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Appendix K

Traffic and Transportation Analysis

Darden Clean Energy Project

CEC Traffic & Transportation Analysis
October 27, 2023

Prepared for:
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1.0 Introduction

1.1 Description of the Region/Project

This Transportation Analysis has been prepared for the purpose of analyzing traffic conditions related to the Darden Clean Energy Project (Project) and surrounding transportation facilities. The Project is located on approximately 9,500 acres in an agricultural area within unincorporated Fresno County south of the community of Cantua Creek. Figure 1-1 reflects the site's regional context, while Figure 1-2 reflects the Project location within Fresno County.

The Project consists of the construction, operation, and eventual repowering or decommissioning of a 1,150 megawatt (MW) solar photovoltaic (PV) facility, an up-to 4,600 megawatt-hour (MWh) battery energy storage system (BESS), an up-to 1,150 MW green hydrogen facility a 34.5-500 kilovolt (kV) grid step-up substation, a 10- to 15-mile 500 kV generation intertie (gen-tie) line, a 500 kV utility switchyard along the Pacific Gas and Electric Company (PG&E) Los Banos-Midway #2 500 kV transmission line, and appurtenances. Once built, the Project would be California's largest solar generator, largest battery storage facility, and largest green hydrogen producer.

1.1.1 *Study Area*

This study analyzed major roadway segments near the Project site consistent with California Energy Commission (CEC) requirements. The study area included roadway segments (other than freeways) near the project site that are expected to carry 10% or more of Project traffic. Following are the roadway segments that were studied:

Roadway Segments

- ✓ Mt. Whitney Ave/Stanislaus Ave/Harlan Ave between SR 33 and SR 145
- ✓ Colusa Ave between SR 145 and Mt. Whitney Ave
- ✓ SR 145 between I-5 and Colusa Ave
- ✓ SR 145 between Mt Whitney Ave and SR 180
- ✓ SR 269 between SR 198 and Mt. Whitney Ave

1.1.2 *Study Scenarios*

The following scenarios were studied as a part of this study:

- ✓ Existing Conditions - utilized to establish the current traffic operating conditions within the study area
- ✓ Project Construction Conditions - describes the Project's trip generation associated with the construction phase of project
- ✓ Project Completion Conditions - describes traffic operating conditions following Project construction or once the Project is complete and in the operating phase in opening year 2028.

1.2 Methodology

In analyzing street capacities, Level of Service (LOS) methodologies are applied. LOS standards are applied by transportation agencies to quantitatively assess a street and highway system's performance by rating intersections on a scale of LOS "A" through "F". In addition, safety concerns are analyzed to determine the need for appropriate mitigation resulting from increased traffic near sensitive uses, the need for dedicated ingress and egress access lanes to the Project, and other evaluations such as the need for signalized intersections or other improvements. Tables 1-1 define LOS "A" to "F" by indicating the ranges in the amounts of average delay of roadway segments for each level of service ranging from LOS "A" to "F".

1.2.1 *Roadway Segment Analysis*

According to the Highway Capacity Manual (HCM), LOS is categorized by two parameters of traffic: uninterrupted and interrupted flow. Uninterrupted flow facilities do not have fixed elements such as traffic signals that cause interruptions in traffic flow. Interrupted flow facilities do have fixed elements that cause an interruption in the flow of traffic, such as stop signs and signalized intersections along arterial roads. A roadway segment is defined as a stretch of roadway generally located between signalized or controlled intersections.

Segment LOS is important in order to understand whether the capacity of a roadway can accommodate future traffic volumes. Table 1-1 provides a definition of segment LOS. The performance criteria used for evaluating volumes and capacities on the road and highway system for this study were estimated using the Modified HCM-Based LOS Tables which are widely accepted throughout the Central Valley, including Fresno County. The tables consider the capacity of individual road and highway segments based on numerous roadway variables (design speed, passing opportunities, signalized intersections per mile, number of lanes, saturation flow, etc.). These variables were identified and applied to reflect segment LOS conditions. Additional information is included in Appendix A. Street segment capacity was determined using information shown in Table 1-1 and 1-2, which come from the Modified Arterial Level of Service Tables included in Appendix A.

Table 1-1
Roadway Segment Level of Service Definitions
(Highway Capacity Manual)

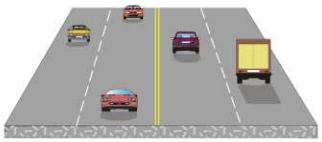
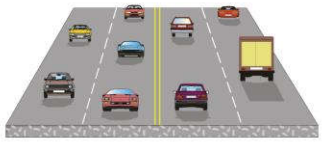
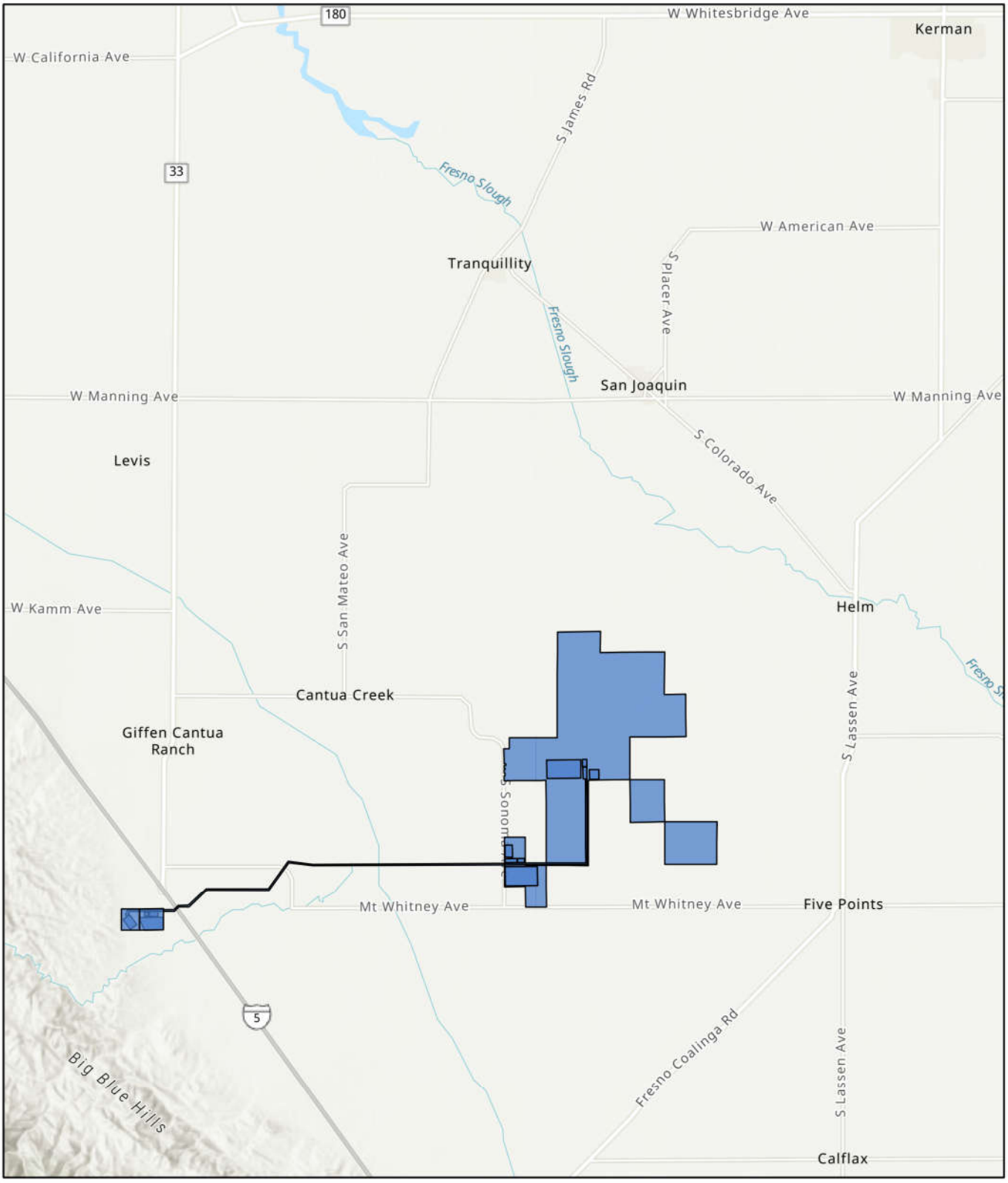
LEVEL OF SERVICE	DEFINITION	
A	Represents free flow. Individual vehicles are virtually unaffected by the presence of others in the traffic stream.	
B	Is in the range of stable flow, but the presence of other vehicles in the traffic stream begins to be noticeable. Freedom to select desired speeds is relatively unaffected, but there is a slight decline in the freedom to maneuver.	
C	Is in the range of stable flow, but marks the beginning of the range of flow in which the operation of individual vehicles becomes significantly affected by interactions with other vehicles in the traffic stream.	
D	Is a crowded segment of roadway with a large number of vehicles restricting mobility and a stable flow. Speed and freedom to maneuver are severely restricted, and the driver experiences a generally poor level of comfort and convenience.	
E	Represents operating conditions at or near the level capacity. All speeds are reduced to a low, but relatively uniform value. Small increases in flow will cause breakdowns in traffic movement.	
F	Is used to define forced or breakdown flow (stop-and-go gridlock). This condition exists when the amount of traffic approaches a point where the amount of traffic exceeds the amount that can travel to a destination. Operations within the queues are characterized by stop and go waves, and they are extremely unstable.	

Table 1-2
Average Daily Volumes

Level of Service					
Lanes	Divided	B	C	D	E
State Highways					
2	Undivided	9,200	17,300	24,400	33,300
4	Divided	35,300	49,600	62,900	69,600
6	Divided	52,800	74,500	94,300	104,500
Non-State Roadways					
2	Undivided	**	12,960	14,580	**
4	Divided	**	30,600	31,950	**
6	Divided	**	46,890	48,150	**

** Not applicable for that level of service letter grade. Volumes greater than level of service D become F because intersection capacities have been reached.

Darden Solar CEC Analysis (Regional Location) (Figure 1-1)



9/25/2023

1:250,000

0 1.75 3.5 7 mi

0 2.75 5.5 11 km

Project Site

World Hillshade

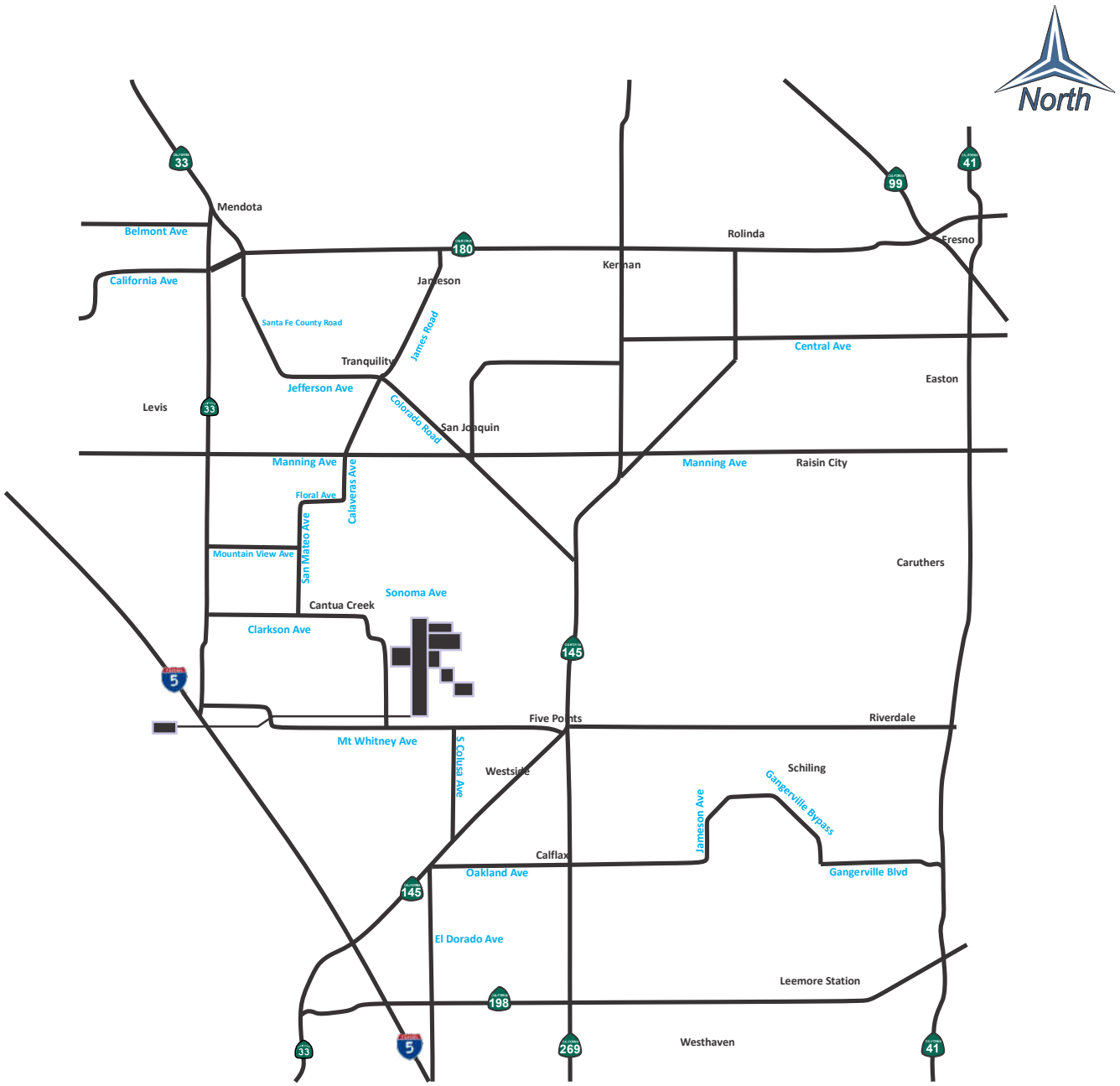
Fresno County Dept. PWP, California State Parks, Esri, HERE, Garmin, SafeGraph, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, USDA, Esri, NASA, NGA, USGS

VRPA

Darden Solar Project

Project Location within Fresno County

Figure 1-2



LEGEND

- State Routes
- Interstate 5(I-5)
- XX Street names
- XX Location names
- Project Location

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2.0 Existing and Planned Transportation Facilities

2.1 Existing Functional Roadway Classification System

Functional classification is the process by which streets and highways are grouped into classes, or systems, according to the type of service they are intended to provide. Fundamental to this process is the recognition that individual streets and highways do not serve travel independently in any major way. These data are extracted from Fresno County Streets shapefiles[1]. Rather, most travel involves movement through a network of roads.

The current hierarchical system of roadways in the study area consists of the following six (6) basic classifications:

- ✓ **Freeways** – Limited-access facilities designed for high-speed regional mobility. Freeways may include up to eight lanes (four lanes in each direction).

  Intersate-5 - (I-5) is an interstate freeway serving the study area. I-5 exists on the southern portion of the Project site as a divided four-lane road without bike lanes throughout. The speed limit is 70 mph and I-5 is entirely grade separated.

  SR 198 - Dorris Avenue is currently an undivided two-lane road in the study area. The posted speed limit is 65 mph. This roadway directs the traffic towards Visalia.

- ✓ **Expressways** – are high-speed, two- to six-lane divided roadways, primarily servicing through and cross-town traffic, with no direct access to abutting property and at-grade intersections located at approximately half-mile intervals. The following expressways exist within the study area.

  SR 33 - SR 33 is currently identified as an expressway in the study area. SR 33 is an undivided two-lane road in the study area. The posted speed limit is 65 mph. This highway directs the traffic towards nearby smaller cities to the north of the Project site.

  SR 145 – SR 145 is currently identified as an expressway facility within the study area. SR 145 is an undivided two-lane road in the study area. The posted speed limit is 55 mph. This highway directs the traffic towards Fresno.

  SR 269 - SR 269 is currently identified as an expressway facility in the study area. SR 269

1 https://www.fresnocountyca.gov/Departments/Public-Works-and-Planning/divisions-of-public-works-and-planning/cds/gis-shapefiles

exists as an undivided two-lane road in the study area. The posted speed limit is 55 mph. This highway merges with SR 145 and carries traffic north of the Project site.

Mt. Whitney Ave – Mt. Whitney Ave is currently identified as an expressway facility in the study area. Mt. Whitney Ave exists as an undivided two-lane road in the study area. The posted speed limit is 55 mph. This highway continues as Harlan Ave to merge with SR 33 and carries traffic north of the Project site.

- ✓ **Super Arterials** – are four-to six-lane divided roadways with a primary purpose of moving traffic to and from major traffic generators and between community plan areas. Access will typically be limited to right-turn entrance and exit vehicular movements. Super Arterials do not presently exist within the study area.

- ✓ **Arterial** – are four- to six-lane divided roadways, with somewhat limited access to abutting properties, and with the primary purpose of moving traffic within and between community plan areas and to and from freeways and expressways.

  West Kamm Road on the north of Project site is identified as Arterial road within study area.

- ✓ **Collectors** – are two to four-lane undivided roadways, with the primary function of connecting local streets and arterials and neighborhood traffic generators and providing access to abutting properties.

  El Dorado Avenue and Oakland Avenue are identified as collector facilities within the study area.

- ✓ **Local Streets** – are two- to three-lane public or private roadways designed to provide direct access to properties while discouraging through traffic between major streets. They are intended to carry low volumes of traffic and support unrestricted on-street parking. All the nearby streets that carry traffic (except those identified above) are considered to be local streets.

2.2 Affected Streets and Highways

Roadway segments in the vicinity of Project site were analyzed to determine levels of service utilizing HCM-based methodologies described previously. Currently, there are no roadway features identified that would have a threat to public safety. The street and highway segments included in this analysis are listed below. New traffic counts for County roadways were conducted by VRPA in 2023. Traffic counts for State Highways were obtained from the Caltrans Traffic Census website. Additional information on traffic counts is included in Appendix B.

The capacity of freeway on ramps and off ramps as separate facilities is typically not analyzed because the capacity of freeway ramps is controlled by the merge/diverge areas on the freeway and capacity of the ramp terminal intersections. The roadway segment analysis conducted for the segment of SR 145 between I-5 and Colusa Avenue includes the ramp terminal intersections. The capacity of the freeway and the merge/diverge areas are typically not analyzed in a transportation impact analysis unless specifically requested by Caltrans. Therefore, there is no need to conduct a separate analysis of the I-5 freeway on and off ramps. The existing roadway segments by classification are shown in Figure 2-1 and major transportation facilities near project site are shown in Figure 2-2.

Roadway Segments

- ✓ Mt. Whitney Ave/Stanislaus Ave/Harlan Ave between SR 33 and SR 145
- ✓ Colusa Ave between SR 145 and Mt. Whitney Ave
- ✓ SR 145 between I-5 and Colusa Ave
- ✓ SR 145 between Mt Whitney Ave and SR 180
- ✓ SR 269 between SR 198 and Mt. Whitney Ave

2.3 Level of Service

2.3.1 *Roadway Segment Capacity Analysis*

Results of the AM and PM peak hour LOS segment analysis along the existing street and highway system are reflected in Table 2-1. Figure 2-3 shows existing roadway Average Daily Traffic (ADT) volumes Roadway segment analysis was based on the Modified HCM-Based LOS Tables which are widely accepted throughout the Central Valley, including Fresno County. The Tables generated by the Florida Department of Transportation are based on the 2010 HCM. Table 2-1 provides ADT levels of service results for above mentioned roadway segments. Results of the analysis show that all of the study roadway segments are operating at acceptable levels of service. Additional information on existing traffic conditions is provided In Tables 2-2 and 2-3. Peak hour counts are shown in Table 2-2 and truck percentages are shown in Table 2-3.

2.3.2 *Pipelines and Canals*

In the vicinity of the project construction site, there's a canal that intersects Mt. Whitney Avenue, serving as a source of water for agricultural processes. Despite no visible pipelines on the field's surface, there's a possibility of concealed underground gas and water pipelines that necessitate careful consideration during the construction phase. It is necessary to notify the local public agency responsible for providing these essential services before commencing any construction activities.

2.4 Public Transit and Active Transport Systems

While the private automobile is the dominant mode of travel throughout Fresno County, other modes of transportation are important. The data provided by Fresno Council of Governments (COG) indicates bus routes are available along SR 145, which continues to Mt. Whitney Avenue to the east. Two bus stops are available near the Project site. While congestion is not a major issue in study area, overreliance on automobiles creates other costs for both society and households and means that many in the communities who cannot drive (the young, the elderly, people with disabilities, and low-income residents) must rely on those who can drive for their mobility.

2.5 Aviation

Fresno Yosemite International Airport (FAT) is located 35 miles northeast of the Project site. FAT is the principal passenger airfreight airport in the Central San Joaquin Valley.

2.6 Biking Routes

Bicycling is considered an effective alternative mode of transportation that can help to improve air quality and reduce the number of vehicles traveling along existing highways, especially within the cities and unincorporated communities. There are no designated bike routes available or planned within the study area.

2.7 Railway Facilities

There is a rail line owned by the San Joaquin Valley Railroad situated northwest of the project, running in a NW/SE direction, passing through Helm and adjacent to Colorado Ave at a distance of approximately 7 miles. Although the California High-Speed Rail Authority is planning a high-speed rail system service with new stations in Fresno, it's important to note that the proposed rail line will not pass near the project site. Consequently, this will not impact the transportation considerations of the project.

Table 2-1
Darden Clean Energy Project
2023 Existing Roadway Segment Daily Average Counts
Average Daily Traffic

STREET SEGMENT	SEGMENT DESCRIPTION	TARGET LOS	EXISTING (2023)	
			(Average Daily Traffic) ADT	Level of Service (LOS)
Mt. Whitney Ave				
SR 33 to Colusa Ave	1 lane	D	1,800	C
Colusa Ave to SR 145	1 lane	D	2,200	C
Colusa Avenue				
SR 145 to Mt. Whitney Ave	1 lane	D	850	C
SR 145				
I-5 to Colusa Ave	1 lane	C	3,300	B
Colusa to Whitney Ave	1 Lane	C	4,100	B
Mt Whitney Ave and SR 180	1 Lane	C	7,300	B
	2 Lanes	C	12,000	B
SR 269				
SR 198 and Mt. Whitney Ave	1 lane	C	4,100	B

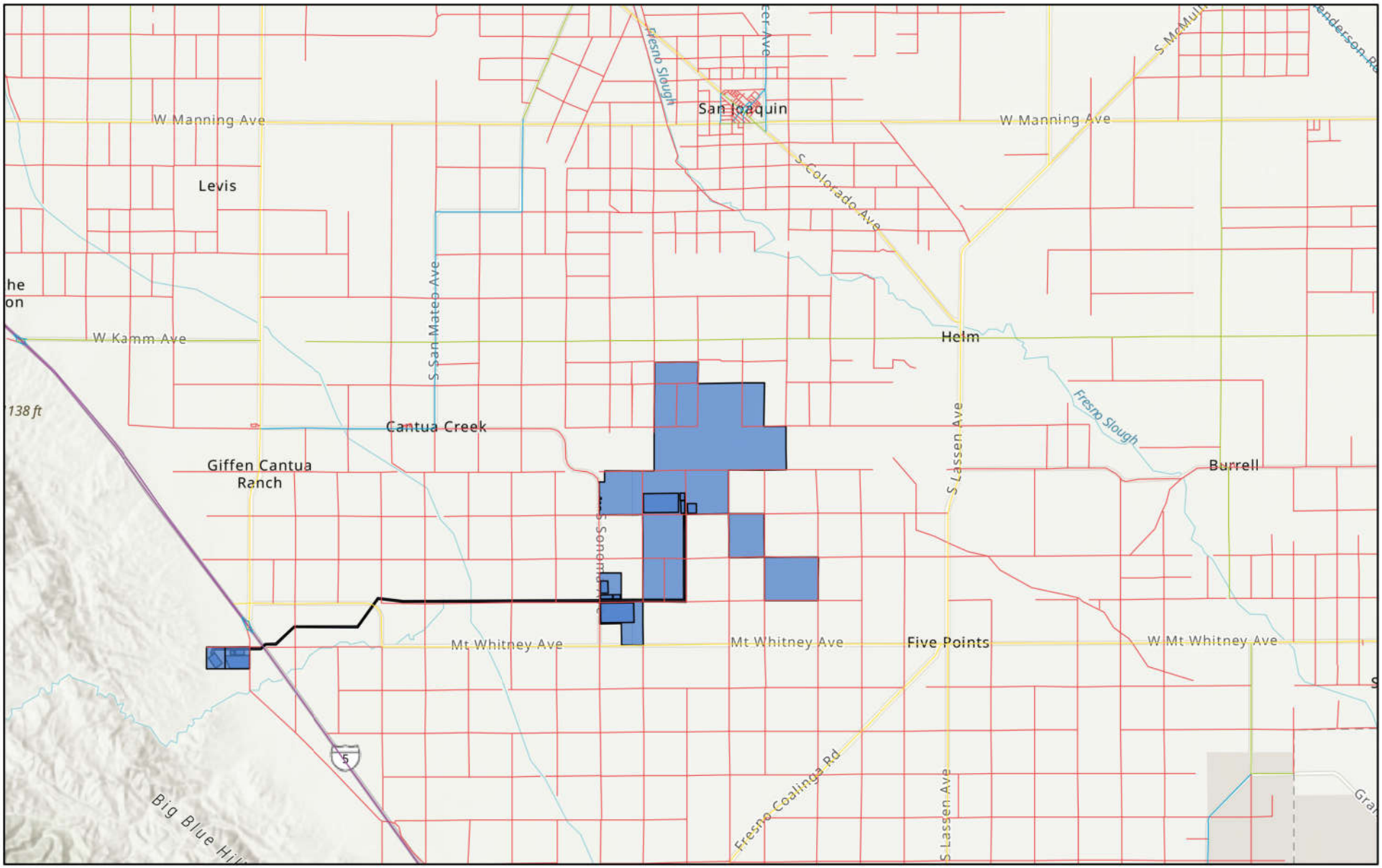
Table 2-2
Darden Clean Energy Project
2023 Existing Roadway Segment
Peak Hour Traffic

STREET SEGMENT	SEGMENT DESCRIPTION	EXISTING (2023) (Average Daily Traffic) ADT	EXISTING (2023) PEAK HOUR
Mt. Whitney Ave			
SR 33 to Colusa Ave	1 lane	1,800	227
Colusa Ave to SR 145	1 lane	2,200	277
Colusa Avenue			
SR 145 to Mt. Whitney Ave	1 lane	850	106
SR 145			
I-5 to Colusa Ave	1 lane	3,300	360
Colusa to Whitney Ave	1 Lane	4,100	447
Mt Whitney Ave and SR 180	1 Lane	7,300	694
	2 Lanes	12,000	1140
SR 269			
SR 198 and Mt. Whitney Ave	1 lane	4,100	410

Table 2-3
Darden Clean Energy Project
2023 Existing Roadway Segment
Truck Percentages

STREET SEGMENT	SEGMENT DESCRIPTION	TRUCK PERCENTAGES
Mt. Whitney Ave		
SR 33 to Colusa Ave	1 lane	3%
Colusa Ave to SR 145	1 lane	3%
Colusa Avenue		
SR 145 to Mt. Whitney Ave	1 lane	3%
SR 145		
I-5 to Colusa Ave	1 lane	10%
Colusa to Whitney Ave	1 Lane	
Mt Whitney Ave and SR 180	1 Lane	10%
	2 Lanes	10%
SR 269		
SR 198 and Mt. Whitney Ave	1 lane	10%

Darden Solar CEC Analysis Roadway Classification (Figure 2-1)



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Streets 06222023

Local

Collector

Arterial

Freeway

Expressway

Project Site

World Hillshade

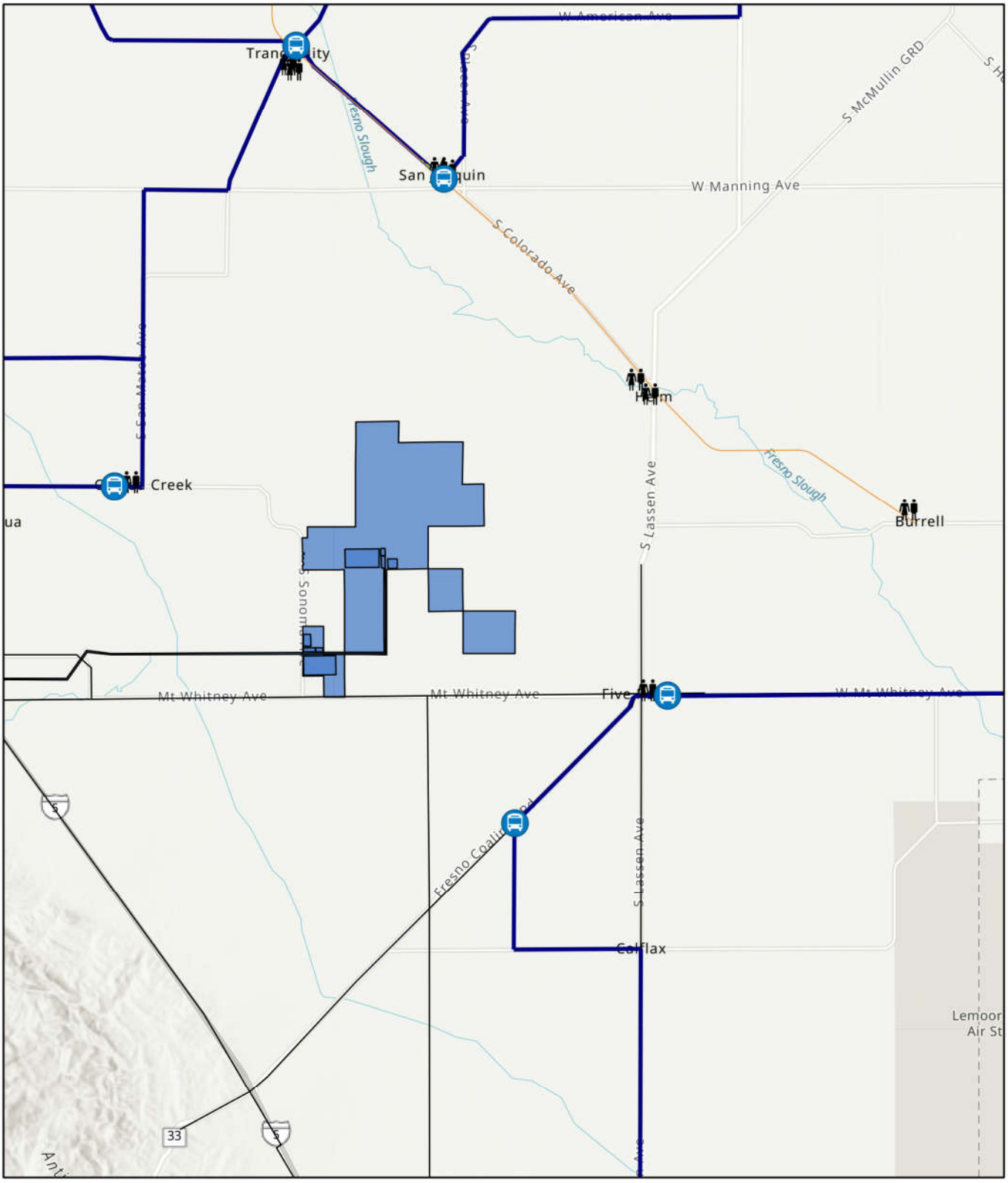
1:250,000

0 1.75 3.5 7 mi

0 2.75 5.5 11 km

Fresno County Dept. PWP, California State Parks, Esri, HERE, Garmin, SafeGraph, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, VRPA

Darden Solar CEC Analysis Transportation Facilities (Figure 2-2)



10/25/2023

1:250,000

0 1.75 3.5 7 mi

0 2.75 5.5 11 km

- Bus Stops
- Schools
- Bike Lanes
- Railroads
- Transit Bus Routes
- Project Site
- World Hillshade

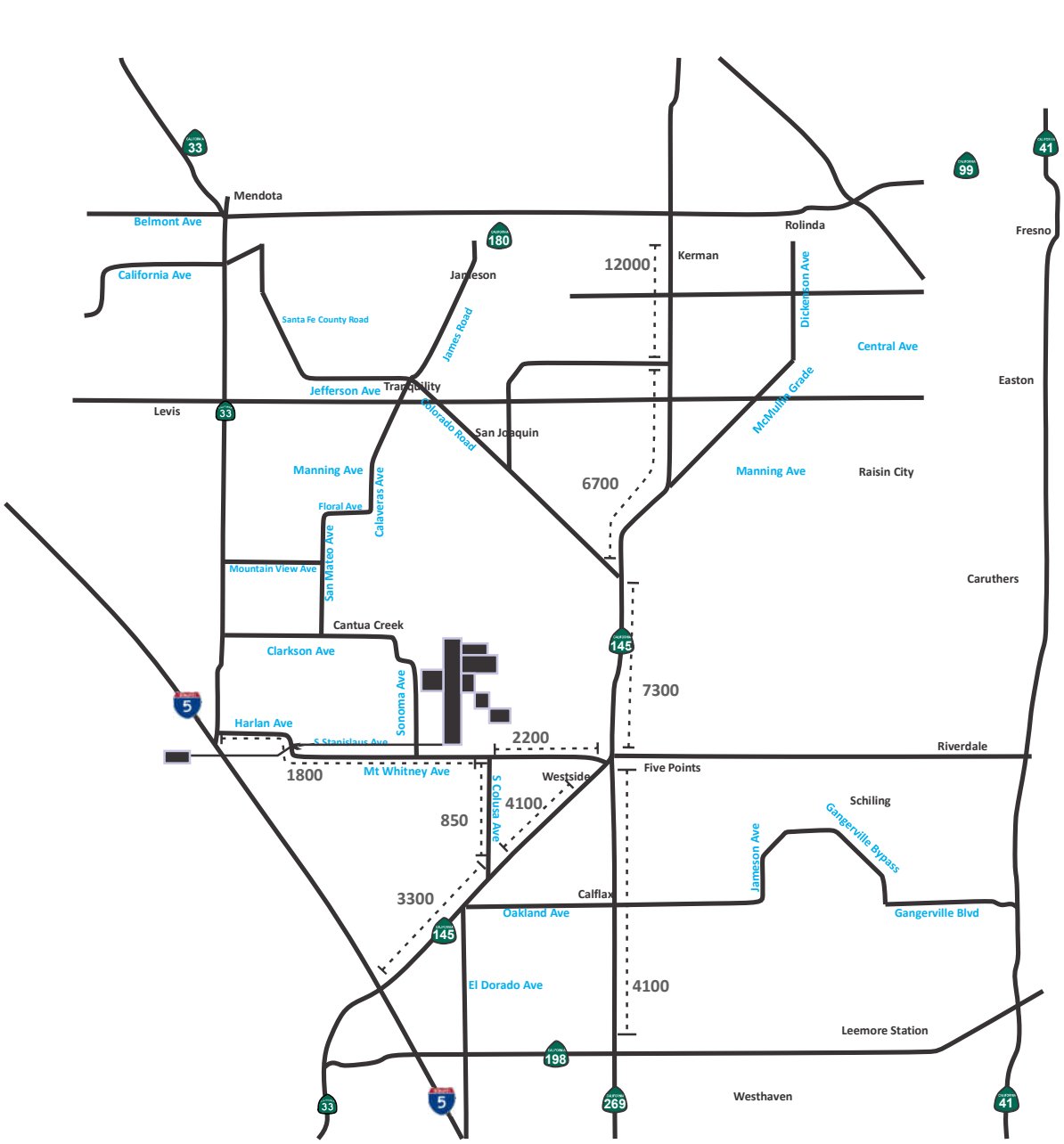
Fresno County Dept. PWP, California State Parks, Esri, HERE, Garmin, SafeGraph, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, USDA, Esri, NASA, NGA, USGS

VRPA

Darden Solar Project

Darden Roadway Segments 2023 Average Daily Traffic(ADT)

Figure 2-3



Note: For East of Mt. Whitney Ave, traffic was added from Mt Whitney west of Colusa Ave and 50% traffic from NB Colusa Ave was assumed to take left turn. Hence they are subtracted twice from total added traffic

LEGEND

- State Routes
- Interstate 5(I-5)
- XX Street names
- xx Segment Volume
- Project Location
- XX Location names

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3.0 Traffic Impacts

This chapter provides an assessment of the construction and operation traffic that the Project is expected to generate and the impact of that traffic on the surrounding street system.

3.1 Trip Generation

To assess the impacts that the Project may have on the surrounding roadway network, the first step is to determine Project trip generation. This analysis was conducted to analyze maximum construction trips during construction periods. Project construction trips were estimated using construction schedules provided by the Project applicant and information from the Institute of Transportation Engineers (ITE) Trip Generation Manual (11th Edition).

Currently the project has anticipated two different construction schedules:

- 18-month construction schedule
- 36-month construction schedule

The Project trips were generated for two different schedules: an 18-month construction period and a 36-month construction period. The trip generation table for both construction phases is provided in Table 3-1a. Once the Project's construction phase is completed, it will commence daily operation, and the trip generation for the operational phase of the project is illustrated in Table 3-1b. These estimates for Project trips are based on the following assumptions.

- ✓ It is assumed that each employee makes two trips in a day, one for entering the workplace and another when returning from work.

- ✓ Truck trip estimates for the entire project's operational phase were derived by considering worker trips and utilizing typical trip generation rates, specifically from the ITE trip generation manual within the Manufacturing category, assuming the same number of employees.

- ✓ For a conservative approach, the trips generated by the hydrogen facility at the I-5/SR 33 location (alternate hydrogen facility) are considered insignificant for traffic analysis purposes, and they have been included within the main project site (Option 1 and Option 2).

The trip generation is based on the Project's construction schedule information which is provided detail in Appendix C.

3.2 Trip Distribution

The impacts of peak of construction activity were analyzed for the surrounding roadway networks. Trip distribution is based upon knowledge of the study area, engineering judgement, prevailing traffic patterns in the study area, major routes, population centers, and other existing developments.

Trips are expected to be generated from the nearby major cities of Fresno and Visalia with SR 145 North transporting traffic towards Fresno and SR 145 South directing traffic to SR 198 or towards Visalia. The trip distribution percentages will vary for autos and trucks. Trip distribution for employees and truck trip distribution is shown in Figures 3-1a and 3-1b.

3.3 Project Construction Traffic

Project traffic as shown in Table 3-1a and 3-1b was distributed to the roadway system using the trip distribution percentages shown in Figures 3-1a and 3-1b. A graphical representation of the resulting autos and trucks are shown separately. The ADT volumes for 18 months construction schedule and 36 months schedule are shown in Figure 3-2 and 3-3. These volumes are computed using employees and truck trip distributions.

3.4 Project Operation Traffic

The impacts of the Project were analyzed during the daily operation phase of Project. Project traffic was distributed to the roadway system using the trip distribution percentages shown in Figures 3-1a and 3-1b. Traffic conditions for daily operating conditions is shown in Figures 3-4.

3.5 Impacts

3.5.1 Existing Plus Project Construction Traffic Conditions

An Existing Plus Project Constructions scenario was analyzed to include existing traffic plus traffic generated by the proposed Project. Results of the ADT LOS segment analysis along the existing street and highway system for 18 months construction schedule and 36 months construction schedule are reflected in Table 3-2 and Table 3-3. Roadway segment analysis was based on the Modified HCM-Based LOS Tables which are widely accepted throughout the Central Valley, including Fresno County. Results of the analysis show that all of the study roadway segments are projected to operate at acceptable levels of service during peak construction operations. During the construction period, the project will raise the proportion of trucks utilizing the local roadways, potentially leading to alterations in the traffic and truck mix. It is expected that there will be an increase in 10% of existing traffic. Anticipated figures include up to 345 trucks during the peak 18-month construction schedule and up to 280 trucks during the peak 36-month construction schedule. Similarly, an estimated 3,010 automobiles are expected to result from worker

commutes within the 18-month schedule, while 2,400 automobiles are projected for the 36-month schedule. These trucks will primarily be dedicated to delivering construction materials, while project workers will commute using their personal vehicles.

Additional information on existing traffic conditions is provided In Tables 3-5 and 3-6. Peak hour traffic conditions are shown in Table 3-5 for an 18-month construction schedule and peak hour traffic conditions for a 36-month schedule are shown in Table 3-6.

3.5.2 Project Opening Year Traffic Conditions

The Project's operating scenario was analyzed assuming the opening year 2028 to include traffic condition in the opening year plus traffic generated by proposed Project. Table 3-4 provides ADT levels of service results for Mt. Whitney Ave, Colusa Ave and SR 145 and SR 269. Results of the analysis show that all of the study roadway segments are projected to operate at acceptable levels of service during Projects operations in the opening year. Peak hour traffic conditions for Opening Year conditions is shown in Table 3-7.

Table 3-1a
Darden Clean Energy Project
Daily Average Trip During Peak Construction
Trip Generation Table

PHASES		DAILY WORKER TRIPS	DAILY TRUCK TRIPS	DAILY WORKER TRIPS	DAILY TRUCK TRIPS
	Description	18 MONTH CONSTRUCTION SCHEDULE		36 MONTH CONSTRUCTION SCHEDULE	
1	Site Preparation	200	14	350	10
2	PV Panel System	1600	88	1200	65
3	Inverters, Transformers, Substation Electrical	550	47	500	40
4	Gen Tie	200	29	200	25
5	Battery Storage	300	63	200	50
6	Hydrogen(Electrolyzer 1,150 MW, WTP, Storage	400	130	300	100
7	Utility Switchyard	160	17	160	15
	PEAK TOTAL*	**3010**	**345**	**2400**	**280**

Daily Project Trip generation is based on the Project Construction Schedule

* The daily worker and truck trips for the project will not sum up to the peak total, as the peak total occurs when different phases take place at various time intervals.

Table 3-1 b
Darden Clean Energy Project
Daily Average Project Trips During Operation

TRIP TYPE	DAILY TRIPS
Daily Worker Trips	80

Note:

Daily trips during operation of the facility were based on the Project Description and traffic counts of similar facilities as published in the Institute of

Transportation Engineers (ITE) Trip Generation Manual, 11th Edition.

Table 3-2
Darden Clean Energy Project

2023 Existing Plus Project Construction Roadway Segment Capacity Analysis
18 Month Construction Schedule

STREET SEGMENT	SEGMENT DESCRIPTION	TARGET LOS	EXISTING PLUS PROJECT CONSTRUCTION (2023)	
			ADT	LOS
Mt. Whitney Ave				
SR 33 to Colusa Ave	1 lane	D	2,100	C
Colusa Ave to SR 145	1 lane	D	4,570	C
Colusa Avenue				
SR 145 to Mt. Whitney Ave	1 lane	D	1,190	C
SR 145				
I-5 to Colusa Ave	1 lane	C	3,640	B
Colusa to Whitney Ave	1 Lane	C	4,100	B
Mt Whitney Ave and SR 180	1 Lane	C	8,170	B
	2 Lanes	C	13,470	C
SR 269				
SR 198 and Mt. Whitney Ave	1 lane	C	5,000	B

LOS = Level of Service

Table 3-3
Darden Clean Energy Project
2023 Existing Plus Project Construction
36 Month Construction Schedule

STREET SEGMENT	SEGMENT DESCRIPTION	TARGET LOS	EXISTING PLUS PROJECT CONSTRUCTION (2023)	
			ADT	LOS
Mt. Whitney Ave				
SR 33 to Colusa Ave	1 lane	D	2,040	C
Colusa Ave to SR 145	1 lane	D	4,090	C
Colusa Avenue				
SR 145 to Mt. Whitney Ave	1 lane	D	1,120	C
SR 145				
I-5 to Colusa Ave	1 lane	C	3,570	B
Colusa to Whitney Ave	1 Lane	C	4,100	B
Mt Whitney Ave and SR 180	1 Lane	C	8,470	B
	2 Lanes	C	13,170	C
SR 269				
SR 198 and Mt. Whitney Ave	1 lane	C	4,820	B

LOS = Level of Service

Table 3-4
Darden Clean Energy Project

2028 Traffic plus Project Operation Roadway Segment ADT Operations

STREET SEGMENT	SEGMENT DESCRIPTION	TARGET LOS	OPENING YEAR 2028 PLUS PROJECT	
			ADT	LOS
Mt. Whitney Ave				
SR 33 to Colusa Ave	1 lane	D	2,000	C
Colusa Ave to SR 145	1 lane	D	2,500	C
Colusa Avenue				
SR 145 to Mt. Whitney Ave	1 lane	D	950	C
SR 145				
I-5 to Colusa Ave	1 lane	C	3,650	B
Colusa to Whitney Ave	1 Lane	C	4,440	B
Mt Whitney Ave and SR 180	1 Lane	C	8,100	B
	2 Lanes	C	13,290	C
SR 269				
SR 198 and Mt. Whitney Ave	1 lane	C	4,550	B

LOS = Level of Service

Table 3-5
Darden Clean Energy Project

2023 Existing Plus Project Construction Roadway Segment Peak Hour Traffic

18 Months Construction Schedule

STREET SEGMENT	SEGMENT DESCRIPTION	TARGET LOS	EXISTING PLUS PROJECT (2023)	
			ADT	PEAK HOUR
Mt. Whitney Ave				
SR 33 to Colusa Ave	1 lane	D	2,100	269
Colusa Ave to SR 145	1 lane	D	4,570	611
Colusa Avenue				
SR 145 to Mt. Whitney Ave	1 lane	D	1,190	153
SR 145				
I-5 to Colusa Ave	1 lane	C	3,640	400
Colusa to Whitney Ave	1 Lane	C	4,100	447
Mt Whitney Ave and SR 180	1 Lane	C	8,170	850
	2 Lanes	C	13,470	1140
SR 269				
SR 198 and Mt. Whitney Ave	1 lane	C	5,000	511

LOS = Level of Service / **BOLD** denotes LOS standard has been exceeded

Table 3-6
Darden Clean Energy Project
2023 Existing Plus Project Construction Roadway Segment Peak Hour Traffic
36 Months Construction Schedule

STREET SEGMENT	SEGMENT DESCRIPTION	TARGET LOS	EXISTING PLUS PROJECT (2023)	
			ADT	PEAK HOUR
Mt. Whitney Ave				
SR 33 to Colusa Ave	1 lane	D	2,040	261
Colusa Ave to SR 145	1 lane	D	4,090	544
Colusa Avenue				
SR 145 to Mt. Whitney Ave	1 lane	D	1,120	143
SR 145				
I-5 to Colusa Ave	1 lane	C	3,570	392
Colusa to Whitney Ave	1 Lane	C	4,100	447
Mt Whitney Ave and SR 180	1 Lane	C	8,470	818
	2 Lanes	C	13,170	1140
SR 269				
SR 198 and Mt. Whitney Ave	1 lane	C	4,820	490

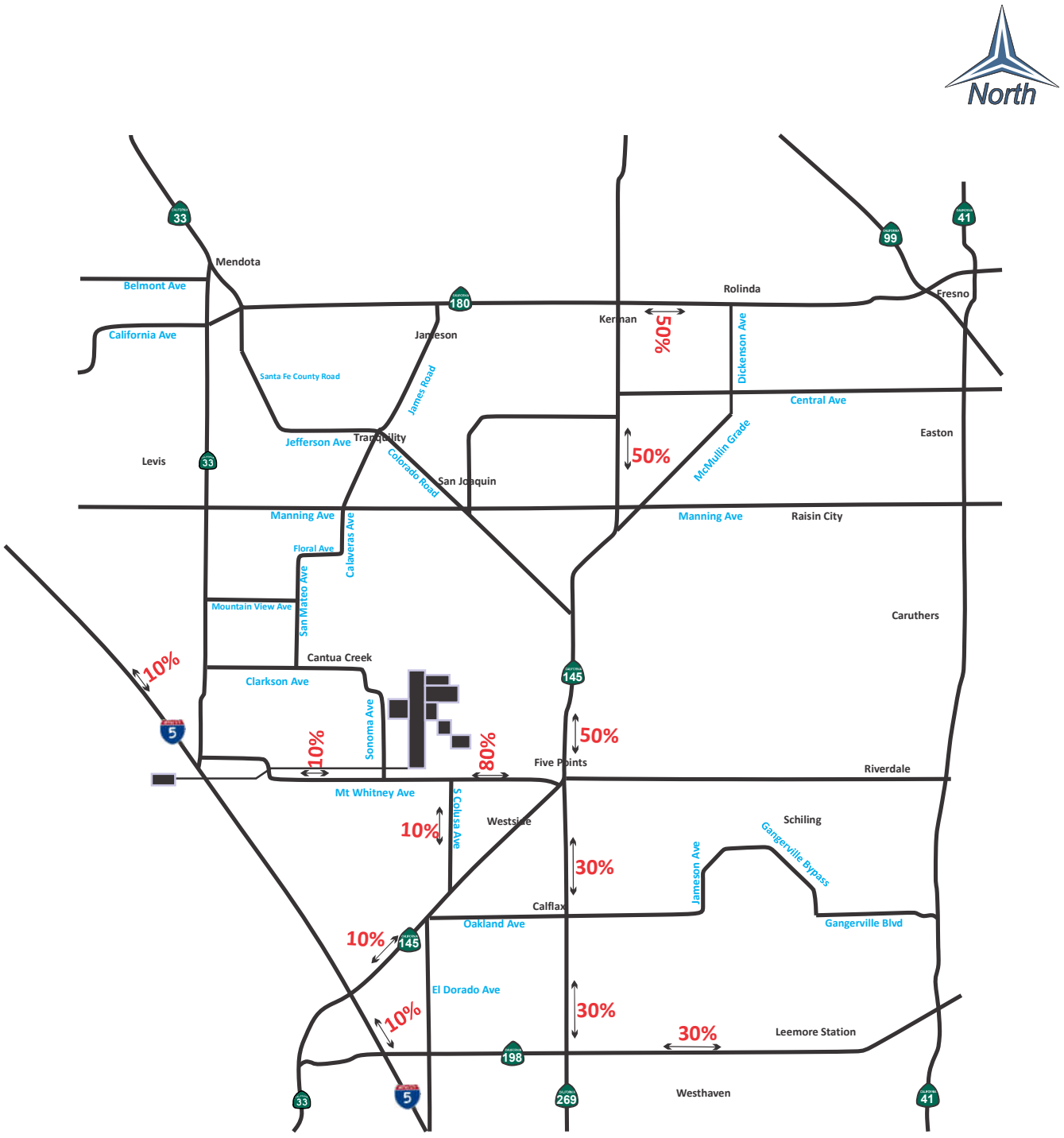
Table 3-7
Darden Clean Energy Project

2028 Traffic Plus Project Operation Roadway Segment Peak Hour Traffic

STREET SEGMENT	SEGMENT DESCRIPTION	TARGET LOS	OPENING YEAR 2028 PLUS PROJECT	
			ADT	PEAK HOUR
Mt. Whitney Ave				
SR 33 to Colusa Ave	1 lane	D	2,000	253
Colusa Ave to SR 145	1 lane	D	2,500	323
Colusa Avenue				
SR 145 to Mt. Whitney Ave	1 lane	D	950	121
SR 145				
I-5 to Colusa Ave	1 lane	C	3,650	461
Colusa to Whitney Ave	1 Lane	C	4,440	559
Mt Whitney Ave and SR 180	1 Lane	C	8,100	1026
	2 Lanes	C	13,290	1675
SR 269				
SR 198 and Mt. Whitney Ave	1 lane	C	4,550	576

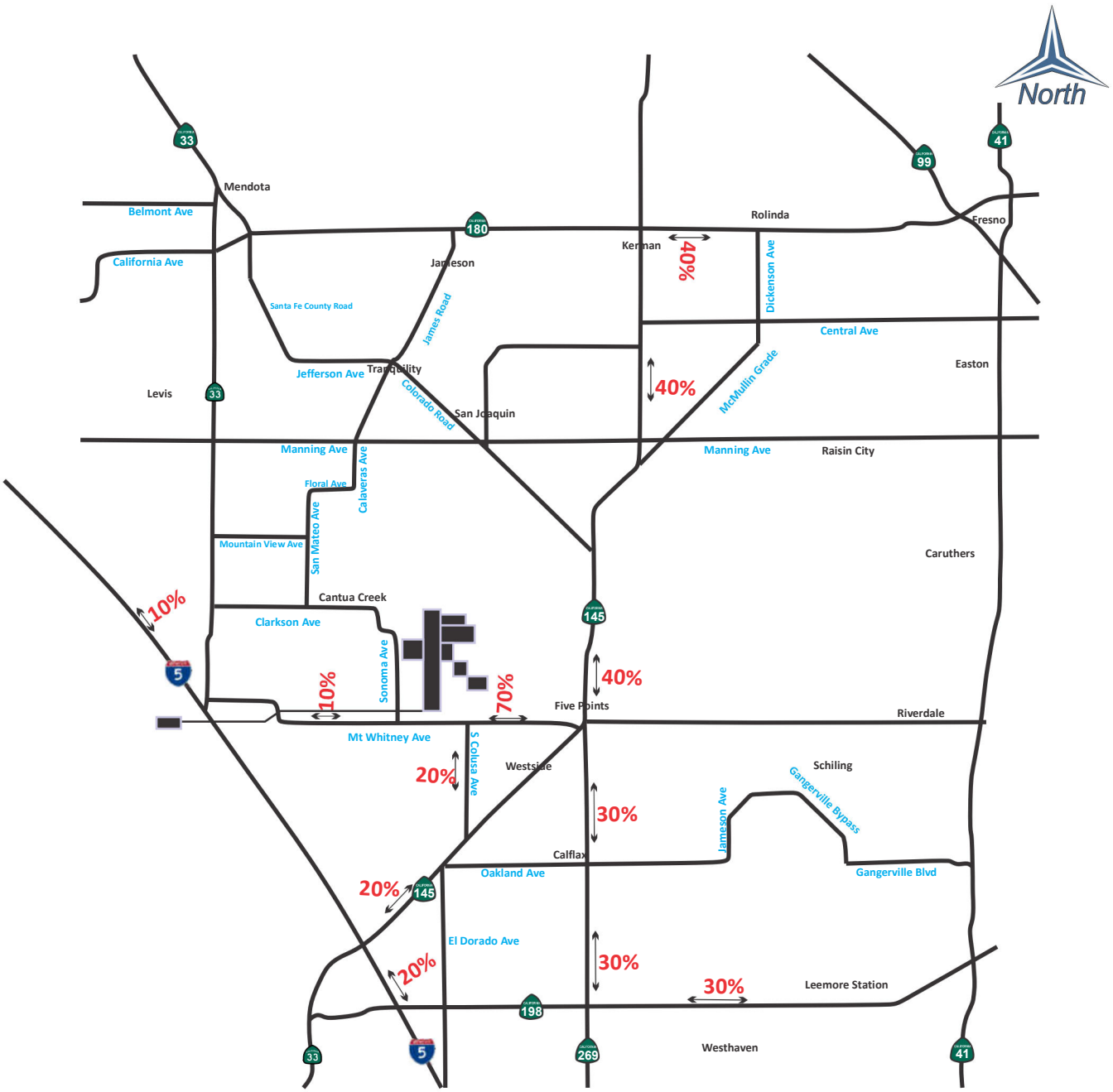
Darden Solar Project
Employee Trip Distribution

Figure 3-1a



Darden Solar Project
Truck Trip Distribution

Figure 3-1b



LEGEND

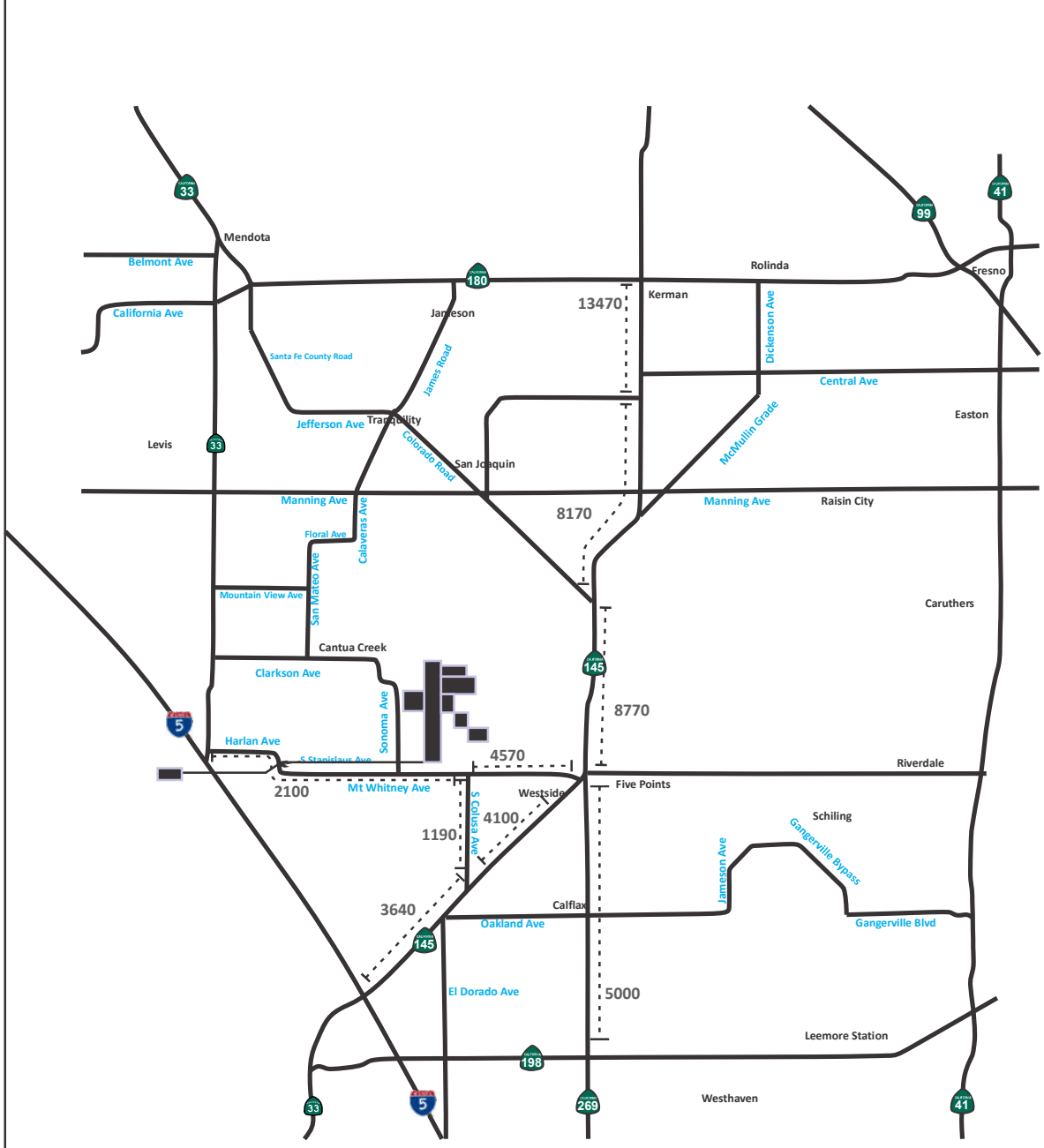
- State Routes
- XX Street names
- Project Location
- Interstate 5(I-5)
- Trip Distribution
- XX Location names

VRPA TECHNOLOGIES, INC.

Darden Solar Project

Darden Roadway Segments Existing Plus Construction Traffic 18-Months Schedule

Figure 3-2



Note: For East of Mt. Whitney Ave, traffic was added from Mt Whitney west of Colusa Ave and 50% traffic from NB Colusa Ave was assumed to take left turn. Hence they are subtracted twice from total added traffic

LEGEND

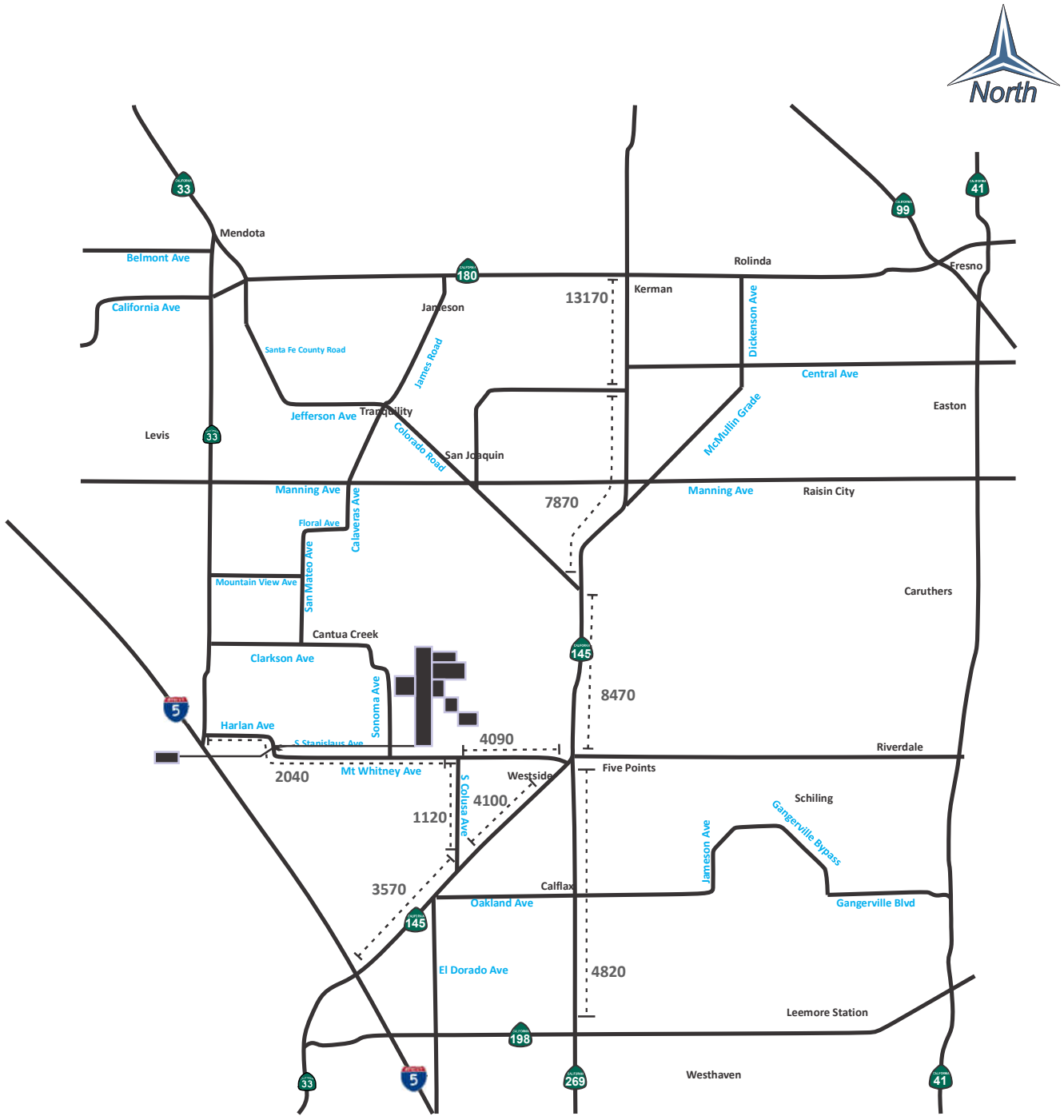
- State Routes
- Interstate 5(I-5)
- XX Street names
- xx Segment Volume
- Project Location
- XX Location names

VRPA TECHNOLOGIES, INC.

Darden Solar Project

Darden Roadway Segments Existing Plus Construction Traffic 36-Months Schedule

Figure 3-3



Note: For East of Mt. Whitney Ave, traffic was added from Mt Whitney west of Colusa Ave and 50% traffic from NB Colusa Ave was assumed to take left turn. Hence they are subtracted twice from total added traffic

LEGEND

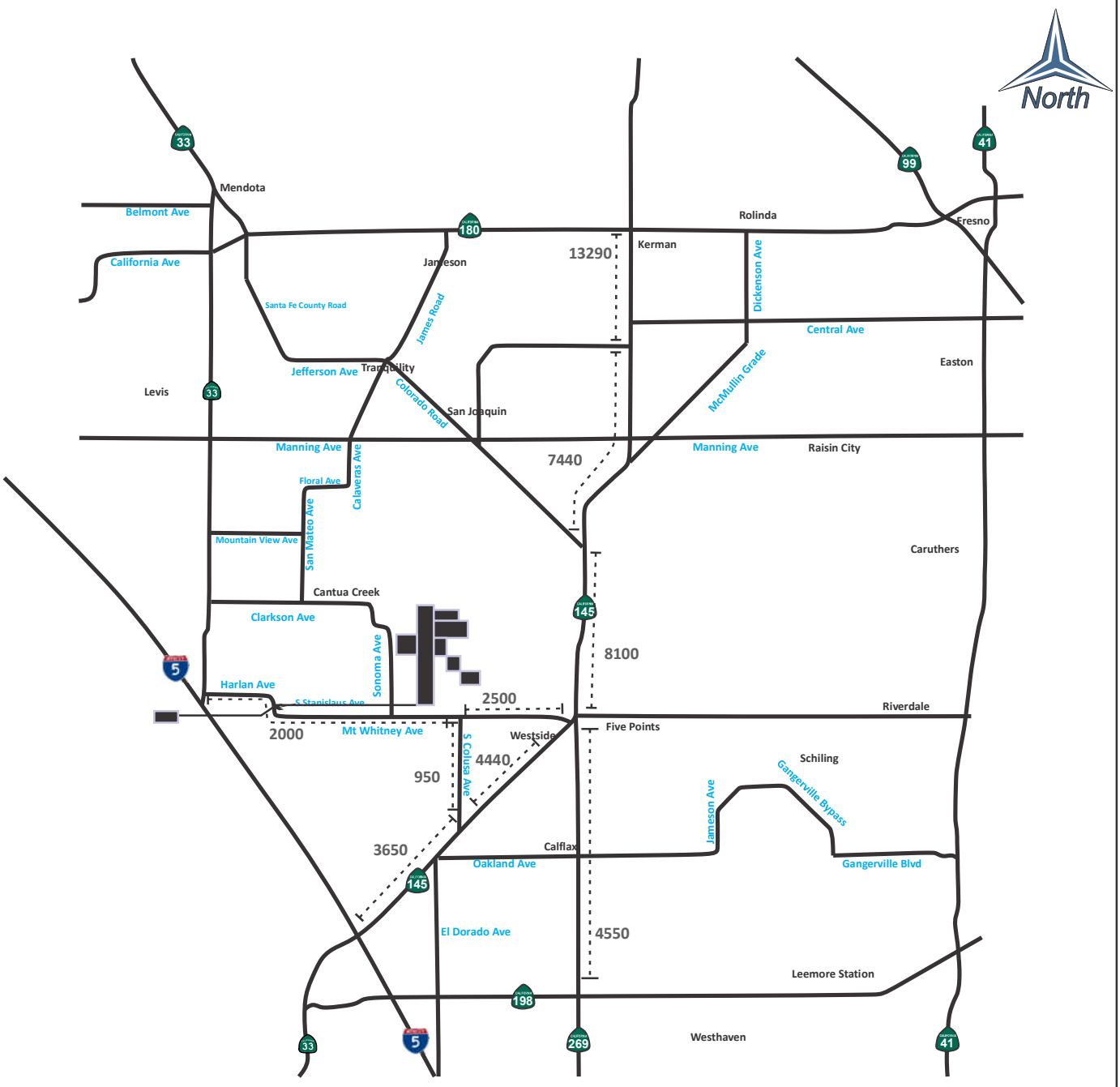
- State Routes
- Interstate 5(I-5)
- XX Street names
- xx Segment Volume
- Project Location
- XX Location names

VRPA TECHNOLOGIES, INC.

Darden Solar Project

Darden Roadway Segments Average Daily Traffic(ADT)
Opening Year 2028 Plus Project Traffic

Figure 3-4



Note: For East of Mt. Whitney Ave, traffic was added from Mt Whitney west of Colusa Ave and 50% traffic from NB Colusa Ave was assumed to take left turn. Hence they are subtracted twice from total added traffic

LEGEND

- State Routes
- XX Street names
- Project Location
- Interstate 5(I-5)
- XX Segment Volume
- XX Location names

VRPA TECHNOLOGIES, INC.

4.0 Conclusions

Three scenarios of project traffic were analyzed:

- Construction traffic with an 18-month construction schedule
- Construction traffic with a 36-month construction schedule
- Traffic conditions on the expected opening year of the facility (2028)

While an increase in traffic and trucks is expected during the project, it's important to note that no significant adverse impacts are anticipated during both the construction and operation phases. Based on the results of Chapter 3, traffic operations on study area roadways will operate at target levels of service (level of service C or better) for all scenarios and there are no need for any roadway improvements. Additionally, as part of the project approvals process, a comprehensive evaluation will be conducted to assess the potential impact of project-related truck traffic on pavement condition, ensuring the continued integrity of the transportation infrastructure.

APPENDIX A

Modified HCM-Based LOS Tables (Florida Tables)

TABLE 2

Generalized **Annual Average Daily** Volumes for Florida's **Transitioning Areas** and **Areas Over 5,000 Not In Urbanized Areas**[1]

12/18/12

INTERRUPTED FLOW FACILITIES

STATE SIGNALIZED ARTERIALS

Class I (40 mph or higher posted speed limit)

Lanes	Median	B	C	D	E
2	Undivided	*	14,400	16,200	**
4	Divided	*	34,000	35,500	**
6	Divided	*	52,100	53,500	**

Class II (35 mph or slower posted speed limit)

Lanes	Median	B	C	D	E
2	Undivided	*	6,500	13,300	14,200
4	Divided	*	9,900	28,800	31,600
6	Divided	*	16,000	44,900	47,600

Non-State Signalized Roadway Adjustments

(Alter corresponding state volumes by the indicated percent.)

Non-State Signalized Roadways - 10%

Median & Turn Lane Adjustments

Lanes	Median	Exclusive Left Lanes	Exclusive Right Lanes	Adjustment Factors
2	Divided	Yes	No	+5%
2	Undivided	No	No	-20%
Multi	Undivided	Yes	No	-5%
Multi	Undivided	No	No	-25%
–	–	–	Yes	+ 5%

One-Way Facility Adjustment

Multiply the corresponding two-directional volumes in this table by 0.6

BICYCLE MODE[2]

(Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)

Paved Shoulder/Bicycle Lane Coverage	B	C	D	E
0-49%	*	2,600	6,100	19,500
50-84%	1,900	5,500	18,400	>19,500
85-100%	7,500	19,500	>19,500	**

PEDESTRIAN MODE[2]

(Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)

Sidewalk Coverage	B	C	D	E
0-49%	*	*	2,800	9,400
50-84%	*	1,600	8,600	15,600
85-100%	3,800	10,500	17,100	>19,500

BUS MODE (Scheduled Fixed Route)[3]

(Buses in peak hour in peak direction)

Sidewalk Coverage	B	C	D	E
0-84%	> 5	≥ 4	≥ 3	≥ 2
85-100%	> 4	≥ 3	≥ 2	≥ 1

UNINTERRUPTED FLOW FACILITIES

FREEWAYS

Lanes	B	C	D	E
4	44,100	57,600	68,900	71,700
6	65,100	85,600	102,200	111,000
8	85,100	113,700	135,200	150,000
10	106,200	141,700	168,800	189,000

Freeway Adjustments

Auxiliary Lanes Present in Both Directions	Ramp Metering
+ 20,000	+ 5%

UNINTERRUPTED FLOW HIGHWAYS

Lanes	Median	B	C	D	E
2	Undivided	9,200	17,300	24,400	33,300
4	Divided	35,300	49,600	62,900	69,600
6	Divided	52,800	74,500	94,300	104,500

Uninterrupted Flow Highway Adjustments

Lanes	Median	Exclusive left lanes	Adjustment factors
2	Divided	Yes	+5%
Multi	Undivided	Yes	-5%
Multi	Undivided	No	-25%

[1] Values shown are presented as two-way annual average daily volumes for levels of service and are for the automobile/truck modes unless specifically stated. This table does not constitute a standard and should be used only for general planning applications. The computer models from which this table is derived should be used for more specific planning applications. The table and deriving computer models should not be used for corridor or intersection design, where more refined techniques exist. Calculations are based on planning applications of the Highway Capacity Manual and the Transit Capacity and Quality of Service Manual.

[2] Level of service for the bicycle and pedestrian modes in this table is based on number of motorized vehicles, not number of bicyclists or pedestrians using the facility.

[3] Buses per hour shown are only for the peak hour in the single direction of the higher traffic flow.

* Cannot be achieved using table input value defaults.

** Not applicable for that level of service letter grade. For the automobile mode, volumes greater than level of service D become F because intersection capacities have been reached. For the bicycle mode, the level of service letter grade (including F) is not achievable because there is no maximum vehicle volume threshold using table input value defaults.

Source:
Florida Department of Transportation
Systems Planning Office
www.dot.state.fl.us/planning/systems/sm/los/default.shtm

TABLE 8

Generalized **Peak Hour Directional** Volumes for Florida's **Transitioning** and **Areas Over 5,000 Not In Urbanized Areas**[1]

12/18/12

INTERRUPTED FLOW FACILITIES

STATE SIGNALIZED ARTERIALS

Class I (40 mph or higher posted speed limit)

Lanes	Median	B	C	D	E
1	Undivided	*	710	800	**
2	Divided	*	1,740	1,820	**
3	Divided	*	2,670	2,740	**

Class II (35 mph or slower posted speed limit)

Lanes	Median	B	C	D	E
1	Undivided	*	330	680	720
2	Divided	*	500	1,460	1,600
3	Divided	*	810	2,280	2,420

Non-State Signalized Roadway Adjustments

(Alter corresponding state volumes by the indicated percent.)

Non-State Signalized Roadways - 10%

Median & Turn Lane Adjustments

Lanes	Median	Exclusive Left Lanes	Exclusive Right Lanes	Adjustment Factors
1	Divided	Yes	No	+5%
2	Undivided	No	No	-20%
Multi	Undivided	Yes	No	-5%
Multi	Undivided	No	No	-25%
–	–	–	Yes	+ 5%

One-Way Facility Adjustment

Multiply the corresponding directional volumes in this table by 1.2

BICYCLE MODE[2]

(Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)

Paved Shoulder/Bicycle Lane Coverage	B	C	D	E
0-49%	*	140	320	1,000
50-84%	100	280	940	>1,000
85-100%	380	1,000	>1,000	**

PEDESTRIAN MODE[2]

(Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)

Sidewalk Coverage	B	C	D	E
0-49%	*	*	140	480
50-84%	*	80	440	800
85-100%	200	540	880	>1,000

BUS MODE (Scheduled Fixed Route)[3]

(Buses in peak hour in peak direction)

Sidewalk Coverage	B	C	D	E
0-84%	> 5	≥ 4	≥ 3	≥ 2
85-100%	> 4	≥ 3	≥ 2	≥ 1

UNINTERRUPTED FLOW FACILITIES

FREEWAYS

Lanes	B	C	D	E
2	2,200	2,880	3,440	3,580
3	3,260	4,280	5,100	5,540
4	4,260	5,680	6,760	7,500
5	5,300	7,080	8,440	9,440

Freeway Adjustments

Auxiliary Lane	Ramp Metering
+ 1,000	+ 5%

UNINTERRUPTED FLOW HIGHWAYS

Lanes	Median	B	C	D	E
1	Undivided	450	850	1,200	1,640
2	Divided	1,740	2,450	3,110	3,440
3	Divided	2,610	3,680	4,660	5,170

Uninterrupted Flow Highway Adjustments

Lanes	Median	Exclusive left lanes	Adjustment factors
1	Divided	Yes	+5%
Multi	Undivided	Yes	-5%
Multi	Undivided	No	-25%

[1] Values shown are presented as peak hour directional volumes for levels of service and are for the automobile/truck modes unless specifically stated. This table does not constitute a standard and should be used only for general planning applications. The computer models from which this table is derived should be used for more specific planning applications. The table and deriving computer models should not be used for corridor or intersection design, where more refined techniques exist. Calculations are based on planning applications of the Highway Capacity Manual and the Transit Capacity and Quality of Service Manual.

[2] Level of service for the bicycle and pedestrian modes in this table is based on number of motorized vehicles, not number of bicyclists or pedestrians using the facility.

[3] Buses per hour shown are only for the peak hour in the single direction of the higher traffic flow.

* Cannot be achieved using table input value defaults.

** Not applicable for that level of service letter grade. For the automobile mode, volumes greater than level of service D become F because intersection capacities have been reached. For the bicycle mode, the level of service letter grade (including F) is not achievable because there is no maximum vehicle volume threshold using table input value defaults.

Source:
Florida Department of Transportation
Systems Planning Office
www.dot.state.fl.us/planning/systems/sm/los/default.shtm

Appendix B
ADT Counts

Prepared by National Data & Surveying Services

VOLUME

W Mt Whitney Ave W/O S Colusa Ave

Day: Wednesday
Date: 9/6/2023

City: San Joaquin
Project #: CA23_090109_001

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	915	902	1,817

15-Minutes Interval

TIME	NB	SB	EB	WB	TOTAL	TIME	NB	SB	EB	WB	TOTAL
00:00			2	1	3	12:00			13	13	26
00:15			2	0	2	12:15			14	12	26
00:30			1	5	6	12:30			13	13	26
00:45			1	3	4	12:45			12	14	26
01:00			5	3	8	13:00			21	11	32
01:15			1	2	3	13:15			11	11	22
01:30			3	4	7	13:30			13	16	29
01:45			0	3	3	13:45			13	13	26
02:00			6	1	7	14:00			11	9	20
02:15			2	1	3	14:15			16	11	27
02:30			1	1	2	14:30			44	17	61
02:45			3	6	9	14:45			11	11	22
03:00			1	5	6	15:00			19	19	38
03:15			0	3	3	15:15			27	8	35
03:30			2	4	6	15:30			11	27	38
03:45			2	2	4	15:45			14	19	33
04:00			2	1	3	16:00			17	10	27
04:15			0	2	2	16:15			14	11	25
04:30			5	3	8	16:30			28	13	41
04:45			5	8	13	16:45			13	6	19
05:00			8	5	13	17:00			15	11	26
05:15			18	28	46	17:15			10	15	25
05:30			20	42	62	17:30			17	9	26
05:45			22	45	67	17:45			24	16	40
06:00			7	21	28	18:00			29	10	39
06:15			7	24	31	18:15			15	15	30
06:30			17	12	29	18:30			7	7	14
06:45			12	8	20	18:45			9	7	16
07:00			11	11	22	19:00			2	7	9
07:15			11	19	30	19:15			7	10	17
07:30			10	13	23	19:30			10	2	12
07:45			8	13	21	19:45			5	3	8
08:00			14	8	22	20:00			9	5	14
08:15			12	16	28	20:15			7	2	9
08:30			11	12	23	20:30			1	3	4
08:45			10	14	24	20:45			1	4	5
09:00			18	13	31	21:00			2	3	5
09:15			10	13	23	21:15			2	3	5
09:30			17	5	22	21:30			1	4	5
09:45			6	12	18	21:45			2	3	5
10:00			14	12	26	22:00			3	3	6
10:15			7	9	16	22:15			2	3	5
10:30			17	13	30	22:30			2	2	4
10:45			2	12	14	22:45			5	3	8
11:00			9	15	24	23:00			1	1	2
11:15			17	14	31	23:15			0	0	0
11:30			11	9	20	23:30			1	1	2
11:45			21	9	30	23:45			0	1	1
TOTALS	0	0	391	485	876	TOTALS	0	0	524	417	941
SPLIT %	0%	0%	45%	55%	48%	SPLIT %	0%	0%	56%	44%	52%

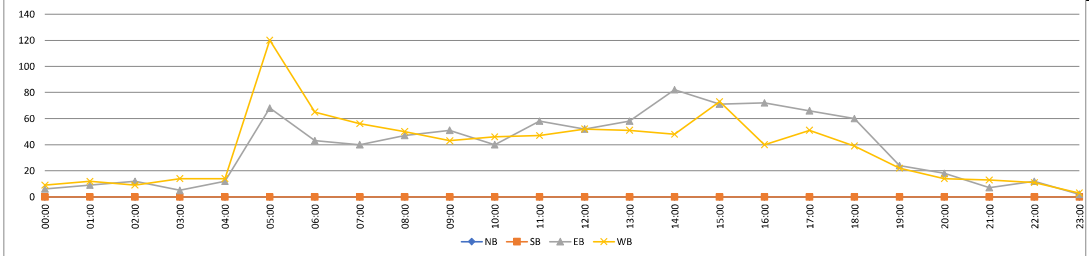
DAILY TOTALS

Hourly Intervals

TIME		NB	SB	EB	WB	TOTAL
00:00	01:00			6	9	15
01:00	02:00			9	12	21
02:00	03:00			12	9	21
03:00	04:00			5	14	19
04:00	05:00			12	14	26
05:00	06:00			68	120	188
06:00	07:00			43	65	108
07:00	08:00			40	56	96
08:00	09:00			47	50	97
09:00	10:00			51	43	94
10:00	11:00			40	46	86
11:00	12:00			58	47	105
12:00	13:00			52	52	104
13:00	14:00			58	51	109
14:00	15:00			82	48	130
15:00	16:00			71	73	144
16:00	17:00			72	40	112
17:00	18:00			66	51	117
18:00	19:00			60	39	99
19:00	20:00			24	22	46
20:00	21:00			18	14	32
21:00	22:00			7	13	20
22:00	23:00			12	11	23
23:00	00:00			2	3	5

STATISTICS

	NB	SB	EB	WB	TOTAL
Peak Period	00:00	to	12:00		
Volume			391	485	876
Peak Hour			5:00	5:15	5:15
Peak Volume			68	136	203
Peak Hour Factor			0.773	0.756	0.757
Peak Period	12:00	to	00:00		
Volume			524	417	941
Peak Hour			14:30	15:00	14:30
Peak Volume			101	73	156
Peak Hour Factor			0.574	0.676	0.639
Peak Period	07:00	to	09:00		
Volume			87	106	193
Peak Hour			8:00	7:00	8:00
Peak Volume			47	56	97
Peak Hour Factor			0.839	0.737	0.866
Peak Period	16:00	to	18:00		
Volume			138	91	229
Peak Hour			16:00	17:00	17:00
Peak Volume			72	51	117
Peak Hour Factor			0.643	0.797	0.731



Prepared by National Data & Surveying Services

VOLUME

S Colusa Ave S/O W Mt Whitney Ave

Day: Wednesday
Date: 9/6/2023

City: San Joaquin
Project #: CA23_090109_002

DAILY TOTALS	NB	SB	EB	WB	Total
	436	412	0	0	848

15-Minutes Interval

TIME	NB	SB	EB	WB	TOTAL	TIME	NB	SB	EB	WB	TOTAL
00:00	2	1			3	12:00	5	7			12
00:15	0	1			1	12:15	5	5			10
00:30	1	0			1	12:30	12	3			15
00:45	1	0			1	12:45	4	7			11
01:00	1	1			2	13:00	5	7			12
01:15	0	1			1	13:15	5	6			11
01:30	3	0			3	13:30	10	1			11
01:45	0	0			0	13:45	8	7			15
02:00	0	1			1	14:00	5	7			12
02:15	0	0			0	14:15	8	7			15
02:30	1	0			1	14:30	12	10			22
02:45	0	0			0	14:45	5	6			11
03:00	3	0			3	15:00	11	10			21
03:15	0	0			0	15:15	6	15			21
03:30	1	0			1	15:30	40	8			48
03:45	3	3			6	15:45	9	7			16
04:00	0	1			1	16:00	7	5			12
04:15	1	0			1	16:15	9	6			15
04:30	0	4			4	16:30	11	9			20
04:45	2	4			6	16:45	7	9			16
05:00	0	3			3	17:00	9	3			12
05:15	5	8			13	17:15	7	3			10
05:30	10	21			31	17:30	8	4			12
05:45	11	28			39	17:45	2	7			9
06:00	7	9			16	18:00	6	7			13
06:15	9	11			20	18:15	5	3			8
06:30	9	11			20	18:30	4	2			6
06:45	4	6			10	18:45	2	3			5
07:00	3	6			9	19:00	3	0			3
07:15	10	5			15	19:15	4	3			7
07:30	4	3			7	19:30	0	3			3
07:45	4	6			10	19:45	2	3			5
08:00	5	7			12	20:00	1	7			8
08:15	3	3			6	20:15	1	4			5
08:30	3	2			5	20:30	1	1			2
08:45	9	4			13	20:45	1	1			2
09:00	10	5			15	21:00	3	1			4
09:15	5	4			9	21:15	1	0			1
09:30	3	3			6	21:30	1	0			1
09:45	7	4			11	21:45	1	1			2
10:00	3	6			9	22:00	0	0			0
10:15	5	4			9	22:15	0	0			0
10:30	2	5			7	22:30	0	2			2
10:45	6	3			9	22:45	2	0			2
11:00	5	3			8	23:00	4	0			4
11:15	6	9			15	23:15	6	0			6
11:30	4	1			5	23:30	0	1			1
11:45	6	13			19	23:45	1	1			2
TOTALS	177	210	0	0	387	TOTALS	259	202	0	0	461
SPLIT %	46%	54%	0%	0%	46%	SPLIT %	56%	44%	0%	0%	54%

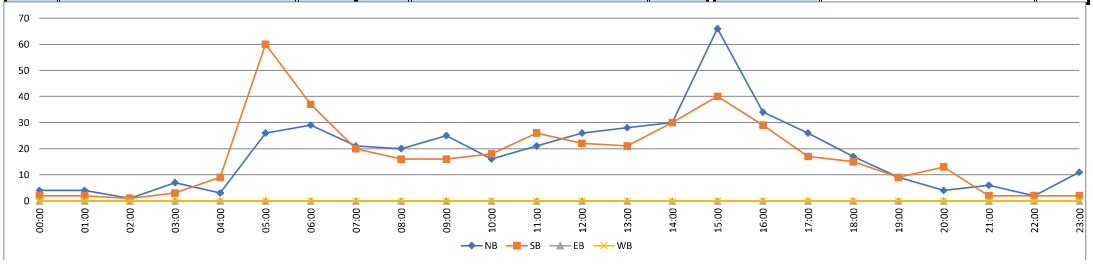
DAILY TOTALS

Hourly Intervals

TIME		NB	SB	EB	WB	TOTAL
00:00	01:00	4	2			6
01:00	02:00	4	2			6
02:00	03:00	1	1			2
03:00	04:00	7	3			10
04:00	05:00	3	9			12
05:00	06:00	26	60			86
06:00	07:00	29	37			66
07:00	08:00	21	20			41
08:00	09:00	20	16			36
09:00	10:00	25	16			41
10:00	11:00	16	18			34
11:00	12:00	21	26			47
12:00	13:00	26	22			48
13:00	14:00	28	21			49
14:00	15:00	30	30			60
15:00	16:00	66	40			106
16:00	17:00	34	29			63
17:00	18:00	26	17			43
18:00	19:00	17	15			32
19:00	20:00	9	9			18
20:00	21:00	4	13			17
21:00	22:00	6	2			8
22:00	23:00	2	2			4
23:00	00:00	11	2			13

STATISTICS

	NB	SB	EB	WB	TOTAL
Peak Period	00:00	to	12:00		
Volume	177	210			387
Peak Hour	5:30	5:30			5:30
Peak Volume	37	69			106
Peak Hour Factor	0.841	0.616			0.679
Peak Period	12:00	to	00:00		
Volume	259	202			461
Peak Hour	15:00	14:30			15:00
Peak Volume	66	41			106
Peak Hour Factor	0.413	0.683			0.552
Peak Period	07:00	to	09:00		
Volume	41	36			77
Peak Hour	7:15	7:15			7:15
Peak Volume	23	21			44
Peak Hour Factor	0.575	0.750			0.733
Peak Period	16:00	to	18:00		
Volume	60	46			106
Peak Hour	16:15	16:00			16:00
Peak Volume	36	29			63
Peak Hour Factor	0.818	0.806			0.788



DISTRICT	RTE	RTE_SFX	CNTY	PM_PFX	PM	PM_SFX	DESCRIPTION	BACK_PEAK_HOUR	BACK_PEAK_MADT	BACK_AADT	AHEAD_PEAK_HOUR	AHEAD_PEAK_MADT	AHEAD_AADT
06	005		FRE		0.000		KINGS/FRESNO COUNTY LINE				5300	45000	39000
06	005		FRE		0.228		JCT. RTE. 269, LASSEN AVENUE	5300	45000	39000	5300	46000	39500
06	005		FRE		5.501		JAYNE AVENUE	5300	46000	39500	5300	46000	39500
06	005		FRE		14.873		JCT. RTE. 198	5300	46000	39500	5500	46500	41000
06	005		FRE		17.964		JCT. RTE. 33 SOUTH, JCT. RTE. 145 NORTH	5500	46500	41000	5300	45500	40000
06	005		FRE		29.955		JCT. RTE. 33 NORTH	5300	45500	40000	5300	45500	40000
06	005		FRE		38.359		KAMM AVENUE	5300	45500	40000	5600	44000	41000
06	005		FRE		45.798		MANNING AVENUE	5600	44000	41000	5500	46000	41500
06	005		FRE		48.990		PANOCHE ROAD	5500	46000	41500	5300	48500	40500
06	005		FRE		52.746		RUSSELL AVENUE	5300	48500	40500	5300	48500	40500
06	005		FRE		60.077		SHIELDS AVENUE	5300	48500	40500	5400	49000	41000
06	005		FRE		65.782		NEES AVENUE	5400	49000	41000	5700	52000	43500
06	005		FRE		66.159		FRESNO/MERCED COUNTY LINE	5700	52000	43500			
06	033		FRE		0.000		KINGS/FRESNO COUNTY LINE				290	3100	2000
06	033		FRE		8.020		ALPINE/LOST HILLS ROADS	290	3100	2000	250	2700	1750
06	033		FRE		14.750		MERCED AVENUE	840	8800	8300	1000	11600	10200
06	033		FRE		15.370		COALINGA, FIFTH STREET	1150	12800	11300	350	3750	3600
06	033		FRE		15.707		COALINGA, JCT. RTE. 198 WEST	410	6200	4100	860	13200	9100
06	033		FRE		16.780		COALINGA, PHELPS AVENUE	890	9600	9400	520	7900	5400
06	033		FRE	R	18.588		GALE AVENUE	480	5500	5100	420	5100	4400
06	033		FRE		24.316		JCT. RTE. 198 EAST	380	4550	4300	230	2650	2450
06	033		FRE	R	27.019		DERRICK AVENUE	260	3100	2650	240	2750	2400
06	033		FRE	R	29.000		JCT. RTE. 145 NORTHEAST, SOUTH JCT. RTE. 5	240	2750	2400	240	2750	2400
06	033		FRE	R	39.853		NORTH JCT. RTE. 5	240	2750	2400	250	2400	1850
06	033		FRE		53.400		ADAMS AVENUE	330	2200	1750	260	2400	1750
06	033		FRE		59.430		CALIFORNIA AVENUE	270	2450	1900	320	2850	1900
06	033		FRE		61.450		MENDOTA, BELMONT AVENUE	320	2850	1900	750	5700	4750
06	033		FRE		62.247		MENDOTA, JCT. RTE. 180 EAST	530	6400	5400	1350	15100	13000
06	033		FRE	R	62.506		BASS AVENUE	1350	15100	13000	770	8200	7300
06	033		FRE		69.920		FIREBAUGH, 15TH STREET	1350	14600	12800	1250	13200	12000
06	033		FRE		70.193		FIREBAUGH, 12TH STREET	1500	13600	12300	1450	12600	11800
06	033		FRE		70.557		FIREBAUGH, 8TH STREET	1200	11000	9600	1100	10300	9100
06	033		FRE		72.837		DOUGLAS AVENUE	340	3750	3150	330	3700	3100
06	033		FRE	R	79.905		BRANNON AVENUE	280	3400	2650	780	2700	2350
06	145		FRE		0.000		JCT. RTES. 5 AND 33				320	3050	2650
06	145		FRE		10.324		EXCELSIOR AVENUE	420	3750	3500	440	3750	3500
06	145		FRE		13.212		JCT. RTE. 269	600	5500	4800	680	6700	5300
06	145		FRE		15.220		CERINI ROAD	680	6700	5300	680	6700	5300
06	145		FRE		17.270		ELKHORN AVENUE	570	5800	5200	670	6500	6100
06	145		FRE		20.280		KAMM AVENUE	670	6500	6100	740	7200	6700
06	145		FRE		20.650		COLORADO ROAD	740	7200	6700	650	6200	5900
06	145		FRE		25.085		MADERA AVENUE	650	6200	5900	240	2400	2200
06	145		FRE		26.090		MANNING AVENUE	240	2400	2200	290	3550	3300
06	145		FRE		30.110		AMERICAN AVENUE	370	4650	4300	530	6600	6200
06	145		FRE		33.631		KERMAN, CHURCH AVENUE	640	8000	7500	610	8000	7500
06	145		FRE		34.370		KERMAN, D STREET	830	10500	10100	830	11100	10100
06	145		FRE		35.149		KERMAN, JCT. RTE. 180	1250	13100	12400	990	10500	8900
06	145		FRE		36.154		BELMONT AVENUE	990	10500	8900	1000	9800	9200
06	145		FRE		40.166		SHAW AVENUE	830	8000	7500	600	6900	6600
06	198		FRE		12.330		PARKFIELD JUNCTION	100	990	840	120	990	840
06	198		FRE		19.145		COALINGA CREEK	140	1100	1000	150	1150	1050
06	198		FRE		21.190		FIRESTONE AVENUE	140	1150	1050	150	1250	1150
06	198		FRE		21.740		COALINGA, SOUTH CITY LIMITS	150	1250	1150	460	3700	3500
06	198		FRE		22.370		COALINGA, 8TH/POLK STREETS	460	3700	3500	840	7500	7100
06	198		FRE		22.660		JCT. RTE. 33	830	7400	7000	190	2050	1900
06	198		FRE		26.814		JCT. RTE. 5	190	2050	1900	440	4900	4250
06	198		FRE		34.660		JCT. RTE. 269	400	4650	4050	530	6100	5400
06	198		FRE		42.731		FRESNO/KINGS COUNTY LINE	510	5900	5200			
06	269		FRE		0.000		KINGS/FRESNO COUNTY LINE				620	5800	5500
06	269		FRE		0.150		PLYMOUTH AVE/AVENAL CUTOFF ROAD EAST	610	5800	5400	560	5500	4800
06	269		FRE		0.427		JCT. RTE. 5	560	5500	4900	230	2400	2100
06	269		FRE		12.746		JCT. RTE. 198	540	5400	4600	390	3750	3350
06	269		FRE		24.764		JCT. RTE. 145	310	3100	2650			

Appendix C
Construction Schedule

Darden Clean Energy Project

Trip Generation- 18 Month Schedule

	Total Peak Traffic	12/30/2025	1/30/2026	2/28/2026	4/30/2026	5/28/2026	6/30/2026	9/28/2026	10/28/2026	11/28/2026	3/28/2027	4/28/2027	6/28/2027
1	Ph 1: Site Preparation (~8,700 acres) **(12/30/2025 - 4/30/2026)**	**414**	**414**	**414**	**414**								
2	Ph 2: PV Panel System (1,150 MW) **(2/28/2026 - 6/28/2027)**			**1688**	**1688**	**1688**	**1688**	**1688**	**1688**	**1688**	**1688**	**1688**	**1688**
3	Ph 3: Inverters, Transformers, Substation, Electrical **(5/28/2026 - 3/28/2027)**					**597**	**597**	**597**	**597**	**597**	**597**		
4	Ph 4: Gen-tie (10-15 miles) **(1/30/2026 - 6/30/2026)**		**229**	**229**	**229**	**229**	**229**						
5	Ph 5: Battery Storage (4,600 MWh) **(10/28/2026 - 4/28/2027)**								**363**	**363**	**363**	**363**	
6	Ph 6: Hydrogen (Electrolyzer 1,150 MW, WTP, Storage) **(9/28/2026 - 4/28/2027)**							**530**	**530**	**530**	**530**	**530**	
7	Ph 7: Utility Switchyard (500kv) **(2/28/2026 - 11/28/2026)**			**177**	**177**	**177**	**177**	**177**	**177**	**177**			
	Peak	414	643	2508	2508	2691	2691	2992	**3355**	**3355**	3178	2581	

	One-way Daily Truck Trips	12/30/2025	1/30/2026	2/28/2026	4/30/2026	5/28/2026	6/30/2026	9/28/2026	10/28/2026	11/28/2026	3/28/2027	4/28/2027	6/28/2027
1	Ph 1: Site Preparation (~8,700 acres) **(12/30/2025 - 4/30/2026)**	**14**	**14**	**14**	**14**								
2	Ph 2: PV Panel System (1,150 MW) **(2/28/2026 - 6/28/2027)**			**88**	**88**	**88**	**88**	**88**	**88**	**88**	**88**	**88**	**88**
3	Ph 3: Inverters, Transformers, Substation, Electrical **(5/28/2026 - 3/28/2027)**					**47**	**47**	**47**	**47**	**47**	**47**		
4	Ph 4: Gen-tie (10-15 miles) **(1/30/2026 - 6/30/2026)**		**29**	**29**	**29**	**29**	**29**						
5	Ph 5: Battery Storage (4,600 MWh) **(10/28/2026 - 4/28/2027)**								**63**	**63**	**63**	**63**	
6	Ph 6: Hydrogen (Electrolyzer 1,150 MW, WTP, Storage) **(9/28/2026 - 4/28/2027)**							**130**	**130**	**130**	**130**	**130**	
7	Ph 7: Utility Switchyard (500kv) **(2/28/2026 - 11/28/2026)**			**17**	**17**	**17**	**17**	**17**	**17**	**17**			
	Peak	14	43	148	148	181	181	282	**345**	**345**	328	281	

	Worker Trip County (One-Way Daily)	12/30/2025	1/30/2026	2/28/2026	4/30/2026	5/28/2026	6/30/2026	9/28/2026	10/28/2026	11/28/2026	3/28/2027	4/28/2027	6/28/2027
1	Ph 1: Site Preparation (~8,700 acres) **(12/30/2025 - 4/30/2026)**	**200**	**200**	**200**	**200**								
2	Ph 2: PV Panel System (1,150 MW) **(2/28/2026 - 6/28/2027)**			**1600**	**1600**	**1600**	**1600**	**1600**	**1600**	**1600**	**1600**	**1600**	**1600**
3	Ph 3: Inverters, Transformers, Substation, Electrical **(5/28/2026 - 3/28/2027)**					**550**	**550**	**550**	**550**	**550**	**550**		
4	Ph 4: Gen-tie (10-15 miles) **(1/30/2026 - 6/30/2026)**		**200**	**200**	**200**	**200**	**200**						
5	Ph 5: Battery Storage (4,600 MWh) **(10/28/2026 - 4/28/2027)**								**300**	**300**	**300**	**300**	
6	Ph 6: Hydrogen (Electrolyzer 1,150 MW, WTP, Storage) **(9/28/2026 - 4/28/2027)**							**400**	**400**	**400**	**400**	**400**	
7	Ph 7: Utility Switchyard (500kv) **(2/28/2026 - 11/28/2026)**			**160**	**160**	**160**	**160**	**160**	**160**	**160**			
	Peak	200	400	2160	2160	2510	2510	2710	**3010**	**3010**	2850	2300	

Darden Clean Energy Project

Trip Generation- 36 Month Schedule

	Total Peak Traffic	12/31/2025	5/31/2026	7/31/2026	3/31/2027	5/30/2027	11/30/2027	1/30/20208	2/29/2028	5/30/2028	6/30/2028	9/30/2028	12/29/2028
1	Ph 1: Site Preparation (~8,700 acres) **(12/31/25 - 7/31/26)**	**360**	**360**	**360**									
2	Ph 2: PV Panel System (1,150 MW) **(5/31/26 - 6/30/2028)**		**1265**	**1265**	**1265**	**1265**	**1265**	**1265**	**1265**	**1265**	**1265**		
3	Ph 3: Inverters, Transformers, Substation, Electrical **(5/30/2027 - 5/30/2028)**					**540**	**540**	**540**	**540**	**540**			
4	Ph 4: Gen-tie (10-15 miles) **(11/30/2027 - 5/30/2028)**						**225**	**225**	**225**	**225**			
5	Ph 5: Battery Storage (4,600 MWh) **(1/30/2028 - 9/30/2028)**							**250**	**250**	**250**	**250**	**250**	
6	Ph 6: Hydrogen (Electrolyzer 1,150 MW, WTP, Storage) **(2/29/2028 - 12/29/2028)**								**400**	**400**	**400**	**400**	**400**
7	Ph 7: Utility Switchyard (500kv) **(5/31/2026 - 3/31/2027)**		**175**	**175**	**175**								
	Peak	360	1800	1800	1440	1805	2030	2280	**2680**	**2680**	1915	650	400

	One-way Daily Truck Trips	12/31/2025	5/31/2026	7/31/2026	3/31/2027	5/30/2027	11/30/2027	1/30/20208	2/29/2028	5/30/2028	6/30/2028	9/30/2028	12/29/2028
1	Ph 1: Site Preparation (~8,700 acres) **(12/31/25 - 7/31/26)**	**10**	**10**	**10**									
2	Ph 2: PV Panel System (1,150 MW) **(5/31/26 - 6/30/2028)**		**65**	**65**	**65**	**65**	**65**	**65**	**65**	**65**	**65**		
3	Ph 3: Inverters, Transformers, Substation, Electrical **(5/30/2027 - 5/30/2028)**					**40**	**40**	**40**	**40**	**40**			
4	Ph 4: Gen-tie (10-15 miles) **(11/30/2027 - 5/30/2028)**						**25**	**25**	**25**	**25**			
5	Ph 5: Battery Storage (4,600 MWh) **(1/30/2028 - 9/30/2028)**							**50**	**50**	**50**	**50**	**50**	
6	Ph 6: Hydrogen (Electrolyzer 1,150 MW, WTP, Storage) **(2/29/2028 - 12/29/2028)**								**100**	**100**	**100**	**100**	**100**
7	Ph 7: Utility Switchyard (500kv) **(5/31/2026 - 3/31/2027)**		**15**	**15**	**15**								
	Peak	10	90	90	80	105	130	180	**280**	**280**	215	150	100

	Worker Trip County (One-Way Daily)	12/31/2025	5/31/2026	7/31/2026	3/31/2027	5/30/2027	11/30/2027	1/30/20208	2/29/2028	5/30/2028	6/30/2028	9/30/2028	12/29/2028
1	Ph 1: Site Preparation (~8,700 acres) **(12/31/25 - 7/31/26)**	**350**	**350**	**350**									
2	Ph 2: PV Panel System (1,150 MW) **(5/31/26 - 6/30/2028)**		**1200**	**1200**	**1200**	**1200**	**1200**	**1200**	**1200**	**1200**	**1200**		
3	Ph 3: Inverters, Transformers, Substation, Electrical **(5/30/2027 - 5/30/2028)**					**500**	**500**	**500**	**500**	**500**			
4	Ph 4: Gen-tie (10-15 miles) **(11/30/2027 - 5/30/2028)**						**200**	**200**	**200**	**200**			
5	Ph 5: Battery Storage (4,600 MWh) **(1/30/2028 - 9/30/2028)**							**200**	**200**	**200**	**200**	**200**	
6	Ph 6: Hydrogen (Electrolyzer 1,150 MW, WTP, Storage) **(2/29/2028 - 12/29/2028)**								**300**	**300**	**300**	**300**	**300**
7	Ph 7: Utility Switchyard (500kv) **(5/31/2026 - 3/31/2027)**		**160**	**160**	**160**								
	Peak	350	1710	1710	1360	1700	1900	2100	**2400**	**2400**	1700	500	300