	0	3	6	0	0	0	1	32
Total	0	76	124	0	0	0	46	50	0	0	1	19	316

AM Intersection Peak Hour : **7:15 AM - 8:15 AM**

Intersection PHF : **0.81**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	0	49	65	0	0	0	25	29	0	0	1	12	181
PHF	#####	0.72	0.86	#####	#####	#####	0.63	0.66	#####	#####	0.25	0.75	0.81
Movement PHF		0.79		#DIV/0!				0.79			0.81		0.81

PM Period (4:00 PM - 6:00 PM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
4:00 PM	0	3	41	0	0	0	4	3	0	0	0	4	55
4:15 PM	0	12	18	0	0	0	5	5	0	2	0	2	44
4:30 PM	0	21	19	0	0	0	16	3	0	0	0	1	60
4:45 PM	0	18	12	0	0	0	8	3	0	0	0	0	41
5:00 PM	0	10	13	0	0	0	4	5	0	1	2	4	39
5:15 PM	0	2	13	0	0	0	3	3	0	0	0	0	21
5:30 PM	0	7	12	0	0	0	7	5	0	1	0	0	32
5:45 PM	0	5	13	0	0	0	5	11	0	0	0	0	34
Total	0	78	141	0	0	0	52	38	0	4	2	11	326

PM Intersection Peak Hour : **4:00 PM - 5:00 PM**

Intersection PHF : **0.83**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	0	54	90	0	0	0	33	14	0	2	0	7	200
PHF	#####	0.643	0.549	#####	#####	#####	0.516	0.7	#####	0.25	#####	0.438	0.83
Movement PHF		0.82		#DIV/0!				0.62			0.56		0.83

Turn Count Summary

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: W. Kramar Road @ Drew Road

Date of Count: Tuesday, May 23, 2017

Analysts: LV/CD

Weather: Sunny

AVC Proj No: 17-0676



Vehicular Count

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: W. Kramar Road @ Drew Road

AM Period (7:00 AM - 9:00 AM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
7:00 AM	1	5	1	1	0	0	0	4	0	1	1	4	18
7:15 AM	2	5	0	2	0	2	1	8	0	0	0	7	27
7:30 AM	0	5	3	1	0	3	1	3	0	1	0	2	19
7:45 AM	3	5	0	0	1	0	0	10	1	0	0	6	26
8:00 AM	2	5	1	2	0	0	1	5	0	1	0	3	20
8:15 AM	2	2	1	1	0	3	1	4	0	0	0	2	16
8:30 AM	2	5	0	0	0	0	0	6	2	0	0	1	16
8:45 AM	0	2	0	1	0	0	0	7	0	1	0	2	13
Total	12	34	6	8	1	8	4	47	3	4	1	27	155

AM Intersection Peak Hour : **7:15 AM - 8:15 AM**

Intersection PHF : **0.85**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	7	20	4	5	1	5	3	26	1	2	0	18	92
PHF	0.58	1.00	0.33	0.63	0.25	0.42	0.75	0.65	0.25	0.50	#####	0.64	0.85
Movement PHF		0.97			0.69			0.68			0.71		0.85

PM Period (4:00 PM - 6:00 PM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
4:00 PM	2	7	1	0	0	0	0	5	0	0	1	2	18
4:15 PM	0	10	1	1	1	1	0	1	0	0	0	1	16
4:30 PM	3	10	1	0	0	0	1	16	0	1	0	1	33
4:45 PM	5	2	1	1	0	0	0	1	2	0	1	1	14
5:00 PM	3	7	1	2	1	0	0	1	1	1	0	0	17
5:15 PM	3	6	2	1	0	0	0	2	0	0	0	1	15
5:30 PM	3	5	1	0	0	1	0	7	0	1	0	3	21
5:45 PM	2	10	0	1	0	2	0	18	2	3	0	2	40
Total	21	57	8	6	2	4	1	51	5	6	2	11	174

PM Intersection Peak Hour : **5:00 PM - 6:00 PM**

Intersection PHF : **0.58**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	11	28	4	4	1	3	0	28	3	5	0	6	93
PHF	0.92	0.7	0.5	0.5	0.25	0.375	#####	0.389	0.375	0.417	#####	0.5	0.58
Movement PHF		0.90			0.67			0.39			0.55		0.58

Turn Count Summary

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: W. Diehl Road @ Drew Road

Date of Count: Tuesday, May 23, 2017

Analysts: LV/CD

Weather: Sunny

AVC Proj No: 17-0676



Vehicular Count

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: W. Diehl Road @ Drew Road

AM Period (7:00 AM - 9:00 AM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
7:00 AM	2	1	1	0	0	0	0	4	2	1	1	0	12
7:15 AM	2	1	0	1	0	0	0	2	0	0	0	1	7
7:30 AM	2	1	2	2	0	0	0	2	0	1	0	3	13
7:45 AM	0	1	0	0	1	0	0	4	0	1	0	2	9
8:00 AM	2	1	1	1	0	0	0	3	0	0	0	0	8
8:15 AM	0	1	1	0	0	0	0	4	0	0	0	0	6
8:30 AM	1	3	0	0	0	0	0	2	0	0	1	2	9
8:45 AM	0	2	0	2	0	0	0	3	0	0	0	0	7
Total	9	11	5	6	1	0	0	24	2	3	2	8	71

AM Intersection Peak Hour : **7:00 AM - 8:00 AM**

Intersection PHF : **0.79**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	6	4	3	3	1	0	0	12	2	3	1	6	41
PHF	0.75	1.00	0.38	0.38	0.25	#####	#####	0.75	0.25	0.75	0.25	0.50	0.79
Movement PHF		0.65			0.50			0.58			0.63		0.79

PM Period (4:00 PM - 6:00 PM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
4:00 PM	1	3	0	0	0	0	0	0	1	0	0	2	7
4:15 PM	0	7	0	0	0	0	0	1	0	0	0	0	8
4:30 PM	2	5	0	1	0	0	0	0	0	0	0	2	10
4:45 PM	3	1	0	0	0	0	0	2	3	0	0	0	9
5:00 PM	1	4	0	0	0	1	0	1	1	0	0	0	8
5:15 PM	2	3	0	0	0	0	0	1	1	0	0	0	7
5:30 PM	0	4	1	0	0	0	0	4	0	0	0	0	9
5:45 PM	2	2	0	0	0	0	0	3	0	0	0	1	8
Total	11	29	1	1	0	1	0	12	6	0	0	5	66

PM Intersection Peak Hour : **4:15 PM - 5:15 PM**

Intersection PHF : **0.88**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	6	17	0	1	0	1	0	4	4	0	0	2	35
PHF	0.50	0.607	#####	0.25	#####	0.25	#####	0.5	0.333	#####	#####	0.25	0.88
Movement PHF		0.82			0.50			0.40			0.25		0.88

Turn Count Summary

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: W. Wixom Road @ Drew Road

Date of Count: Tuesday, May 23, 2017

Analysts: LV/CD

Weather: Sunny

AVC Proj No: 17-0676



Vehicular Count

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: W. Wixom Road @ Drew Road

AM Period (7:00 AM - 9:00 AM)								
	Southbound			Northbound		Eastbound		TOTAL
	Right	Thru		Thru	Left	Right	Left	
7:00 AM	0	3		6	0	0	0	9
7:15 AM	0	1		3	0	0	0	4
7:30 AM	0	2		2	0	0	0	4
7:45 AM	1	0		5	1	0	0	7
8:00 AM	0	1		3	0	0	0	4
8:15 AM	0	1		4	0	0	0	5
8:30 AM	1	2		2	0	0	0	5
8:45 AM	0	1		3	0	0	0	4
Total	2	11		28	1	0	0	42

AM Intersection Peak Hour : **7:00 AM - 8:00 AM**

Intersection PHF : **0.67**

	Southbound			Northbound		Eastbound		
	Right	Thru		Thru	Left	Right	Left	TOTAL
Volume	1	6		16	1	0	0	24
PHF	0.25	0.50		0.67	0.25	#####	#####	0.67
Movement PHF		0.58		0.71		#DIV/0!		0.67

PM Period (4:00 PM - 6:00 PM)								
	Southbound			Northbound		Eastbound		TOTAL
	Right	Thru		Thru	Left	Right	Left	
4:00 PM	1	2		0	0	0	0	3
4:15 PM	0	7		1	0	0	0	8
4:30 PM	1	3		0	0	0	0	4
4:45 PM	0	1		5	0	1	0	7
5:00 PM	1	4		2	0	0	0	7
5:15 PM	0	4		1	0	0	0	5
5:30 PM	0	2		4	0	0	0	6
5:45 PM	1	2		1	0	0	1	5
Total	4	25		14	0	1	1	45

PM Intersection Peak Hour : **4:15 PM - 5:15 PM**

Intersection PHF : **0.81**

	Southbound			Northbound		Eastbound		
	Right	Thru		Thru	Left	Right	Left	TOTAL
Volume	2	15		8	0	1	0	26
PHF	0.50	0.536		0.4	#####	0.25	#####	0.81
Movement PHF		0.61		0.40		0.25		0.81

24 Hour Segment Count

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: 1. Drew Road btw I-8 EB Ramps to W. Kramar Road

Orientation: North-South

Date of Count: Tuesday, May 23, 2017

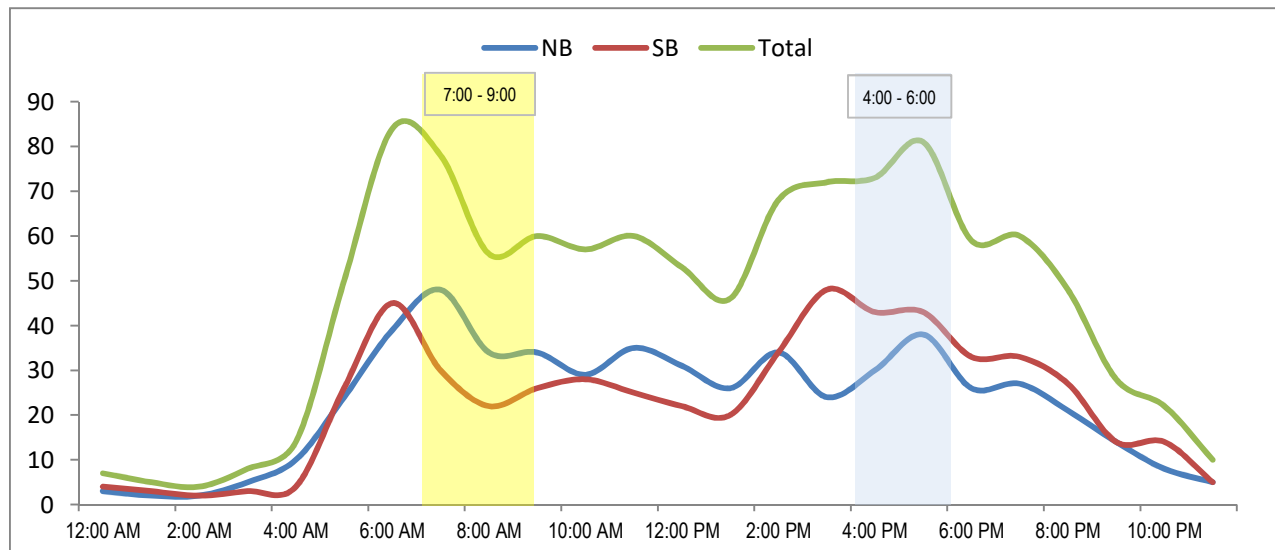
Analysts: DASH

Weather: Sunny

AVC Proj. No: 17-0676

24 Hour Segment Volume					1,103			
Time	Hourly Volume				Time	Hourly Volume		
	NB	SB	Total			NB	SB	Total
12:00 AM - 1:00 AM	3	4	7		12:00 PM - 1:00 PM	31	22	53
1:00 AM - 2:00 AM	2	3	5		1:00 PM - 2:00 PM	26	20	46
2:00 AM - 3:00 AM	2	2	4		2:00 PM - 3:00 PM	34	34	68
3:00 AM - 4:00 AM	5	3	8		3:00 PM - 4:00 PM	24	48	72
4:00 AM - 5:00 AM	10	4	14		4:00 PM - 5:00 PM	30	43	73
5:00 AM - 6:00 AM	24	26	50		5:00 PM - 6:00 PM	38	43	81
6:00 AM - 7:00 AM	39	45	84		6:00 PM - 7:00 PM	26	33	59
7:00 AM - 8:00 AM	48	30	78		7:00 PM - 8:00 PM	27	33	60
8:00 AM - 9:00 AM	34	22	56		8:00 PM - 9:00 PM	21	27	48
9:00 AM - 10:00 AM	34	26	60		9:00 PM - 10:00 PM	14	14	28
10:00 AM - 11:00 AM	29	28	57		10:00 PM - 11:00 PM	8	14	22
11:00 AM - 12:00 PM	35	25	60		11:00 PM - 12:00 AM	5	5	10
Total	265	218	483		Total	284	336	620

24-Hour NB Volume	549	24-Hour SB Volume	554
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24 Hour Segment Count

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: 2. Drew Road btw W. Kramar Road to W. Diehl Road

Orientation: North-South

Date of Count: Tuesday, May 23, 2017

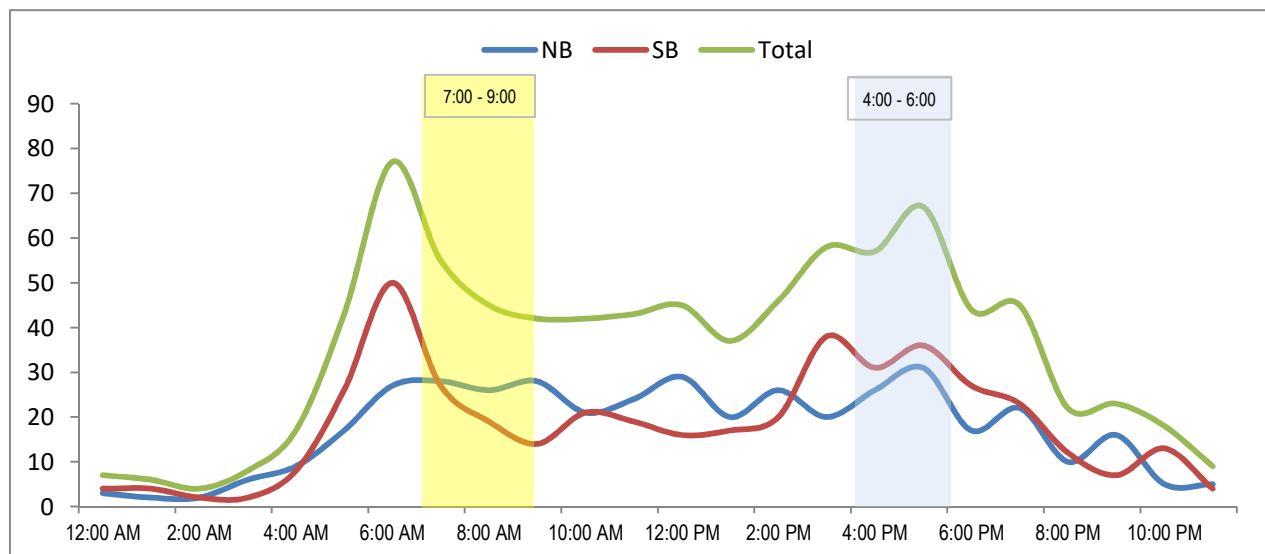
Analysts: DASH

Weather: Sunny

AVC Proj. No: 17-0676

24 Hour Segment Volume					860			
Time	Hourly Volume				Time	Hourly Volume		
	NB	SB	Total			NB	SB	Total
12:00 AM - 1:00 AM	3	4	7		12:00 PM - 1:00 PM	29	16	45
1:00 AM - 2:00 AM	2	4	6		1:00 PM - 2:00 PM	20	17	37
2:00 AM - 3:00 AM	2	2	4		2:00 PM - 3:00 PM	26	20	46
3:00 AM - 4:00 AM	6	2	8		3:00 PM - 4:00 PM	20	38	58
4:00 AM - 5:00 AM	9	8	17		4:00 PM - 5:00 PM	26	31	57
5:00 AM - 6:00 AM	17	26	43		5:00 PM - 6:00 PM	31	36	67
6:00 AM - 7:00 AM	27	50	77		6:00 PM - 7:00 PM	17	27	44
7:00 AM - 8:00 AM	28	27	55		7:00 PM - 8:00 PM	22	23	45
8:00 AM - 9:00 AM	26	19	45		8:00 PM - 9:00 PM	10	12	22
9:00 AM - 10:00 AM	28	14	42		9:00 PM - 10:00 PM	16	7	23
10:00 AM - 11:00 AM	21	21	42		10:00 PM - 11:00 PM	5	13	18
11:00 AM - 12:00 PM	24	19	43		11:00 PM - 12:00 AM	5	4	9
Total	193	196	389		Total	227	244	471

24-Hour NB Volume	420	24-Hour SB Volume	440
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APPENDIX B

PEAK HOUR INTERSECTION ANALYSIS WORKSHEETS – EXISTING

Existing AM
1: Drew Rd & I-8 WB Ramps

Big Rock Cluster Solar Farms

10/10/2017

Intersection

Int Delay, s/veh 4.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↰	↱		↰			↱	
Traffic Vol, veh/h	0	0	0	17	1	109	2	39	0	0	97	13
Future Vol, veh/h	0	0	0	17	1	109	2	39	0	0	97	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	-	-	60	-	-	-	-	-	-
Veh in Median Storage, #	-	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	19	1	124	2	44	0	0	110	15

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	166	173	44	125	0	-	-	-	0
Stage 1	48	48	-	-	-	-	-	-	-
Stage 2	118	125	-	-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	4.12	-	-	-	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	2.218	-	-	-	-	-
Pot Cap-1 Maneuver	824	720	1026	1462	-	0	0	-	-
Stage 1	974	855	-	-	-	0	0	-	-
Stage 2	907	792	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	823	0	1026	1462	-	-	-	-	-
Mov Cap-2 Maneuver	823	0	-	-	-	-	-	-	-
Stage 1	973	0	-	-	-	-	-	-	-
Stage 2	907	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.1	0.4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBTWBLn1WBLn2	SBT	SBR
Capacity (veh/h)	1462	- 823 1026	-	-
HCM Lane V/C Ratio	0.002	- 0.025 0.121	-	-
HCM Control Delay (s)	7.5	0 9.5 9	-	-
HCM Lane LOS	A	A A A	-	-
HCM 95th %tile Q(veh)	0	- 0.1 0.4	-	-





Existing AM
2: Drew Rd & I-8 EB Ramps

Big Rock Cluster Solar Farms

10/10/2017

Intersection

Int Delay, s/veh 3.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	1	0	0	0	0	0	29	25	65	49	0
Future Vol, veh/h	12	1	0	0	0	0	0	29	25	65	49	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Yield	-	-	None	-	-	None	-	-	None
Storage Length	-	-	60	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	16979	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	14	1	0	0	0	0	0	33	28	74	56	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	251	265	56	-	0	0	61	0	0
Stage 1	204	204	-	-	-	-	-	-	-
Stage 2	47	61	-	-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	-	-	-	4.12	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	-	-	-	2.218	-	-
Pot Cap-1 Maneuver	738	640	1011	0	-	-	1542	-	0
Stage 1	830	733	-	0	-	-	-	-	0
Stage 2	975	844	-	0	-	-	-	-	0
Platoon blocked, %					-	-			
Mov Cap-1 Maneuver	701	0	1011	-	-	-	1542	-	-
Mov Cap-2 Maneuver	701	0	-	-	-	-	-	-	-
Stage 1	789	0	-	-	-	-	-	-	-
Stage 2	975	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.2	0	4.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	SBL	SBT
Capacity (veh/h)	-	-	701	-	1542	-
HCM Lane V/C Ratio	-	-	0.021	-	0.048	-
HCM Control Delay (s)	-	-	10.2	0	7.5	0
HCM Lane LOS	-	-	B	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	-	0.2	-






Existing AM
3: Drew Rd & Kramar Rd

Big Rock Cluster Solar Farms

10/10/2017

Intersection

Int Delay, s/veh 3.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	18	0	2	5	1	5	1	26	3	4	20	7
Future Vol, veh/h	18	0	2	5	1	5	1	26	3	4	20	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	180
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	20	0	2	6	1	6	1	30	3	5	23	8

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	70	68	23	72	75	32	31	0	0	33	0	0
Stage 1	33	33	-	34	34	-	-	-	-	-	-	-
Stage 2	37	35	-	38	41	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	922	823	1054	919	815	1042	1582	-	-	1579	-	-
Stage 1	983	868	-	982	867	-	-	-	-	-	-	-
Stage 2	978	866	-	977	861	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	913	820	1054	914	812	1042	1582	-	-	1579	-	-
Mov Cap-2 Maneuver	913	820	-	914	812	-	-	-	-	-	-	-
Stage 1	982	865	-	981	866	-	-	-	-	-	-	-
Stage 2	970	865	-	972	858	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9	8.8	0.2	0.9
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1582	-	-	925	956	1579	-	-
HCM Lane V/C Ratio	0.001	-	-	0.025	0.013	0.003	-	-
HCM Control Delay (s)	7.3	0	-	9	8.8	7.3	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-

Existing AM
4: Drew Rd & Diehl Rd

Big Rock Cluster Solar Farms

10/10/2017

Intersection

Int Delay, s/veh 3.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	1	3	0	1	3	2	12	0	3	4	6
Future Vol, veh/h	6	1	3	0	1	3	2	12	0	3	4	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	1	3	0	1	3	2	14	0	3	5	7




Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	35	33	9	35	36	14	12	0	0	14	0	0
Stage 1	15	15	-	18	18	-	-	-	-	-	-	-
Stage 2	20	18	-	17	18	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	971	860	1073	971	856	1066	1607	-	-	1604	-	-
Stage 1	1005	883	-	1001	880	-	-	-	-	-	-	-
Stage 2	999	880	-	1002	880	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	965	857	1073	965	853	1066	1607	-	-	1604	-	-
Mov Cap-2 Maneuver	965	857	-	965	853	-	-	-	-	-	-	-
Stage 1	1004	881	-	1000	879	-	-	-	-	-	-	-
Stage 2	994	879	-	996	878	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.7	8.6	1	1.7
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1607	-	-	982 1003	1604	-	-
HCM Lane V/C Ratio	0.001	-	-	0.012 0.005	0.002	-	-
HCM Control Delay (s)	7.2	0	-	8.7 8.6	7.2	0	-
HCM Lane LOS	A	A	-	A A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0 0	0	-	-

Intersection

Int Delay, s/veh 0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	1	1	16	6	1
Future Vol, veh/h	0	1	1	16	6	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1	1	18	7	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	28	8	8	0	-	0
Stage 1	8	-	-	-	-	-
Stage 2	20	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	987	1074	1612	-	-	-
Stage 1	1015	-	-	-	-	-
Stage 2	1003	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	986	1074	1612	-	-	-
Mov Cap-2 Maneuver	986	-	-	-	-	-
Stage 1	1014	-	-	-	-	-
Stage 2	1003	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.4	0.4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1612	-	1074	-	-
HCM Lane V/C Ratio	0.001	-	0.001	-	-
HCM Control Delay (s)	7.2	0	8.4	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Existing PM
1: Drew Rd & I-8 WB Ramps

Big Rock Cluster Solar Farms





10/10/2017

Intersection												
Int Delay, s/veh		3										
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↰	↱		↰			↱	
Traffic Vol, veh/h	0	0	0	25	0	52	1	20	0	0	119	11
Future Vol, veh/h	0	0	0	25	0	52	1	20	0	0	119	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	-	-	60	-	-	-	-	-	-
Veh in Median Storage, #	-	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	28	0	59	1	23	0	0	135	13
Major/Minor				Minor1			Major1			Major2		
Conflicting Flow All				167	173	23	148	0	-	-	-	0
Stage 1				25	25	-	-	-	-	-	-	-
Stage 2				142	148	-	-	-	-	-	-	-
Critical Hdwy				6.42	6.52	6.22	4.12	-	-	-	-	-
Critical Hdwy Stg 1				5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2				5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy				3.518	4.018	3.318	2.218	-	-	-	-	-
Pot Cap-1 Maneuver				823	720	1054	1434	-	0	0	-	-
Stage 1				998	874	-	-	-	0	0	-	-
Stage 2				885	775	-	-	-	0	0	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver				822	0	1054	1434	-	-	-	-	-
Mov Cap-2 Maneuver				822	0	-	-	-	-	-	-	-
Stage 1				997	0	-	-	-	-	-	-	-
Stage 2				885	0	-	-	-	-	-	-	-
Approach				WB			NB			SB		
HCM Control Delay, s				8.9			0.4			0		
HCM LOS				A								
Minor Lane/Major Mvmt	NBL	NBT	WBLn1	WBLn2	SBT	SBR						
Capacity (veh/h)	1434	-	822	1054	-	-						
HCM Lane V/C Ratio	0.001	-	0.035	0.056	-	-						
HCM Control Delay (s)	7.5	0	9.5	8.6	-	-						
HCM Lane LOS	A	A	A	A	-	-						
HCM 95th %tile Q(veh)	0	-	0.1	0.2	-	-						

Existing PM
2: Drew Rd & I-8 EB Ramps

Big Rock Cluster Solar Farms

10/10/2017

Intersection												
Int Delay, s/veh	3.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	0	2	0	0	0	0	14	33	90	54	0
Future Vol, veh/h	7	0	2	0	0	0	0	14	33	90	54	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Yield	-	-	None	-	-	None	-	-	None
Storage Length	-	-	60	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	16979	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	0	2	0	0	0	0	16	38	102	61	0
Major/Minor	Minor2			Major1			Major2					
Conflicting Flow All	300	319	61				-	0	0	54	0	0
Stage 1	265	265	-				-	-	-	-	-	-
Stage 2	35	54	-				-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22				-	-	-	4.12	-	-
Critical Hdwy Stg 1	5.42	5.52	-				-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-				-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318				-	-	-	2.218	-	-
Pot Cap-1 Maneuver	691	598	1004				0	-	-	1551	-	0
Stage 1	779	689	-				0	-	-	-	-	0
Stage 2	987	850	-				0	-	-	-	-	0
Platoon blocked, %								-	-		-	
Mov Cap-1 Maneuver	644	0	1004				-	-	-	1551	-	-
Mov Cap-2 Maneuver	644	0	-				-	-	-	-	-	
Stage 1	726	0	-				-	-	-	-	-	-
Stage 2	987	0	-				-	-	-	-	-	-
Approach	EB			NB			SB					
HCM Control Delay, s	10.2			0			4.7					
HCM LOS	B											
Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	SBL	SBT						
Capacity (veh/h)	-	-	644	1004	1551	-						
HCM Lane V/C Ratio	-	-	0.012	0.002	0.066	-						
HCM Control Delay (s)	-	-	10.7	8.6	7.5	0						
HCM Lane LOS	-	-	B	A	A	A						
HCM 95th %tile Q(veh)	-	-	0	0	0.2	-						






Existing PM
3: Drew Rd & Kramar Rd

Big Rock Cluster Solar Farms

10/10/2017

Intersection

Int Delay, s/veh 2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	0	5	3	1	4	3	28	0	4	28	11
Future Vol, veh/h	6	0	5	3	1	4	3	28	0	4	28	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	180
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	0	6	3	1	5	3	32	0	5	32	13

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	83	80	32	90	93	32	45	0	0	32	0	0
Stage 1	42	42	-	38	38	-	-	-	-	-	-	-
Stage 2	41	38	-	52	55	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	904	810	1042	895	797	1042	1563	-	-	1580	-	-
Stage 1	972	860	-	977	863	-	-	-	-	-	-	-
Stage 2	974	863	-	961	849	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	896	806	1042	887	793	1042	1563	-	-	1580	-	-
Mov Cap-2 Maneuver	896	806	-	887	793	-	-	-	-	-	-	-
Stage 1	970	857	-	975	861	-	-	-	-	-	-	-
Stage 2	967	861	-	953	846	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.8	8.9	0.7	0.7
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1563	-	-	957	943	1580	-
HCM Lane V/C Ratio	0.002	-	-	0.013	0.01	0.003	-
HCM Control Delay (s)	7.3	0	-	8.8	8.9	7.3	0
HCM Lane LOS	A	A	-	A	A	A	A
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-





Existing PM
4: Drew Rd & Diehl Rd

Big Rock Cluster Solar Farms

10/10/2017

Intersection

Int Delay, s/veh 1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	0	0	1	0	1	4	4	0	0	17	6
Future Vol, veh/h	2	0	0	1	0	1	4	4	0	0	17	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	0	0	1	0	1	5	5	0	0	19	7




Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	39	38	23	38	41	5	26	0	0	5	0	0
Stage 1	23	23	-	15	15	-	-	-	-	-	-	-
Stage 2	16	15	-	23	26	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	966	854	1054	967	851	1078	1588	-	-	1616	-	-
Stage 1	995	876	-	1005	883	-	-	-	-	-	-	-
Stage 2	1004	883	-	995	874	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	963	851	1054	965	848	1078	1588	-	-	1616	-	-
Mov Cap-2 Maneuver	963	851	-	965	848	-	-	-	-	-	-	-
Stage 1	992	876	-	1002	880	-	-	-	-	-	-	-
Stage 2	1000	880	-	995	874	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.7	8.5	3.6	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1588	-	-	963 1018	1616	-	-
HCM Lane V/C Ratio	0.003	-	-	0.002 0.002	-	-	-
HCM Control Delay (s)	7.3	0	-	8.7 8.5	0	-	-
HCM Lane LOS	A	A	-	A A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0 0	0	-	-

Intersection

Int Delay, s/veh 0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	1	0	8	15	2
Future Vol, veh/h	0	1	0	8	15	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1	0	9	17	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	27	18	19	0	-	0
Stage 1	18	-	-	-	-	-
Stage 2	9	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	988	1061	1597	-	-	-
Stage 1	1005	-	-	-	-	-
Stage 2	1014	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	988	1061	1597	-	-	-
Mov Cap-2 Maneuver	988	-	-	-	-	-
Stage 1	1005	-	-	-	-	-
Stage 2	1014	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.4	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1597	-	1061	-	-
HCM Lane V/C Ratio	-	-	0.001	-	-
HCM Control Delay (s)	0	-	8.4	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

APPENDIX C

PEAK HOUR INTERSECTION ANALYSIS WORKSHEETS – BASELINE WITHOUT CONSTRUCTION TRAFFIC & BASELINE WITH CONSTRUCTION TRAFFIC

Baseline AM
1: Drew Rd & I-8 WB Ramps

Big Rock Cluster Solar Farms





10/10/2017

Intersection												
Int Delay, s/veh		4.2										
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↕	↗		↕			↗	
Traffic Vol, veh/h	0	0	0	18	1	114	2	41	0	0	102	14
Future Vol, veh/h	0	0	0	18	1	114	2	41	0	0	102	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	-	-	60	-	-	-	-	-	-
Veh in Median Storage, #	-	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	20	1	130	2	47	0	0	116	16
Major/Minor				Minor1			Major1			Major2		
Conflicting Flow All				175	183	47	132	0	-	-	-	0
Stage 1				51	51	-	-	-	-	-	-	-
Stage 2				124	132	-	-	-	-	-	-	-
Critical Hdwy				6.42	6.52	6.22	4.12	-	-	-	-	-
Critical Hdwy Stg 1				5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2				5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy				3.518	4.018	3.318	2.218	-	-	-	-	-
Pot Cap-1 Maneuver				815	711	1022	1453	-	0	0	-	-
Stage 1				971	852	-	-	-	0	0	-	-
Stage 2				902	787	-	-	-	0	0	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver				814	0	1022	1453	-	-	-	-	-
Mov Cap-2 Maneuver				814	0	-	-	-	-	-	-	-
Stage 1				970	0	-	-	-	-	-	-	-
Stage 2				902	0	-	-	-	-	-	-	-
Approach				WB			NB			SB		
HCM Control Delay, s				9.1			0.3			0		
HCM LOS				A								
Minor Lane/Major Mvmt	NBL	NBT	WBLn1	WBLn2	SBT	SBR						
Capacity (veh/h)	1453	-	814	1022	-	-						
HCM Lane V/C Ratio	0.002	-	0.027	0.127	-	-						
HCM Control Delay (s)	7.5	0	9.5	9	-	-						
HCM Lane LOS	A	A	A	A	-	-						
HCM 95th %tile Q(veh)	0	-	0.1	0.4	-	-						

Baseline AM
2: Drew Rd & I-8 EB Ramps

Big Rock Cluster Solar Farms

10/10/2017

Intersection												
Int Delay, s/veh	3.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	13	1	0	0	0	0	0	30	26	68	51	0
Future Vol, veh/h	13	1	0	0	0	0	0	30	26	68	51	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Yield	-	-	None	-	-	None	-	-	None
Storage Length	-	-	60	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	16979	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	15	1	0	0	0	0	0	34	30	77	58	0
Major/Minor	Minor2			Major1			Major2					
Conflicting Flow All	261	276	58				-	0	0	64	0	0
Stage 1	212	212	-				-	-	-	-	-	-
Stage 2	49	64	-				-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22				-	-	-	4.12	-	-
Critical Hdwy Stg 1	5.42	5.52	-				-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-				-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318				-	-	-	2.218	-	-
Pot Cap-1 Maneuver	728	632	1008				0	-	-	1538	-	0
Stage 1	823	727	-				0	-	-	-	-	0
Stage 2	973	842	-				0	-	-	-	-	0
Platoon blocked, %								-	-		-	
Mov Cap-1 Maneuver	690	0	1008				-	-	-	1538	-	-
Mov Cap-2 Maneuver	690	0	-				-	-	-	-	-	
Stage 1	780	0	-				-	-	-	-	-	-
Stage 2	973	0	-				-	-	-	-	-	-
Approach	EB			NB			SB					
HCM Control Delay, s	10.3			0			4.3					
HCM LOS	B											
Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	SBL	SBT						
Capacity (veh/h)	-	-	690	-	1538	-						
HCM Lane V/C Ratio	-	-	0.023	-	0.05	-						
HCM Control Delay (s)	-	-	10.3	0	7.5	0						
HCM Lane LOS	-	-	B	A	A	A						
HCM 95th %tile Q(veh)	-	-	0.1	-	0.2	-						






Baseline AM
3: Drew Rd & Kramar Rd

Big Rock Cluster Solar Farms

10/10/2017

Intersection

Int Delay, s/veh 3.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	19	0	2	5	1	5	1	27	3	4	21	7
Future Vol, veh/h	19	0	2	5	1	5	1	27	3	4	21	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	180
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	22	0	2	6	1	6	1	31	3	5	24	8

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	72	70	24	74	77	33	32	0	0	34	0	0
Stage 1	34	34	-	35	35	-	-	-	-	-	-	-
Stage 2	38	36	-	39	42	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	919	821	1052	916	813	1041	1580	-	-	1578	-	-
Stage 1	982	867	-	981	866	-	-	-	-	-	-	-
Stage 2	977	865	-	976	860	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	910	818	1052	911	810	1041	1580	-	-	1578	-	-
Mov Cap-2 Maneuver	910	818	-	911	810	-	-	-	-	-	-	-
Stage 1	981	864	-	980	865	-	-	-	-	-	-	-
Stage 2	969	864	-	971	857	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9	8.8	0.2	0.9
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1580	-	-	922 954	1578	-	-
HCM Lane V/C Ratio	0.001	-	-	0.026 0.013	0.003	-	-
HCM Control Delay (s)	7.3	0	-	9 8.8	7.3	0	-
HCM Lane LOS	A	A	-	A A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1 0	0	-	-

Baseline AM
4: Drew Rd & Diehl Rd

Big Rock Cluster Solar Farms

10/10/2017

Intersection

Int Delay, s/veh 3.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	1	3	0	1	3	2	13	0	3	4	6
Future Vol, veh/h	6	1	3	0	1	3	2	13	0	3	4	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	1	3	0	1	3	2	15	0	3	5	7

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	36	34	9	36	37	15	12	0	0	15	0	0
Stage 1	15	15	-	19	19	-	-	-	-	-	-	-
Stage 2	21	19	-	17	18	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	970	859	1073	970	855	1065	1607	-	-	1603	-	-
Stage 1	1005	883	-	1000	880	-	-	-	-	-	-	-
Stage 2	998	880	-	1002	880	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	964	856	1073	964	852	1065	1607	-	-	1603	-	-
Mov Cap-2 Maneuver	964	856	-	964	852	-	-	-	-	-	-	-
Stage 1	1004	881	-	999	879	-	-	-	-	-	-	-
Stage 2	993	879	-	996	878	-	-	-	-	-	-	-




Approach	EB	WB	NB	SB
HCM Control Delay, s	8.7	8.6	1	1.7
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1607	-	-	982 1002	1603	-	-
HCM Lane V/C Ratio	0.001	-	-	0.012 0.005	0.002	-	-
HCM Control Delay (s)	7.2	0	-	8.7 8.6	7.3	0	-
HCM Lane LOS	A	A	-	A A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0 0	0	-	-

Baseline AM
5: Drew Rd & Wixom Rd

Big Rock Cluster Solar Farms

10/10/2017

Intersection						
Int Delay, s/veh	0.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	1	1	17	6	1
Future Vol, veh/h	0	1	1	17	6	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1	1	19	7	1
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	29	8	8	0	-	0
Stage 1	8	-	-	-	-	-
Stage 2	21	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	986	1074	1612	-	-	-
Stage 1	1015	-	-	-	-	-
Stage 2	1002	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	985	1074	1612	-	-	-
Mov Cap-2 Maneuver	985	-	-	-	-	-
Stage 1	1014	-	-	-	-	-
Stage 2	1002	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.4	0.4		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1612	-	1074	-	-	
HCM Lane V/C Ratio	0.001	-	0.001	-	-	
HCM Control Delay (s)	7.2	0	8.4	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0	-	-	

Baseline PM
1: Drew Rd & I-8 WB Ramps

Big Rock Cluster Solar Farms





10/10/2017

Intersection												
Int Delay, s/veh		3										
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↕	↗		↕			↖	
Traffic Vol, veh/h	0	0	0	26	0	55	1	21	0	0	125	12
Future Vol, veh/h	0	0	0	26	0	55	1	21	0	0	125	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	-	-	60	-	-	-	-	-	-
Veh in Median Storage, #	-	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	30	0	63	1	24	0	0	142	14
Major/Minor				Minor1			Major1			Major2		
Conflicting Flow All				175	182	24	156	0	-	-	-	0
Stage 1				26	26	-	-	-	-	-	-	-
Stage 2				149	156	-	-	-	-	-	-	-
Critical Hdwy				6.42	6.52	6.22	4.12	-	-	-	-	-
Critical Hdwy Stg 1				5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2				5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy				3.518	4.018	3.318	2.218	-	-	-	-	-
Pot Cap-1 Maneuver				815	712	1052	1424	-	0	0	-	-
Stage 1				997	874	-	-	-	0	0	-	-
Stage 2				879	769	-	-	-	0	0	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver				814	0	1052	1424	-	-	-	-	-
Mov Cap-2 Maneuver				814	0	-	-	-	-	-	-	-
Stage 1				996	0	-	-	-	-	-	-	-
Stage 2				879	0	-	-	-	-	-	-	-
Approach				WB			NB			SB		
HCM Control Delay, s				8.9			0.3			0		
HCM LOS				A								
Minor Lane/Major Mvmt	NBL	NBT	WBLn1	WBLn2	SBT	SBR						
Capacity (veh/h)	1424	-	814	1052	-	-						
HCM Lane V/C Ratio	0.001	-	0.036	0.059	-	-						
HCM Control Delay (s)	7.5	0	9.6	8.6	-	-						
HCM Lane LOS	A	A	A	A	-	-						
HCM 95th %tile Q(veh)	0	-	0.1	0.2	-	-						

Baseline PM
2: Drew Rd & I-8 EB Ramps

Big Rock Cluster Solar Farms

10/10/2017

Intersection												
Int Delay, s/veh	3.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	0	2	0	0	0	0	15	35	95	57	0
Future Vol, veh/h	7	0	2	0	0	0	0	15	35	95	57	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Yield	-	-	None	-	-	None	-	-	None
Storage Length	-	-	60	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	16979	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	0	2	0	0	0	0	17	40	108	65	0
Major/Minor	Minor2			Major1			Major2					
Conflicting Flow All	318	338	65				-	0	0	57	0	0
Stage 1	281	281	-				-	-	-	-	-	-
Stage 2	37	57	-				-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22				-	-	-	4.12	-	-
Critical Hdwy Stg 1	5.42	5.52	-				-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-				-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318				-	-	-	2.218	-	-
Pot Cap-1 Maneuver	675	583	999				0	-	-	1547	-	0
Stage 1	767	678	-				0	-	-	-	-	0
Stage 2	985	847	-				0	-	-	-	-	0
Platoon blocked, %								-	-		-	
Mov Cap-1 Maneuver	626	0	999				-	-	-	1547	-	-
Mov Cap-2 Maneuver	626	0	-				-	-	-	-	-	
Stage 1	712	0	-				-	-	-	-	-	-
Stage 2	985	0	-				-	-	-	-	-	-
Approach	EB			NB			SB					
HCM Control Delay, s	10.3			0			4.7					
HCM LOS	B											
Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	SBL	SBT						
Capacity (veh/h)	-	-	626	999	1547	-						
HCM Lane V/C Ratio	-	-	0.013	0.002	0.07	-						
HCM Control Delay (s)	-	-	10.8	8.6	7.5	0						
HCM Lane LOS	-	-	B	A	A	A						
HCM 95th %tile Q(veh)	-	-	0	0	0.2	-						






Baseline PM
3: Drew Rd & Kramar Rd

Big Rock Cluster Solar Farms

10/10/2017

Intersection

Int Delay, s/veh 2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	0	5	3	1	4	3	29	0	4	29	12
Future Vol, veh/h	6	0	5	3	1	4	3	29	0	4	29	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	180
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	0	6	3	1	5	3	33	0	5	33	14

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	85	82	33	92	96	33	47	0	0	33	0	0
Stage 1	43	43	-	39	39	-	-	-	-	-	-	-
Stage 2	42	39	-	53	57	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	901	808	1041	892	794	1041	1560	-	-	1579	-	-
Stage 1	971	859	-	976	862	-	-	-	-	-	-	-
Stage 2	972	862	-	960	847	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	893	804	1041	884	790	1041	1560	-	-	1579	-	-
Mov Cap-2 Maneuver	893	804	-	884	790	-	-	-	-	-	-	-
Stage 1	969	856	-	974	860	-	-	-	-	-	-	-
Stage 2	965	860	-	952	844	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.8	8.9	0.7	0.6
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1560	-	-	955	941	1579	-
HCM Lane V/C Ratio	0.002	-	-	0.013	0.01	0.003	-
HCM Control Delay (s)	7.3	0	-	8.8	8.9	7.3	0
HCM Lane LOS	A	A	-	A	A	A	A
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-





Baseline PM
4: Drew Rd & Diehl Rd

Big Rock Cluster Solar Farms

10/10/2017

Intersection

Int Delay, s/veh 1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	0	0	1	0	1	4	4	0	0	18	6
Future Vol, veh/h	2	0	0	1	0	1	4	4	0	0	18	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	0	0	1	0	1	5	5	0	0	20	7




Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	40	39	24	39	42	5	27	0	0	5	0	0
Stage 1	24	24	-	15	15	-	-	-	-	-	-	-
Stage 2	16	15	-	24	27	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	964	853	1052	966	850	1078	1587	-	-	1616	-	-
Stage 1	994	875	-	1005	883	-	-	-	-	-	-	-
Stage 2	1004	883	-	994	873	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	961	850	1052	964	847	1078	1587	-	-	1616	-	-
Mov Cap-2 Maneuver	961	850	-	964	847	-	-	-	-	-	-	-
Stage 1	991	875	-	1002	880	-	-	-	-	-	-	-
Stage 2	1000	880	-	994	873	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.8	8.5	3.6	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1587	-	-	961 1018	1616	-	-
HCM Lane V/C Ratio	0.003	-	-	0.002 0.002	-	-	-
HCM Control Delay (s)	7.3	0	-	8.8 8.5	0	-	-
HCM Lane LOS	A	A	-	A A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0 0	0	-	-

Intersection

Int Delay, s/veh 0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	1	0	8	16	2
Future Vol, veh/h	0	1	0	8	16	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1	0	9	18	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	28	19	20	0	-	0
Stage 1	19	-	-	-	-	-
Stage 2	9	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	987	1059	1596	-	-	-
Stage 1	1004	-	-	-	-	-
Stage 2	1014	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	987	1059	1596	-	-	-
Mov Cap-2 Maneuver	987	-	-	-	-	-
Stage 1	1004	-	-	-	-	-
Stage 2	1014	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.4	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1596	-	1059	-	-
HCM Lane V/C Ratio	-	-	0.001	-	-
HCM Control Delay (s)	0	-	8.4	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Baseline + Proj AM
1: Drew Rd & I-8 WB Ramps

Big Rock Cluster Solar Farms

10/10/2017

Intersection												
Int Delay, s/veh		6.7										
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↰	↱		↰			↱	
Traffic Vol, veh/h	0	0	0	188	1	114	2	41	0	0	106	14
Future Vol, veh/h	0	0	0	188	1	114	2	41	0	0	106	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	-	-	60	-	-	-	-	-	-
Veh in Median Storage, #	-	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	214	1	130	2	47	0	0	120	16
Major/Minor				Minor1			Major1			Major2		
Conflicting Flow All				179	187	47	136	0	-	-	-	0
Stage 1				51	51	-	-	-	-	-	-	-
Stage 2				128	136	-	-	-	-	-	-	-
Critical Hdwy				6.42	6.52	6.22	4.12	-	-	-	-	-
Critical Hdwy Stg 1				5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2				5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy				3.518	4.018	3.318	2.218	-	-	-	-	-
Pot Cap-1 Maneuver				811	708	1022	1448	-	0	0	-	-
Stage 1				971	852	-	-	-	0	0	-	-
Stage 2				898	784	-	-	-	0	0	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver				810	0	1022	1448	-	-	-	-	-
Mov Cap-2 Maneuver				810	0	-	-	-	-	-	-	-
Stage 1				970	0	-	-	-	-	-	-	-
Stage 2				898	0	-	-	-	-	-	-	-
Approach				WB			NB			SB		
HCM Control Delay, s				10.2			0.3			0		
HCM LOS				B								
Minor Lane/Major Mvmt	NBL	NBT	WBLn1	WBLn2	SBT	SBR						
Capacity (veh/h)	1448	-	810	1022	-	-						
HCM Lane V/C Ratio	0.002	-	0.265	0.127	-	-						
HCM Control Delay (s)	7.5	0	11	9	-	-						
HCM Lane LOS	A	A	B	A	-	-						
HCM 95th %tile Q(veh)	0	-	1.1	0.4	-	-						

Baseline + Proj AM
2: Drew Rd & I-8 EB Ramps

Big Rock Cluster Solar Farms

10/10/2017

Intersection

Int Delay, s/veh 1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↕					↕			↕	
Traffic Vol, veh/h	13	1	4	0	0	0	0	30	26	68	225	0
Future Vol, veh/h	13	1	4	0	0	0	0	30	26	68	225	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Yield	-	-	None	-	-	None	-	-	None
Storage Length	-	-	60	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	16979	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	15	1	5	0	0	0	0	34	30	77	256	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	459	474	256	-	0	0	64	0	0
Stage 1	410	410	-	-	-	-	-	-	-
Stage 2	49	64	-	-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	-	-	-	4.12	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	-	-	-	2.218	-	-
Pot Cap-1 Maneuver	560	489	783	0	-	-	1538	-	0
Stage 1	670	595	-	0	-	-	-	-	0
Stage 2	973	842	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	528	0	783	-	-	-	1538	-	-
Mov Cap-2 Maneuver	528	0	-	-	-	-	-	-	-
Stage 1	631	0	-	-	-	-	-	-	-
Stage 2	973	0	-	-	-	-	-	-	-






Approach	EB	NB	SB
HCM Control Delay, s	11.5	0	1.7
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	SBL	SBT
Capacity (veh/h)	-	-	528	783	1538	-
HCM Lane V/C Ratio	-	-	0.03	0.006	0.05	-
HCM Control Delay (s)	-	-	12	9.6	7.5	0
HCM Lane LOS	-	-	B	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	0.2	-

Baseline + Proj AM
3: Drew Rd & Kramar Rd

Big Rock Cluster Solar Farms

10/10/2017

Intersection												
Int Delay, s/veh	1.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	19	0	2	5	1	5	1	27	3	4	199	7
Future Vol, veh/h	19	0	2	5	1	5	1	27	3	4	199	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	180
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	22	0	2	6	1	6	1	31	3	5	226	8

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	274	272	226	276	279	33	234	0	0	34	0	0
Stage 1	236	236	-	35	35	-	-	-	-	-	-	-
Stage 2	38	36	-	241	244	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	678	635	813	676	629	1041	1333	-	-	1578	-	-
Stage 1	767	710	-	981	866	-	-	-	-	-	-	-
Stage 2	977	865	-	762	704	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	671	632	813	671	626	1041	1333	-	-	1578	-	-
Mov Cap-2 Maneuver	671	632	-	671	626	-	-	-	-	-	-	-
Stage 1	766	707	-	980	865	-	-	-	-	-	-	-
Stage 2	969	864	-	757	701	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.5	9.6	0.2	0.1
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1333	-	-	682	794	1578	-	-
HCM Lane V/C Ratio	0.001	-	-	0.035	0.016	0.003	-	-
HCM Control Delay (s)	7.7	0	-	10.5	9.6	7.3	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-





Baseline + Proj AM
4: Drew Rd & Diehl Rd

Big Rock Cluster Solar Farms

10/10/2017

Intersection




Int Delay, s/veh 0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	1	3	0	1	3	2	13	0	3	57	131
Future Vol, veh/h	6	1	3	0	1	3	2	13	0	3	57	131
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	1	3	0	1	3	2	15	0	3	65	149

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	167	165	140	167	239	15	214	0	0	15	0	0
Stage 1	146	146	-	19	19	-	-	-	-	-	-	-
Stage 2	21	19	-	148	220	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	797	728	908	797	662	1065	1356	-	-	1603	-	-
Stage 1	857	776	-	1000	880	-	-	-	-	-	-	-
Stage 2	998	880	-	855	721	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	791	726	908	791	660	1065	1356	-	-	1603	-	-
Mov Cap-2 Maneuver	791	726	-	791	660	-	-	-	-	-	-	-
Stage 1	856	774	-	999	879	-	-	-	-	-	-	-
Stage 2	993	879	-	849	720	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.5	8.9	1	0.1
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1356	-	-	815	923	1603	-	-
HCM Lane V/C Ratio	0.002	-	-	0.014	0.005	0.002	-	-
HCM Control Delay (s)	7.7	0	-	9.5	8.9	7.3	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-

Intersection						
Int Delay, s/veh	2.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	1	30	17	6	54
Future Vol, veh/h	0	1	30	17	6	54
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1	34	19	7	61
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	125	38	68	0	-	0
Stage 1	38	-	-	-	-	-
Stage 2	87	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	870	1034	1533	-	-	-
Stage 1	984	-	-	-	-	-
Stage 2	936	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	851	1034	1533	-	-	-
Mov Cap-2 Maneuver	851	-	-	-	-	-
Stage 1	962	-	-	-	-	-
Stage 2	936	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.5	4.7		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1533	-	1034	-	-	
HCM Lane V/C Ratio	0.022	-	0.001	-	-	
HCM Control Delay (s)	7.4	0	8.5	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.1	-	0	-	-	

Baseline + Proj PM
1: Drew Rd & I-8 WB Ramps

Big Rock Cluster Solar Farms

10/10/2017

Intersection

Int Delay, s/veh 3.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↰	↱		↰			↱	
Traffic Vol, veh/h	0	0	0	26	0	55	5	25	0	0	125	12
Future Vol, veh/h	0	0	0	26	0	55	5	25	0	0	125	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	-	-	60	-	-	-	-	-	-
Veh in Median Storage, #	-	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	30	0	63	6	28	0	0	142	14

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	189	196	28	156	0	-	-	-	0
Stage 1	40	40	-	-	-	-	-	-	-
Stage 2	149	156	-	-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	4.12	-	-	-	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	2.218	-	-	-	-	-
Pot Cap-1 Maneuver	800	699	1047	1424	-	0	0	-	-
Stage 1	982	862	-	-	-	0	0	-	-
Stage 2	879	769	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	797	0	1047	1424	-	-	-	-	-
Mov Cap-2 Maneuver	797	0	-	-	-	-	-	-	-
Stage 1	978	0	-	-	-	-	-	-	-
Stage 2	879	0	-	-	-	-	-	-	-





Approach	WB	NB	SB
HCM Control Delay, s	9	1.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBTWBLn1WBLn2	SBT	SBR
Capacity (veh/h)	1424	- 797 1047	-	-
HCM Lane V/C Ratio	0.004	- 0.037 0.06	-	-
HCM Control Delay (s)	7.5	0 9.7 8.7	-	-
HCM Lane LOS	A	A A A	-	-
HCM 95th %tile Q(veh)	0	- 0.1 0.2	-	-

Baseline + Proj PM
2: Drew Rd & I-8 EB Ramps

Big Rock Cluster Solar Farms






10/10/2017

Intersection												
Int Delay, s/veh	2.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	0	2	0	0	0	0	23	205	95	57	0
Future Vol, veh/h	7	0	2	0	0	0	0	23	205	95	57	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Yield	-	-	None	-	-	None	-	-	None
Storage Length	-	-	60	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	16979	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	0	2	0	0	0	0	26	233	108	65	0
Major/Minor	Minor2			Major1			Major2					
Conflicting Flow All	424	540	65				-	0	0	259	0	0
Stage 1	281	281	-				-	-	-	-	-	-
Stage 2	143	259	-				-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22				-	-	-	4.12	-	-
Critical Hdwy Stg 1	5.42	5.52	-				-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-				-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318				-	-	-	2.218	-	-
Pot Cap-1 Maneuver	587	449	999				0	-	-	1306	-	0
Stage 1	767	678	-				0	-	-	-	-	0
Stage 2	884	694	-				0	-	-	-	-	0
Platoon blocked, %								-	-		-	
Mov Cap-1 Maneuver	537	0	999				-	-	-	1306	-	-
Mov Cap-2 Maneuver	537	0	-				-	-	-	-	-	
Stage 1	701	0	-				-	-	-	-	-	-
Stage 2	884	0	-				-	-	-	-	-	-
Approach	EB			NB			SB					
HCM Control Delay, s	11.1			0			5					
HCM LOS	B											
Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	SBL	SBT						
Capacity (veh/h)	-	-	537	999	1306	-						
HCM Lane V/C Ratio	-	-	0.015	0.002	0.083	-						
HCM Control Delay (s)	-	-	11.8	8.6	8	0						
HCM Lane LOS	-	-	B	A	A	A						
HCM 95th %tile Q(veh)	-	-	0	0	0.3	-						

Baseline + Proj PM
3: Drew Rd & Kramar Rd

Big Rock Cluster Solar Farms

10/10/2017

Intersection												
Int Delay, s/veh	0.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	0	5	3	1	4	3	207	0	4	29	12
Future Vol, veh/h	6	0	5	3	1	4	3	207	0	4	29	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	180
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	0	6	3	1	5	3	235	0	5	33	14
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	287	284	33	294	298	235	47	0	0	235	0	0
Stage 1	43	43	-	241	241	-	-	-	-	-	-	-
Stage 2	244	241	-	53	57	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	665	625	1041	658	614	804	1560	-	-	1332	-	-
Stage 1	971	859	-	762	706	-	-	-	-	-	-	-
Stage 2	760	706	-	960	847	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	657	621	1041	651	610	804	1560	-	-	1332	-	-
Mov Cap-2 Maneuver	657	621	-	651	610	-	-	-	-	-	-	-
Stage 1	969	856	-	760	705	-	-	-	-	-	-	-
Stage 2	753	705	-	951	844	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	9.6			10.1			0.1			0.7		
HCM LOS	A			B								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1560	-	-	789	713	1332	-	-				
HCM Lane V/C Ratio	0.002	-	-	0.016	0.013	0.003	-	-				
HCM Control Delay (s)	7.3	0	-	9.6	10.1	7.7	0	-				
HCM Lane LOS	A	A	-	A	B	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-				





Baseline + Proj PM
4: Drew Rd & Diehl Rd

Big Rock Cluster Solar Farms

10/10/2017

Intersection

Int Delay, s/veh 6.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	127	0	0	1	0	1	4	57	0	0	18	6
Future Vol, veh/h	127	0	0	1	0	1	4	57	0	0	18	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	144	0	0	1	0	1	5	65	0	0	20	7




Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	100	99	24	99	102	65	27	0	0	65	0	0
Stage 1	24	24	-	75	75	-	-	-	-	-	-	-
Stage 2	76	75	-	24	27	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	881	791	1052	883	788	999	1587	-	-	1537	-	-
Stage 1	994	875	-	934	833	-	-	-	-	-	-	-
Stage 2	933	833	-	994	873	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	878	789	1052	881	786	999	1587	-	-	1537	-	-
Mov Cap-2 Maneuver	878	789	-	881	786	-	-	-	-	-	-	-
Stage 1	991	875	-	931	831	-	-	-	-	-	-	-
Stage 2	929	831	-	994	873	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.9	8.9	0.5	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1587	-	-	878 936	1537	-	-
HCM Lane V/C Ratio	0.003	-	-	0.164 0.002	-	-	-
HCM Control Delay (s)	7.3	0	-	9.9 8.9	0	-	-
HCM Lane LOS	A	A	-	A A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.6 0	0	-	-

Intersection

Int Delay, s/veh 6.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	53	30	0	8	16	2
Future Vol, veh/h	53	30	0	8	16	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	60	34	0	9	18	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	28	19	20	0	-	0
Stage 1	19	-	-	-	-	-
Stage 2	9	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	987	1059	1596	-	-	-
Stage 1	1004	-	-	-	-	-
Stage 2	1014	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	987	1059	1596	-	-	-
Mov Cap-2 Maneuver	987	-	-	-	-	-
Stage 1	1004	-	-	-	-	-
Stage 2	1014	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.9	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1596	-	1012	-	-
HCM Lane V/C Ratio	-	-	0.093	-	-
HCM Control Delay (s)	0	-	8.9	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-