

## **SECTION 4.3**

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# **TRANSPORTATION AND CIRCULATION**

## 4.3 TRANSPORTATION AND CIRCULATION

This section discusses the transportation, circulation and access impacts that would occur in association with implementation of the proposed Project. Impacts may occur from introduction of construction-related traffic on local roads, physical changes to roads, and access points created to allow entry and exit from each CUP. Information contained in this section is summarized from the *Wistaria Ranch Solar Energy Center Draft Traffic Impact Analysis* prepared by LOS Engineering, Inc. (LOS 2014). This document is provided on the attached CD of Technical Appendices as **Appendix B** of this EIR.

This section of this EIR analyzes traffic impacts from construction, operation, and decommissioning of the proposed Project. During the operations, the Project will have approximately 15 full-time personnel and generate very few trips. This volume of traffic is not representative of the amount of workers and traffic generated during construction as the greatest amount of traffic (664 Average Daily Trips [ADT]) will be generated during construction, not operations. Therefore, the higher and more conservative construction trip generation was used to determine potential Project impacts. Additionally, the Draft Traffic Impact Assessment analyzes the impacts of a development scenario towards the end of the ten year period where background traffic levels will be marginally greater than a near-term scenario. Lastly, traffic impacts associated with decommissioning are analyzed and discussed to the extent possible.

### 4.3.1 REGULATORY FRAMEWORK

#### A. STATE

##### California Department of Transportation

The State of California Department of Transportation (Caltrans) is responsible for the design, construction, maintenance, and operation of the California State Highway System. Caltrans is also responsible for portions of the Interstate Highway System within the state's boundaries. Caltrans has jurisdiction over state highway right-of-way (ROW) and has the authority to issue permits for work and encroachments (temporary or permanent) in these areas. Likewise, Caltrans is involved in review of traffic control plans, stoppage of traffic for placement of aerial lines, and installation or removal of overhead conductors crossing a highway. The Project proposes to construct a 230-kV Gen-Tie or a lower voltage collector line that would extend approximately one-half mile along Rockwood Road to the Mount Signal Solar Farm Gen-Tie. This segment would require an encroachment permit from Caltrans to cross State Route 98 (SR-98).

#### B. LOCAL

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

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

**Table 4.3-1** analyzes the consistency of the proposed Project with the applicable Goal and objectives relating to land use in the County of Imperial General Plan. While this EIR analyzes the Project's consistency with the General Plan pursuant to California Environmental Quality Act (CEQA) Guidelines

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section 15125(d), the Imperial County Board of Supervisors ultimately determines consistency with the General Plan.

**TABLE 4.3-1**  
**IMPERIAL COUNTY GENERAL PLAN CONSISTENCY ANALYSIS**

General Plan Goal and Objectives	Consistent with General Plan?	Analysis
<b>CIRCULATION AND SCENIC HIGHWAYS ELEMENT</b>		
<b>Safe, Convenient, and Efficient Transportation System</b>		
<b>Goal 1</b> The County will provide and require an integrated transportation system for the safe and efficient movement of people and goods within and through the County of Imperial with minimum disruption to the environment.	Yes	The proposed Project would rely primarily on County roadways for transport of workers and materials. To ensure safety of roads, the Applicant proposes that Project-related impacts to County roads will be repaired (see <b>Table 2.0-9</b> ). In addition, mitigation measures MM 4.3.6a, MM 4.3.6b, MM 4.3.6c and MM 4.3.6d require that roads damage by Project-related traffic be repaired. Therefore, the proposed Project is consistent with this goal.
<b>Objective 1.1</b> Maintain and improve the existing road and highway network, while providing for future expansion and improvement based on travel demand and the development of alternative travel modes.	Yes	As noted in the analysis of Goal 1, the Applicant proposes to repair any Project-related roadway damage and would also be required to implement mitigation measures addressing roadway damage (MM 4.3.6a, MM 4.3.6b, MM 4.3.6c and MM 4.3.6d). This is consistent with the County's objective to maintain roadways. Therefore, the proposed Project is consistent with this objective.
<b>Objective 1.2</b> Require a traffic analysis for any new development which may have a significant impact on County roads. A traffic analysis may not be necessary in every situation, such as when the size or location of the project will not have a significant impact upon and generate only a small amount of traffic. Also, certain types of projects, due to the trip generation characteristics, may add virtually no traffic during peak periods. These types of projects may be exempt from the traffic analysis requirements. Whether a particular project qualifies for any	Yes	A Draft Traffic Impact Analysis was prepared for the proposed Project by LOS Engineering, Inc. The analysis examined four scenarios (Year 2013, 2016, 2019, and 2024) to account for the possibility that the Project may be built in phases. Therefore, the proposed Project is consistent with this objective.

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**TABLE 4.3-1**  
**IMPERIAL COUNTY GENERAL PLAN CONSISTENCY ANALYSIS**

General Plan Goal and Objectives	Consistent with General Plan?	Analysis
exemption will be determined by the Department of Public Works Road Commissioner.		
<b>Objective 1.12</b> Review new development proposals to ensure that the proposed development provides adequate parking and would not increase traffic on existing roadways and intersection to a level of service (LOS) worse than “C” without providing appropriate mitigations to existing infrastructure. This can include fair share contributions on the part of developers to mitigate traffic impacts caused by such proposed developments.	Yes	The Draft Traffic Impact Analysis examined impacts to intersections, roadway segment and freeway segment level of service (LOS) within the Project study area. The proposed Project would not result in any intersection, roadway segment or freeway segment operating below LOS C under any scenario (Year 2013, 2016, 2019, and 2024). Parking for Project-related vehicles will be provided on-site during construction. The parking lot may move to adjacent CUPs as new CUPs are constructed. Each O&M building would have its own parking lot with approximately 25 parking spaces (refer to Figure 2.0-24 in Chapter 2.0). The proposed Project is consistent with this objective and no mitigation is required.

### 4.3.2 ENVIRONMENTAL SETTING

Information contained in this section is summarized from the *Wistaria Ranch Solar Energy Center Draft Traffic Impact Analysis* prepared by LOS Engineering, Inc. (LOS 2014). This document is provided on the attached CD of Technical Appendices as **Appendix B** of this EIR.

#### A. SOLAR ENERGY CENTER

##### **Existing Circulation Network**

The existing roadway system and classifications described below comprise the Project study area and are based on the Imperial County General Plan Circulation and Scenic Highways Element (January 29, 2008). (Excerpts from the Element are included in Appendix G of the Draft Traffic Impact Analysis [**Appendix B** of this EIR].)

**Anza Road** between Brockman Road and Ferrell Road has a classification of Local in the Imperial County General Plan Circulation and Scenic Highways Element. This roadway is currently constructed as a 2-lane undivided roadway.

**Brockman Road** between McCabe Road and SR-98 has a classification of Major Collector in the Imperial County General Plan Circulation and Scenic Highways Element. This roadway is currently constructed as a 2-lane undivided roadway. From SR-98 to Anza Road, the classification for Brockman Road is not listed in

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the Imperial County General Plan Circulation and Scenic Highways Element; however, this segment is constructed as a 2-lane undivided roadway.

**Ferrell Road** between Kubler Road and SR-98 has a classification of Major Collector in the Imperial County General Plan Circulation and Scenic Highways Element. This roadway is currently constructed as a 2-lane undivided roadway. From SR-98 to Anza Road, the classification is listed as Minor Collector in the Imperial County General Plan Circulation and Scenic Highways Element and this segment is constructed as a 2-lane undivided roadway.

**Forrester Road** between Interstate 8 (I-8) and McCabe Road has a classification of Prime Arterial in the Imperial County General Plan Circulation and Scenic Highways Element. This roadway is currently constructed as a 2-lane undivided roadway.

**Interstate 8 (I-8)** between Drew Road and Imperial Avenue is constructed as a 4-lane divided highway with 2-lanes in each direction.

**Kubler Road** between Brockman Road and La Brucherie Road has a classification of Major Collector in the Imperial County General Plan Circulation and Scenic Highways Element. This roadway is currently constructed as a 2-lane undivided roadway.

**La Brucherie Road** between McCabe Road and Kubler Road has a classification of Major Collector in the Imperial County General Plan Circulation and Scenic Highways Element. This roadway is currently constructed as a 2-lane undivided roadway.

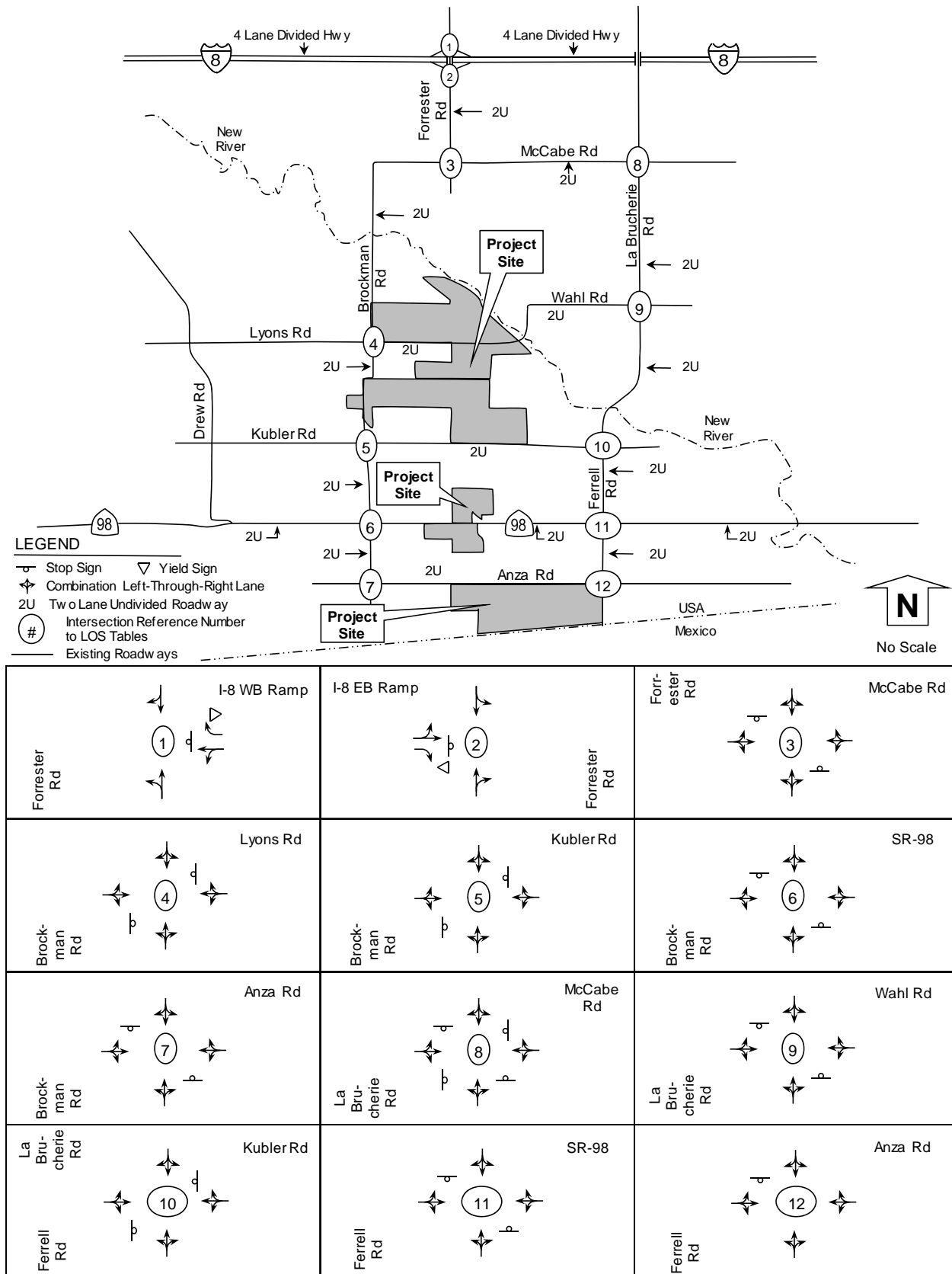
**Lyons Road** between Brockman Road and Nichols Road has a classification of Minor Collector in the Imperial County General Plan Circulation and Scenic Highways Element. This roadway is currently constructed as a 2-lane undivided roadway.

**McCabe Road** between Brockman Road and La Brucherie Road has a classification of Major Collector in the Imperial County General Plan Circulation and Scenic Highways Element. This roadway is currently constructed as a 2-lane undivided roadway.

**State Route (SR-98)** between Drew Road and Clark Road has a classification of State Highway in the Imperial County General Plan Circulation and Scenic Highways Element. This roadway is currently constructed as a 2-lane undivided roadway.

The existing roadway conditions are shown in **Figure 4.3-1**.

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Source: LOS 2014.

**FIGURE 4.3-1**  
**EXISTING ROADWAY CONDITIONS**

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### Level of Service

#### Intersection LOS

In order to understand existing conditions, LOS must be explained. The operating conditions of the study intersections are measured using the Highway Capacity Manual (HCM) LOS designations ranging from A through F. LOS A represents the best operating condition and LOS F denotes the worst operating condition. LOS worsens from A to F based on delay in seconds at the intersection. **Table 4.3-2** shows the delays for each LOS associated with un-signalized and signalized intersections. The individual LOS criteria for each roadway component are described below.

**TABLE 4.3-2**  
**UN-SIGNALIZED AND SIGNALIZED INTERSECTION LEVEL OF SERVICE (HCM 2000)**

Level of Service	Un-Signalized Average Control Delay (seconds/vehicle)	Signalized Average Control Delay (seconds/vehicle)
A	0-10	0-10
B	> 10-15	> 10-20
C	> 15-25	> 20-35
D	> 25-35	> 35-55
E	> 35-50	> 55-80
F	> 50	> 80

Source: LOS 2014 from Highway Capacity Manual, 2000.

As noted on page 5 of Caltrans's *Guide for the Preparation of Traffic Impact Studies*, December 2002, the accepted methodology by Caltrans for un-signalized intersections is the most current edition of the HCM (excerpt included in Appendix B of the Draft Traffic Impact Analysis [**Appendix B** of this EIR]). Therefore, all of the study interchanges with un-signalized intersections were analyzed using the most current edition of the HCM.

#### Roadway Segment LOS

The roadway segments were analyzed based on the functional classification of the roadway using the Imperial County Standard Street Classification capacity lookup table (copy included in Appendix C of the Draft Traffic Impact Analysis [**Appendix B** of this EIR]). **Table 4.3-3** summarizes the roadway segment capacity and LOS standards used to analyze roadway segments.

**TABLE 4.3-3**  
**ROADWAY SEGMENT DAILY CAPACITY AND LOS (IMPERIAL COUNTY)**

Circulation Element Road Classification	Cross Section	LOS A	LOS B	LOS C	LOS D	LOS E
Expressway	154/210	<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
Local County (Residential)	40/60	*	*	<1,500	*	*
Local County (Residential Cul-de-Sac or Loop Street)	40/60	*	*	<200	*	*
Major Industrial Collector – (Industrial)	76/96	<5,000	<10,000	<14,000	<17,000	<20,000
Industrial Local	44/64	<2,500	<5,000	<7,000	<8,500	<10,000

Source: LOS 2014, from Imperial County Department of Planning and Development Services Circulation and Scenic Highways Element January 29,

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2008.

Notes: \*Level of service is not applied to residential streets because the primary purpose of residential streets is to serve abutting lots, rather than carry through traffic. Level of service normally applies to roads carrying through traffic between major trip generators and attractors.

### Freeway Segment LOS

The freeway segments were analyzed based on a multi-lane highway LOS criterion using a Volume to Capacity (V/C) ratio as outlined in the 2000 HCM. The V/C ratio is the ratio of traffic to roadway capacity. The V/C ratio provides a measure of how much roadway capacity is being used. As noted on page 5 of Caltrans's *Guide for the Preparation of Traffic Impact Studies*, December 2002, the methodology accepted by Caltrans for the analysis of freeway sections is to use the most current edition of the HCM. **Table 4.3-4** summarizes the freeway LOS operations based on Caltrans's *Guide for the Preparation of Traffic Impact Studies* V/C ratios. (Excerpts from Caltrans's *Guide for the Preparation of Traffic Impact Studies* are included in Appendix D of the Draft Traffic Impact Analysis [**Appendix B** of this EIR].)

**TABLE 4.3-4**  
**FREEWAY LEVEL OF SERVICE**

Measure of Effectiveness	LOS A	LOS B	LOS C	LOS D	LOS E
Max Volume/Capacity Ratio (V/C)	0.30	0.50	0.71	0.89	1.00

Source: Source: LOS 2014 from Caltrans' *Guide for the Preparation of Traffic Impact Studies*, December 2002.

### **B. STUDY AREA CRITERIA**

The parameters by which the Draft Traffic Impact Study was prepared included the determination of what intersections and roadways are to be analyzed. The County of Imperial Department of Public Works *Traffic Study and Report Policy* dated March 12, 2007, revised June 29, 2007 and approved by the Board of Supervisors of the County of Imperial on August 7, 2007 states on page 14 "The study area for the project will be expected to encompass an adequate surrounding area to ensure that all impacts are identified to a sufficient extent that any mitigation measures, regardless of importance are shown, e.g. stop signs, yield signs, etc." The project study area was determined based on similar solar projects in the same general area. The following intersections were analyzed as part of this study:

- 1) Forrester Road/I-8 westbound(WB) Ramp (un-signalized)
- 2) Forrester Road/I-8 eastbound (EB) Ramp (un-signalized)
- 3) Forrester Road/McCabe Road (un-signalized)
- 4) Brockman Road/Lyons Road (un-signalized)
- 5) Brockman Road/Kubler Road (un-signalized)
- 6) Brockman Road/SR-98 (un-signalized)
- 7) Brockman Road/Anza Road (un-signalized)
- 8) La Brucherie Road/McCabe Road (un-signalized)
- 9) La Brucherie Road/Wahl Road (un-signalized)
- 10) La Brucherie Road/Kubler Road (un-signalized)
- 11) La Brucherie Road/SR-98 (un-signalized)
- 12) La Brucherie Road/Anza Road (un-signalized)

Along with the following roadway segments:

- 1) Anza Road from Brockman Road to Ferrell Road
- 2) Brockman Road from McCabe Road to Lyons Road
- 3) Brockman Road from Lyons Road to Kubler Road
- 4) Brockman Road from Kubler Road to SR-98
- 5) Brockman Road from SR-98 to Anza Road
- 6) Forrester Road from I-8 to McCabe Road



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- 7) Kubler Road from Brockman Road to Ferrell Road
- 8) La Brucherie Road from McCabe Road to Lyons Road
- 9) La Brucherie Road from Lyons Road to Kubler Road
- 10) La Brucherie Road from Kubler Road to SR-98
- 11) La Brucherie Road from SR-98 to Anza Road
- 12) Lyons Road from Brockman Road to La Brucherie Road

And, the following Interstate and Freeway and State Route segments:

- 1) I-8 between Drew Road and Forrester Road
- 2) I-8 between Forrester Road and Imperial Avenue
- 3) SR-98 between Drew Road and Brockman Road
- 4) SR-98 between Brockman Road and Ferrell Road
- 5) SR-98 between Ferrell Road and Clark Road

### C. EXISTING (YEAR 2013) TRAFFIC VOLUMES AND LOS ANALYSIS

#### **Intersection Volumes**

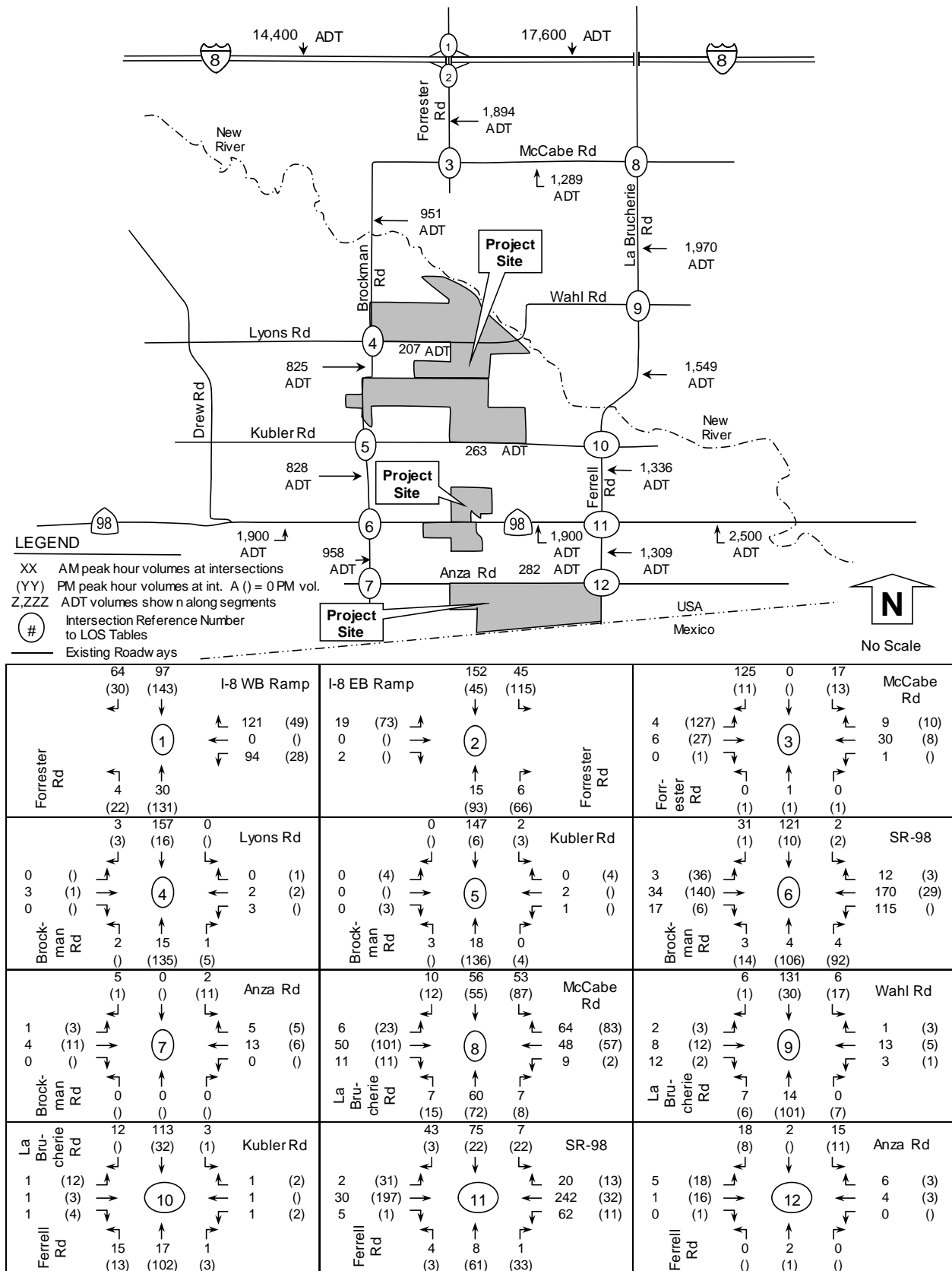
Existing AM and PM peak hour intersection volumes were collected for the intersections numbered 1 thru 12. **Table 4.3-5** provides a summary of the intersection locations and the count date for each intersection. (Count data is included in Appendix H of the Draft Traffic Impact Analysis [**Appendix B** of this EIR].) Counts on this date would be representative of traffic on any given day at these intersections.

**TABLE 4.3-5  
INTERSECTION LOCATION AND DATE OF COUNT**

Number	Intersection	Date of Count
1	Forrester Road/I-8 WB Ramp	Wednesday, April 24, 2013
2	Forrester Road/I-8 EB Ramp	Wednesday, April 24, 2013
3	Forrester Road/McCabe Road	Wednesday, April 24, 2013
4	Brockman Road/Lyons Road	Wednesday, April 24, 2013
5	Brockman Road/Kubler Road	Wednesday, April 24, 2013
6	Brockman Road/SR-98	Wednesday, April 24, 2013
7	Brockman Road/Anza Road	Wednesday, April 24, 2013
8	La Brucherie Road/McCabe Road	Wednesday, April 24, 2013
9	La Brucherie Road/Wahl Road	Wednesday, April 24, 2013
10	La Brucherie Road/Kubler Road	Wednesday, April 24, 2013
11	La Brucherie Road/SR-98	Wednesday, April 24, 2013
12	La Brucherie Road/Anza Road	Wednesday, April 24, 2013

Source: LOS 2014.

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Source: LOS 2014.

**FIGURE 4.3-2**  
**EXISTING INTERSECTION, ROADWAY SEGMENT AND FREEWAY SEGMENT VOLUMES**

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### Roadway Segment Volumes

Daily traffic volumes were obtained or collected for 12 roadway segments. **Table 4.3-6** provides a summary of the roadway segment locations and count dates. Roadway count data is included in Appendix H of the Draft Traffic Impact Analysis (**Appendix B** of this EIR).

**TABLE 4.3-6  
ROADWAY SEGMENT AND DATE OF COUNT**

Number	Roadway Segment	Date of Count
1	Anza Road from Brockman Road to Ferrell Road	Wednesday, April 24, 2013
2	Brockman Road from McCabe Road to Lyons Road	Wednesday, April 24, 2013
3	Brockman Road from Lyons Road to Kubler Road	Wednesday, April 24, 2013
4	Brockman Road from Kubler Road to SR-98	Wednesday, April 24, 2013
5	Brockman Road from SR-98 to Anza Road	Wednesday, April 24, 2013
6	Forrester Road from I-8 to McCabe Road	Wednesday, April 24, 2013
7	Kubler Road from Brockman Road to Ferrell Road	Wednesday, April 24, 2013
8	La Brucherie Road from McCabe Road to Lyons Road	Wednesday, April 24, 2013
9	La Brucherie Road from Lyons Road to Kubler Road	Wednesday, April 24, 2013
10	La Brucherie Road from Kubler Road to SR-98	Wednesday, April 24, 2013
11	La Brucherie Road from SR-98 to Anza Road	Wednesday, April 24, 2013
12	Lyons Road from Brockman Road to La Brucherie Road	Wednesday, April 24, 2013

Source: LOS 2014.

### Freeway Segment Volumes

Daily freeway volumes were obtained for five freeway segments (two along I-8 and three along SR-98). **Table 4.3-7** provides a summary of the freeway segment locations and count dates. Roadway count data is included in Appendix H of the Draft Traffic Impact Analysis (**Appendix B** of this EIR).

**TABLE 4.3-7  
FREEWAY SEGMENT AND DATA**

Number	Freeway Segment	Latest Data*
1	I-8 between Drew Road and Forrester Road	Caltrans latest available 2011 data with a 2.8% annual growth factor applied to reach an existing (Year 2013) volume.
2	I-8 between Forrester Road and Imperial Avenue	Caltrans latest available 2011 data with a 2.8% annual growth factor applied to reach an existing (Year 2013) volume.
3	SR-98 between Drew Road and Brockman Road	Caltrans latest available 2011 data with a 2.8% annual growth factor applied to reach an existing (Year 2013) volume.
4	SR-98 between Brockman Road and Ferrell Road	Caltrans latest available 2011 data with a 2.8% annual growth factor applied to reach an existing (Year 2013) volume.
5	SR-98 between Ferrell Road and Clark Road	Caltrans latest available 2011 data with a 2.8% annual growth factor applied to reach an existing (Year 2013) volume.

Source: LOS 2014.

\* The 2.8% annual growth factor was obtained from the Southern California Association of Governments Community Development Division's 2004 Regional Transportation Plan Socio-Economic Forecast Report):

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### Peak Hour Intersection Performance

**Table 4.3-8** summarizes the existing (Year 2013) weekday intersection LOS. Intersections LOS calculations are included in Appendix I of the Draft Traffic Impact Analysis (**Appendix B** of this EIR). As shown, all intersections currently operate at LOS C or better during both the AM and PM peak hours. Four of the intersections would operate at LOS A during both the AM and PM peak hours. Five of the intersections operate at LOS B during the AM peak hour; one intersection (Brockman Road at SR-98) would operate at LOS C during the AM peak hour only. **Figure 4.3-2** depicts the existing AM, PM, and daily intersection, roadway segment and freeway volumes for the Project study area during weekday conditions. (Intersection LOS calculations are included in **Appendix I** of the Draft Traffic Impact Analysis [**Appendix B** of this EIR]).

**TABLE 4.3-8  
EXISTING (YEAR 2013) INTERSECTION LOS**

Intersection & (Control) <sup>1</sup>	Movement	Peak Hour	Existing (Year 2013)	
			Delay <sup>2</sup>	LOS <sup>3</sup>
1) Forrester Rd I-8 WB Ramp (U)	Minor Leg	AM PM	9.6 10.0	A B
2) Forrester Rd I-8 EB Ramp (U)	Minor Leg	AM PM	10.5 13.8	B B
3) Forrester Road at McCabe Road (U)	Minor Leg	AM PM	9.4 10.5	A B
4) Brockman Road at Lyons Road (U)	Minor Leg	AM PM	10.2 10.0	B B
5) Brockman Road at Kubler Road (U)	Minor Leg	AM PM	10.0 9.1	B A
6) Brockman Road at SR-98 (U)	Minor Leg	AM PM	16.5 12.4	C B
7) Brockman Road at Anza Road (U)	Minor Leg	AM PM	8.5 8.7	A A
8) La Brucherie Road at McCabe Road (U)	Minor Leg	AM PM	8.1 8.9	A A
9) La Brucherie Road at Wahl Road (U)	Minor Leg	AM PM	10.2 9.8	B A
10) Ferrell Road at Kubler Road (U)	Minor Leg	AM PM	9.6 9.6	A A
11) Ferrell Road at SR-98 (U)	Minor Leg	AM PM	13.6 12.6	B B
12) Ferrell Road at Anza Road (U)	Minor Leg	AM PM	9.2 9.4	A A

Source: LOS 2014.

Notes: <sup>1</sup> Intersection Control - (S) Signalized, (U) Un-signalized.

<sup>2</sup> Delay - HCM Average Control Delay in Seconds.

<sup>3</sup> Los: Level of Service.

Minor Leg: approach LOS of minor/lesser roadway. All: combined LOS for all approaches.

### Daily Segment Volumes

**Table 4.3-9** summarizes the existing (Year 2013) daily roadway segment LOS during the weekday conditions. Under existing (Year 2013) conditions, all study roadway segments were calculated to operate above LOS C. Six segments would operate at LOS A; all segments along SR-98 would operate at LOS B; and one portion of McCabe Road to Wahl Road along the segment of La Brucherie Road/Ferrell Road would

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operate at LOS B while the remaining portions would operate at LOS A. **Figure 4.3-2** identifies the existing ADTs along roadway segments in the Project study area during weekday conditions.

**TABLE 4.3-9  
EXISTING (YEAR 2013) ROADWAY SEGMENT LOS**

Roadway Segment	Classification (as built)	Existing (Year 2013)				
		Daily Volume	# of Lanes	LOS C Capacity	V/C	LOS
<b>Anza Road</b> Brockman Road to Ferrell Road	Local (2U)	282	2	7,100	0.04	A
<b>Brockman Road</b> McCabe Road to Lyons Road	Major (2U)	951	2	7,100	0.13	A
Lyons Road to Kubler Road	Major (2U)	825	2	7,100	0.12	A
Kubler Road to SR-98	Major (2U)	828	2	7,100	0.12	A
SR-98 to Anza Road	Not Classified (2U)	958	2	7,100	0.13	A
<b>Forrester Road</b> I-8 to McCabe Road	Prime (2U)	1,894	2	7,100	0.27	A
<b>Kubler Road</b> Brockman Road to Ferrell Road	Major (2U)	263	2	7,100	0.04	A
<b>La Brucherie Road/Ferrell Road</b> McCabe Road to Wahl Road	Major (2U)	1,970	2	7,100	0.28	B
Wahl Road to Kubler Road	Major (2U)	1,549	2	7,100	0.22	A
Kubler Road to SR-98	Major (2U)	1,336	2	7,100	0.19	A
SR-98 to Anza Road	Major (2U)	1,309	2	7,100	0.18	A
<b>Lyons Road</b> Brockman Road to La Brucherie Road	Major (2U)	207	2	7,100	0.03	A
<b>McCabe Road</b> Forrester Road to La Brucherie Road	Major (2U)	1,289	2	7,100	0.18	A
<b>SR-98</b> Drew Road to Brockman Road	State Highway (2U)	1,900	2	7,100	0.27	B
Brockman Road Ferrell	State Highway (2U)	1,900	2	7,100	0.27	B
Ferrell Road to Dogwood Road	State Highway (2U)	2,500	2	7,100	0.35	B

Source: LOS 2014.

Notes: Classification based on 1/29/08 Circulation and Scenic Highways Element.

V/C: Volume to Capacity ratio.

2U = 2-lane undivided roadway.

Daily volume is a 24 hour volume.

LOS: Level of Service. LOS based on actual number of lanes currently constructed.

### Existing Freeway Analysis

**Table 4.3-10** summarizes the results of the existing daily freeway analysis during weekday conditions for the two freeway segments identified in the Project study area. As shown, both I-8 freeway segments operate at LOS B or better.

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**TABLE 4.3-10**  
**EXISTING (YEAR 2013) FREEWAY SEGMENT LOS**

Freeway Segment	I-8 Drew Road to Forrester Road				I-8 Forrester Road to Imperial Avenue			
Existing (Year 2013)								
ADT	14,400				17,600			
Peak Hour	AM		PM		AM		PM	
Directions	EB	WB	EB	WB	EB	WB	EB	WB
Number of Lanes	2	2	2	2	2	2	2	2
Capacity <sup>1</sup>	4,700	4,700	4,700	4,700	4,700	4,700	4,700	4,700
K Factor <sup>2</sup>	0.1076	0.0963	0.0917	0.1517	0.1076	0.0963	0.0917	0.1517
D Factor <sup>3</sup>	0.2616	0.7384	0.4419	0.5581	0.2616	0.7384	0.4419	0.5581
Truck Factor <sup>4</sup>	0.8376	0.8376	0.8376	0.8376	0.8376	0.8376	0.8376	0.8376
Peak Hour Volume	484	1,222	697	1,456	591	1,494	851	1,779
V/C	0.103	0.260	0.148	0.310	0.104	0.126	0.318	0.379
LOS	A	A	A	B	A	B	A	B

Source: LOS 2014.

Notes: <sup>1</sup> Capacity of 2,350 passenger cars per hour per lane (pcphpl) from CALTRANS' Guide for the Preparation of Traffic Impact Studies, December 2002.

<sup>2</sup> Latest K factor (percentage of the ADT in both directions during the peak hour) from Caltrans (based on 2007 report).

<sup>3</sup> Latest D factor (percentage of traffic in the peak direction during the peak hour) from Caltrans (based on 2007 report), which when multiplied by K and ADT will provide peak hour volume.

<sup>4</sup> Latest truck factor from Caltrans (based on 2007 report).

LOS: Level of Service. LOS based on actual number of lanes currently constructed.

V/C: Volume to Capacity ratio. EB = eastbound; WB = westbound.

Based on the information shown in **Table 4.3-8**, **Table 4.3-9** and **Table 4.3-10**, under existing conditions, all Project study area intersections, roadway segments, and freeway segments were calculated to operate at LOS C or better.

### D. GEN-TIE

The Draft Traffic Impact Analysis included traffic generated all components of the Project and did not differentiate traffic specifically associated with the proposed Gen-Tie. The analysis below is therefore inclusive of the Solar Energy Center, Gen-Tie and all supporting infrastructures (i.e., Electric Collector Line Corridor).

### E. METHODOLOGY FOR ANALYSIS

The following describes the methodology used for the various aspects of the traffic analysis.

#### Intersections

The HCM operations analysis using LOS evaluation criteria were employed in the Draft Traffic Impact Analysis. The operating conditions of the Project study area intersections were measured using the HCM LOS designations ranging from A through F. LOS A represents the best operating condition and LOS F denotes the worst operating condition. LOS worsens from A to F based on delay in seconds at the intersection (refer to **Table 4.3-2**, above).

#### Roadway Segments

Roadway segments were analyzed based on the functional classification of the roadway using the Imperial County Standard Street Classification capacity lookup table. The roadway segment capacity and LOS standards used to analyze roadway segments are summarized in **Table 4.3-3**, above.

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### Freeway Segments

Freeway segments were analyzed based on a multi-lane highway LOS criterion using a V/C ratio as outlined in the HCM. As noted on page 5 of Caltrans's *Guide for the Preparation of Traffic Impact Studies*, December 2002, the accepted methodology for the analysis of freeway sections is use the most current edition of the HCM. Freeway LOS operations are based on Caltrans' *Guide for the Preparation of Traffic Impact Studies* V/C ratios (identified in **Table 4.3-3**, above).

### F. SCENARIOS

The parameters by which the Draft Traffic Impact Analysis was prepared included the determination of the scenarios to be analyzed. The number of scenarios to be analyzed was based on the methodology outlined in the County of Imperial Department of Public Works *Traffic Study and Report Policy* dated March 12, 2007, revised June 29, 2007 and approved by the Board of Supervisors of the County of Imperial on August 7, 2007. Excerpts from the *Traffic Study and Report Policy* showing the scenario criteria are included in Appendix A of the Draft Traffic Impact Analysis [**Appendix B** of this EIR]). Based on the aforementioned methodology source and to account for the possibility that the Project may be phased, the following scenarios were analyzed:

- 1) Existing 2013 Conditions
- 2) Existing 2013 With Project Conditions
- 3) Existing 2013 With Project With Cumulative Conditions
- 4) Near-Term (Year 2016) Conditions
- 5) Near-Term (Year 2016) With Project Conditions
- 6) Near-Term (Year 2016) With Project With Cumulative Conditions
- 7) Mid-Term (Year 2019) Conditions
- 8) Mid-Term (Year 2019) With Project Conditions
- 9) Mid-Term (Year 2019) With Project With Cumulative Conditions
- 10) Long-Term (Year 2024) Conditions
- 11) Long-Term (Year 2024) With Project Conditions
- 12) Long-Term (Year 2024) With Project With Cumulative Conditions
- 13) Horizon Year 2049 Conditions

### G. PROJECT TRIP GENERATION

The Project trip generation consists of a construction phase and operations phase. The construction phase will have the highest trip intensity followed by an operations phase with significantly fewer trips. This section describes the construction and operations trip generation. (Project description details are included in Appendix J of the Draft Traffic Impact Analysis [**Appendix B** of this EIR]).

The proposed Project could be built-out in its entirety or phased over time. Therefore, four possible development scenarios were analyzed: the Full Build-out Scenario (all 17 CUPs 13-0036 thru 13-0052) being constructed early in 2013 (existing conditions scenario); the Full Build-out Scenario being constructed on a typical schedule that accounts for time needed to obtain permits and financing for the Project in 2016 (near-term scenario); the Full Build-out Scenario being constructed in 2019 (2024 minus 5 years for a mid-point scenario of the CUPs); and the Full Build-out Scenario being delayed due to market forces until 2024 (long-term scenario).

### Construction Trip Generation

Construction of the Project includes site preparation, foundation construction, delivery of equipment and supplies, erection of major equipment and structures, installation of control systems, and start-up/testing.

## 4.3 TRANSPORTATION AND CIRCULATION

These construction activities are expected to require approximately 18 months. According to the Applicant, the construction workforce is expected to start in 2015 and reach the highest concentration in spring of 2016 (for the near-term scenario) with an average of 250 workers and a possible peak of up to 350 daily workers. Based on the Applicant's experience in the current construction of ISECS, approximately 75% of the workers follow a 4 day at 10 hours per day (4 to 10) schedule; approximately 25% follow a 5 day at 8 hours per day (5 to 8) schedule; and approximately 25% of the workers carpool. The workers' start and end times also vary between the 4 to 10 and 5 to 8 schedule. The 4 to 10 workers typically arrive at 6 a.m. and depart at 5 p.m. In contrast, the 8 to 5 workers typically arrive at 7 a.m. and depart at 4 p.m. This analysis is based on the higher concentration (75%) of 4 to 10 workers that arrive at 6 a.m. and depart at 5 p.m. **Table 4.3-11** shows the worker and construction truck traffic calculated at 664 ADT with 209 AM peak hour trips (203 inbound and 6 outbound) and 209 PM peak hour trips (6 inbound and 203 outbound).

**TABLE 4.3-11**  
**PROJECT CONSTRUCTION TRIP GENERATION**

Proposed Construction-Related Traffic	ADT	6:00 AM		7:00 AM		4:00 PM		5:00 PM	
		IN	OUT	IN	OUT	IN	OUT	IN	OUT
Construction Workers on 4 to 10 Shift (75% of 350) <sup>1</sup>	394	197	0	0	0	0	0	0	197
Construction Workers on 5 to 8 Shift (25% of 350) <sup>2</sup>	132	0	0	66	0	0	66	0	0
Equipment and Construction Trucks (with PCE) <sup>3</sup>	138	6	6	6	6	6	6	6	6
Total Traffic During Peak Construction Period	664	203	6	72	6	6	72	6	203
Daily and Higher Peak Hour Used for Analysis	664	203	6					6	203

Source: LOS 2014.

Notes: <sup>1</sup> Applicant estimates the 4 days at 10 hours/day (4 to 10) shift to include approximately 75% of the total 350 peak work force with approximately 25% carpooling.

<sup>2</sup> Applicant estimates the 5 days at 8 hours/day (5 to 8) shift to include approximately 25% of the total 350 peak work forces with approximately 25% carpooling.

<sup>3</sup> Approximately 23 daily trucks with a Passenger Car Equivalent (PCE) factor of 3 applied to each truck equals 138 ADT (23 trucks x 2 x 3 PCE = 138 ADT) that are anticipated to have a frequency of approximately 2 per hour for a peak period volume of 6 (with PCE).

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

Based on experience with other solar projects in Imperial County, it is estimated that approximately 80% of the labor pool for the construction workforce would come from a combination of existing residents and workers that will temporarily reside within Imperial County. The remaining approximately 20% of construction workers will come from outside Imperial County. The existing residents and workers that will temporarily reside within Imperial County are anticipated to travel from Calipatria, Westmorland, Brawley, Imperial, El Centro, Holtville, and Calexico. The distribution of the construction workforce by cities/communities was based on the concentration of populations per the Census 2010 from the U.S. Census Bureau (<http://2010.census.gov/2010census>). **Table 4.3-12** shows the percentage of local construction workforce by city/community and county.

**TABLE 4.3-12**  
**CONSTRUCTION WORKFORCE SOURCES BASED ON CENSUS 2010 POPULATIONS (80 PERCENT LOCAL)**

80 Percent Local Workforce	2010 Census Population	Percentage of Total	Percentage of Construction Employees (60% From Within Imperial County)
Calipatria	7,705	5%	4%
Westmorland	2,225	2%	1%
Brawley	24,953	18%	15%
Imperial	14,758	11%	9%
El Centro	42,598	31%	25%



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**TABLE 4.3-12**  
**CONSTRUCTION WORKFORCE SOURCES BASED ON CENSUS 2010 POPULATIONS (80 PERCENT LOCAL)**

80 Percent Local Workforce	2010 Census Population	Percentage of Total	Percentage of Construction Employees (60% From Within Imperial County)
Holtville	5,939	4%	3%
Calexico	38,572	28%	23%
Total	136,750	100%	80%

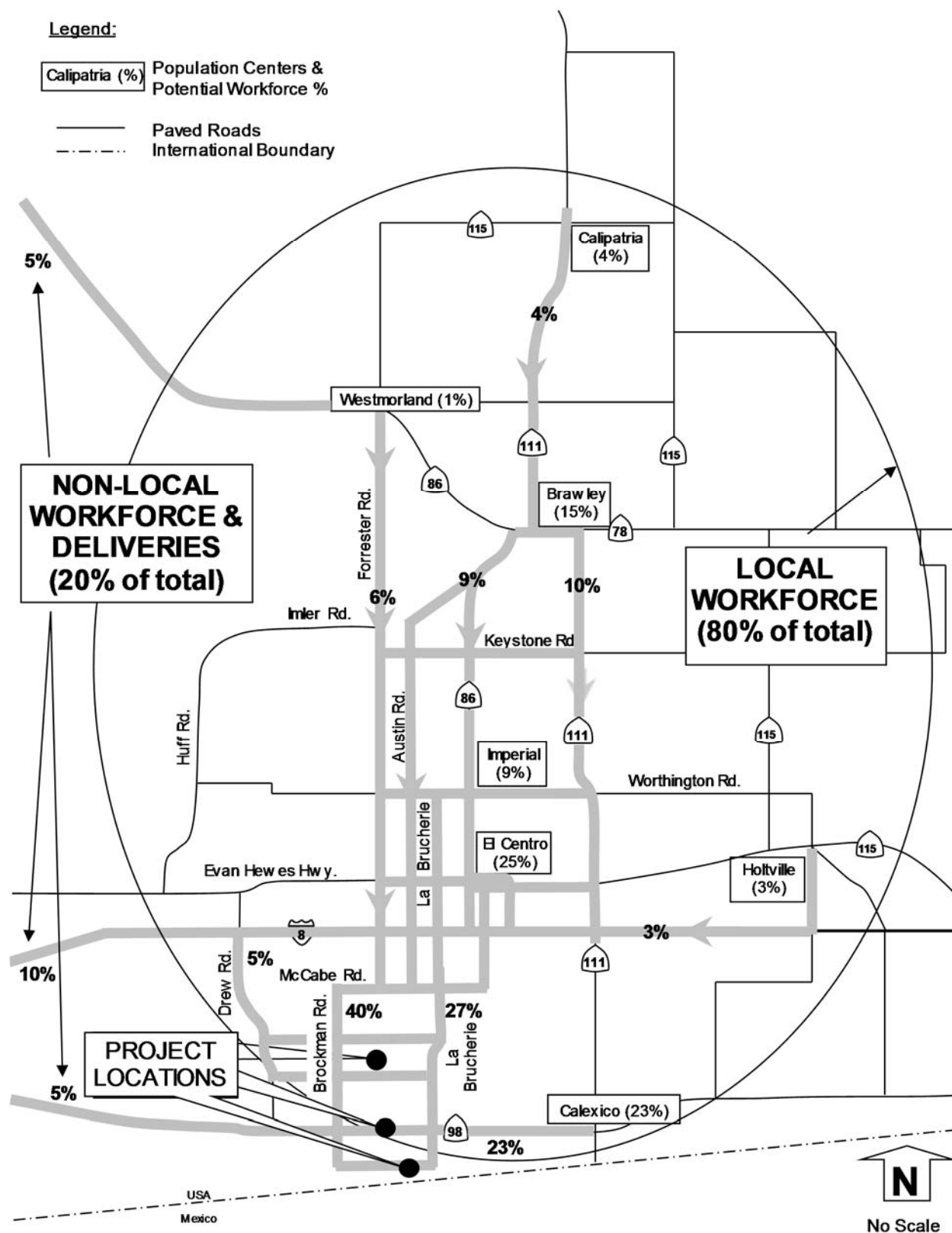
Source: LOS 2014. Population data from U.S. Census Bureau.

The percentage of non-local construction workforce (remainder 20%) is estimated to be from San Diego County (15%) and Riverside County (5%). **Figure 4.3-3** depicts the regional construction distribution based on the aforementioned Census information. The local distribution accounted for the three CUP clusters (northern, central and southern) and travel between each cluster. The northern CUP cluster (13-0038 thru 13-0049) represents approximately 65% of the Project acreage ( $[1,942 \div 2,793] \times 100 = .65$ ), thus approximately 65% of the Project traffic distribution was assigned to the northern CUP cluster. The central CUP cluster (13-0036 and 13-0037) has approximately 15% of the Project acreage ( $[414.27 \div 2,793] \times 100 = .15$ ) and the southern CUP cluster (13-0050 thru 13-0052) approximately 20% of the Project acreage ( $[559.57 \div 2,793] \times 100 = .20$ ). Thus, the distribution reflects each clusters' respective percentage of the Full Build-out Scenario. Approximately 5% of the peak hour may travel between the different areas and is incorporated into the local distribution. **Figure 4.3-4** shows the local area distribution which was based on the aforementioned breakdown of northern, central and southern CUP clusters and travel between work areas. **Figure 4.3-5** depicts the peak (Year 2016) construction trip assignment based on the aforementioned distribution.

### **Project Operations and Maintenance Trip Generation**

The Project will primarily operate during daylight hours and, based on experience with other solar projects in Imperial County, it is estimated to require approximately 15 full-time personnel for operations and maintenance. Based on this information, the operations and maintenance trip generation is estimated at 30 ADT with approximately 10 a.m. and 10 p.m. peak hour trips. Because the 30 ADT associated with Project operations would not result in a lowering of LOS below LOS C, the Project would not create a significant impact on roads and intersections within the Project study area. Therefore, this analysis focuses on traffic impacts occurring during the construction phase because construction traffic represents a higher and more conservative (i.e. worst-case) trip generation of 664 ADT.

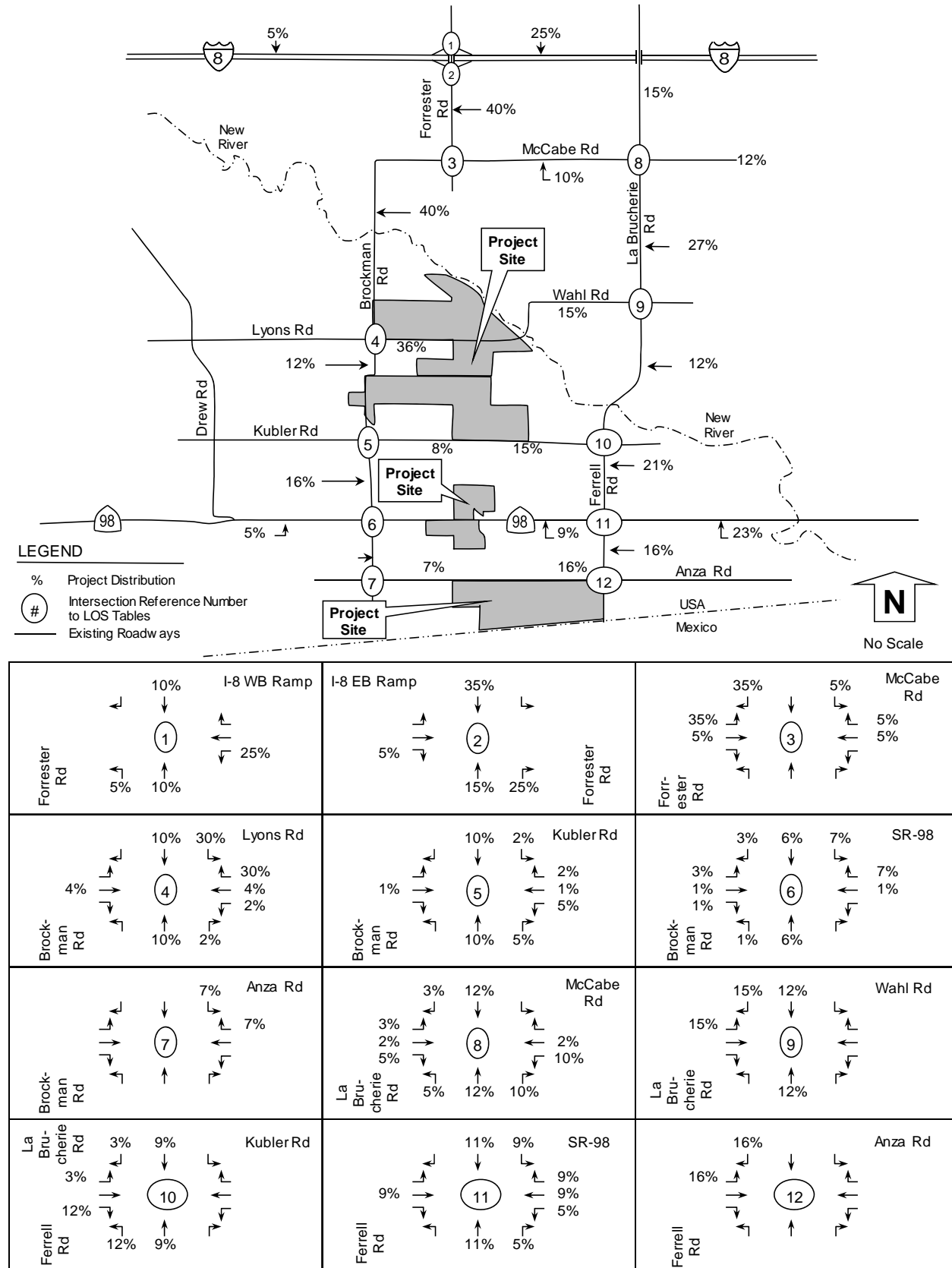
## 4.3 TRANSPORTATION AND CIRCULATION



Source: LOS 2014.

**FIGURE 4.3-3**  
**REGIONAL CONSTRUCTION DISTRIBUTION**

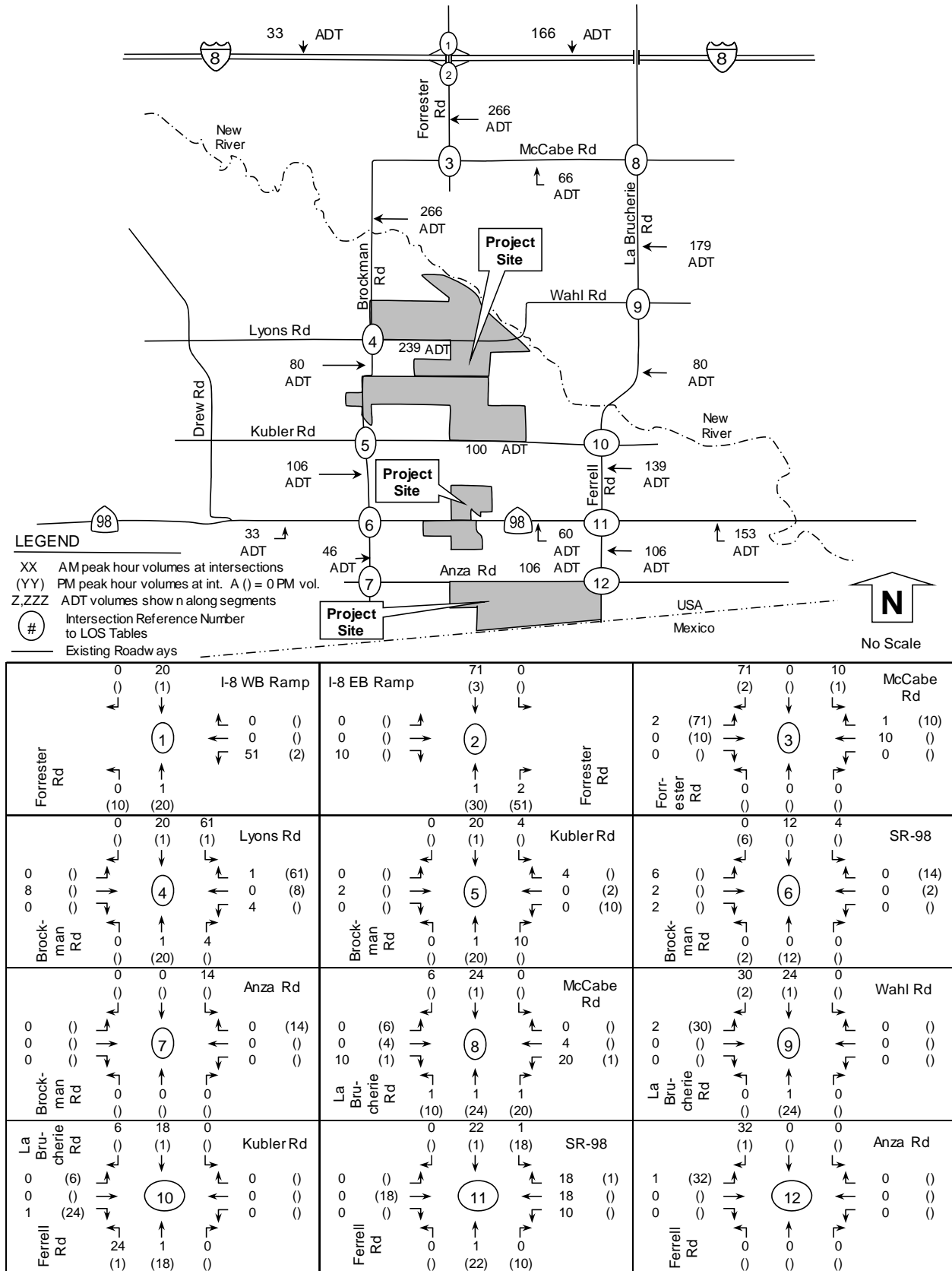
### 4.3 TRANSPORTATION AND CIRCULATION



Source: LOS 2014.

**FIGURE 4.3-4**  
**LOCAL PROJECT CONSTRUCTION DISTRIBUTION**

## 4.3 TRANSPORTATION AND CIRCULATION



Source: LOS 2014.

**FIGURE 4.3-5**  
**PROJECT CONSTRUCTION TRAFFIC**

## 4.3 TRANSPORTATION AND CIRCULATION

### 4.3.3 IMPACTS AND MITIGATION MEASURES

#### A. STANDARDS OF SIGNIFICANCE

The CEQA significance criteria listed below were used to determine if the proposed Project would result in impacts to transportation and circulation. These criteria are the same as the significance criteria for Transportation/Traffic listed in the CEQA Environmental Checklist, Appendix G of the 2013 CEQA Guidelines. Under CEQA, the proposed Project would have a significant impact on transportation and circulation if it would:

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

The significance criteria for traffic impacts are based on the Imperial County Planning & Development Services Department LOS standard as outlined on page 55 of the *Circulation and Scenic Highways Element* dated January 29, 2008, which states “The County’s goal for an acceptable traffic service standard on an Average Daily Traffic (ADT) basis and during AM and PM peak periods for all County-Maintained Roads shall be LOS C for all street segment links and intersections.” An excerpt from the *Circulation and Scenic Highways Element* is included in Appendix E of the Draft Traffic Impact Analysis (**Appendix B** of this EIR). The current practice of determining direct or cumulative impacts is defined by the significance criteria outlined in **Table 4.3-13**, which was obtained from several EIRs for projects located in Imperial County.) (Copies of traffic significance criteria from other EIRs are included in Appendix F of the Draft Traffic Impact Analysis [**Appendix B** of this EIR]).

**TABLE 4.3-13  
SIGNIFICANCE CRITERIA**

Existing	Existing With Project	Existing With Project With Cumulative Projects	Impact Type
<b>Intersections</b>			
LOS C or better	LOS C or better	LOS C or better	None
LOS C or better	LOS D or worse	NA	Direct
LOS D	LOS D and adds 2.0 seconds or more of delay	LOS D or worse	Cumulative
LOS D	LOS E or F	NA	Direct

## 4.3 TRANSPORTATION AND CIRCULATION

**TABLE 4.3-13  
SIGNIFICANCE CRITERIA**

Existing	Existing With Project	Existing With Project With Cumulative Projects	Impact Type
LOS E	LOS F	NA	Direct
LOS F	LOS F and delay increases by $\geq 10.0$ seconds	LOS F	Direct
Any LOS	Project does not degrade LOS and adds < 2.0 seconds of delay	Any LOS	None
Any LOS	Project does not degrade LOS but adds 2.0 to 9.9 seconds of delay	LOS E or worse	Cumulative
<b>Segments</b>			
LOS C or better	LOS C or better	LOS C or better	None
LOS C or better	LOS C or better and V/C > 0.02	LOS D or worse	Cumulative
LOS C or better	LOS D or worse	NA	Direct <sup>1</sup>
LOS D	LOS D and V/C > 0.02	LOS D or worse	Cumulative
LOS D	LOS E or F	NA	Direct
LOS E	LOS F	NA	Direct
LOS F	LOS F and V/C increases by >0.09	LOS F	Direct
Any LOS	LOS E or worse & V/C 0.02 to 0.09	LOS E or worse	Cumulative
Any LOS	LOS E or worse & V/C < 0.02	Any LOS	None

Source: LOS 2014.

Notes: <sup>1</sup> Exception: post-project segment operation is LOS D and intersections along segment are LOS D or better resulting in no significant impact.

LOS = Level of Service.

NA = Not Applicable.

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

Note that three CEQA significance criteria were scoped out as part of the Initial Study. Criteria c, e and f were eliminated from further consideration for the following reasons. Criterion “c” deals with changes in traffic patterns. The proposed Project would not result in changes to existing air traffic patterns through an increase in traffic levels or change in location. Thus, no impact is identified for this issue area. Criterion “e” addresses adequacy of emergency access. The proposed circulation plan for each CUP and the entire Project will be required to provide emergency access points and safe vehicular travel. As shown on Figures 2.0-6 thru 2.0-22 (in Chapter 2.0, Project Description), multiple access points to each CUP are proposed with associated security gates at several entrances. The final site plan for each CUP must be designed in accordance with the Imperial County Fire Department requirements for access and would not impact provision of emergency access to each CUP. The Project will not hinder the ability of fire or law enforcement to access nearby properties. Thus, no impact is identified for this issue area. Lastly, criterion “f” was eliminated because the proposed Project is in a rural, sparsely populated portion of the County void of public transit, bike lanes and pedestrian facilities. Thus, the proposed Project would not conflict with any adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities. Thus, no impact is identified for this issue area.

### C. METHODOLOGY

The methodology for analysis has been previously described as it was also pertinent to the discussion of existing traffic conditions. Please refer to subsection 4.3.2 Environmental Setting, item E, “Methodology for Analysis.” Horizon Year 2049 methodology associated with decommissioning is described below.

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### Horizon Year 2049

The Year 2049 was selected as the horizon year because it is 30 years past the mid-point (Year 2019) of when the Project may be constructed. At the conclusion of the CUP term (estimated at Year 2049), the Project entitlements require the Applicant to decommission each CUP and restore it to its previous condition as farmland (i.e. pre-Project soil conditions) in accordance with the Project's Reclamation Plan.

Implementation of the Reclamation Plan required in Agricultural Mitigation Measure MM 4.9.1b is anticipated to generate traffic on the roads in the vicinity of the Project from trucks hauling solar panels and other components (e.g. pads, pilings, inverters, etc.) removed from each CUP and subsequent installment of agriculture-related infrastructure. Traffic would also be generated by worker trips to and from each CUP during decommissioning. This traffic would be added to Project study area intersections, roadway segments and freeway segments during a 7-month period concluding at the end of Year 2049.

A careful consideration of various methodologies for evaluating decommissioning traffic impacts was undertaken including: a thorough investigation for reliable data; and best efforts to reasonably ascertain and disclose information regarding decommissioning traffic. The result of these efforts lead to the conclusion that it is not possible to accurately forecast decommissioning traffic impacts. Rationale to support this conclusion is provided below:

- 1) To date, no solar projects have been decommissioned in Imperial County. Thus, there is no existing reference point to determine decommissioning traffic impacts. For example, without knowing exactly how many Conditional Use Permit projects will have a decommissioning phase, a conservative approach could be taken that all CUPs would have a decommissioning phase and all of these CUPs would undergo decommissioning at the same time in year 2049 as the proposed Project. Additionally, a continued conservative assumption is to estimate that these other CUPs would all invoke identical CUP extensions as the proposed Project (i.e. 10 years). Furthermore, all other CUPs would have the same number of concurrent extensions as the proposed Project to effectively decommission at the same unknown but estimated horizon time period as the proposed Project. However, this would not include unforeseen CUPs that may be processed after completion of this Project that could also undergo decommissioning at the time of the proposed Project. Finally, traffic data from decommissioning phases of solar farm projects located in Imperial Valley is not available, thus only an estimate can be made as to what type, level, and duration of construction workers and associated traffic will be required. Making assumptions for all of the aforementioned variables still leaves the analysis open to challenge because of the potential for unknown and unforeseen CUP decommissioning phases that would change the results of the proposed conservative approach assumptions. This creates a scenario with too many variables and insufficient historical information to make reasonable assumptions.
- 2) The near-term construction work force is based on the concentration of populations from the 2010 Census. The source and location of a Horizon Year 2049 construction work force cannot be estimated in the same manner. Therefore, it would require speculation to determine where the construction work force would originate and the amount of workers coming from the local area (i.e., Imperial Valley) and the regional area (i.e., Los Angeles, San Diego, or Arizona). If an assumption is made that claims the majority of the construction work force would be from the local area in the Year 2049, then there would need to be data or reasoning supporting this

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approach. However, there is no known data to support that the local work force would continue to live in the surrounding area when there are many national projects that can reduce or increase a local population.

- 3) Other solar projects on the cumulative projects list in the vicinity may or may not be undergoing decommissioning at the same time the proposed Project is decommissioned. Many of these other solar projects have a ten year extension option and it is not possible to estimate how many would exercise the option. Accordingly, only a guess could be made as to when the other cumulative projects would initiate decommissioning and add associated traffic to the horizon year background conditions.
- 4) The horizon year traffic model for Imperial County does not have horizon year volumes for the Project study area roadways around the Project site nor does the traffic model have data for decommissioning scenarios.
- 5) How the County may allow or require decommissioning phases is unknown at this time. The County may allow concurrent decommissioning or may require projects within a specific proximity of each other to be decommissioned in sequence to avoid a concentration of decommissioning traffic. Until such time that historical data is available on how long the permitting process will take for decommissioning of solar farms, only speculative estimates can be made.
- 6) Over time, new technologies will be developed which may allow greater efficiencies in solar energy production. The timing of a decommissioning phase could be affected if a CUP undergoes a partial or complete replacement with new technology. Determining the timing and quantity of traffic associated with such a replacement would be speculative as would the decommissioning timeframe based on implementing new technology.

For all of these reasons, approximating decommissioning phase traffic is considered too speculative for further analysis. Based on the time horizon and uncertainties surrounding decommissioning, future CEQA analysis should be undertaken prior to decommissioning and reclamation.

### D. PROJECT IMPACTS AND MITIGATION MEASURES

#### Conflict with Applicable Plan/LOS Standard - (Year 2013) With Project

**Impact 4.3.1** Implementation of the proposed Project would add traffic to existing traffic volumes on Project study area intersections, roadway segments and freeway segments during (Year 2013) Project construction. The additional traffic would not result in an exceedance of LOS C. Therefore, conflicts with the Imperial County General Plan Circulation and Scenic Highways Element are **considered less than significant** for (Year 2013) with Project conditions.

#### ***Existing (Year 2013) With Project Construction Conditions***

This section documents the addition of construction traffic onto (Year 2013) conditions to analyze scenario if the Project was constructed immediately. **Figure 4.3-6** shows (Year 2013) With Project Construction traffic volumes. Intersection, segment, and freeway LOS are discussed below.

#### Intersection LOS

**Table 4.3-14** summarizes intersection LOS. (Intersection LOS calculations are included in Appendix M of the Draft Traffic Impact Analysis [**Appendix B** of this EIR]).



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**TABLE 4.3-14**  
**EXISTING (YEAR 2013) WITHOUT AND WITH PROJECT CONSTRUCTION INTERSECTION LOS**

Intersection & (Control) <sup>1</sup>	Movement	Existing (Year 2013)		Existing (Year 2013) With Project			
		Delay <sup>2</sup>	LOS <sup>3</sup>	Delay <sup>2</sup>	LOS <sup>3</sup>	Delta <sup>4</sup>	Impact <sup>5</sup>
1) Forrester Road at I-8 WB (U)	Minor Leg	9.6 10.0	A B	10.0 10.4	B B	0.5 0.4	No No
2) Forrester Road at I-8 EB (U)	Minor Leg	10.5 13.8	B B	10.7 14.9	B B	0.2 1.1	No No
3) Forrester Road at McCabe Road (U)	Minor Leg	9.4 10.5	A B	9.7 12.0	A B	0.3 1.5	No No
4) Brockman Road at Lyons Road (U)	Minor Leg	10.2 10.0	B B	11.7 10.2	B B	1.5 0.2	No No
5) Brockman Road at Kubler Road (U)	Minor Leg	10.0 9.1	B A	10.4 9.7	B A	0.4 0.6	No No
6) Brockman Road at SR-98 (U)	Minor Leg	16.5 12.4	C B	18.6 12.9	C B	2.1 0.5	No No
7) Brockman Road at Anza Road (U)	Minor Leg	8.5 8.7	A A	8.7 8.7	A A	0.2 0.0	No No
8) La Brucherie Road at McCabe Road (U)	Minor Leg	8.1 8.9	B A	8.5 9.2	A A	0.4 0.3	No No
9) La Brucherie Road at Wahl Road (U)	Minor Leg	10.2 9.8	B A	10.5 10.6	B B	0.3 0.8	No No
10) Ferrell Road at Kubler Road (U)	Minor Leg	9.6 9.6	A A	9.9 9.6	A A	0.3 0.0	No No
11) Ferrell Road at SR-98 (U)	Minor Leg	13.6 12.6	B B	15.4 14.2	C B	1.8 1.6	No No
12) Ferrell Road at Anza Road (U)	Minor Leg	9.2 9.4	A A	9.2 9.9	A A	0.0 0.5	No No

Source: LOS 2014.

Notes: <sup>1</sup> Intersection Control – (S) Signalized, (U) Un-signalized Minor Leg: approach LOS of minor/lesser roadway.

<sup>2</sup> Delay – HCM Average Control Delay in seconds

All: combined LOS for all approaches.

<sup>3</sup> LOS: Level of Service

<sup>4</sup> Delta is the increase in delay from Project.

<sup>5</sup> Type of impact: none, direct, or cumulative.

Under existing (Year 2013) With Project Conditions, the Project study area intersections were calculated to operate at LOS C or better. Two intersections (Brockman Road at SR-98 and Ferrell Road at SR-98), operate at LOS C in the AM peak hour (and LOS B in the PM peak hour). Four intersections operate at LOS B in both the AM and PM peak hours. Likewise, four intersections operate at LOS A in both the AM and PM peak hours. One intersection (Brockman Road at Kubler Road) operates at LOS B in the AM peak hour only and LOS A in the PM peak hour. Another intersection (Forrester Road at McCabe Road) operates at LOS A in the AM peak hour only and LOS B in the PM peak hour. No significant impacts to Project study area intersections were calculated due to the addition of construction traffic to existing traffic. Moreover, the increases in traffic resulting from construction of the proposed Project would not exceed LOS standards. Therefore, **less than significant** impacts to Project study area intersections would result under Existing (Year 2013) With Project Construction conditions.

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### Roadway Segment LOS

**Table 4.3-15** summarizes roadway segment LOS for Existing (Year 2013) With Project conditions. As shown, only one change in LOS would occur along the segment of Forrester Road which would decrease from LOS A to B. All other segments would all operate above LOS C (at LOS A or LOS B). Therefore, **less than significant** impacts to Project study area roadway segments would result under Existing (Year 2013) With Project Construction conditions.

### Freeway Segment LOS

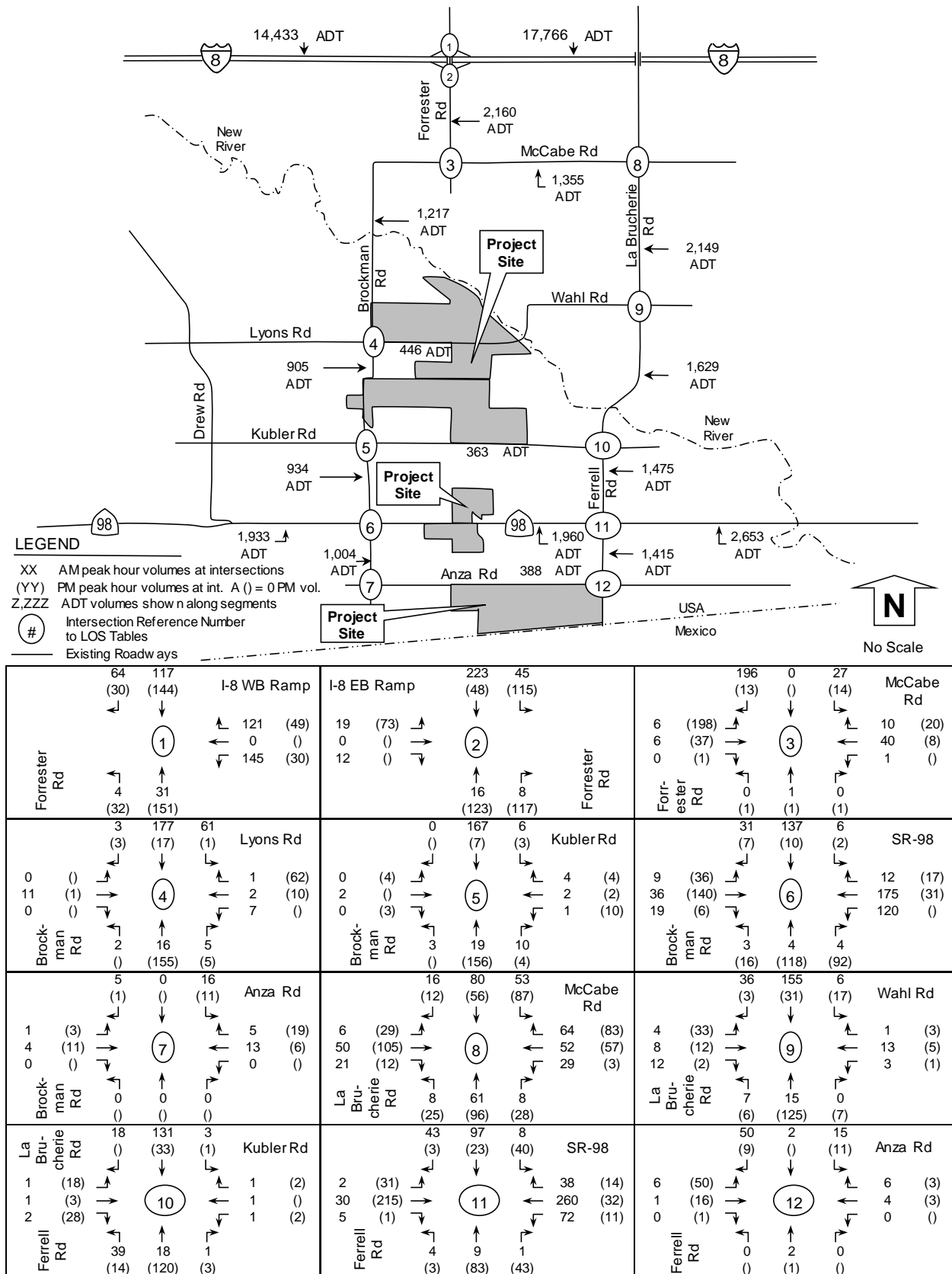
**Table 4.3-16** summarizes freeway segment LOS. Under existing (Year 2013) With Project Conditions, the freeway segments were calculated to operate above LOS C (at LOS A and LOS B). I-8 from Drew Road to Forrester Road would continue to operate at LOS A in the AM peak hour in both directions (eastbound and westbound); LOS A in the PM peak hour in the eastbound direction; and LOS B in the PM peak hour in the westbound direction. I-8 from Forrester Road to Imperial Avenue would continue to operate at LOS A during the AM and PM peak hour in the eastbound direction and LOS B in the AM and PM peak hour in the westbound direction. Moreover, the increases in traffic resulting from Project construction would not exceed V/C ratios or LOS standards. Therefore, **less than significant** impacts to Project study area freeway segments would occur under Existing (Year 2013) With Project Construction conditions.

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Source: LOS 2014.

**FIGURE 4.3-6**

**EXISTING (YEAR 2013) WITH PROJECT CONSTRUCTION VOLUMES**

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**TABLE 4.3-15  
EXISTING (YEAR 2013) WITHOUT AND WITH PROJECT CONSTRUCTION SEGMENT LOS**

Roadway Segment	Classification (as built)	(Year 2013) Without				Project Daily Volume	(Year 2013) With Project					
		Daily Volume	LOS C Capacity	V/C	LOS		Daily Volume	LOS C Capacity	V/C	LOS	Change in V/C	Significant Impact?
<b>Anza Road</b> Brockman Road to Ferrell Road	Local (2U)	282	7,100	0.04	A	106	388	7,100	0.05	A	0.01	None
<b>Brockman Road</b> McCabe Road to Lyons Road	Major (2U)	951	7,100	0.13	A	266	1,217	7,100	0.17	A	0.04	None
Lyons Road to Kubler Road	Major (2U)	825	7,100	0.12	A	80	905	7,100	0.13	A	0.01	None
Kubler Road to SR-98	Major (2U)	828	7,100	0.12	A	106	934	7,100	0.13	A	0.01	None
SR-98 to Anza Road	Not Classified (2U)	958	7,100	0.13	A	46	1,004	7,100	0.14	A	0.01	None
<b>Forrester Road</b> I-8 to McCabe Road	Prime (2U)	1,894	7,100	0.27	A	266	2,160	7,100	0.30	B	0.04	None
<b>Kubler Road</b> Brockman Road to Ferrell Road	Major (2U)	283	7,100	0.04	A	100	363	7,100	0.05	A	0.01	None
<b>La Brucherie Road/Ferrell Road</b> McCabe Road to Wahl Road	Major (2U)	1,970	7,100	0.28	B	179	2,149	7,100	0.30	B	0.03	None
Wahl Road to Kubler Road	Major (2U)	1,549	7,100	0.22	A	80	1,629	7,100	0.23	A	0.01	None
Kubler Road to SR-98	Major (2U)	1,336	7,100	0.19	A	139	1,475	7,100	0.21	A	0.02	None
SR-98 to Anza Road	Major (2U)	1,309	7,100	0.18	A	106	1,475	7,100	0.20	A	0.01	None
<b>Lyons Road</b> Brockman Road to LaBrucherie Rd	Major (2U)	207	7,100	0.03	A	239	446	7,100	.060	A	0.03	None
<b>McCabe Road</b> Forrester Road to LaBrucherie Rd	Major (2U)	1,289	7,100	0.18	A	66	1,355	7,100	0.19	A	0.01	None
<b>SR-98</b> Drew Road to Brockman Road	State Highway (2U)	1,900	7,100	0.27	B	33	1,933	7,100	0.27	B	0.00	None
Brockman Road to Ferrell Road	State Highway (2U)	1,900	7,100	0.27	B	60	1,960	7,100	0.28	B	0.01	None
Ferrell Road to Dogwood Road	State Highway (2U)	2,500	7,100	0.35	B	153	2,653	7,100	0.37	B	0.02	None

Source: LOS 2014.

Notes: Classification based on 1/29/08 Circulation and Scenic Highways Element.

2U = 2-lane undivided roadway. Daily volume is a 24 hour volume.

LOS: Level of Service. LOS based on actual number of lanes currently constructed.

V/C: Volume to Capacity ratio.

Impact? = type of impact (none, cumulative, or direct).

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**TABLE 4.3-16**  
**EXISTING (YEAR 2013) WITHOUT AND WITH PROJECT CONSTRUCTION FREEWAY LOS**

Freeway Segment	I-8 Drew Road to Forrester Road				I-8 Forrester Road to Imperial Avenue			
<b>Forecasted (Year 2013) Without</b>								
ADT	14,400				17,600			
Peak Hour	AM		PM		AM		PM	
Directions	EB	WB	EB	WB	EB	WB	EB	WB
Number of Lanes	2	2	2	2	2	2	2	2
Capacity <sup>1</sup>	4,700	4,700	4,700	4,700	4,700	4,700	4,700	4,700
K Factor <sup>2</sup>	0.1076	0.0963	0.0917	0.1517	0.1076	0.0963	0.0917	0.1517
D Factor <sup>3</sup>	0.2616	0.7384	0.4419	0.5581	0.2616	0.7384	0.4419	0.5581
Truck Factor <sup>4</sup>	0.8376	0.8376	0.8376	0.8376	0.8376	0.8376	0.8376	0.8376
Peak Hour Volume	484	1,222	697	1,456	591	1,494	851	1,779
V/C	0.092	0.233	0.133	0.277	0.104	0.264	0.150	0.314
LOS	A	A	A	B	A	B	A	B
<b>Peak Project Hour Volume</b>								
<b>2013 With Project</b>								
Peak Hour Volume	494	1,222	697	1,466	593	1,545	902	1,781
V/C	0.105	0.260	0.148	0.312	0.126	0.329	0.192	0.379
LOS	A	A	A	B	A	B	A	B
Increase in V/C	0.002	0.000	0.000	0.002	0.000	0.011	0.011	0.000
Impact	None	None	None	None	None	None	None	None

Source: LOS 2014.

Notes: <sup>1</sup> Capacity of 2,350 pcphpl from Caltrans' Guide for the Preparation of Traffic Impact Studies, December 2002.

<sup>2</sup> Latest K factor from Caltrans (based on 2007 report), which is the percentage of Annual Average Daily Traffic (AADT) in both directions.

<sup>3</sup> Latest D factor from Caltrans (based on 2007 report), which when multiplied by K and ADT will provide peak hour volume.

<sup>4</sup> Latest truck factor from Caltrans (based on 2007 report).

Impact? = Direct, Cumulative, or None.

Overall, under Existing (Year 2013) With Project Conditions, the Project study area intersections, roadway segments and freeway segments were calculated to operate at LOS C or better. Thus, **less than significant** impacts were calculated with the addition of Project construction traffic to existing traffic volumes.

### **Mitigation Measures**

None required.

### **Significance After Mitigation**

Not applicable.

### **Conflict with Applicable Plan/LOS Standard - Near-Term (Year 2016) With Project**

**Impact 4.3.2** Implementation of the proposed Project would add traffic to existing traffic volumes on Project study area intersections, roadway segments and freeway segments during Near-Term ((Year 2016)) Project construction. The additional traffic would not result in an exceedance of LOS C. Therefore, conflicts with the Imperial County General Plan Circulation and Scenic Highways Element are **considered less than significant** under Near-Term (Year 2016) With Project conditions.

## 4.3 TRANSPORTATION AND CIRCULATION

### ***Near-Term (Year 2016) With Project Construction Conditions***

Construction is anticipated to be at its peak during Near-Term ((Year 2016)) conditions. (Year 2016) background volumes are based on increasing the existing (Year 2013) volumes by an annual growth rate. Determination of the annual growth rate was based on guidelines defined in the County of Imperial Department of Public Works *Traffic Study and Report Policy* dated March 12, 2007, revised June 29, 2007 and approved by the Board of Supervisors of the County of Imperial on August 7, 2007. The County document indicates that traffic projections should be based on demonstrated growth as detailed in the General Plan. Four growth rate options were reviewed:

- 1) The Land Use Element of the General Plan indicates that the Population Research Unit of the California Department of Finance (DOF) estimates the annual change in population. Using the DOF revised July 1, 2006 population estimate of 168,979 and the projected population of Imperial County in 2030 of 283,693, an annual growth rate of 2.2 percent is calculated.
- 2) The Housing Element section of the General Plan has a 1980 population of 92,500. The 2000 Southern California Association of Governments (SCAG) population estimate of 148,980 for the Year 2000. Based on this information, an annual growth rate of 2.4 percent is calculated.
- 3) The Southern California Association of Governments Community Development Division's 2004 *Regional Transportation Plan Socio-Economic Forecast Report*, dated June 2004, states that the population of Imperial County is projected to grow at an annual rate of 2.8 percent.
- 4) The U.S. Census Bureau population data from Year 2000 to Year 2010 for the local cities/residential communities within Imperial County as outlined previously in **Table 4.3-12**. The U.S. Census Bureau reported a population growth of 27,162 people over a 10 year period (population of 109,588 per the 2000 census and population of 136,750 per the 2010 census). Over this 10 year period, the annual growth rate was approximately 2.0 percent.

For the purpose of the Draft Traffic Impact Analysis, the more conservative growth rate of 2.8 percent was selected for the annual population growth rate. The recent *Imperial County 2013 Transportation Plan*, dated November 2013 noted that "The California Department of Finance estimated the rate of growth in Imperial County to be 0.5% in 2012", therefore, the average annual 2.8 percent growth rate used in the analysis may be conservative. (The growth factor support data and excerpt from the *Imperial County 2013 Transportation Plan* are included in Appendix O of the Draft Traffic Impact Analysis [**Appendix B** of this EIR]). (Year 2016) traffic data was factored up from existing data through the application of a 2.8% annual growth rate.

**Figure 4.3-7** shows (Year 2016) traffic volumes (for the construction peak period) calculated by increasing existing volumes by 2.8% annually. Intersection, segment, and freeway LOS are shown in **Table 4.3-17**, **Table 4.3-18** and **Table 4.3-19**.



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### Intersection LOS

**Table 4.3-17** summarizes intersection LOS. (Intersection LOS calculations are included in Appendix M of the Draft Traffic Impact Analysis [Appendix B of this EIR]).

**TABLE 4.3-17  
NEAR-TERM (YEAR 2016) INTERSECTION LOS**

Intersection & (Control) <sup>1</sup>	Movement	Peak Hour	(Year 2016)	
			Delay <sup>2</sup>	LOS <sup>3</sup>
1) Forrester Road at I-8 WB (U)	Minor Leg	AM PM	9.7 10.2	A B
2) Forrester Road at I-8 EB (U)	Minor Leg	AM PM	10.8 14.6	B B
3) Forrester Road at McCabe Road (U)	Minor Leg	AM PM	9.4 10.7	A B
4) Brockman Road at Lyons Road (U)	Minor Leg	AM PM	10.3 10.1	B B
5) Brockman Road at Kubler Road (U)	Minor Leg	AM PM	10.1 9.1	B A
6) Brockman Road at SR-98 (U)	Minor Leg	AM PM	17.2 13.0	C B
7) Brockman Road at Anza Road (U)	Minor Leg	AM PM	8.5 8.7	A A
8) La Brucherie Road at McCabe Road (U)	Minor Leg	AM PM	8.3 9.2	A A
9) La Brucherie Road at Wahl Road (U)	Minor Leg	AM PM	10.3 9.9	B A
10) Ferrell Road at Kubler Road (U)	Minor Leg	AM PM	9.7 9.7	A A
11) Ferrell Road at SR-98 (U)	Minor Leg	AM PM	14.5 13.3	B B
12) Ferrell Road at Anza Road (U)	Minor Leg	AM PM	9.2 9.4	A A

Source: LOS 2014.

Notes: <sup>1</sup> Intersection Control - (S) Signalized, (U) Un-signalized.

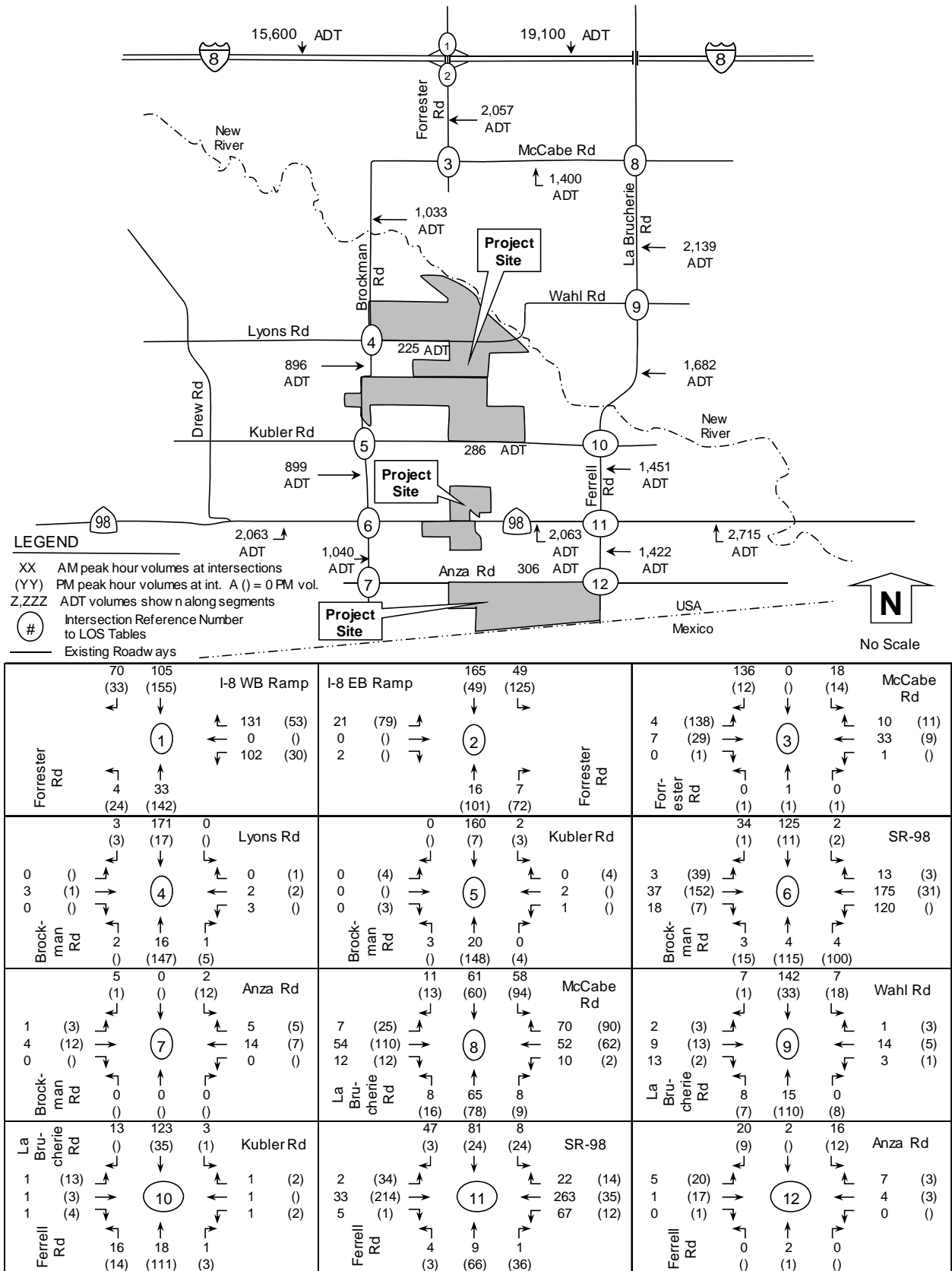
<sup>2</sup> Delay - HCM Average Control Delay in seconds.

<sup>3</sup> LOS: Level of Service. Minor Leg: approach LOS of minor/lesser roadway.

All: combined LOS for all approaches.

Under Near-Term (Year 2016) Conditions, the Project study area intersections were calculated to operate at LOS C or better. One intersection (Brockman Road at SR-98) operates at LOS C in the AM peak hour and LOS B in the PM peak hour. Three intersections operate at LOS B in both the AM and PM peak hours. Likewise, three intersections operate at LOS A in both the AM and PM peak hours. Two intersections (Brockman Road at Kubler Road and La Brucherie Road at Wahl Road) operate at LOS B in the AM peak hour only and LOS A in the PM peak hour. Two intersections (Forrester Road at I-8 and Forrester Road at McCabe Road) operate at LOS A in the AM peak hour only and LOS B in the PM peak hour. All intersections are operating below the LOS C standard with **less than significant impacts** under Near-Term (Year 2016) conditions.

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Source: LOS 2014.

**FIGURE 4.3-7  
NEAR-TERM (YEAR 2016) VOLUMES**

## 4.3 TRANSPORTATION AND CIRCULATION

### Roadway Segment LOS

**Table 4.3-18** summarizes roadway segment LOS for Near-Term (Year 2016) conditions. As shown, all segments would operate above LOS C. Specifically, all segments would operate at LOS A with the exception of the segment of Forrester Road; La Brucherie Road/Ferrell Road from McCabe Road to Wahl Road; and all three segments along SR-98 which would all operate at LOS B. Because, all roadway segments would operate above the LOS C standard, **less than significant impacts** would occur under Near-Term ((Year 2016)) conditions.

**TABLE 4.3-18  
NEAR-TERM (YEAR 2016) ROADWAY SEGMENT LOS**

Segment	Classification (as built)	Daily Volume	# of Lanes	LOS C Capacity	V/C	LOS
<b>Anza Road</b>						
Brockman Road to Ferrell Road	Local (2U)	306	2	7,100	0.04	A
<b>Brockman Road</b>						
McCabe Road to Lyons Road	Major (2U)	1,033	2	7,100	0.15	A
Lyons Road to Kubler Road	Major (2U)	896	2	7,100	0.13	A
Kubler Road to SR-98	Major (2U)	899	2	7,100	0.13	A
SR-98 to Anza Road	Not Classified (2U)	1,040	2	7,100	0.15	A
<b>Forrester Road</b>						
I-8 to McCabe Road	Prime (2U)	2,057	2	7,100	0.29	B
<b>Kubler Road</b>						
Brockman Road to Ferrell Road	Major (2U)	286	2	7,100	0.04	A
<b>La Brucherie Road/Ferrell Road</b>						
McCabe Road to Wahl Road	Major (2U)	2,139	2	7,100	0.30	B
Wahl Road to Kubler Road	Major (2U)	1,682	2	7,100	0.24	A
Kubler Road to SR-98	Major (2U)	1,451	2	7,100	0.20	A
SR-98 to Anza Road	Major (2U)	1,422	2	7,100	0.20	A
<b>Lyons Road</b>						
Brockman Road to La Brucherie Road	Major (2U)	255	2	7,100	0.03	A
<b>McCabe Road</b>						
Forrester Road to La Brucherie Road	Major (2U)	1,400	2	7,100	0.20	A
<b>SR-98</b>						
Drew Road to Brockman Road	State Highway (2U)	2,063	2	7,100	0.29	B
Brockman Road to Ferrell Road	State Highway (2U)	2,063	2	7,100	0.29	B
Ferrell Road to Dogwood Road	State Highway (2U)	2,715	2	7,100	0.38	B

Source: LOS 2014.

Notes: Classification based on 1/29/08 Circulation and Scenic Highways Element.

2U = 2-lane undivided roadway. Daily volume is a 24 hour volume.

LOS: Level of Service. LOS based on actual number of lanes currently constructed.

V/C: Volume to Capacity ratio.

### Freeway Segment LOS

**Table 4.3-19** summarizes Near-Term (Year 2016) freeway segment LOS. As shown, the freeway segments were calculated to operate above LOS C. I-8 from Drew Road to Forrester Road would operate at LOS B in the PM peak hour in the westbound direction. Likewise, I-8 from Forrester Road to Imperial Avenue would operation at LOS B in both the AM and PM peak hour in the westbound direction. All other freeway

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segments would operate at LOS A. Because, all freeway segments would operate above the LOS C standard, **less than significant impacts** would occur under Near-Term (Year 2016) conditions.

**TABLE 4.3-19  
NEAR-TERM (YEAR 2016) FREEWAY LOS**

Freeway Segment	I-8 Drew Road to Forrester Road				I-8 Forrester Road to Imperial Avenue			
Forecasted (Year 2016)								
ADT	15,600				19,100			
Peak Hour	AM		PM		AM		PM	
Directions	EB	WB	EB	WB	EB	WB	EB	WB
Number of Lanes	2	2	2	2	2	2	2	2
Capacity <sup>1</sup>	4,700	4,700	4,700	4,700	4,700	4,700	4,700	4,700
K Factor <sup>2</sup>	0.1076	0.0963	0.0917	0.1517	0.1076	0.0963	0.0917	0.1517
D Factor <sup>3</sup>	0.2616	0.7384	0.4419	0.5581	0.2616	0.7384	0.4419	0.5581
Truck Factor <sup>4</sup>	0.8376	0.8376	0.8376	0.8376	0.8376	0.8376	0.8376	0.8376
Peak Hour Volume	524	1,324	755	1,577	642	1,621	924	1,931
V/C	0.112	0.282	0.161	0.335	0.137	0.345	0.197	0.411
LOS	A	A	A	B	A	B	A	B

Source: LOS 2014.

Notes: <sup>1</sup> Capacity of 2,350 pcphpl from CALTRANS' Guide for the Preparation of Traffic Impact Studies, December 2002.

<sup>2</sup> Latest K factor from Caltrans (based on 2007 report), which is the percentage of Annual Average Day Traffic (AADT) in both directions.

<sup>3</sup> Latest D factor from Caltrans (based on 2007 report), which when multiplied by K and ADT will provide peak hour volume.

<sup>4</sup> Latest truck factor from Caltrans (based on 2007 report).

Under Near-Term ((Year 2016)) conditions, the Project study area intersections, roadways, and freeway segments were calculated to operate at LOS C or better.

### **Near-Term (Year 2016) With Project Construction Conditions**

This section discusses the addition of Project construction traffic in combination with Near-Term (Year 2016) conditions for the anticipated construction peak. **Figure 4.3-8** depicts (Year 2016) With Project Construction traffic volumes. Intersection, segment, and freeway LOS are shown in **Table 4.3-20**, **Table 4.3-21** and **Table 4.3-22**. (Intersection LOS calculations are included in Appendix Q of the Draft Traffic Impact Analysis [**Appendix B** of this EIR]). Intersection LOS

**Table 4.3-20** summarizes Near-Term (Year 2016) intersection LOS compared to Near-Term (Year 2016) With Project construction traffic. (Intersection LOS calculations are included in Appendix M of the Draft Traffic Impact Analysis [**Appendix B** of this EIR]).

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**TABLE 4.3-20**  
**NEAR-TERM (YEAR 2016) WITHOUT AND WITH PROJECT CONSTRUCTION INTERSECTION LOS**

Intersection & (Control) <sup>1</sup>	Movement	Peak Hour	(Year 2016)		(Year 2016) With Project			
			Delay <sup>2</sup>	LOS <sup>3</sup>	Delay <sup>2</sup>	LOS <sup>3</sup>	Delta <sup>4</sup>	Impact <sup>5</sup>
1) Forrester Road at I-8 WB (U)	Minor Leg	AM PM	9.7 10.2	A B	10.3 10.6	B B	0.6 0.4	None None
2) Forrester Road at I-8 EB (U)	Minor Leg	AM PM	10.8 14.6	B B	11.0 16.0	B C	0.2 1.4	None None
3) Forrester Road at McCabe Road (U)	Minor Leg	AM PM	9.4 10.7	A B	9.8 12.3	A B	0.4 1.6	None None
4) Brockman Road at Lyons Road (U)	Minor Leg	AM PM	10.3 10.1	B B	11.9 10.3	B B	1.6 0.2	None None
5) Brockman Road at Kubler Road (U)	Minor Leg	AM PM	10.1 9.1	B A	10.6 9.8	B A	0.5 0.7	None None
6) Brockman Road at SR-98 (U)	Minor Leg	AM PM	17.2 13.0	C B	18.7 13.6	C B	1.5 0.6	None None
7) Brockman Road at Anza Road (U)	Minor Leg	AM PM	8.5 8.7	A A	8.7 8.8	A A	0.2 0.1	None None
8) La Brucherie Road at McCabe Road(U)	Minor Leg	AM PM	8.3 9.2	A A	8.7 9.6	A A	0.4 0.4	None None
9) La Brucherie Rd at Wahl Road (U)	Minor Leg	AM PM	10.3 9.9	B A	10.6 10.8	B B	0.3 0.9	None None
10) Ferrell Road at Kubler Road (U)	Minor Leg	AM PM	9.7 9.7	A A	10.0 9.7	B A	0.3 0.0	None None
11) Ferrell Road at SR-98 (U)	Minor Leg	AM PM	14.5 13.3	B B	16.6 15.1	C C	2.1 1.8	None None
12) Ferrell Road at Anza Road (U)	Minor Leg	AM PM	9.2 9.4	A A	9.2 10.0	A B	0.0 0.6	None None

Source: LOS 2014.

Notes: <sup>1</sup> Intersection Control - (S) Signalized, (U) Un-signalized.

<sup>2</sup> Delay - HCM Average Control Delay in seconds.

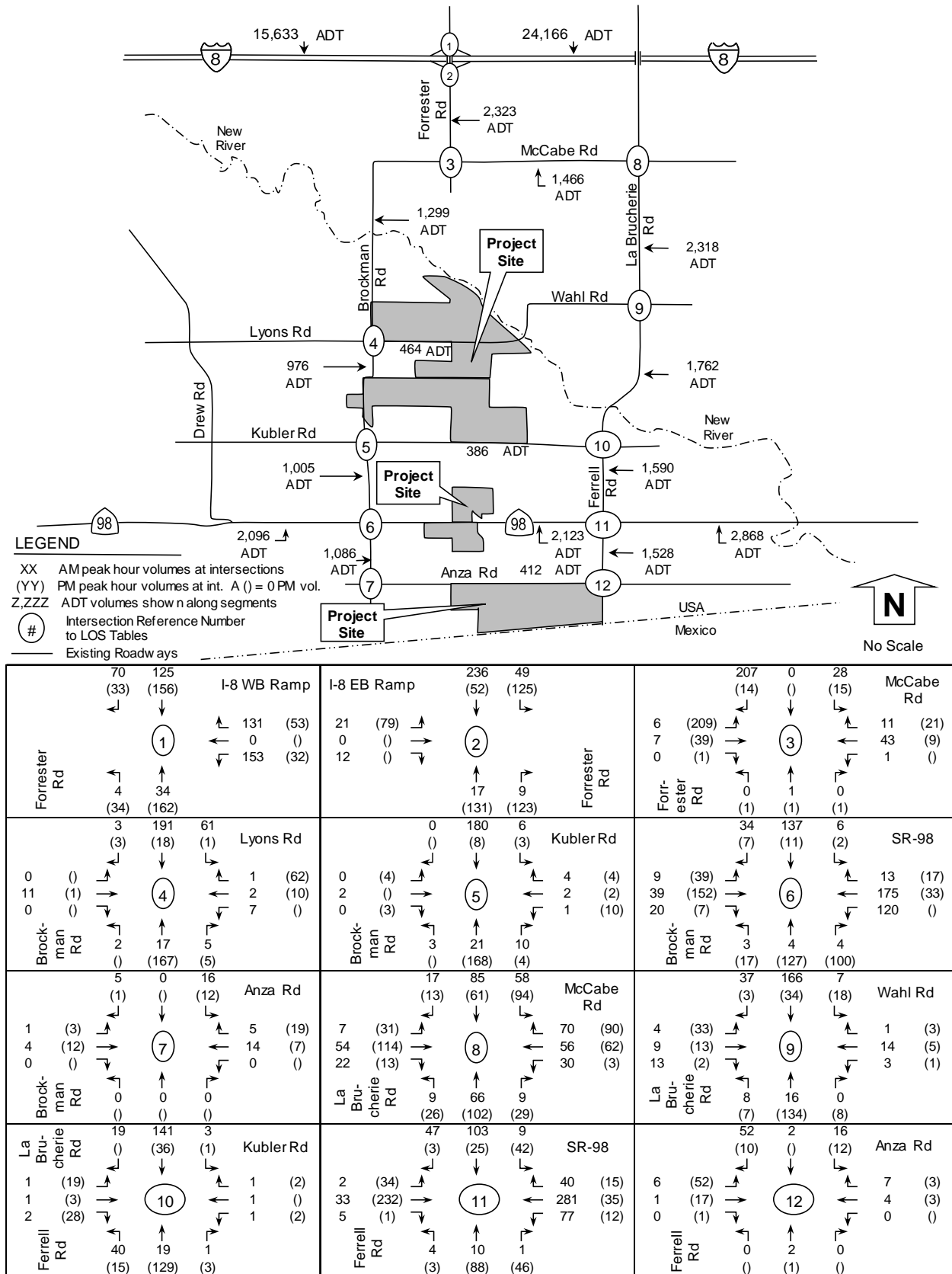
<sup>3</sup> LOS: Level of Service. Minor Leg: approach LOS of minor/lesser roadway. All: combined LOS for all approaches.

<sup>4</sup> Delta is the increase in delay from Project.

<sup>5</sup> Type of impact: none, direct, or cumulative.

As shown, under Near-Term (Year 2016) With Project Conditions, all Project study area intersections are calculated to operate at LOS C or better. One intersection (Ferrell Road at SR-98) would operate at LOS C in both the AM and PM peak hour. Forrester Road at I-8 (EB) would operate at LOS C in the PM peak hour (and LOS B in the AM peak hour); the intersection of Brockman Road at SR-98 would operate at LOS C in the AM peak hour (and LOS B in the PM peak hour). Two intersections operate at LOS B in both the AM and PM peak hours. Likewise, two intersections operate at LOS A in both the AM and PM peak hours. Two intersections (Brockman Road at Kubler Road and Ferrell Road at Kubler Road) operate at LOS B in the AM peak hour only and LOS A in the PM peak hour. Another intersection (Forrester Road at McCabe Road and Ferrell Road at Anza Road) operate at LOS A in the AM peak hour only and LOS B in the PM peak hour. No significant impacts to Project study area intersections were calculated due to the addition of Project construction traffic to existing traffic under Near-Term (Year 2016) conditions. Moreover, the increases in traffic resulting from construction of the proposed Project would not exceed LOS standards. Therefore, **less than significant** impacts to Project study area intersections would result under Near-Term (Year 2016) With Project Construction conditions.

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Source: LOS 2014.

**FIGURE 4.3-8**

**NEAR-TERM (YEAR 2016) WITH PROJECT CONSTRUCTION VOLUMES**

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### Roadway Segment LOS

**Table 4.3-21** summarizes roadway segment LOS for Near-Term (Year 2016) With and Without Project Construction. As shown, all segments would continue to operate above LOS C (at LOS A or LOS B). No change in LOS would occur for any segment with the addition of Near-Term (Year 2016) Project construction traffic. Therefore, **less than significant** impacts to Project study area roadway segments would result under Near-Term (Year 2016) With Project Construction conditions.

### Freeway Segment LOS

**Table 4.3-22** summarizes freeway segment LOS under Near-Term (Year 2016) With and Without Project Construction. As shown, both freeway segments were calculated to operate above LOS C (at LOS A and LOS B). I-8 from Drew Road to Forrester Road would continue to operate at LOS A in the AM peak hour in both directions (eastbound and westbound); LOS A in the PM peak hour in the eastbound direction; and LOS B in the PM peak hour in the westbound direction. I-8 from Forrester Road to Imperial Avenue would continue to operate at LOS A during the AM and PM peak hour in the eastbound direction and LOS B in the AM and PM peak hour in the westbound direction. Moreover, the increases in traffic resulting from Project construction would not exceed V/C ratios or LOS standards. Therefore, **less than significant** impacts to Project study area freeway segments would occur under Near-Term (Year 2016) With Project Construction.



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**TABLE 4.3-21**  
**NEAR-TERM (YEAR 2016) WITHOUT AND WITH PROJECT CONSTRUCTION ROADWAY SEGMENT LOS**

Segment	Classification (as built)	Daily Volume	LOS C Capacity	V/C	LOS	Project Daily Volume Segment	Daily Volume	LOS C Capacity	V/C	LOS	Change in V/C	Impact ?
<b>Anza Road</b>												
Brockman Road to Ferrell Road	Local (2U)	306	7,100	0.04	A	106	412	7,100	0.06	A	0.01	None
<b>Brockman Road</b>												
McCabe Road to Lyons Road	Major (2U)	1,033	7,100	0.15	A	266	1,299	7,100	0.18	A	0.04	None
Lyons Road to Kubler Road	Major (2U)	896	7,100	0.13	A	80	976	7,100	0.14	A	0.01	None
Kubler Road to SR-98	Major (2U)	899	7,100	0.13	A	106	1,005	7,100	0.14	A	0.01	None
SR-98 to Anza Road	Not Classified (2U)	1,040	7,100	0.15	A	46	1,086	7,100	0.15	A	0.01	None
<b>Forrester Road</b>												
I-8 to McCabe Road	Prime (2U)	2,057	7,100	0.29	B	266	2,323	7,100	0.33	B	0.04	None
<b>Kubler Road</b>												
Brockman Road to Ferrell Road	Major (2U)	286	7,100	0.04	A	100	386	7,100	0.05	A	0.01	None
<b>La Brucherie Road/Ferrell Road</b>												
McCabe Road to Wahl Road	Major (2U)	2,139	7,100	0.30	B	179	2,318	7,100	0.33	B	0.03	None
Wahl Road to Kubler Road	Major (2U)	1,682	7,100	0.24	A	80	1,762	7,100	0.25	A	0.01	None
Kubler Road to SR-98	Major (2U)	1,451	7,100	0.20	A	139	1,590	7,100	0.22	A	0.02	None
SR-98 to Anza Road	Major (2U)	1,422	7,100	0.20	A	106	1,528	7,100	0.22	A	0.01	None
<b>Lyons Road</b>												
Brockman Road to La Brucherie Road	Major (2U)	255	7,100	0.03	A	239	464	7,100	0.7	A	0.03	None
<b>McCabe Road</b>												
Forrester Road to La Brucherie Road	Major (2U)	1,400	7,100	0.20	A	66	1,466	7,100	0.21	A	0.01	None
<b>SR-98</b>												
Drew Road to Brockman Road	State Highway (2U)	2,063	7,100	0.29	B	33	2,096	7,100	0.30	B	0.00	None
Brockman Road to Ferrell Road	State Highway (2U)	2,063	7,100	0.29	B	60	2,123	7,100	0.30	B	0.01	None
Ferrell Road to Dogwood Road	State Highway (2U)	2,715	7,100	0.38	B	153	2,868	7,100	0.40	B	0.02	None

Source: LOS 2014.

Notes: Classification based on 1/29/08 Circulation and Scenic Highways Element.

2U = 2-lane undivided roadway. Daily volume is a 24 hour volume.

LOS: Level of Service. LOS based on actual number of lanes currently constructed.

V/C: Volume to Capacity ratio.

Impact? = type of impact (none, cumulative, or direct).

## 4.3 TRANSPORTATION AND CIRCULATION

**TABLE 4.3-22**  
**NEAR-TERM (YEAR 2016) WITHOUT AND WITH PROJECT CONSTRUCTION FREEWAY SEGMENT LOS**

Freeway Segment	I-8 Drew Road to Forrester Road				I-8 Forrester Road to Imperial Avenue			
Forecasted Near-Term (Year 2016) Without Project								
ADT	15,600				19,100			
Peak Hour	AM		PM		AM		PM	
Direction	EB	WB	EB	WB	EB	WB	EB	WB
Number of Lanes	2	2	2	2	2	2	2	2
Capacity <sup>1</sup>	4,700	4,700	4,700	4,700	4,700	4,700	4,700	4,700
K Factor <sup>2</sup>	0.1076	0.0963	0.0917	0.1517	0.1076	0.0963	0.0917	0.1517
D Factor <sup>3</sup>	0.2616	0.7384	0.4419	0.5581	0.2616	0.7384	0.4419	0.5581
Truck Factor <sup>4</sup>	0.8376	0.8376	0.8376	0.8376	0.8376	0.8376	0.8376	0.8376
Peak Hour Volume	534	1,324	755	1,577	642	1,621	924	1,931
V/C	0.112	0.282	0.161	0.335	0.137	0.345	0.197	0.411
LOS	A	A	A	B	A	B	A	B
<u>Project Peak Hour Volume</u>	10	0	0	10	2	51	51	2
<u>Near-Term (Year 2016) With Project</u>								
Peak Hour Volume	534	1,324	755	1,587	644	1,672	975	1,933
V/C	0.114	0.282	0.161	0.338	0.137	0.356	0.207	0.411
LOS	A	A	A	B	A	B	A	B
Increase in V/C	0.002	0.000	0.000	0.002	0.000	.0011	0.011	0.000
Impact	None	None	None	None	None	None	None	None

Source: LOS 2014.

Notes: <sup>1</sup> Capacity of 2,350 pcphpl from CALTRANS' Guide for the Preparation of Traffic Impact Studies, December 2002.

<sup>2</sup> Latest K factor from Caltrans (based on 2007 report), which is the percentage of AADT in both directions.

<sup>3</sup> Latest D factor from Caltrans (based on 2007 report), which when multiplied by K and ADT will provide peak hour volume.

<sup>4</sup> Latest truck factor from Caltrans (based on 2007 report).

Impact? = Direct, Cumulative, or None.

Overall, under Near-Term (Year 2016) With and Without Project, the Project study area intersections, roadway segments and freeway segments were calculated to operate at LOS C or better. Thus, **less than significant** impacts were calculated with the addition of Project construction traffic to existing traffic volumes under Near-Term (Year 2016) With Project construction.

### **Mitigation Measures**

None required.

### **Significance After Mitigation**

Not applicable.

### **Conflict with Applicable Plan/LOS Standard - Mid-Term (Year 2019) With Project**

**Impact 4.3.3** Implementation of the proposed Project would add traffic to existing traffic volumes on Project study area intersections, roadway segments and freeway segments during Mid-Term (Year 2019) Project construction. The additional traffic would not result in an exceedance of LOS C. Therefore, conflicts with the Imperial County General Plan Circulation and Scenic Highways Element are **considered less than significant** under Mid-Term (Year 2019) With Project conditions.

## 4.3 TRANSPORTATION AND CIRCULATION

### Mid-Term (Year 2019)

This section documents a Mid-Term (Year 2019) condition in the event the Project is constructed in approximately 5 years or the mid-point of the 10-year period permitted for CUP construction. The (Year 2019) background volumes are based on increasing the Existing (Year 2013) volumes by an annual growth rate of 2.8% as described in the Near-Term (Year 2016) Conditions' Section. **Figure 4.3-9** depicts Mid-Term (Year 2019) traffic volumes. Intersection, segment, and freeway LOS are shown in **Table 4.3-23**, **Table 4.3-24** and **Table 4.3-25**.

#### Intersection LOS

**Table 4.3-23** summarizes Mid-Term (Year 2019) intersection LOS. (Intersection LOS calculations are included in Appendix S of the Draft Traffic Impact Analysis [**Appendix B** of this EIR]).

**TABLE 4.3-23**  
**MID-TERM (YEAR 2019) INTERSECTION LOS**

Intersection & (Control) <sup>1</sup>	Movement	Peak Hour	(Year 2019)	
			Delay <sup>2</sup>	LOS <sup>3</sup>
1) Forrester Road at I-8 WB (U)	Minor Leg	AM PM	9.8 10.5	A B
2) Forrester Road at I-8 EB (U)	Minor Leg	AM PM	11.1 15.7	B C
3) Forrester Road at McCabe Road (U)	Minor Leg	AM PM	9.4 10.9	A B
4) Brockman Road at Lyons Road (U)	Minor Leg	AM PM	10.4 10.2	B B
5) Brockman Road at Kubler Road (U)	Minor Leg	AM PM	10.2 9.2	B A
6) Brockman Road at SR-98 (U)	Minor Leg	AM PM	17.4 13.8	C B
7) Brockman Road at Anza Road (U)	Minor Leg	AM PM	8.5 8.7	A A
8) La Brucherie Road at McCabe Road (U)	Minor Leg	AM PM	8.5 9.5	A A
9) La Brucherie Road at Wahl Road (U)	Minor Leg	AM PM	10.4 10.0	B B
10) Ferrell Road at Kubler Road (U)	Minor Leg	AM PM	9.8 9.8	A A
11) Ferrell Road at SR-98 (U)	Minor Leg	AM PM	15.6 13.9	C B
12) Ferrell Road at Anza Road (U)	Minor Leg	AM PM	9.2 9.5	A A

Notes: <sup>1</sup> Intersection Control - (S) Signalized, (U) Un-signalized.

<sup>2</sup> Delay - HCM Average Control Delay in seconds.

<sup>3</sup> LOS: Level of Service.

Minor Leg: approach LOS of minor/lesser roadway.

All: combined LOS for all approaches.

Under Mid-Term (Year 2019) Conditions, the Project study area intersections were calculated to operate at LOS C or better. Two intersections (Brockman Road at SR-98 and Ferrell Road at SR-98) operate at LOS C in the AM peak hour while one intersection (Forrester Road at I-8, eastbound) would operate at LOS C

## 4.3 TRANSPORTATION AND CIRCULATION

in the PM peak hour. Two intersections operate at LOS B in both the AM and PM peak hours. Four intersections operate at LOS A in both the AM and PM peak hours. Two intersections (Forrester Road at I-8, eastbound and Brockman Road at Kubler Road) operate at LOS B in the AM peak hour only. Brockman Road at Kubler Road would operate at LOS A in the PM peak hour. Two intersections (Forrester Road at I-8 westbound and Forrester Road at McCabe Road) operate at LOS A in the AM peak hour only and LOS B in the PM peak hour. All or the roadway segments would be operating with **less than significant impacts** with regard to LOS under Mid-Term (Year 2019) conditions.

### Roadway Segment LOS

**Table 4.3-24** summarizes roadway segment LOS for Mid-Term (Year 2019) conditions. As shown, all segments would operate above LOS C (at LOS A or LOS B). Specifically, all segments would operate at LOS A with the exception of the segment along Forrester Road; La Brucherie Road/Ferrell Road from McCabe Road to Wahl Road; and all three segments along SR-98 which would all operate at LOS B. Because, all roadway segments would operate above the LOS C standard, **less than significant impacts** would occur under Mid-Term (Year 2019) conditions.

**TABLE 4.3-24**  
**MID-TERM (YEAR 2019) ROADWAY SEGMENT LOS**

Segment	Classification (as built)	Daily Volume	LOS C Capacity	V/C	LOS
<b>Anza Road</b> Brockman Road to Ferrell Road	Local (2U)	333	7,100	0.05	A
<b>Brockman Road</b> McCabe Road to Lyons Road	Major (2U)	1,122	7,100	0.16	A
Lyons Road to Kubler Road	Major (2U)	974	7,100	0.14	A
Kubler Road to SR-98	Major (2U)	977	7,100	0.14	A
SR-98 to Anza Road	Not Classified (2U)	1,130	7,100	0.16	A
<b>Forrester Road</b> I-8 to McCabe Road	Prime (2U)	2,235	7,100	0.31	B
<b>Kubler Road</b> Brockman Road to Ferrell Road	Major (2U)	310	7,100	0.04	A
<b>La Brucherie Road/Ferrell Road</b> McCabe Road to Wahl Road	Major (2U)	2,325	7,100	0.33	B
Wahl Road to Kubler Road	Major (2U)	1,828	7,100	0.26	A
Kubler Road to SR-98	Major (2U)	1,576	7,100	0.22	A
SR-98 to Anza Road	Major (2U)	1,545	7,100	0.22	A
<b>Lyons Road</b> Brockman Road to La Brucherie Road	Major (2U)	244	7,100	0.03	A
<b>McCabe Road</b> Forrester Road to La Brucherie Road	Major (2U)	1,521	7,100	0.21	A
<b>SR-98</b> Drew Road to Brockman Road	State Highway (2U)	2,242	7,100	0.32	B
Brockman Road to Ferrell Road	State Highway (2U)	2,242	7,100	0.32	B
Ferrell Road to Dogwood Road	State Highway (2U)	2,950	7,100	0.42	B

Source: LOS 2014.

Notes: Classification based on 1/29/08 Circulation and Scenic Highways Element.

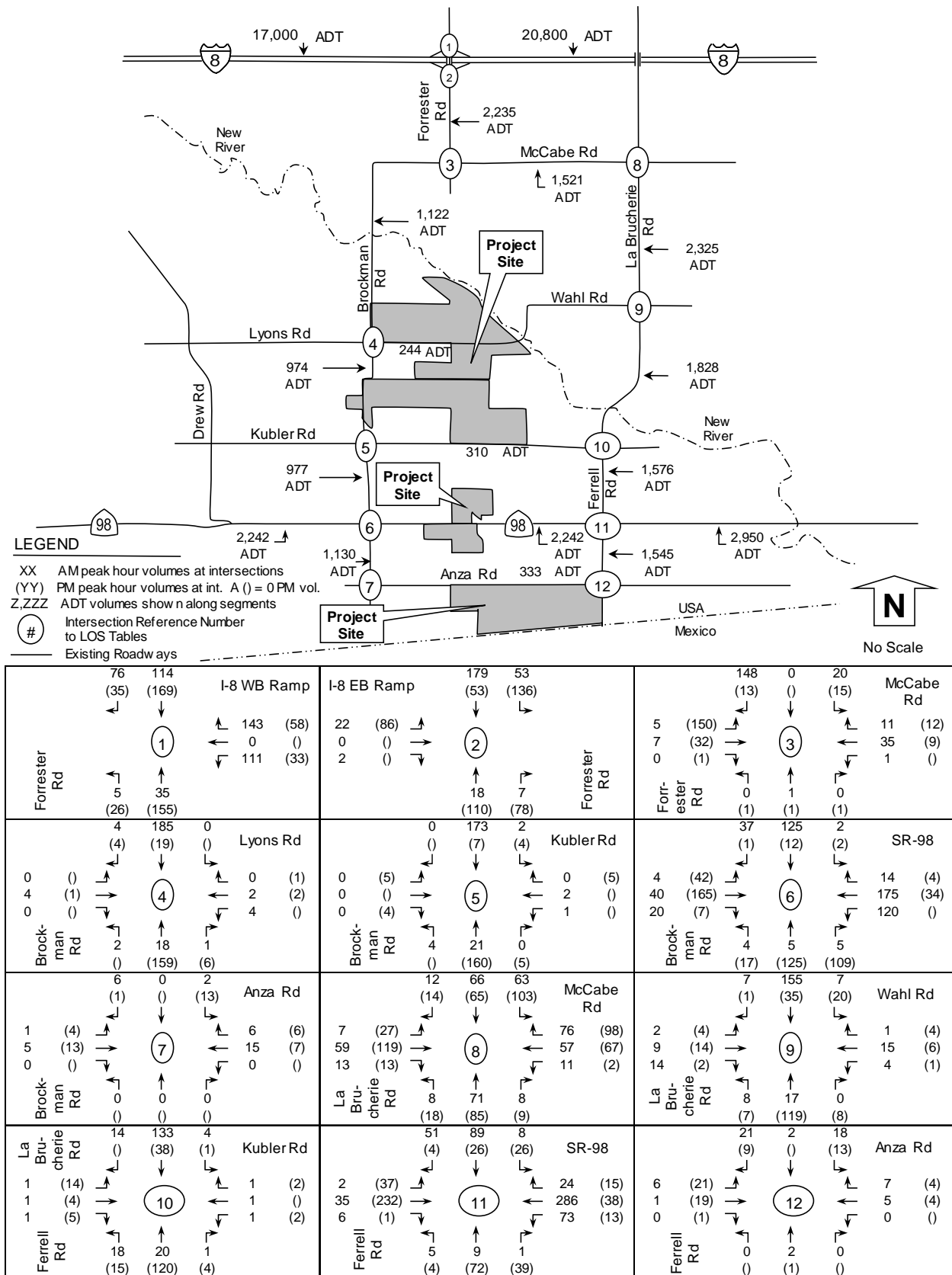
2U = 2-lane undivided roadway.

Daily volume is a 24 hour volume.

LOS: Level of Service. LOS based on actual number of lanes currently constructed.

V/C: Volume to Capacity ratio.

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Source: LOS 2014.

**FIGURE 4.3-9**  
**MID-TERM (YEAR 2019) VOLUMES**

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### Freeway Segment LOS

**Table 4.3-25** summarizes Mid-Term (Year 2019) freeway segment LOS. As shown, the freeway segments were calculated to operate above LOS C. I-8 from Drew Road to Forrester Road would operate at LOS B in the AM and PM peak hour westbound direction. Likewise, I-8 from Forrester Road to Imperial Avenue would operation at LOS B in both the AM and PM peak hour in the westbound direction. All other freeway segments would operate at LOS A. Because, all freeway segments would operate above the LOS C standard, **less than significant impacts** would occur under Mid-Term (Year 2019) conditions.

**TABLE 4.3-25  
MID-TERM (YEAR 2019) FREEWAY LOS**

Freeway Segment	I-8 Drew Road to Forrester Road				I-8 Forrester Road to Imperial Avenue			
Forecasted (Year 2019)								
ADT	17,000				20,800			
Peak Hour	AM		PM		AM		PM	
Direction	EB	WB	EB	WB	EB	WB	EB	WB
Number of Lanes	2	2	2	2	2	2	2	2
Capacity <sup>1</sup>	4,700	4,700	4,700	4,700	4,700	4,700	4,700	4,700
K Factor <sup>2</sup>	0.1076	0.0963	0.0917	0.1517	0.1076	0.0963	0.0917	0.1517
D Factor <sup>3</sup>	0.2616	0.7384	0.4419	0.5581	0.2616	0.7384	0.4419	0.5581
Truck Factor <sup>4</sup>	0.8376	0.8376	0.8376	0.8376	0.8376	0.8376	0.8376	0.8376
Peak Hour Volume	571	1,443	822	1,718	699	1,766	1,006	2,102
V/C	0.122	0.307	0.175	0.366	0.149	0.376	0.214	0.447
LOS	A	B	A	B	A	B	A	B

Source: LOS 2014.

Notes: <sup>1</sup> Capacity of 2,350 pcphpl from CALTRANS' Guide for the Preparation of Traffic Impact Studies, December 2002.

<sup>2</sup> Latest K factor from Caltrans (based on 2007 report), which is the percentage of AADT in both directions.

<sup>3</sup> D factor from Caltrans (based on 2007 report), which when multiplied by K and ADT will provide peak hour volume.

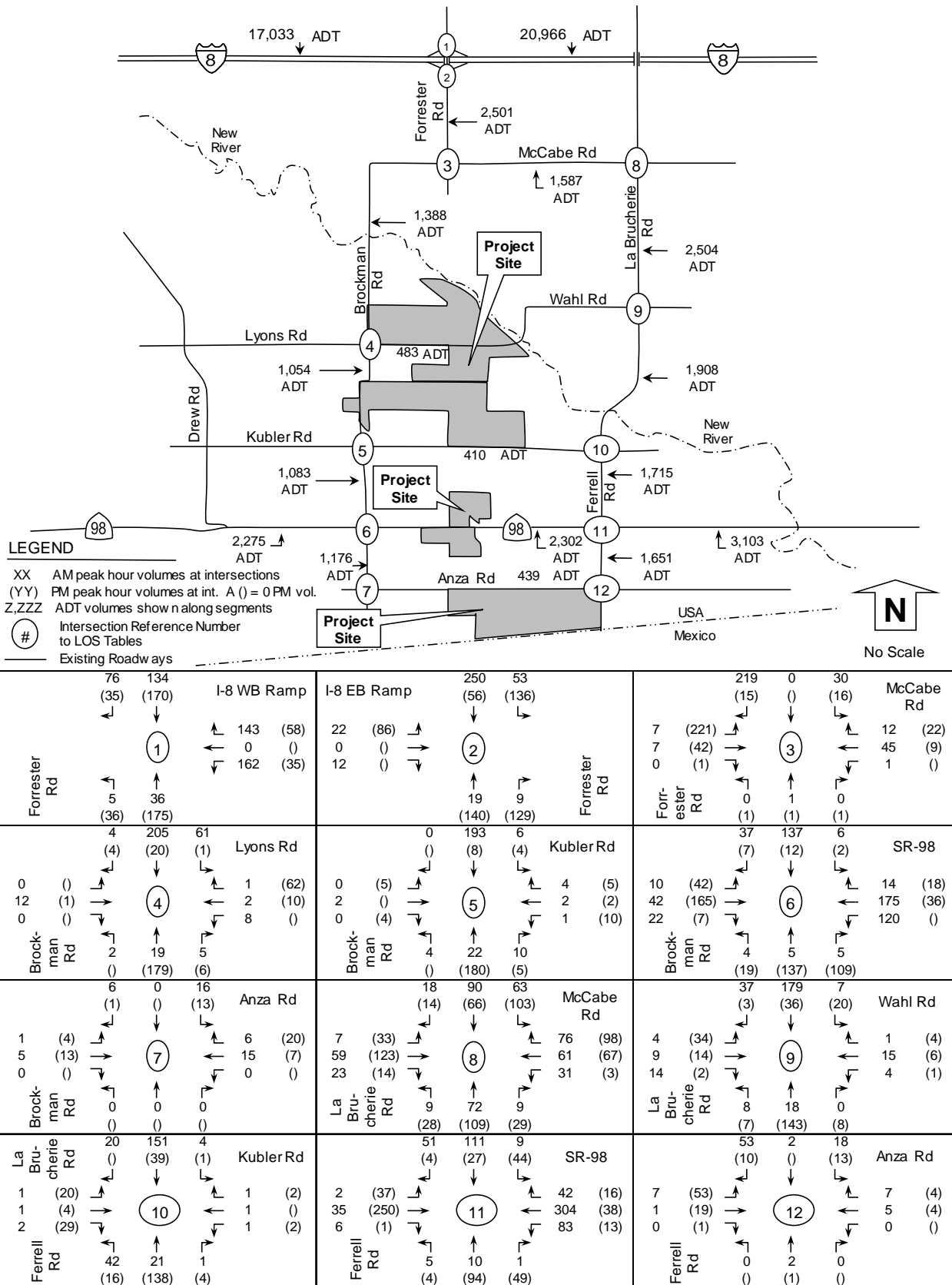
<sup>4</sup> truck factor from Caltrans (based on 2007 report).

Impact? = Direct, Cumulative, or None.

### **Mid-Term (Year 2019) With Project Construction Conditions**

This section documents the addition of Project construction traffic onto Mid-Term (Year 2019) conditions. **Figure 4.3-10** depicts Mid-Term (Year 2019) With Project Construction traffic volumes. Intersection, segment, and freeway LOS are shown in **Table 4.3-26**, **Table 4.3-27** and **Table 4.3-28**.

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Source: LOS 2014.

**FIGURE 4.3-10**  
**MID-TERM (YEAR 2019) WITH PROJECT CONSTRUCTION VOLUMES**



## 4.3 TRANSPORTATION AND CIRCULATION

### Intersection LOS

**Table 4.3-26** summarizes Mid-Term (Year 2019) intersection LOS compared to Mid-Term (Year 2019) With Project construction traffic. (Intersection LOS calculations are included in Appendix T of the Draft Traffic Impact Analysis [Appendix B of this EIR]).

**TABLE 4.3-26  
MID-TERM (YEAR 2019) WITH PROJECT CONSTRUCTION INTERSECTION LOS**

Intersection & (Control) <sup>1</sup>	Movement	Peak Hour	(Year 2019)		(Year 2019) With Project			
			Delay <sup>2</sup>	LOS <sup>3</sup>	Delay <sup>2</sup>	LOS <sup>3</sup>	Delta <sup>4</sup>	Impact <sup>5</sup>
1) Forrester Road at I-8 WB (U)	Minor Leg	AM PM	9.8 10.5	A B	10.5 01.8	B B	0.7 0.3	None None
2) Forrester Road at I-8 EB (U)	Minor Leg	AM PM	11.1 15.7	B C	11.2 17.3	B C	0.1 1.6	None None
3) Forrester Road at McCabe Rd (U)	Minor Leg	AM PM	9.4 10.9	A B	10.0 12.6	B B	0.6 1.7	None None
4) Brockman Road at Lyons Rd (U)	Minor Leg	AM PM	10.4 10.2	B B	12.1 1.4	B B	1.7 0.2	None None
5) Brockman Rd at Kubler Rd (U)	Minor Leg	AM PM	10.2 9.2	B A	10.7 9.9	B A	0.5 0.7	None None
6) Brockman Road at SR-98 (U)	Minor Leg	AM PM	17.4 13.8	C B	19.0 14.5	C B	1.6 0.7	None None
7) Brockman Road at Anza Rd (U)	Minor Leg	AM PM	8.5 8.7	A A	8.7 8.8	A A	0.2 0.1	None None
8) La Brucherie Rd at McCabe Rd(U)	Minor Leg	AM PM	8.5 9.5	A A	8.9 9.9	A A	0.4 0.4	None None
9) La Brucherie Rd at Wahl Rd (U)	Minor Leg	AM PM	10.4 10.0	B B	10.8 10.9	B B	0.4 0.9	None None
10) Ferrell Road at Kubler Rd (U)	Minor Leg	AM PM	9.8 9.8	A A	10.1 9.8	B A	0.9 0.0	None None
11) Ferrell Road at SR-98 (U)	Minor Leg	AM PM	15.6 13.9	C B	18.2 16.1	C C	2.6 2.2	None None
12) Ferrell Road at Anza Road (U)	Minor Leg	AM PM	9.2 9.5	A A	9.2 10.0	A B	0.0 0.5	None None

Source: LOS 2014.

Notes: <sup>1</sup> Intersection Control - (S) Signalized, (U) Un-signalized.

<sup>2</sup> Delay - HCM Average Control Delay in seconds.

<sup>3</sup> LOS: Level of Service. Minor Leg: approach LOS of minor/lesser roadway. All: combined LOS for all approaches.

<sup>4</sup> Delta is the increase in delay from project.

<sup>5</sup> Type of impact: none, direct, or cumulative.

As shown, under Mid-Term (Year 2019) With Project Construction, all Project study area intersections are calculated to operate at LOS C or better. One intersection (Ferrell Road at SR-98) would operate at LOS C in both the AM and PM peak hour. Forrester Road at I-8 (eastbound) would operate at LOS C in the PM peak hour (and LOS B in the AM peak hour); the intersection of Brockman Road at SR-98 would operate at LOS C in the AM peak hour (and LOS B in the PM peak hour). Four intersections operate at LOS B in both the AM and PM peak hours. Likewise, two intersections (Brockman Road at Anza Road and La Brucherie Road at McCabe Road) operate at LOS A in both the AM and PM peak hours. Two intersections (Brockman Road at Kubler Road and Ferrell Road at Kubler Road) operate at LOS B in the AM peak hour only and LOS A in the PM peak hour. Another intersection (Ferrell Road at Anza Road) operates at LOS A in the AM peak hour only and LOS B in the PM peak hour. No significant impacts to Project study area intersections were calculated due to the addition of construction traffic to existing traffic under Mid-Term (Year 2019)

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conditions. Moreover, the increases in traffic resulting from construction of the proposed Project would not exceed LOS standards. Therefore, **less than significant impacts** to Project study area intersections would result under Mid-Term (Year 2019) With Project Construction conditions.

### Roadway Segment LOS

**Table 4.3-27** summarizes roadway segment LOS for Mid-Term (Year 2019) With and Without Project Construction. As shown, all segments would continue to operate above LOS C (at LOS A or LOS B). No change in LOS would occur for any segment with the addition of Near-Term (Year 2016) Project construction traffic. Therefore, **less than significant impacts** to Project study area roadway segments would occur under Near-Term (Year 2019) With Project Construction conditions.

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## 4.3 TRANSPORTATION AND CIRCULATION

**TABLE 4.3-27**  
**MID-TERM (YEAR 2019) WITH PROJECT CONSTRUCTION ROADWAY SEGMENT LOS**

Segment	Classification (as built)	(Year 2019)				Project Daily Volume	(Year 2019) With Project					
		Daily Volume	LOS C Capacity	V/C	LOS		Daily Volume	LOS C Capacity	V/C	LOS	Change in V/C	Impact?
<b>Anza Road</b>												
Brockman Road to Ferrell Road	Local (2U)	333	7,100	0.05	A	106	439	7,100	0.06	A	0.01	None
<b>Brockman Road</b>												
McCabe Road to Lyons Road	Major (2U)	1,122	7,100	0.16	A	266	1,388	7,100	0.20	A	0.04	None
Lyons Road to Kubler Road	Major (2U)	974	7,100	0.14	A	80	1,054	7,100	0.15	A	0.01	None
Kubler Road to SR-98	Major (2U)	977	7,100	0.14	A	106	1,083	7,100	0.15	A	0.01	None
SR-98 to Anza Road	Not Classified (2U)	1,130	7,100	0.016	A	46	1,176	7,100	0.17	A	0.01	None
<b>Forrester Road</b>												
I-8 to McCabe Road	Prime (2U)	2,235	7,100	0.31	B	266	2,501	7,100	0.35	B	0.04	None
<b>Kubler Road</b>												
Brockman Road to Ferrell Road	Major (2U)	310	7,100	0.04	A	100	410	7,100	0.06	A	0.01	None
<b>La Brucherie Road/Ferrell Road</b>												
McCabe Road to Wahl Road	Major (2U)	2,328	7,100	0.33	B	179	2,504	7,100	0.35	B	0.03	None
Wahl Road to Kubler Road	Major (2U)	1,828	7,100	0.26	A	80	1,908	7,100	0.27	A	0.01	None
Kubler Road to SR-98	Major (2U)	1,576	7,100	0.22	A	139	1,715	7,100	0.27	A	0.02	None
SR-98 to Anza Road	Major (2U)	1,545	7,100	0.22	A	106	1,651	7,100	0.23	A	0.01	None
<b>Lyons Road</b>												
Brockman Road to La Brucherie Road	Major (2U)	244	7,100	0.33	A	239	483	7,100	0.07	A	0.03	None
<b>McCabe Road</b>												
Forrester Road to La Brucherie Road	Major (2U)	1,521	7,100	0.21	A	66	1,587	7,100	0.22	A	0.01	None
<b>SR-98</b>												
Drew Road to Brockman Road	State Highway (2U)	2,242	7,100	0.32	B	33	2,275	7,100	0.32	B	0.00	None
Brockman Road to Ferrell Road	State Highway (2U)	2,242	7,100	0.32	B	60	2,302	7,100	0.32	B	0.01	None
Ferrell Road to Dogwood Road	State Highway (2U)	2,242	7,100	0.42	B	153	3,103	7,100	0.44	B	0.02	None

Source: LOS 2014.

Notes: Classification based on the Imperial County General Plan, Circulation and Scenic Highways Element, January 29, 2008.

2U = 2-lane undivided roadway. Daily volume is a 24 hour volume.

LOS: Level of Service. LOS based on actual number of lanes currently constructed.

V/C: Volume to Capacity ratio.

Impact? = type of impact (none, cumulative, or direct).

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### Freeway Segment LOS

**Table 4.3-28** summarizes freeway segment LOS under Mid-Term (Year 2019) With and Without Project Construction. As shown, both freeway segments were calculated to operate above LOS C (at LOS A and LOS B). Both I-8 from Drew Road to Forrester Road and I-8 from Forrester Road to Imperial would continue to operate at LOS A in the AM peak hour in the eastbound and westbound direction and LOS B in the AM and PM in the eastbound and westbound direction. In fact, no change in LOS would occur with the addition of Project traffic. Moreover, the increases in traffic resulting from Project construction would not exceed V/C ratios or LOS standards. Therefore, **less than significant impacts** to Project study area freeway segments would occur under Mid-Term (Year 2019) With Project construction.

**TABLE 4.3-28**  
**MID-TERM (YEAR 2019) WITHOUT AND WITH PROJECT CONSTRUCTION FREEWAY SEGMENT LOS**

Freeway Segment	I-8 Drew Road to Forrester Road				I-8 Forrester Road to Imperial Avenue			
Forecasted (Year 2019) Without Project								
ADT	17,000				20,800			
Peak Hour	AM		PM		AM		PM	
Direction	EB	WB	EB	WB	EB	WB	EB	WB
Number of Lanes	2	2	2	2	2	2	2	2
Capacity <sup>1</sup>	4,700	4,700	4,700	4,700	4,700	4,700	4,700	4,700
K Factor <sup>2</sup>	0.1076	0.0963	0.0917	0.1517	0.1076	0.0963	0.0917	0.1517
D Factor <sup>3</sup>	0.2616	0.7384	0.4419	0.5581	0.2616	0.7384	0.4419	0.5581
Truck Factor <sup>4</sup>	0.8376	0.8376	0.8376	0.8376	0.8376	0.8376	0.8376	0.8376
Peak Hour Volume	571	1,443	822	1,718	699	1,766	1,006	2,102
V/C	0.122	0.307	0.175	0.366	0.149	0.376	0.214	0.447
LOS	A	B	A	B	A	B	A	B
<b>Project Peak Hour Volume</b>	10	0	0	10	2	51	51	2
2019 With Project								
Peak Hour Volume	581	1,443	822	1,728	701	1,817	1,057	2,104
V/C	0.124	0.307	0.175	0.368	0.149	0.387	0.255	0.448
LOS	A	B	A	B	A	B	A	B
Increase in V/C	0.002	0.000	0.000	0.002	0.000	0.011	0.011	0.000
Impact	None	None	None	None	None	None	None	None

Source: LOS 2014.

Notes: <sup>1</sup> Capacity of 2,350 pcphpl from CALTRANS' Guide for the Preparation of Traffic Impact Studies, December 2002.

K factor from Caltrans (based on 2007 report), which is the percentage of AADT in both directions.

D factor from Caltrans (based on 2007 report), which when multiplied by K and ADT will provide peak hour volume.

truck factor from Caltrans (based on 2007 report).

Impact? = Direct, Cumulative, or None.

Overall, under Mid-Term (Year 2019) With and Without Project construction, the Project study area intersections, roadway segments and freeway segments were calculated to operate at LOS C or better. Thus, **less than significant impacts** were calculated with the addition of Project construction traffic to existing traffic volumes under Mid-Term (Year 2019) With Project construction.

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### Mitigation Measures

None required.

### Significance After Mitigation

Not applicable.

### **Conflict with Applicable Plan/LOS Standard - Long-Term (Year 2024) With Project**

**Impact 4.3.4** Implementation of the proposed Project would add traffic to existing traffic volumes on Project study area intersections, roadway segments and freeway segments during (Year 2024) Project construction. The additional traffic would not result in an exceedance of LOS C. Therefore, conflicts with the Imperial County General Plan Circulation and Scenic Highways Element are **considered less than significant** under Long-Term (Year 2024) With Project conditions.

### ***Long-Term (Year 2024)***

This section documents a Long-Term (Year 2024) conditions in the case the Full Build-out Scenario constructed at the end of the 10-year period permitted for CUP construction. The (Year 2024) background volumes are based on increasing the existing (Year 2013) volumes by an annual growth rate of 2.8% as described in the Near-Term (Year 2016) Conditions' Section. **Figure 4.3-11** shows (Year 2024) traffic volumes. Intersection, segment, and freeway LOS are shown in **Table 4.3-29**, **Table 4.3-30** and **Table 4.3-31**.

### Intersection LOS

**Table 4.3-29** summarizes Long-Term (Year 2024) intersection LOS. (Intersection LOS calculations are included in Appendix V of the Draft Traffic Impact Analysis [**Appendix B** of this EIR]).

**TABLE 4.3-29  
LONG-TERM (YEAR 2024) INTERSECTION LOS**

Intersection & (Control) <sup>1</sup>	Movement	Peak Hour	(Year 2024)	
			Delay <sup>2</sup>	LOS <sup>3</sup>
1) Forrester Road at I-8 WB (U)	Minor Leg	AM PM	10.2 11.0	B B
2) Forrester Road at I-8 EB (U)	Minor Leg	AM PM	11.6 18.4	B C
3) Forrester Road at McCabe Road (U)	Minor Leg	AM PM	9.5 11.5	A B
4) Brockman Road at Lyons Road (U)	Minor Leg	AM PM	10.7 10.4	B B
5) Brockman Road at Kubler Road (U)	Minor Leg	AM PM	10.5 9.3	B A
6) Brockman Road at SR-98 (U)	Minor Leg	AM PM	17.7 15.9	C C
7) Brockman Road at Anza Road (U)	Minor Leg	AM PM	8.5 8.8	A A
8) La Brucherie Road at McCabe Road (U)	Minor Leg	AM PM	8.8 10.3	A B
9) La Brucherie Road at Wahl Road (U)	Minor Leg	AM	10.8	B

## 4.3 TRANSPORTATION AND CIRCULATION

**TABLE 4.3-29**  
**LONG-TERM (YEAR 2024) INTERSECTION LOS**

Intersection & (Control) <sup>1</sup>	Movement	Peak Hour	(Year 2024)	
			Delay <sup>2</sup>	LOS <sup>3</sup>
		PM	10.2	B
10) Ferrell Road at Kubler Road (U)	Minor Leg	AM	10.0	B
		PM	10.1	B
11) Ferrell Road at SR-98 (U)	Minor Leg	AM	18.5	C
		PM	15.7	C
12) Ferrell Road at Anza Road (U)	Minor Leg	AM	9.2	A
		PM	8.9	A

Source: LOS 2014.

Notes: <sup>1</sup> Intersection Control - (S) Signalized, (U) Un-signalized.

<sup>2</sup> Delay - HCM Average Control Delay in seconds.

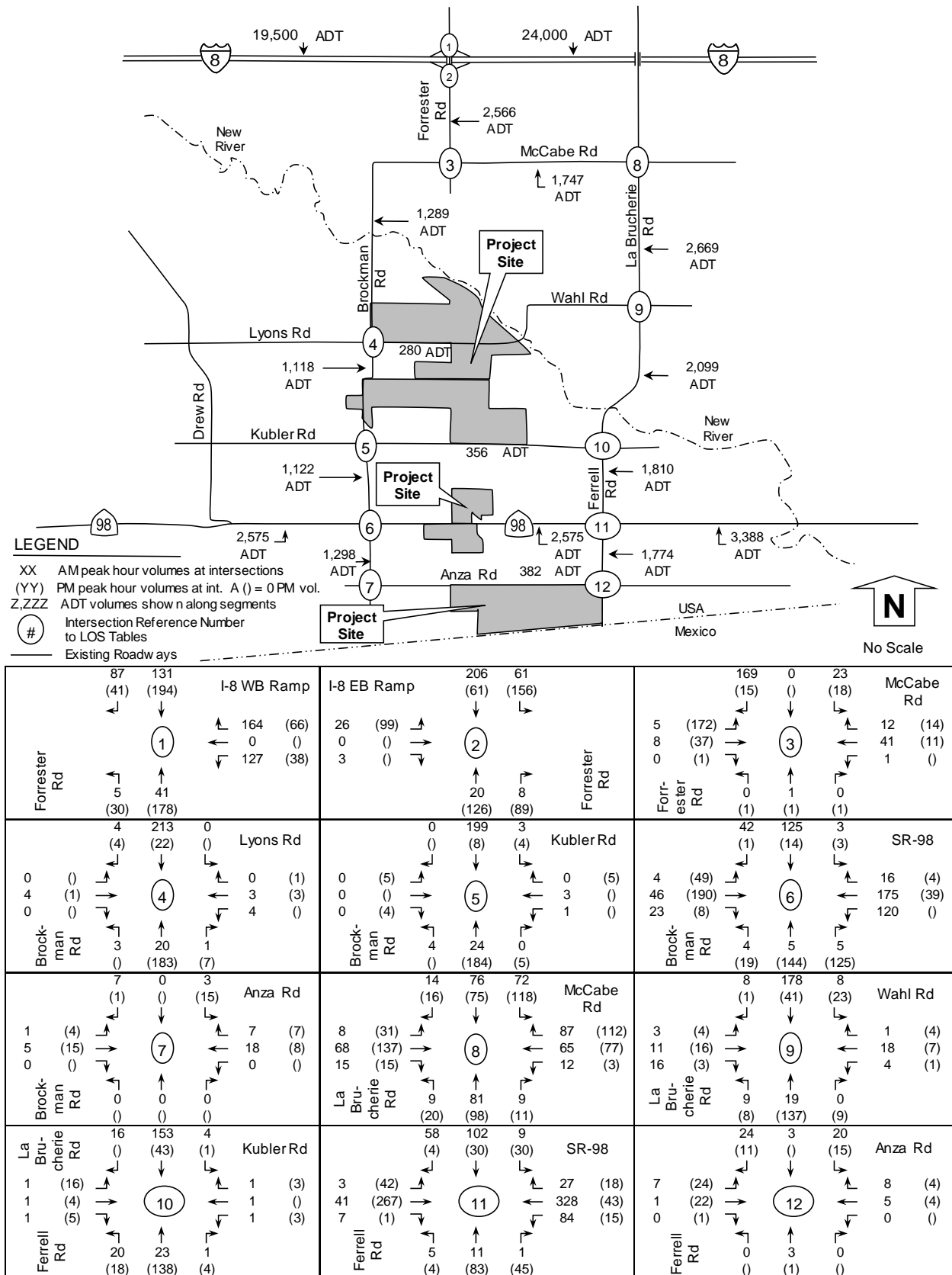
<sup>3</sup> LOS: Level of Service.

Minor Leg: approach LOS of minor/lesser roadway.

All: combined LOS for all approaches.

Under Long-Term (Year 2024) Conditions, the Project study area intersections were calculated to operate at LOS C or better. Two intersections (Brockman Road at SR-98 and Ferrell Road at SR-98) would operate at LOS C in both the AM and PM peak hours. In addition, Forrester Road at I-8, eastbound would operate at LOS C in the PM peak hour and LOS B in the AM peak hour. Four intersections would operate at LOS B in both the AM and PM peak hours. Two intersections (Forrester Road at McCabe Road and LaBrucherie at McCabe Road) would operate at LOS A in the AM peak hour and LOS B in the PM peak hour. One intersection (Brockman Road at Kubler Road) would operate at LOS B in the AM peak hour and LOS A in the PM peak hour. All or the roadway segments would be operating with **less than significant impacts** with regard to LOS under Long-Term (Year 2024) conditions.

## 4.3 TRANSPORTATION AND CIRCULATION



Source: LOS 2014.

**FIGURE 4.3-11**  
**LONG-TERM (YEAR 2024) VOLUMES**



## 4.3 TRANSPORTATION AND CIRCULATION

### Roadway Segment LOS

**Table 4.3-30** summarizes roadway segment LOS for Long-Term (Year 2024) conditions. As shown, all segments would operate above LOS C. Specifically, all segments would operate at LOS A with the exceptions of: the segment along Forrester Road; three portions of the La Brucherie Road/Ferrell Road segment; the segment of McCabe Road; and all three portions of the along the segment of SR-98, which would all operate at LOS B. Because, all roadway segments would operate above the LOS C standard, **less than significant impacts** would occur under Long-Term (Year 2024) conditions.

**TABLE 4.3-30  
LONG-TERM (YEAR 2024) ROADWAY SEGMENT LOS**

Roadway Segment	Classification (as built)	(Year 2024)				
		Daily Volume	# of Lanes	LOS C Capacity	V/C	LOS
<b>Anza Road</b>						
Brockman Road to Ferrell Road	Local (2U)	382	2	7,100	0.05	A
<b>Brockman Road</b>						
McCabe Road to Lyons Road	Major (2U)	1,289	2	7,100	0.18	A
Lyons Road to Kubler Road	Major (2U)	1,188	2	7,100	0.16	A
Kubler Road to SR-98	Major (2U)	1,122	2	7,100	0.16	A
SR-98 to Anza Road	Not Classified (2U)	1,298	2	7,100	0.18	A
<b>Forrester Road</b>						
I-8 to McCabe Road	Prime (2U)	2,566	2	7,100	0.36	B
<b>Kubler Road</b>						
Brockman Road to Ferrell Road	Major (2U)	356	2	7,100	0.05	A
<b>La Brucherie Road/Ferrell Road</b>						
McCabe Road to Wahl Road	Major (2U)	2,669	2	7,100	0.38	B
Wahl Road to Kubler Road	Major (2U)	2,099	2	7,100	0.30	B
Kubler Road to SR-98	Major (2U)	1,810	2	7,100	0.25	B
SR-98 to Anza Road	Major (2U)	1,774	2	7,100	0.25	A
<b>Lyons Road</b>						
Brockman Road to La Brucherie Road	Major (2U)	280	2	7,100	0.04	A
<b>McCabe Road</b>						
Forrester Road to La Brucherie Road	Major (2U)	1,747	2	7,100	0.25	B
<b>SR-98</b>						
Drew Road to Brockman Road	State Highway (2U)	2,575	2	7,100	0.36	B
Brockman Road to Ferrell Road	State Highway (2U)	2,575	2	7,100	0.36	B
Ferrell Road to Dogwood Road	State Highway (2U)	3,388	2	7,100	0.48	B

Source: LOS 2014.

Notes: Classification based on 1/29/08 Circulation and Scenic Highways Element.

2U = 2-lane undivided roadway.

Daily volume is a 24 hour volume.

LOS: Level of Service. LOS based on actual number of lanes currently constructed.

V/C: Volume to Capacity ratio.

### Freeway Segment LOS

**Table 4.3-31** summarizes Long-Term (Year 2024) freeway segment LOS. As shown, the freeway segments were calculated to operate at LOS C or better. Only the segment of I-8 from Forrester Road to Imperial Avenue would operate at LOS C during the PM peak hour in the westbound direction. I-8 from Drew Road

## 4.3 TRANSPORTATION AND CIRCULATION

to Forrester Road would operate at LOS B in the PM peak hour in the westbound direction. Likewise, I-8 from Forrester Road to Imperial Avenue would operation at LOS B in the AM peak hour in the westbound direction. All other freeway segments would operate at LOS A. Because all freeway segments would operate above the LOS C standard, **less than significant impacts** would occur under Long-Term (Year 2024) conditions.

**TABLE 4.3-31  
LONG-TERM (YEAR 2024) FREEWAY SEGMENT LOS**

Freeway Segment	I-8 Drew Road to Forrester Road				I-8 Forrester Road to Imperial Avenue			
Forecasted (Year 2024)								
ADT	19,500				24,000			
Peak Hour	AM		PM		AM		PM	
Direction	EB	WB	EB	WB	EB	WB	EB	WB
Number of Lanes	2	2	2	2	2	2	2	2
Capacity <sup>1</sup>	4,700	4,700	4,700	4,700	4,700	4,700	4,700	4,700
K Factor <sup>2</sup>	0.1076	0.0963	0.0917	0.1517	0.1076	0.0963	0.0917	0.1517
D Factor <sup>3</sup>	0.2616	0.7384	0.4419	0.5581	0.2616	0.7384	0.4419	0.5581
Truck Factor <sup>4</sup>	0.8376	0.8376	0.8376	0.8376	0.8376	0.8376	0.8376	0.8376
Peak Hour Volume	655	1,655	943	1,971	807	2,037	1,161	2,426
V/C	0.139	0.352	0.201	0.419	0.172	0.434	0.247	0.516
LOS	A	B	A	B	A	B	A	C

Source: LOS 2014.

Notes: <sup>1</sup> Capacity of 2,350 pcphpl from Caltrans' Guide for the Preparation of Traffic Impact Studies, December 2002.

<sup>2</sup> Latest K factor from Caltrans (based on 2007 report), which is the percentage of AADT in both directions.

<sup>3</sup> Latest D factor from Caltrans (based on 2007 report), which when multiplied by K and ADT will provide peak hour volume.

<sup>4</sup> Latest truck factor from Caltrans (based on 2007 report).

### Long-Term (Year 2024) With Project Construction Conditions

This section documents the addition of construction traffic onto long-term (Year 2024) conditions. **Figure 4.3-12** depicts (Year 2024) With Project Construction traffic volumes. Intersection, segment, and freeway LOS are shown in **Table 4.3-32**, **Table 4.3-33** and **Table 4.3-34**.

#### Intersection LOS

**Table 4.3-32** summarizes Long-Term (Year 2024) intersection LOS compared to Long-Term (Year 2024) With Project construction traffic. (Intersection LOS calculations are included in Appendix W of the Draft Traffic Impact Analysis [**Appendix B** of this EIR]).

As shown, under Long-Term (Year 2024) With Project Construction, all Project study area intersections are calculated to operate at LOS C or better. Only three intersections would experience a decline in LOS with the addition of construction traffic. These include Forrester Road at McCabe Road which would decline from LOS A to LOS B in the AM peak hour; and Brockman Road at Kubler Road and Ferrell Road at Anza Road, both of which would experience a decline from LOS A to LOS B in the PM peak hour. All other intersections would not experience a decline in LOS including the intersection of Brockman Road at SR-98 and Ferrell Road at SR-98 which would continue to operate at LOS C in both the AM and PM peak hours. Likewise, Forrester Road at I-8 (eastbound) would continue to operate at LOS C in the PM peak hour with the addition of construction traffic. Overall, the increases in construction traffic in Long-Term (Year 2024) would not exceed LOS standards. Therefore, **less than significant** impacts to Project study area intersections would result under Long-Term (Year 2024) With Project Construction conditions.

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**TABLE 4.3-32**  
**LONG-TERM (YEAR 2024) WITH PROJECT CONSTRUCTION INTERSECTION LOS**

Intersection & (Control) <sup>1</sup>	Movement	Peak Hour	Existing (Year 2024)		Existing (Year 2024) With Project			
			Delay <sup>2</sup>	LOS <sup>3</sup>	Delay <sup>2</sup>	LOS <sup>3</sup>	Delta <sup>4</sup>	Impact <sup>5</sup>
1) Forrester Road at I-8 WB (U)	Minor Leg	AM	10.2	B	10.9	B	0.7	None
		PM	11.0	B	11.4	B	0.4	None
2) Forrester Road at I-8 EB (U)	Minor Leg	AM	11.6	B	11.8	B	0.2	None
		PM	18.4	C	20.6	C	2.2	None
3) Forrester Road at McCabe Road (U)	Minor Leg	AM	9.5	A	10.2	B	0.7	None
		PM	11.5	B	13.3	B	1.8	None
4) Brockman Road at Lyons Road (U)	Minor Leg	AM	10.7	B	12.4	B	1.7	None
		PM	10.4	B	10.6	B	0.2	None
5) Brockman Road at Kubler Road (U)	Minor Leg	AM	10.5	B	10.9	B	0.4	None
		PM	9.3	A	10.1	B	0.8	None
6) Brockman Road at SR-98 (U)	Minor Leg	AM	17.7	C	19.4	C	1.7	None
		PM	15.9	C	16.9	C	1.0	None
7) Brockman Road at Anza Road (U)	Minor Leg	AM	8.5	A	8.7	A	0.2	None
		PM	8.8	A	8.8	A	0.0	None
8) La Brucherie Road at McCabe Road (U)	Minor Leg	AM	8.8	A	9.3	A	0.5	None
		PM	10.3	B	10.9	B	0.6	None
9) La Brucherie Road at Wahl Road (U)	Minor Leg	AM	10.8	B	11.2	B	0.4	None
		PM	10.2	B	10.6	B	0.4	None
10) Ferrell Road at Kubler Road (U)	Minor Leg	AM	10.0	B	10.3	B	0.3	None
		PM	10.1	B	10.1	B	0.0	None
11) Ferrell Road at SR-98 (U)	Minor Leg	AM	18.5	C	22.5	C	4.0	None
		PM	15.7	C	18.7	C	3.0	None
12) Ferrell Road at Anza Road (U)	Minor Leg	AM	9.2	A	9.2	A	0.0	None
		PM	8.9	A	10.1	B	1.2	None

Source: LOS 2014.

Notes: <sup>1</sup> Intersection Control – (S) Signalized, (U) Un-signalized

<sup>2</sup> Delay – HCM Average Control Delay in seconds

<sup>3</sup> LOS: Level of Service

is the increase in delay from project.

of impact: none, direct, or cumulative.

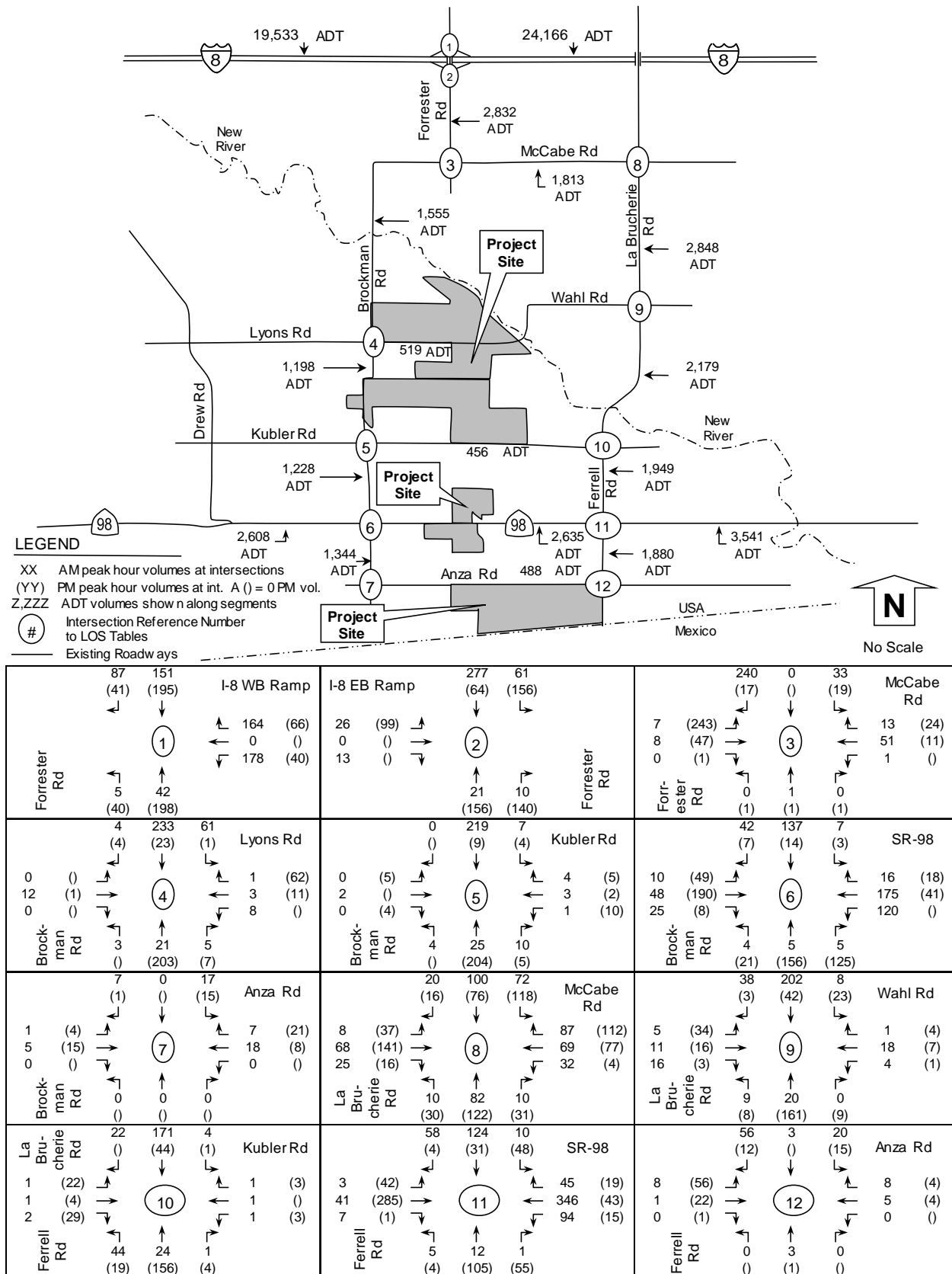
Minor Leg: approach LOS of minor/lesser roadway.

All: combined LOS for all approaches.

### Roadway Segment LOS

**Table 4.3-33** summarizes roadway segment LOS for Long-Term (Year 2024) With and Without Project Construction. As shown, all segments would continue to operate above LOS C (at LOS A or LOS B). No change in LOS would occur for any roadway segment with the addition of Long-Term (Year 2024) Project construction traffic. Therefore, **less than significant** impacts to Project study area roadway segments would result under Long-Term (Year 2024) With Project construction conditions.

## 4.3 TRANSPORTATION AND CIRCULATION



Source: LOS 2014.

**FIGURE 4.3-12**

**LONG-TERM (YEAR 2024) WITH PROJECT CONSTRUCTION VOLUMES**

## 4.3 TRANSPORTATION AND CIRCULATION

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## 4.3 TRANSPORTATION AND CIRCULATION

**TABLE 4.3-33**  
**LONG-TERM (YEAR 2024) WITH PROJECT CONSTRUCTION ROADWAY SEGMENT LOS**

Roadway Segment	Classification (as built)	Long-Term (Year 2024) With Cumulative				Project Daily Volume	Long-Term (Year 2024) With Cumulative With Project					
		Daily Volume	LOS C Capacity	V/C	LOS		Daily Volume	LOS C Capacity	V/C	LOS	Change in V/C	Significant Impact?
<b>Anza Road</b> Brockman Road to Ferrell Road	Local (2U)	382	7,100	0.05	A	106	488	7,100	0.07	A	0.01	None
<b>Brockman Road</b> McCabe Road to Lyons Road	Major (2U)	1,289	7,100	0.18	A	266	1,555	7,100	0.22	A	0.04	None
Lyons Road to Kubler Road	Major (2U)	1,118	7,100	0.16	A	80	1,198	7,100	0.17	A	0.01	None
Kubler Road to SR-98	Major (2U)	1,122	7,100	0.16	A	106	1,228	7,100	0.17	A	0.01	None
SR-98 to Anza Road	Not Classified (2U)	1,298	7,100	0.18	A	46	1,344	7,100	0.19	A	0.01	None
<b>Forrester Road</b> I-8 to McCabe Road	Prime (2U)	2,566	7,100	0.36	B	266	2,832	7,100	0.40	B	0.04	None
<b>Kubler Road</b> Brockman Road to Ferrell Road	Major (2U)	356	7,100	0.05	A	100	456	7,100	0.06	A	0.01	None
<b>La Brucherie Road/Ferrell Road</b> McCabe Road to Wahl Road	Major (2U)	2,669	7,100	0.38	B	179	2,848	7,100	0.40	B	0.03	None
Wahl Road to Kubler Road	Major (2U)	2,099	7,100	0.30	B	80	2,179	7,100	0.31	B	0.01	None
Kubler Road to SR-98	Major (2U)	1,810	7,100	0.25	B	139	1,949	7,100	0.27	B	0.02	None
SR-98 to Anza Road	Major (2U)	1,775	7,100	0.25	A	106	1,880	7,100	0.26	A	0.01	None
<b>Lyons Road</b> Brockman Road to La Brucherie Rd	Major (2U)	280	7,100	0.04	A	239	519	7,100	0.07	A	0.03	None
<b>McCabe Road</b> Forrester Road to La Brucherie Rd	Major (2U)	1,747	7,100	0.25	B	66	1,813	7,100	0.26	B	0.01	None
<b>SR-98</b> Drew Road to Brockman Road	State Highway (2U)	2,575	7,100	0.36	B	33	2,608	7,100	0.37	B	0.00	None
Brockman Road to Ferrell Road	State Highway (2U)	2,575	7,100	0.36	B	60	2,635	7,100	0.37	B	0.01	None
Ferrell Road to Dogwood Road	State Highway (2U)	3,388	7,100	0.48	B	153	3,541	7,100	0.50	B	0.02	None

Source: LOS 2014.

Notes: Classification based on Imperial County General Plan, Circulation and Scenic Highways Element, January 29, 2008.

2U = 2-lane undivided roadway.

Daily volume is a 24 hour volume.

LOS: Level of Service. LOS based on actual number of lanes currently constructed.

V/C: Volume to Capacity ratio.

Impact? = type of impact (none, cumulative, or direct).

## 4.3 TRANSPORTATION AND CIRCULATION

### Freeway Segment LOS

**Table 4.3-34** summarizes freeway segment LOS under Long-Term (Year 2024) With and Without Project Construction. As shown, both freeway segments were calculated to operate at or above LOS C. I-8 from Drew Road to Forrester Road would continue to operate at LOS A in the AM and PM peak hour in the eastbound direction and LOS B in the AM and PM peak hour in the westbound direction. I-8 from Forrester Road to Imperial Avenue would continue to operate at LOS A during the AM and PM peak hour in the eastbound direction but would decline from LOS B in the AM peak hour in the westbound direction to LOS C in the PM peak hour. Moreover, the increases in traffic resulting from Project construction would not exceed V/C ratios or LOS standards. Therefore, **less than significant impacts** to Project study area freeway segments would occur under Long-Term (Year 2024) With Project construction.

**TABLE 4.3-34**  
**LONG-TERM (YEAR 2024) WITH PROJECT CONSTRUCTION FREEWAY SEGMENT LOS**

Freeway Segment	I-8 Drew Road to Forrester Road				I-8 Forrester Road to Imperial Avenue			
Forecasted Long-Term (Year 2024)								
ADT	19,500				24,000			
Peak Hour	AM		PM		AM		PM	
Direction	EB	WB	EB	WB	EB	WB	EB	WB
Number of Lanes	2	2	2	2	2	2	2	2
Capacity <sup>1</sup>	4,700	4,700	4,700	4,700	4,700	4,700	4,700	4,700
K Factor <sup>2</sup>	0.1076	0.0963	0.0917	0.1517	0.1076	0.0963	0.0917	0.1517
D Factor <sup>3</sup>	0.2616	0.7384	0.4419	0.5581	0.2616	0.7384	0.4419	0.5581
Truck Factor <sup>4</sup>	0.8376	0.8376	0.8376	0.8376	0.8376	0.8376	0.8376	0.8376
Peak Hour Volume	655	1,655	943	1,971	807	2,037	1,161	2,426
V/C	0.139	0.352	0.201	0.419	0.172	0.434	0.247	0.516
LOS	A	B	A	B	A	B	A	C
Project Peak Hour Volume	10	0	0	10	2	051	51	2
Long-Term (Year 2024) With Project								
Peak Hour Volume	665	1,655	943	1,981	809	2,088	1,212	2,428
V/C	0.142	0.352	0.201	0.421	0.172	0.444	0.258	0.517
LOS	A	B	A	B	A	B	A	C
Increase in V/C	0.002	0.000	0.000	0.002	0.000	0.011	0.011	0.000
Impact	None	None	None	None	None	None	None	None

Source: LOS 2014.

Notes: <sup>1</sup> Capacity of 2,350 pcphpl from CALTRANS' Guide for the Preparation of Traffic Impact Studies, December 2002.

K factor from Caltrans (based on 2007 report), which is the percentage of AADT in both directions.

D factor from Caltrans (based on 2007 report), which when multiplied by K and ADT will provide peak hour volume.

truck factor from Caltrans (based on 2007 report).

Impact? = Direct, Cumulative, or None.

Overall, under Long-Term (Year 2024) With and Without Project construction, the Project study area intersections, roadway segments and freeway segments were calculated to operate at LOS C or better. Thus, **less than significant** impacts were calculated with the addition of Project construction traffic to existing traffic volumes under Long-Term (Year 2024) With Project construction conditions.

## 4.3 TRANSPORTATION AND CIRCULATION

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### Mitigation Measures

None required.

### Significance After Mitigation

Not applicable.

### **Increase Hazards Due to a Design Feature – Driveways and Travel Speeds**

**Impact 4.3.5** Implementation of the proposed Project would not require provision of left-turn lanes at Project driveways to allow access to any of the CUPs. No design features are proposed that would result in hazards. Likewise, area roadways are currently traveled by farm equipment similar in size and speed to construction equipment necessary for the proposed Project. Therefore, impacts resulting from an increase in hazards due to a design feature or an incompatible use are considered **less than significant**.

### **FULL BUILD-OUT SCENARIO/PHASED CUP SCENARIO**

#### ***Construction***

Multiple County maintained roads provide access throughout the Project area. These roads are currently traveled by farm equipment used to maintain and harvest crops currently grown on the solar field site parcels and surrounding agricultural lands. Farm equipment and construction equipment are of similar size and travel at similar speeds. Thus, the introduction of construction equipment onto area roadways would not pose a hazard or be incompatible with existing uses.

Access to each CUP will primarily be via the following paved roads: County Highway S30, Anza Road, Kubler Road, Lyons Road, and SR-98 (refer to Figures 2.0-6 thru 2.0-22 in Chapter 2.0, Project Description). Additionally, the Project may use County maintained unpaved roads when access from existing paved roads or roads internal to the Project boundary is unavailable. These unpaved roads would include Wahl Road, Mandrapa Road, Ferrell Road, George Road, Preston Road, and Rockwood Road. Multiple gate restricted access points will be used during construction. Access to components of the solar field will be controlled through security gates at several entrances. No left turn lanes are warranted during Project construction and none of access points present a hazard to traffic along adjacent roadways. Therefore, **less than significant impacts** are identified with regard to hazards due to a design feature or incompatible use during construction of either the Full Build-Out Scenario or the Phased CUP Scenario.

#### ***Operation***

During Project operation, access to each CUP (13-0036 thru 13-0052) will be controlled and gates will be installed at the access roads. The parking lot(s) will meet the requirements of the Imperial County Land Use Ordinance Division 3 Chapter 1 90302.02 Development of Standard (e). All driveways leading to the O&M building(s) will be surfaced with a minimum of three (3) inches of asphaltic concrete paving or higher quality material. Incorporation of these access points and paving features would not present a hazard. Therefore, less than significant impacts are identified with regard to hazards due to a design feature during operation for either the Full Build-Out Scenario or Phased CUP Scenario.

#### ***Decommissioning***

Access points to each CUP used during decommissioning are anticipated to be the same as those used during construction. Similar equipment would be involved during decommissioning as was used during construction. However, traffic volumes will likely be less and not as intensive as occurred during construction. Therefore, **less than significant impacts** are identified with regard to hazards due to a design feature during decommissioning for either the Full Build-Out Scenario or the Phased CUP Scenario.



## 4.3 TRANSPORTATION AND CIRCULATION

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### Mitigation Measures

None required.

### Significance After Mitigation

Not Applicable.

### **Increase Hazards Due to a Design Feature – Damage to County-Maintained Roadways During Project Construction**

**Impact 4.3.6** Construction of the proposed Project will require movement of heavy equipment and large vehicles on County roadways not designed to accommodate high volumes of overweight trucks and loads. The condition of the roadways will deteriorate rapidly based on the volume and weight of construction traffic. Therefore, impacts to County-maintained roadways are considered **potentially significant**.

### **FULL BUILD-OUT SCENARIO/PHASED CUP SCENARIO**

County roadways within the Project area should be designed in accordance with the specifications outlined under item “II H. STREET STRUCTURAL SECTION” of the *Engineering Design Guidelines Manual for the Preparation and Checking of Street Improvement Drainage and Grading Plans Within Imperial County* (Imperial County 2008d). As such, the roadways may not currently be designed to accommodate high volumes of construction traffic generated by the proposed Project involving heavy equipment and trucks.

According to the Applicant, the construction workforce is expected to start in 2015 and reach the highest concentration in spring of 2016 (for the near-term scenario) with an average of 250 workers and a possible peak of up to 350 daily workers. Construction activities are expected to require approximately 18 months.

The worker and construction truck traffic is calculated at 664 ADT with 209 AM peak hour trips (203 inbound and 6 outbound) and 209 PM peak hour trips (6 inbound and 203 outbound). These trips would be generated along designated Project haul routes during Project construction.

As construction of the Project includes site preparation, foundation construction, delivery of equipment and supplies, erection of major equipment and structures, installation of control systems, and start-up/testing, many of the 664 ADT would involve movement of heavy equipment and supplies including large trucks carrying oversized loads. Trucks loaded with equipment and supplies are extremely heavy. The weight of these vehicles combined with elevated volumes of trips generated during construction would accelerate the deterioration of County-maintained roadway surfaces along designated Project haul routes. The amount of degradation associated with construction traffic is contingent upon both the design of the pavement (type and thickness) as well as the existing condition of the roadway surface. Existing County-maintained roadways in the Project vicinity are not designed with a pavement thickness sufficient to withstand a high volume of heavy duty trucks and equipment trips. Cracks, ruts and pot-holes will develop as a result of high volumes of heavy vehicles. This damage represents a potential hazard to motorists as well as an economic burden to the County associated with roadway repairs. This is considered a **potentially significant impact**.

The Applicant proposes to minimize use of unpaved roads to the extent feasible during construction. In addition, the Applicant has proposed that roads will be photographed prior to construction to document existing conditions. Furthermore, the Applicant proposes to repair any Project-related impacts to County roads (refer to Table 2.0-9). However, the following mitigation further ensures that any damage rendered in associated with construction of either the Full Build-out Scenario or Phased CUP Scenario will be addressed.

## 4.3 TRANSPORTATION AND CIRCULATION

### Mitigation Measures

**MM 4.6.3a** The Proponent shall utilize I-8 to SR-111 and/or SR-98 for all equipment deliveries. Employee and vendor routes to each CUP shall be limited to SR-111, SR-98, and Clark Road, LaBrucherie/Ferrell Road and Kubler Road, unless improvements are made to other county roads leading to individual CUP sites in advance of development of each CUP.

*Timing/Implementation:* Prior to the issuance of grading permit.

*Enforcement/Monitoring:* Imperial County Planning and Development Services Department, Imperial County Public Works Department.

**MM 4.6.3b** As each CUP may be constructed individually and independently, the CUP Proponent shall improve the roads as shown on **Figures 4.3-18** thru **4.3-35**. If a CUP proponent has already improved the roads that will be utilized by the next CUP to start construction, then no new road improvements are required.

*Timing/Implementation:* Prior to the issuance of grading permit.

*Enforcement/Monitoring:* Imperial County Planning and Development Services Department, Imperial County Public Works Department.

**MM 4.6.3c** Each CUP Proponent shall be responsible for repairing any damage caused to the roads it utilizes as follows:

- CUP 13-0036 – Approximately 200 feet of new pavement required on Rockwood Road south of SR-98 for entrance from SR-98 (**Figure 4.3-13**).
- CUP 13-0037 – Approximately 200 feet of new pavement required on Rockwood Road north of SR-98 and 0.25 miles of new pavement required along Rockwood Road from Kubler Road to the south (**Figure 4.3-14**).
- CUP 13-0038 – No improvements required as long as traffic remains on SR-98, Ferrell Road and Kubler Road (**Figure 4.3-15**).
- CUP 13-0039 – No improvements required as long as traffic remains on SR-98, Ferrell Road and Kubler Road (**Figure 4.3-16**).
- CUP 13-0040 – a) Micro-grind and Asphalt Rubber Asphalt Membrane (ARAM) resurfacing along Brockman Road from SR-98 to CUP 13-0042 for approximately 1.5 miles then utilized on-site haul road through CUP 13-0041 and CUP 13-0042 or b) utilize on-site haul road from Kubler Road thru CUP 13-0038 (**Figure 4.3-17**).
- CUP 13-0041 – a) Micro-grind and Asphalt Rubber Asphalt Membrane (ARAM) resurfacing along Brockman Road from SR-98 to CUP 13-0042 or b) utilize on-site haul road from Kubler Road thru CUP 13-0038 and CUP 13-0040 (**Figure 4.3-18**).
- CUP 13-0042 – Micro-grind and Asphalt Rubber Asphalt Membrane (ARAM) resurfacing along Brockman Road from SR-98 to CUP 13-0042 for approximately 1.5 miles (**Figure 4.3-19**).
- CUP 13-0043 – a) Micro-grind and Asphalt Rubber Asphalt Membrane (ARAM) resurfacing along Brockman Road from SR-98 to CUP 13-0042 for approximately 1.5 miles then on-site haul road through CUPs 13-0042, 13-0041, 13-0040 or; b) Micro-grind and Asphalt Rubber Asphalt Membrane (ARAM) resurfacing along Brockman Road from SR-98 to Lyons Road for approximately 2.5 miles and 1 mile of 3-inch asphalt concrete overlay and 3-inch thick aggregate base shoulder backing on Lyons Road (**Figure 4.3-20**).

## 4.3 TRANSPORTATION AND CIRCULATION

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- CUP 13-0044 – Micro-grind and Asphalt Rubber Asphalt Membrane (ARAM) resurfacing along Brockman Road from SR 98 to Lyons Road for approximately 2.5 miles and 3-inch thick aggregate base shoulder backing; then pave 0.25 miles of Rockwood Road south of Lyons Road (**Figure 4.3-21**).
- CUP 13-0045 – Micro-grind and Asphalt Rubber Asphalt Membrane (ARAM) resurfacing along Brockman Road from SR-98 to Lyons Road for approximately 2.5 miles and 1.5 miles of 3-inch asphalt concrete overlay and 3-inch thick aggregate base shoulder backing on Lyons Road east of Brockman Road (**Figure 4.3-22**).
- CUP 13-0046 – Micro-grind and Asphalt Rubber Asphalt Membrane (ARAM) resurfacing along Brockman Road from SR-98 to Lyons Road for approximately 2.5 miles and 1 mile of 3-inch asphalt concrete overlay and 3-inch thick aggregate base shoulder backing on Lyons Road east of Brockman Road (**Figure 4.3-23**).
- CUP 13-0047 – Micro-grind and Asphalt Rubber Asphalt Membrane (ARAM) resurfacing along Brockman Road from SR-98 to Lyons Road for approximately 2.5 miles and 1 mile of 3-inch asphalt concrete overlay and 3-inch thick aggregate base shoulder backing on Lyons Road east of Brockman Road; then on-site haul road through CUP 13-0046 (**Figure 4.3-24**).
- CUP 13-0048 – Micro-grind and Asphalt Rubber Asphalt Membrane (ARAM) resurfacing along Brockman Road from SR-98 to Lyons Road for approximately 2.5 miles and 1 mile of 3-inch asphalt concrete overlay and 3-inch thick aggregate base shoulder backing on Lyons Road east of Brockman Road (**Figure 4.3-25**).
- CUP 13-0049 – Micro-grind and Asphalt Rubber Asphalt Membrane (ARAM) resurfacing along Brockman Road from SR-98 to Lyons Road for approximately 2.5 miles (**Figure 4.3-26**).
- CUP 13-0050 – 3-inch asphalt concrete overlay and 3-inch thick aggregate base shoulder backing on Anza Road west of Ferrell Road for approximately 1.5 miles (**Figure 4.3-27**).
- CUP 13-0051 – 3-inch asphalt concrete overlay and 3-inch thick aggregate base shoulder backing on Anza Road west of Ferrell Road for approximately 0.75 miles (**Figure 4.3-28**).
- CUP 13-0052 – No Improvements. Access from Ferrell Road/Anza Road intersection (**Figure 4.3-29**).

*Timing/Implementation:* Prior to the issuance of grading permit.

*Enforcement/Monitoring:* Imperial County Planning and Development Services Department, Imperial County Public Works Department.

### MM 4.6.3d

Proponent shall limit the Project's construction traffic on unpaved County roadways to the extent possible and utilize improved paved roadways identified in MM 4.6.3c. In the event the Proponent's construction traffic requires the use of unpaved County roadways, the Proponent shall mitigate those County unpaved roadways in accordance with ICAPCD Rule 805.

In addition to complying with Rule 805, if 50 vehicle trips per day (VPD) are triggered by the projects on any single County unpaved roadway, the Proponent shall provide for the

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## 4.3 TRANSPORTATION AND CIRCULATION

future maintenance cost of the affected roadway for the full term of the CUP which triggered the increase beyond the 50 VPD threshold.

*Timing/Implementation:* Prior to the issuance of grading permit.

*Enforcement/Monitoring:* Imperial County Planning and Development Services Department, Imperial County Public Works Department.

### **Significance After Mitigation**

Implementation of Mitigation Measure MM 4.3.6a would limit equipment deliveries, employee and vendor traffic to specific routes unless improvements are made to other County Roads prior to development of each CUP. Mitigation Measure MM 4.3.6b identifies roads that will need to be improved for each CUP prior to the start of construction. Mitigation Measure 4.3.6c requires each CUP Proponent to be responsible to repair any damage cause to the roads utilized. Lastly, Mitigation Measure MM 4.3.6d allows for mitigation in the event that paved roadways identified in mitigation measures MM 4.6.3a and MM 4.6.3c are not available for use. If public unpaved roads are used for the Proponent's construction, then MM4.3.6d will stipulate the mitigation utilizing acceptable best management practices in accordance with ICAPCD Rule 805. Furthermore, if the Proponent's VPD increase beyond a cumulative total of 50 trips per day, the Proponent will be responsible for the cost of future maintenance of impacted public unpaved roadways. Following implementation of these measures, impacts associated with damage to County-maintained roadways resulting from Project construction would be reduced to **less than significant**.

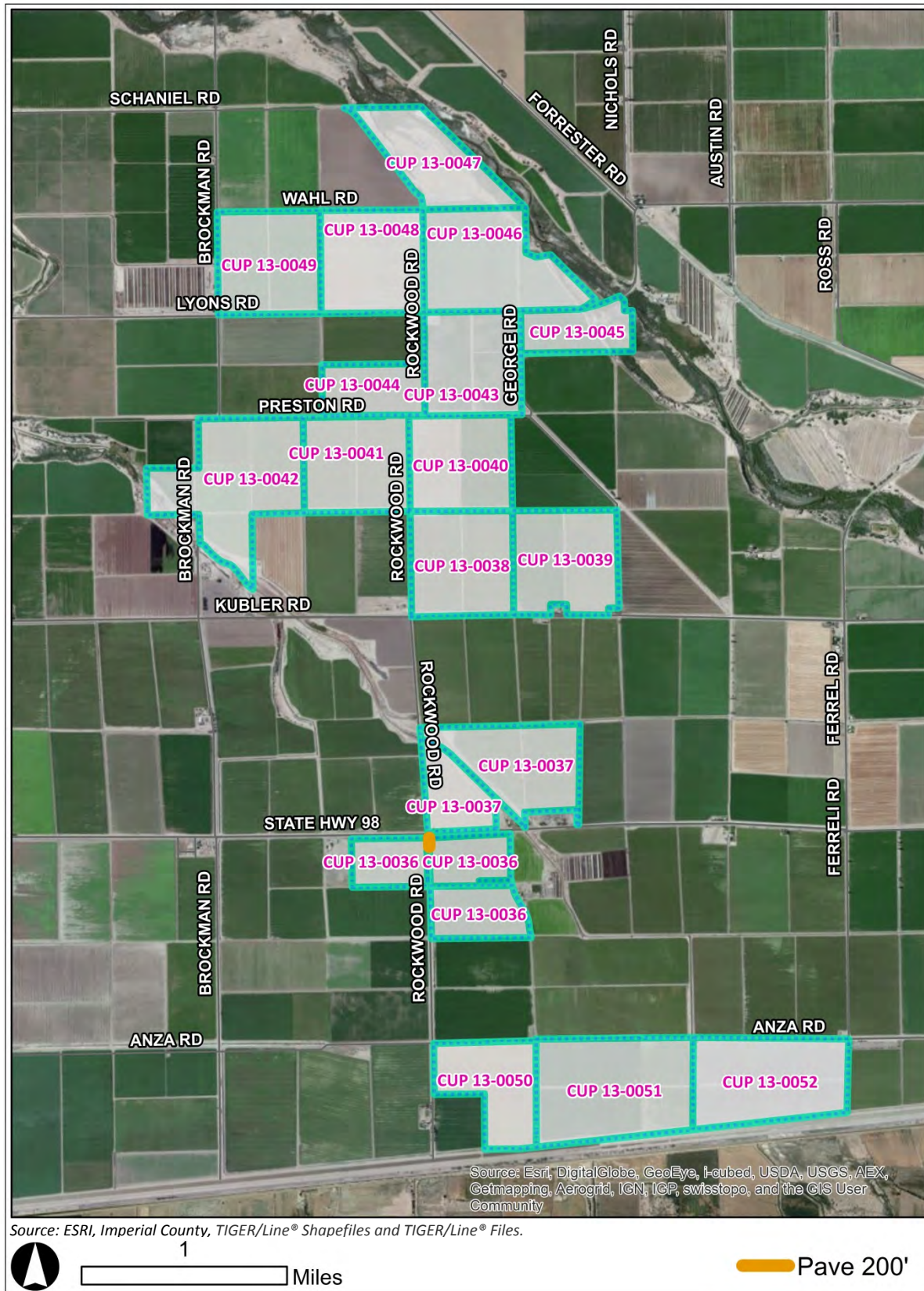
### **4.3.4 CUMULATIVE SETTING, IMPACTS AND MITIGATION MEASURES**

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

The geographic scope for the cumulative setting for transportation and circulation is based on the roadways in the vicinity of the Project study area that may be affected by traffic generated by the Project and cumulative projects. Information on cumulative projects was obtained from, and confirmed by, the County of Imperial to be current as of February 2014 (refer to **Figure 3.0-1** in Chapter 3.0 for a graphical presentation of these projects).

The cumulative list below describes the cumulative projects in the immediate area around the proposed Project (i.e. projects that are generally located south of I-8 and west of Clark Road). There are two cumulative settings. The cumulative setting differs because the various scenarios because projects on the cumulative list will have completed the high traffic construction phase and be in the low traffic operational phase closer to the Long-Term (Year 2024) Scenario. The pre-Long Term Scenarios assume the projects on the cumulative list will be under construction while the Long-Term Scenario assumes the projects on the cumulative list are in operation. The timely conversion of construction to operations for the Long-Term Scenario is supported by the fact that County Code Section 90203.13 voids such project's conditional use permits unless the permittee commences the project within one year from the approval date of the conditional use permit or obtains an extension for up to two one-year periods. Therefore, if applications on file at the County in 2013 take two years to get approved, have a one year CUP life with two years of possible CUP extensions, and an 18 month construction period, then it is reasonable to

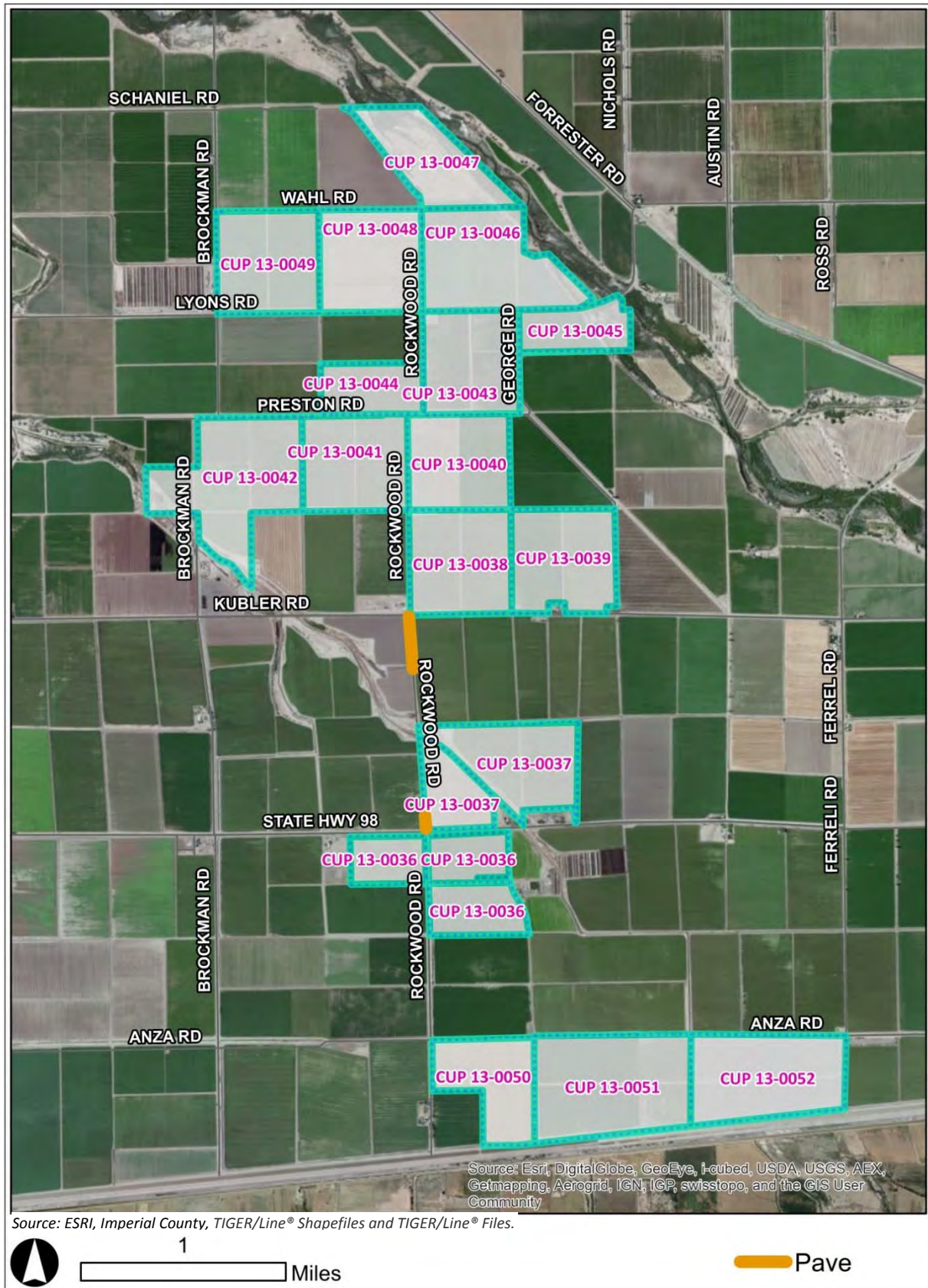
## 4.3 TRANSPORTATION AND CIRCULATION



**FIGURE 4.3-13**  
**CUP 13-0036 – ROADWAY IMPROVEMENTS**



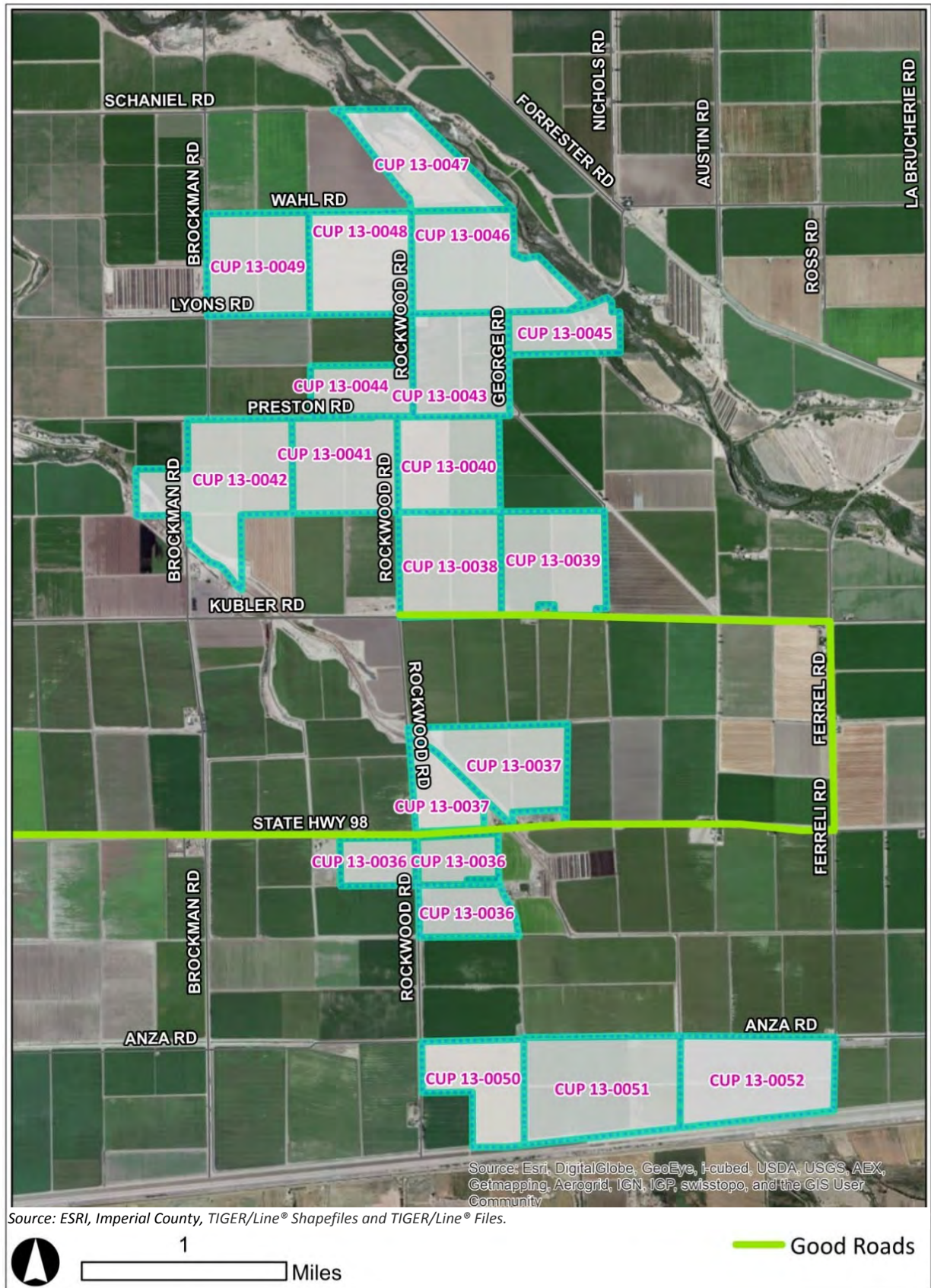
## 4.3 TRANSPORTATION AND CIRCULATION



**FIGURE 4.3-14**  
**CUP 13-0037 – ROADWAY IMPROVEMENTS**



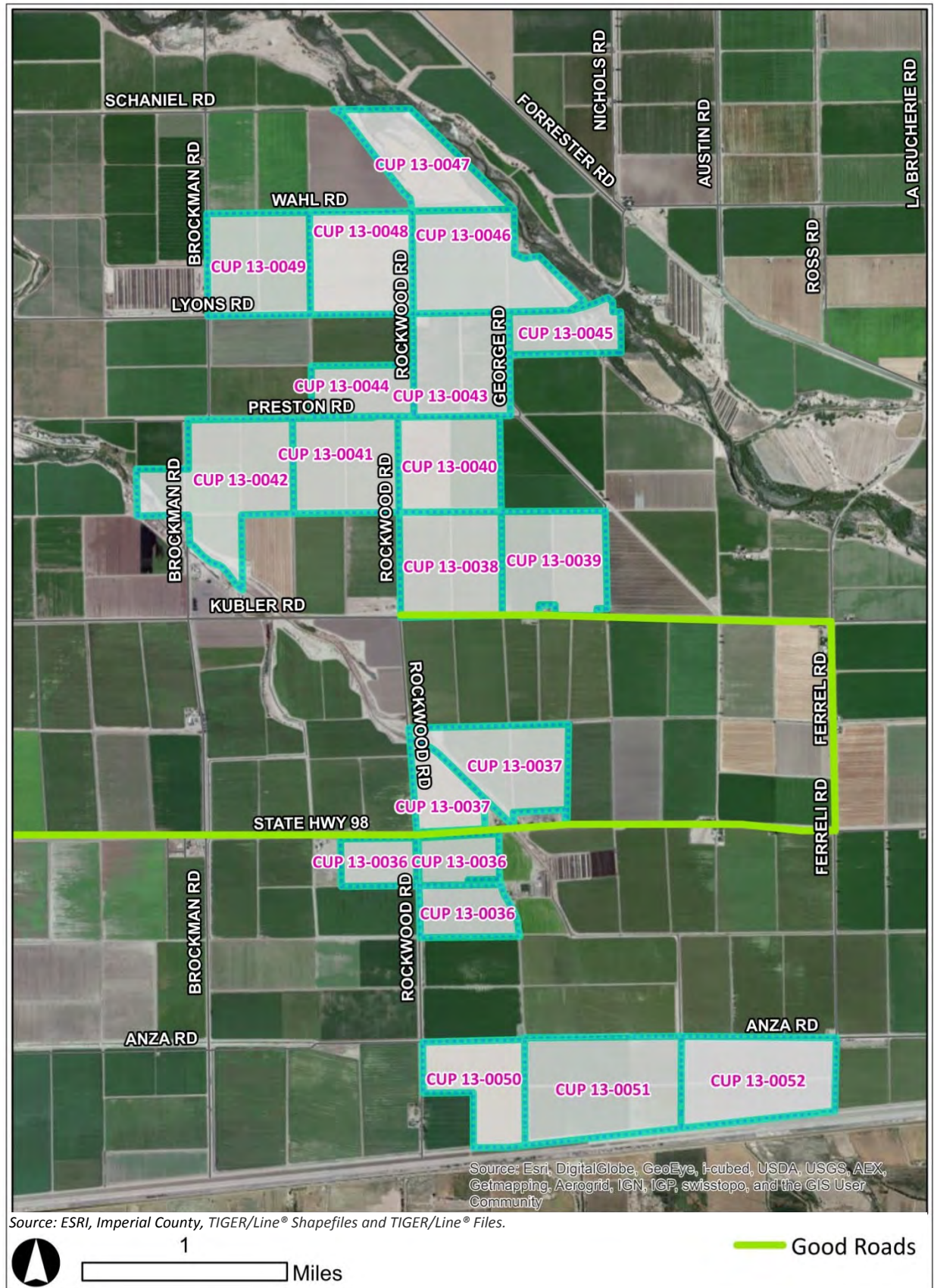
## 4.3 TRANSPORTATION AND CIRCULATION



**FIGURE 4.3-15**  
**CUP 13-0038 – ROADWAY IMPROVEMENTS**



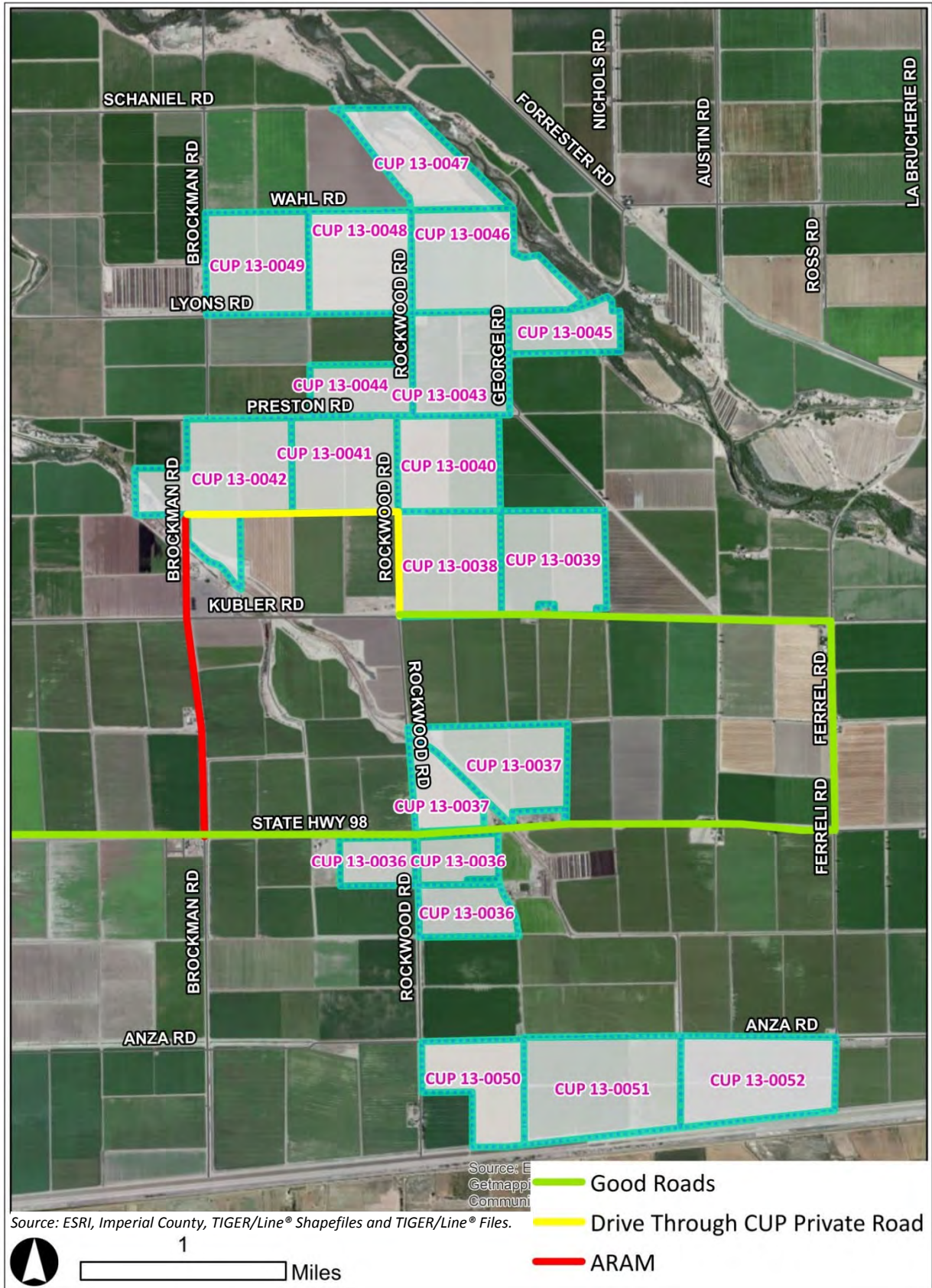
## 4.3 TRANSPORTATION AND CIRCULATION



**FIGURE 4.3-16**  
**CUP 13-0039 – ROADWAY IMPROVEMENTS**



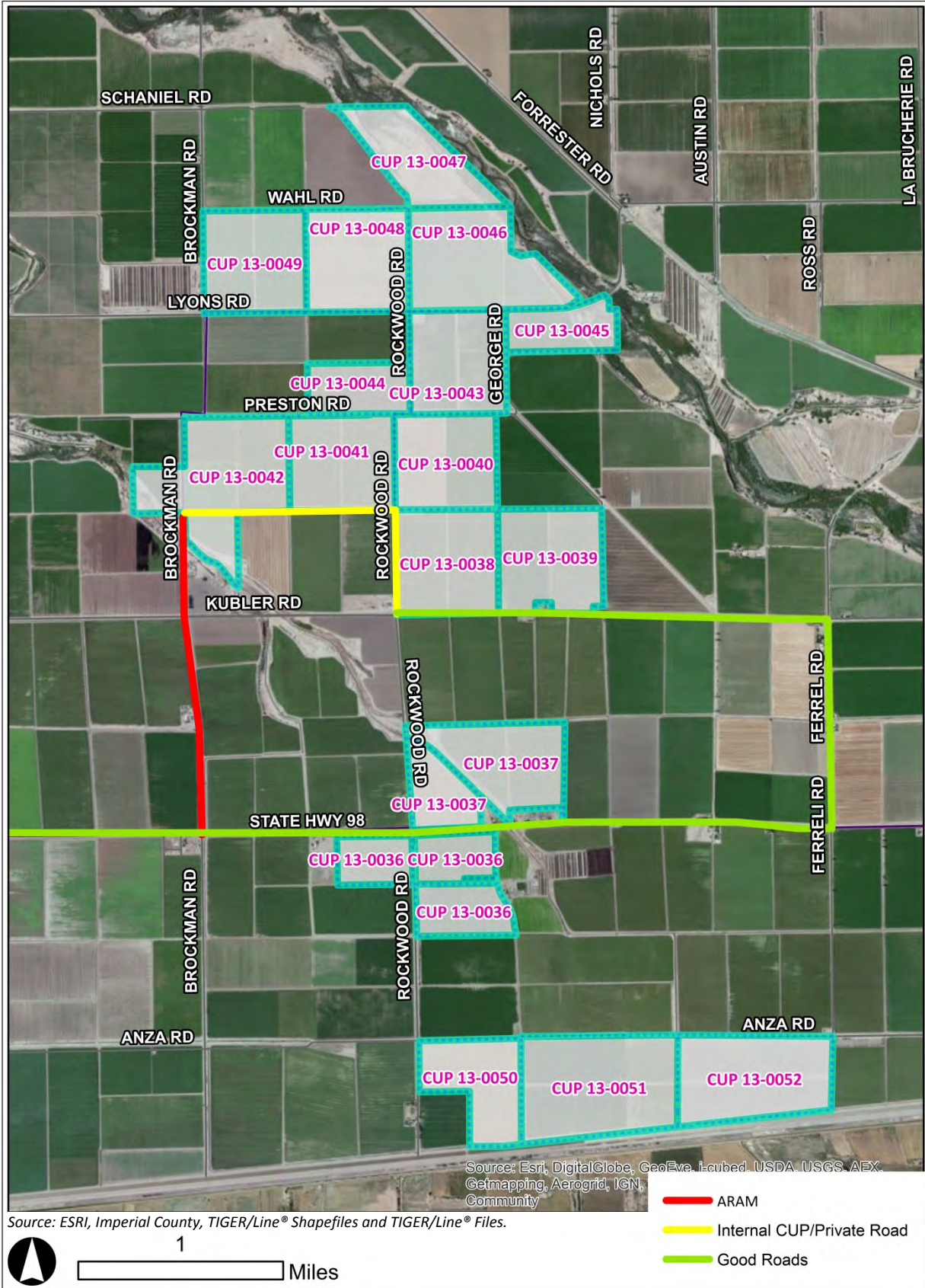
## 4.3 TRANSPORTATION AND CIRCULATION



**FIGURE 4.3-17**  
**CUP 13-0040 – ROADWAY IMPROVEMENTS**



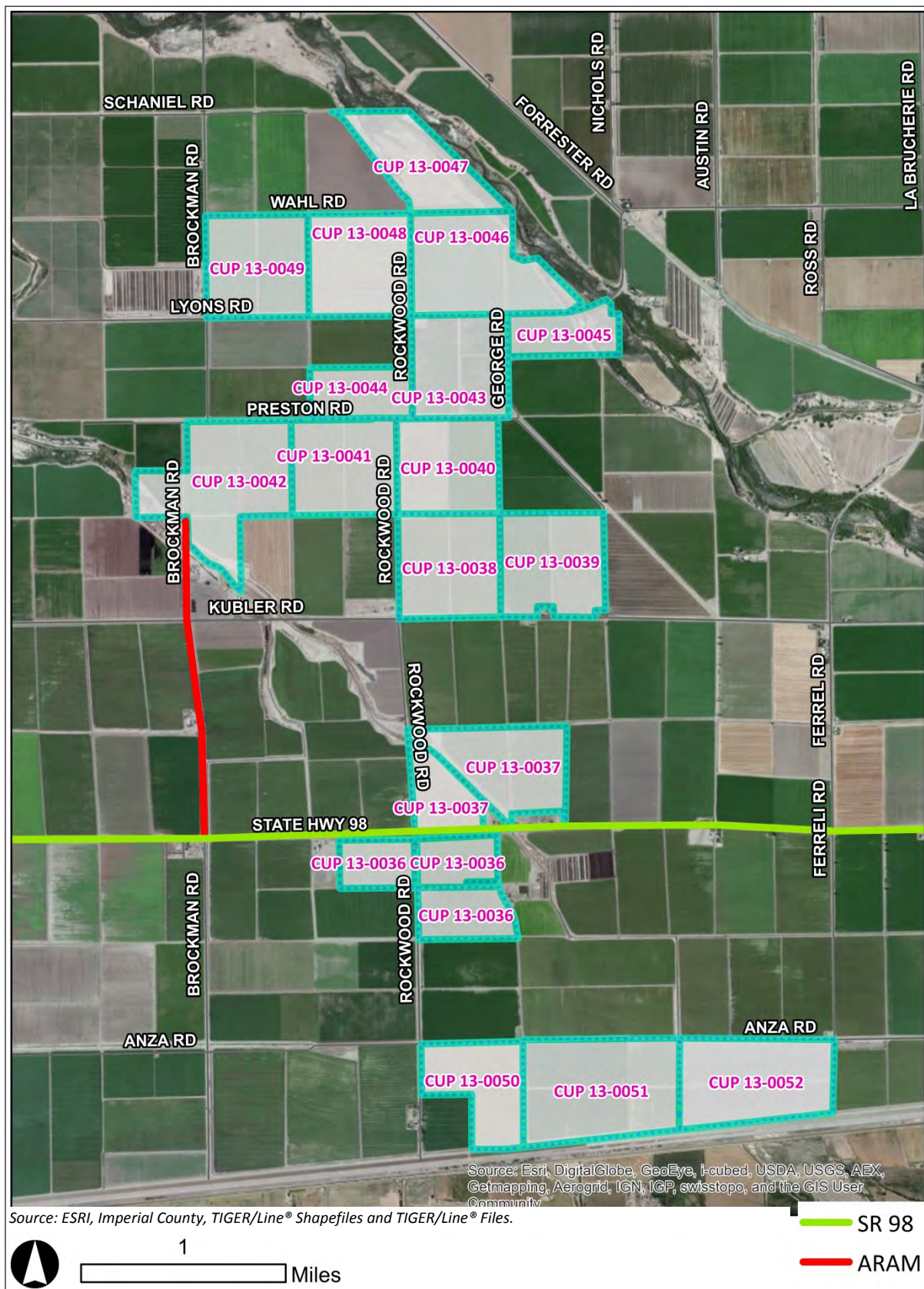
## 4.3 TRANSPORTATION AND CIRCULATION



**FIGURE 4.3-18**  
**CUP 13-0041 – ROADWAY IMPROVEMENTS**



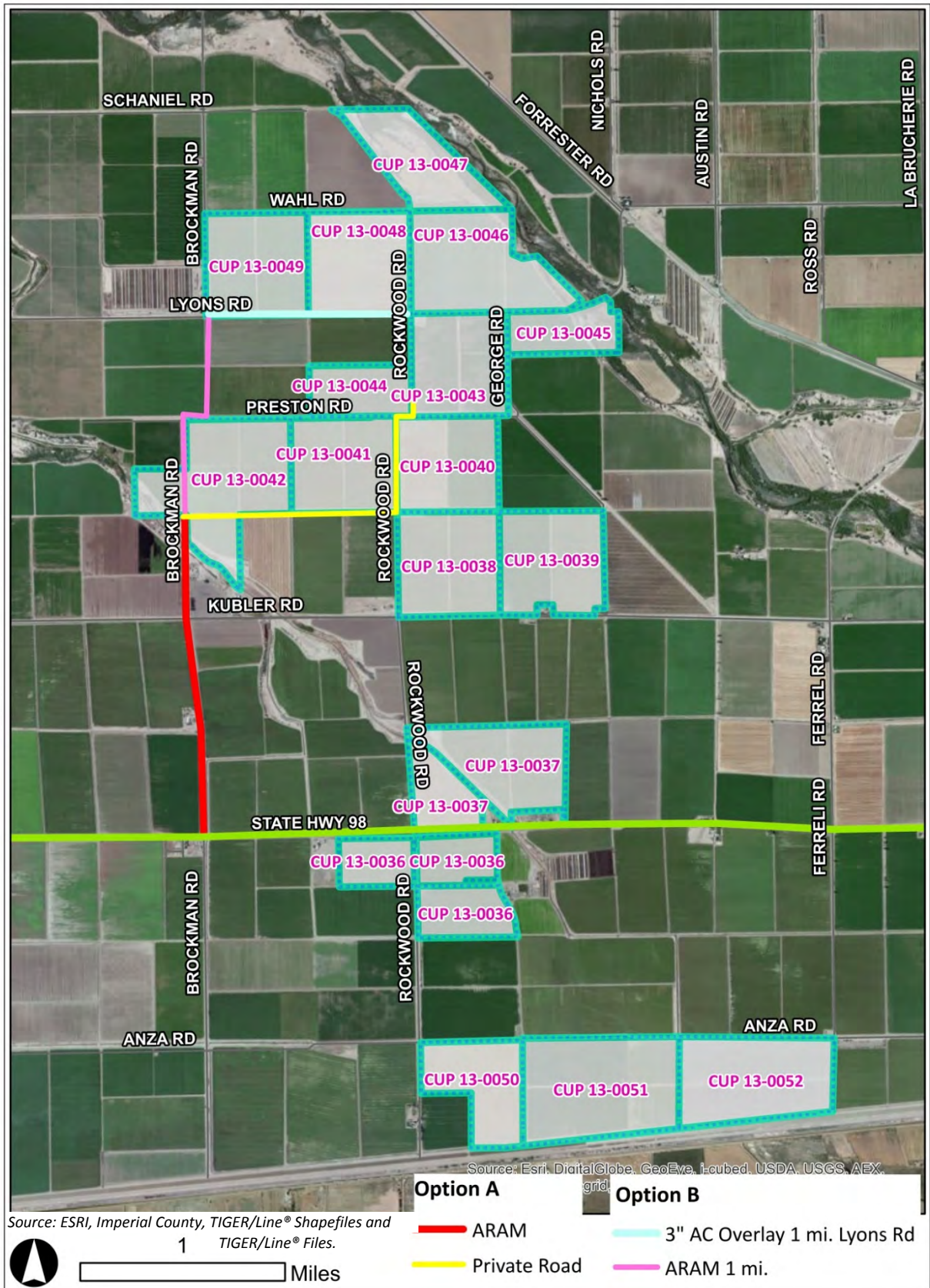
## 4.3 TRANSPORTATION AND CIRCULATION



**FIGURE 4.3-19**  
**CUP 13-0042 – ROADWAY IMPROVEMENTS**



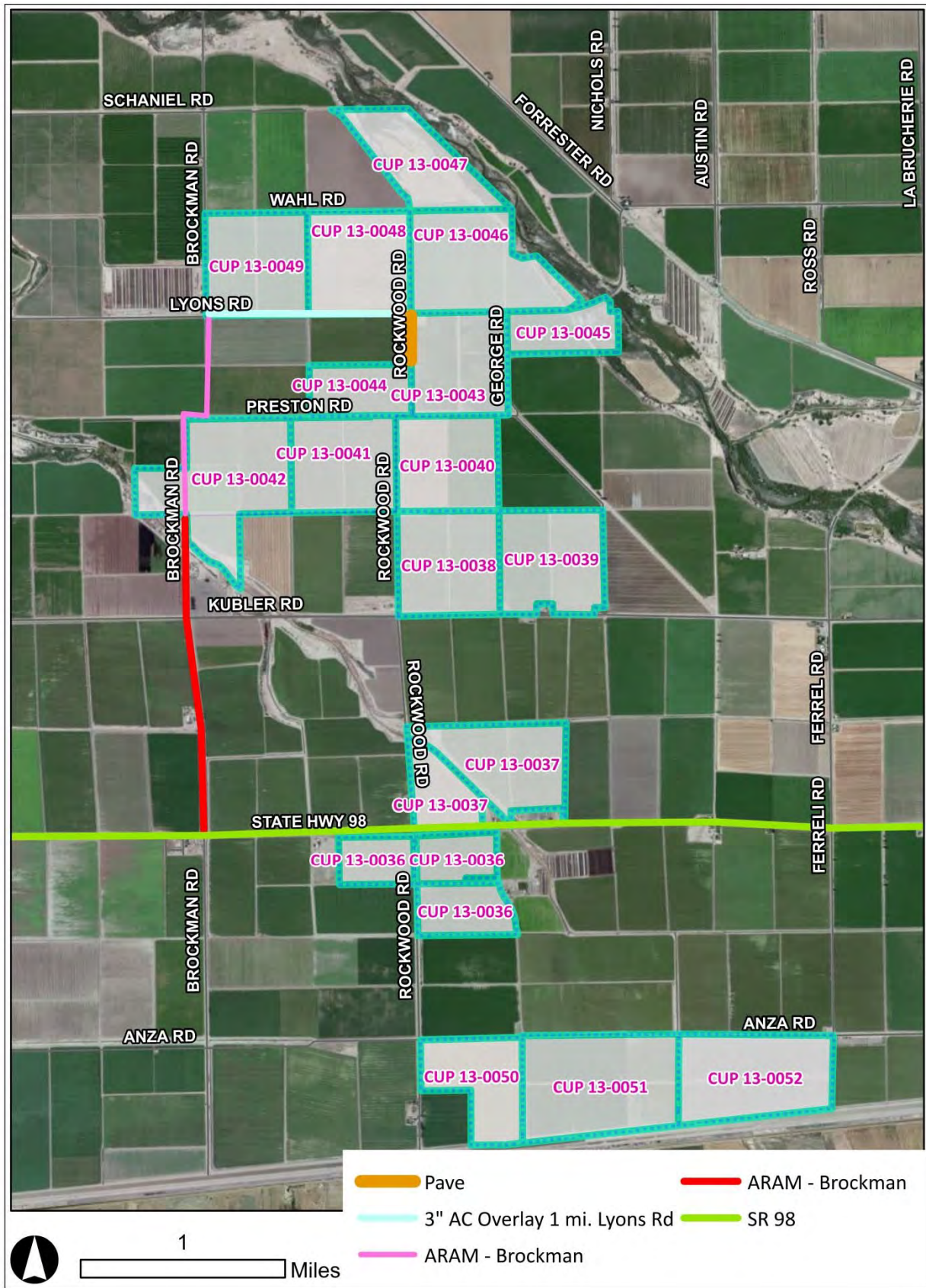
## 4.3 TRANSPORTATION AND CIRCULATION



**FIGURE 4.3-20**  
**CUP 13-0043 – ROADWAY IMPROVEMENTS**



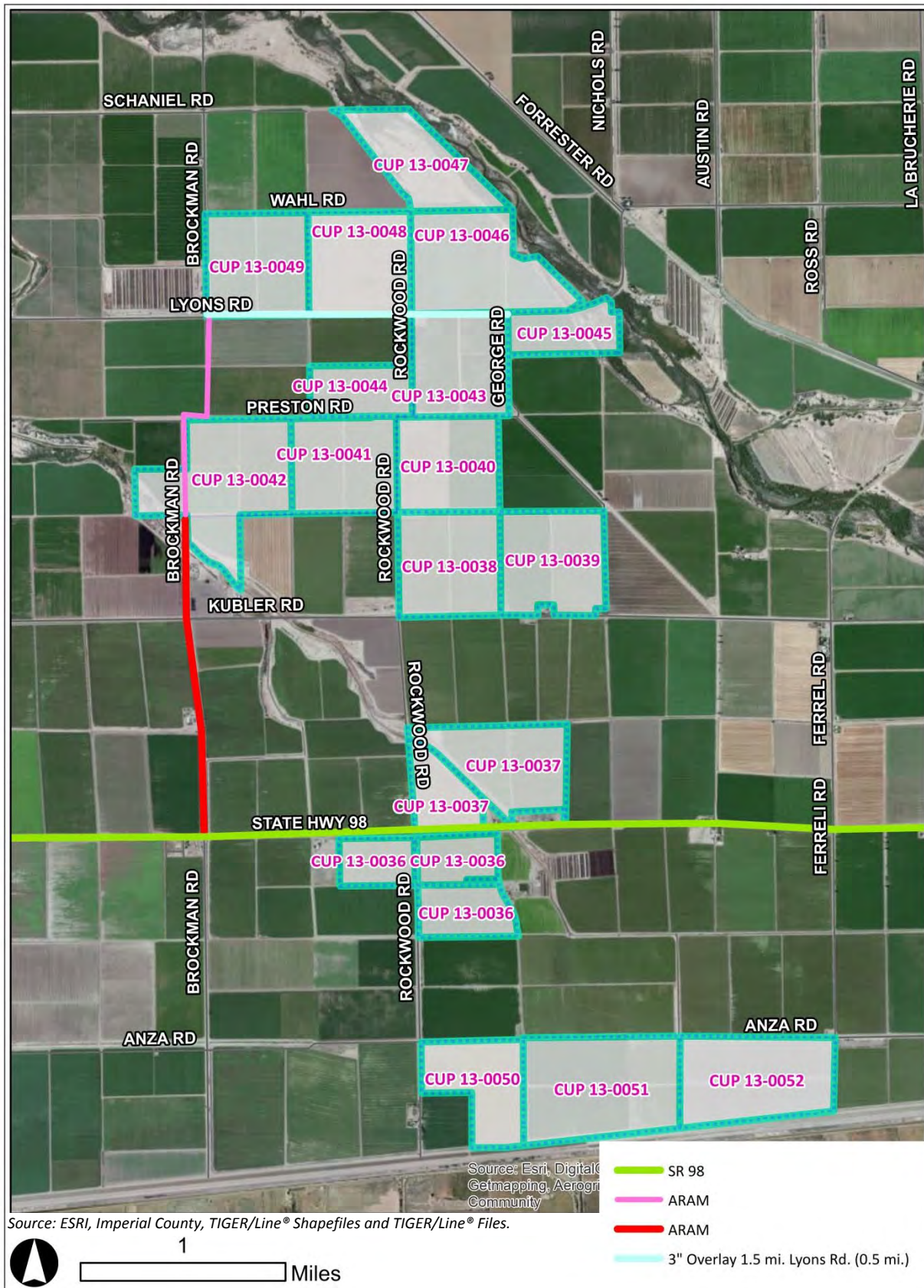
## 4.3 TRANSPORTATION AND CIRCULATION



**FIGURE 4.3-21**  
**CUP 13-0044 – ROADWAY IMPROVEMENTS**



## 4.3 TRANSPORTATION AND CIRCULATION



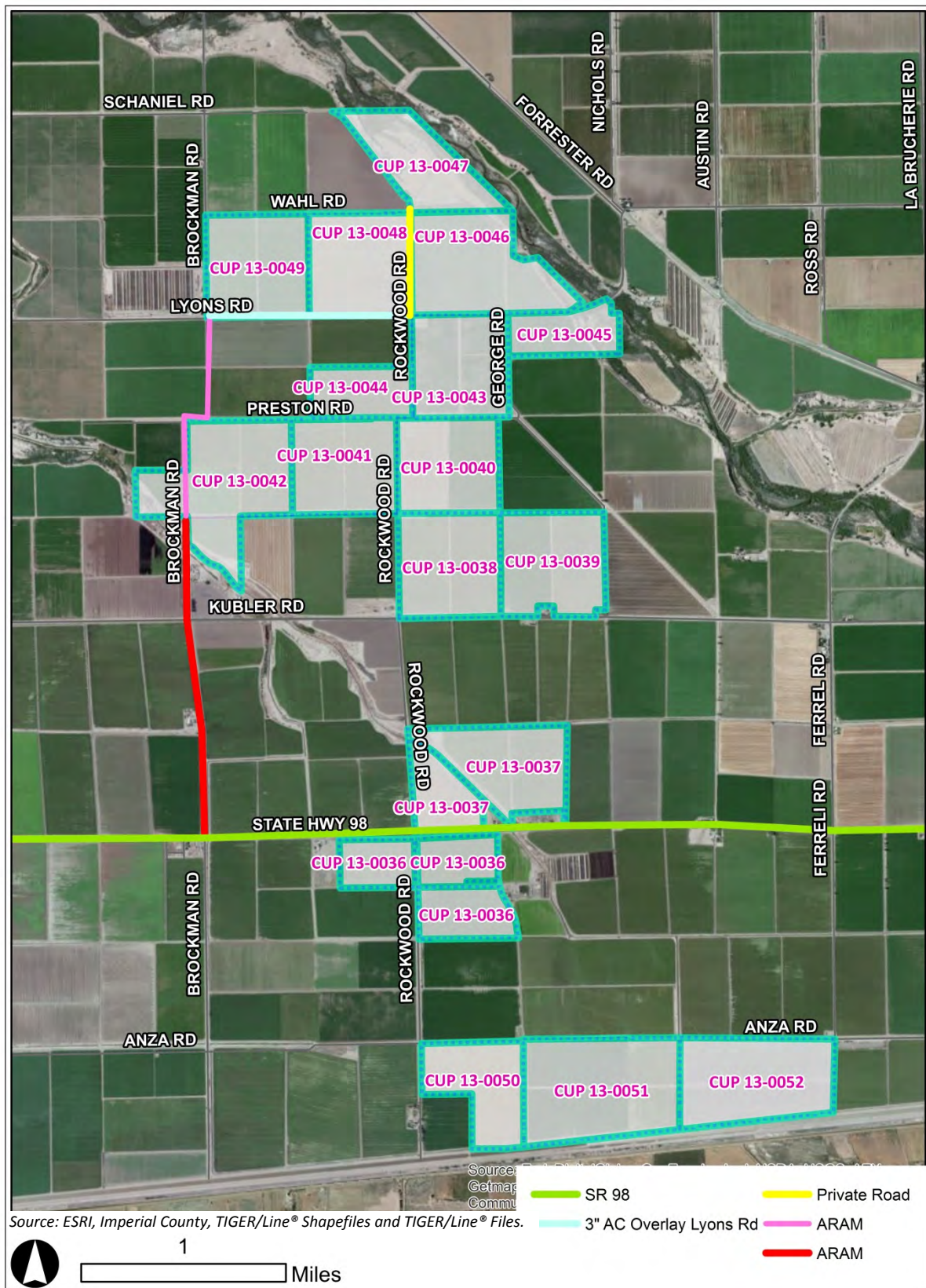
**FIGURE 4.3-22**  
**CUP 13-0045 – ROADWAY IMPROVEMENTS**







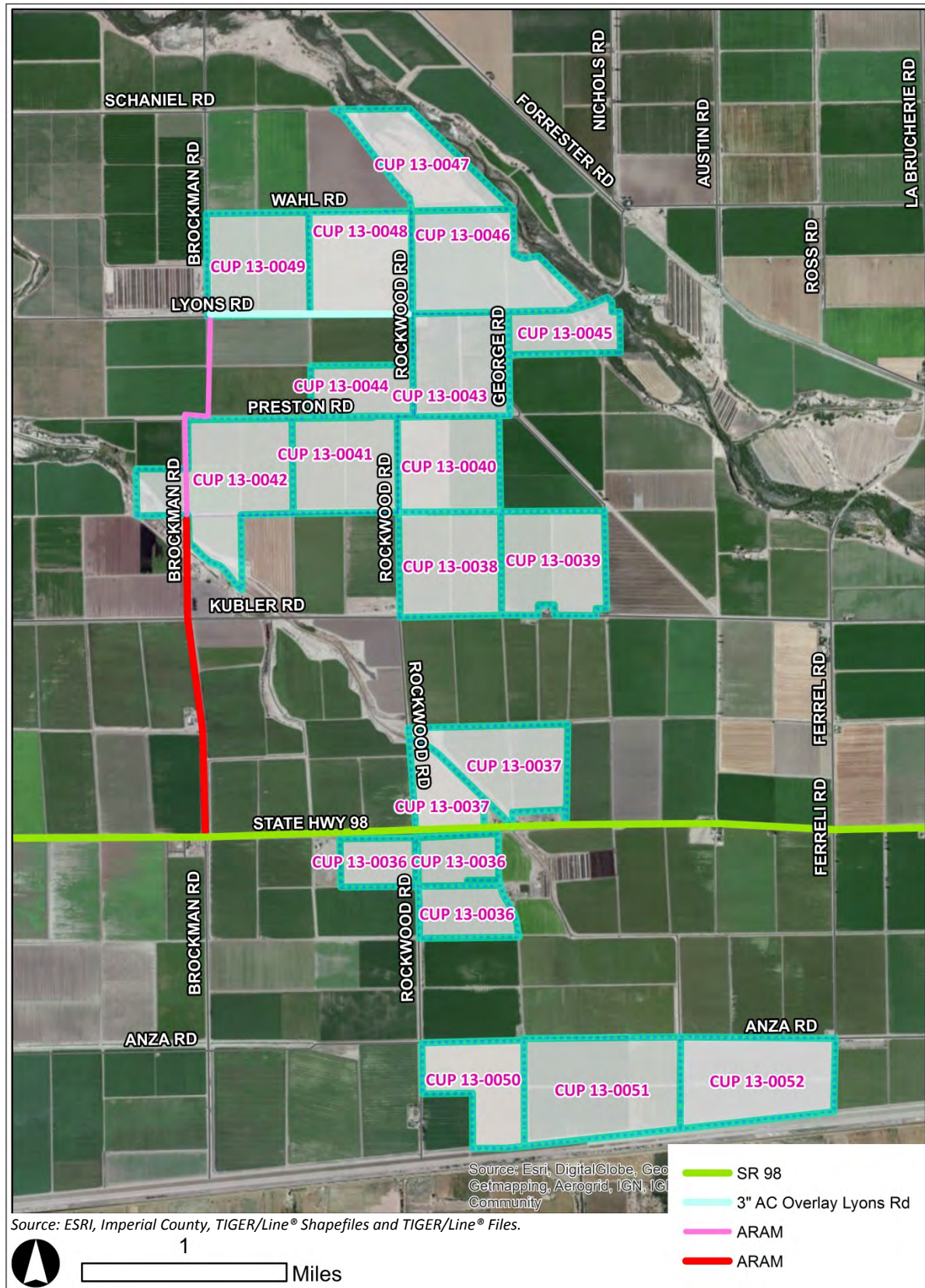
## 4.3 TRANSPORTATION AND CIRCULATION



**FIGURE 4.3-24**  
**CUP 13-0047 – ROADWAY IMPROVEMENTS**



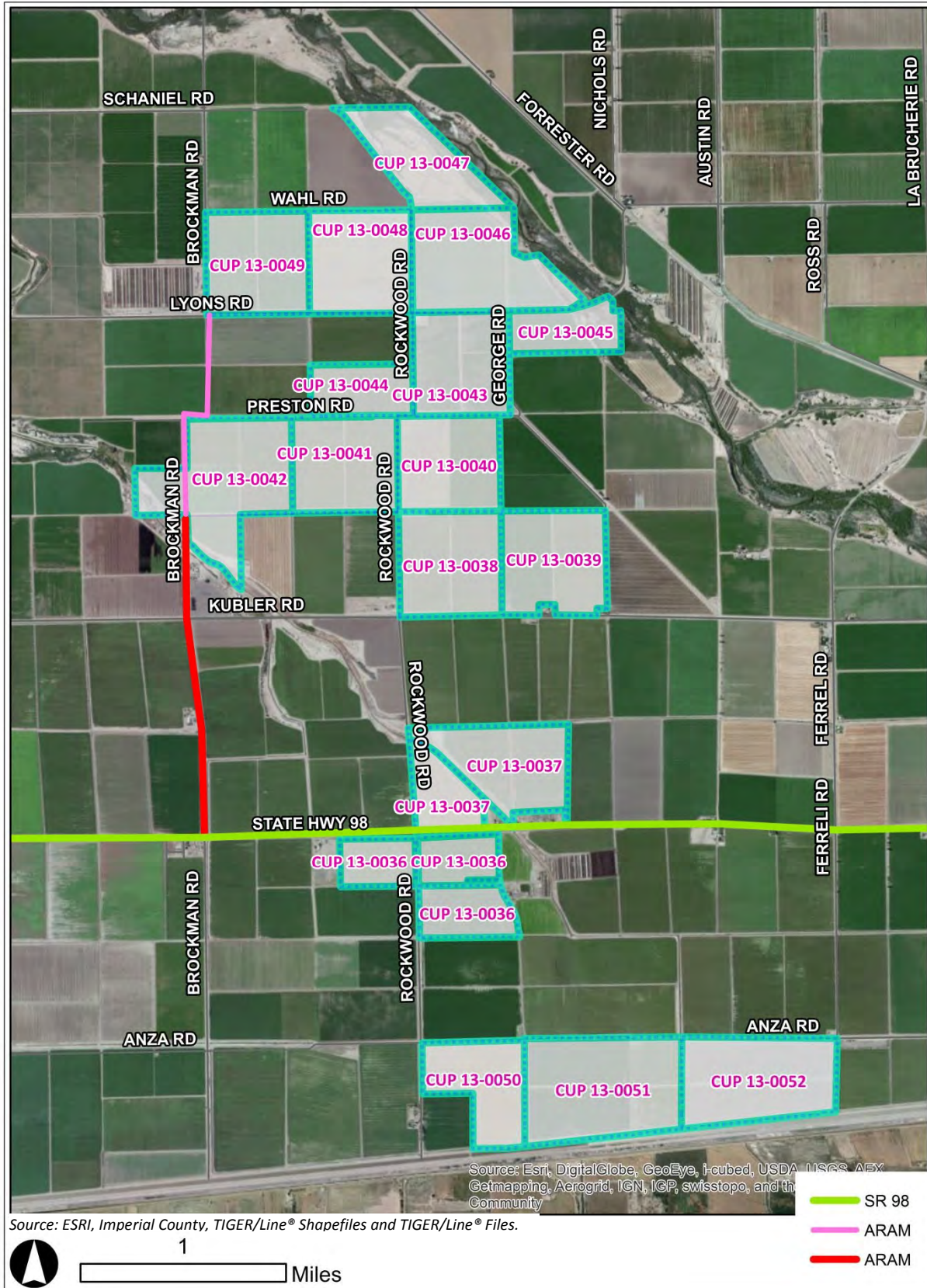
## 4.3 TRANSPORTATION AND CIRCULATION



**FIGURE 4.3-25**  
**CUP 13-0048 – ROADWAY IMPROVEMENTS**



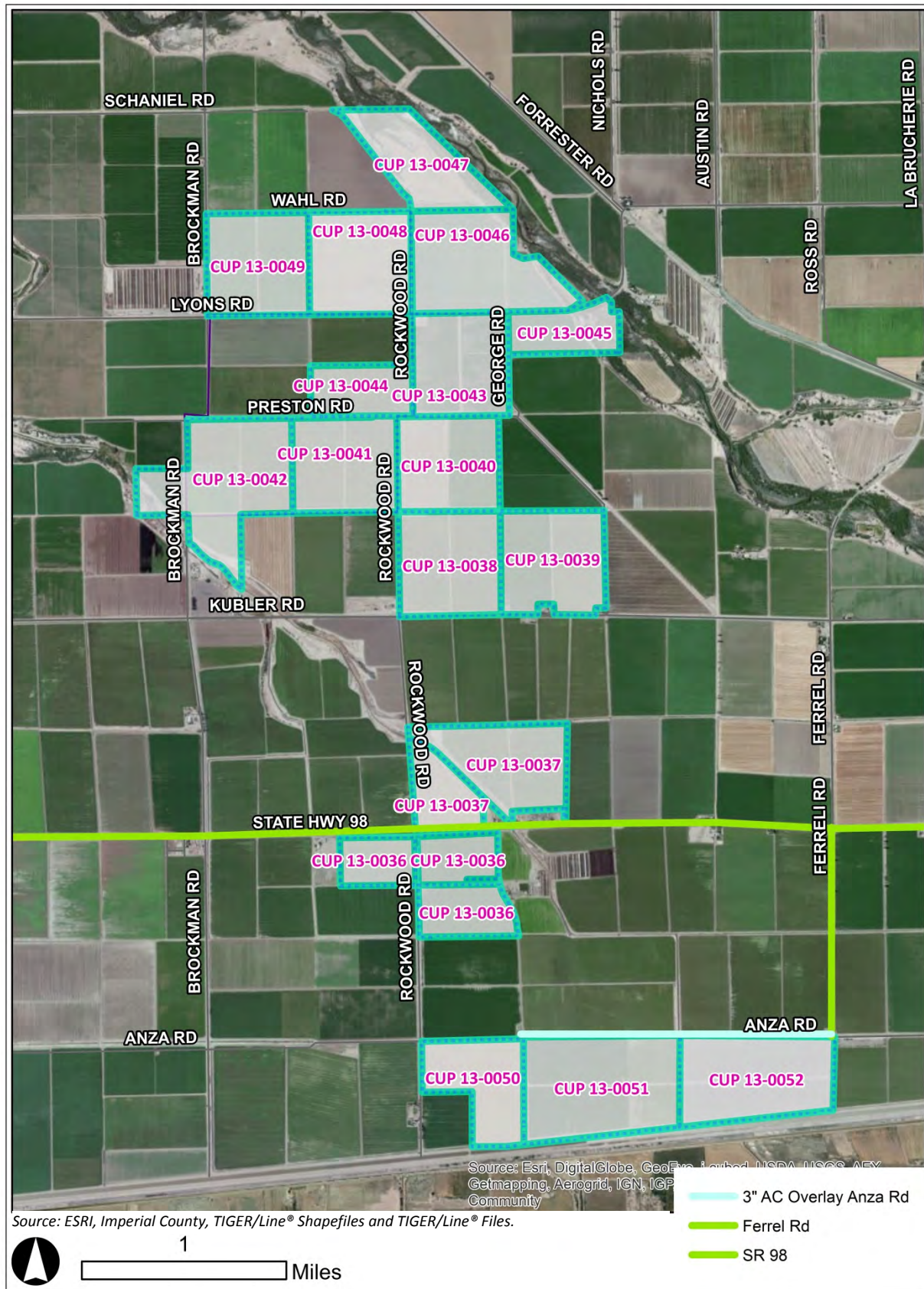
## 4.3 TRANSPORTATION AND CIRCULATION



**FIGURE 4.3-26**  
**CUP 13-0049 – ROADWAY IMPROVEMENTS**



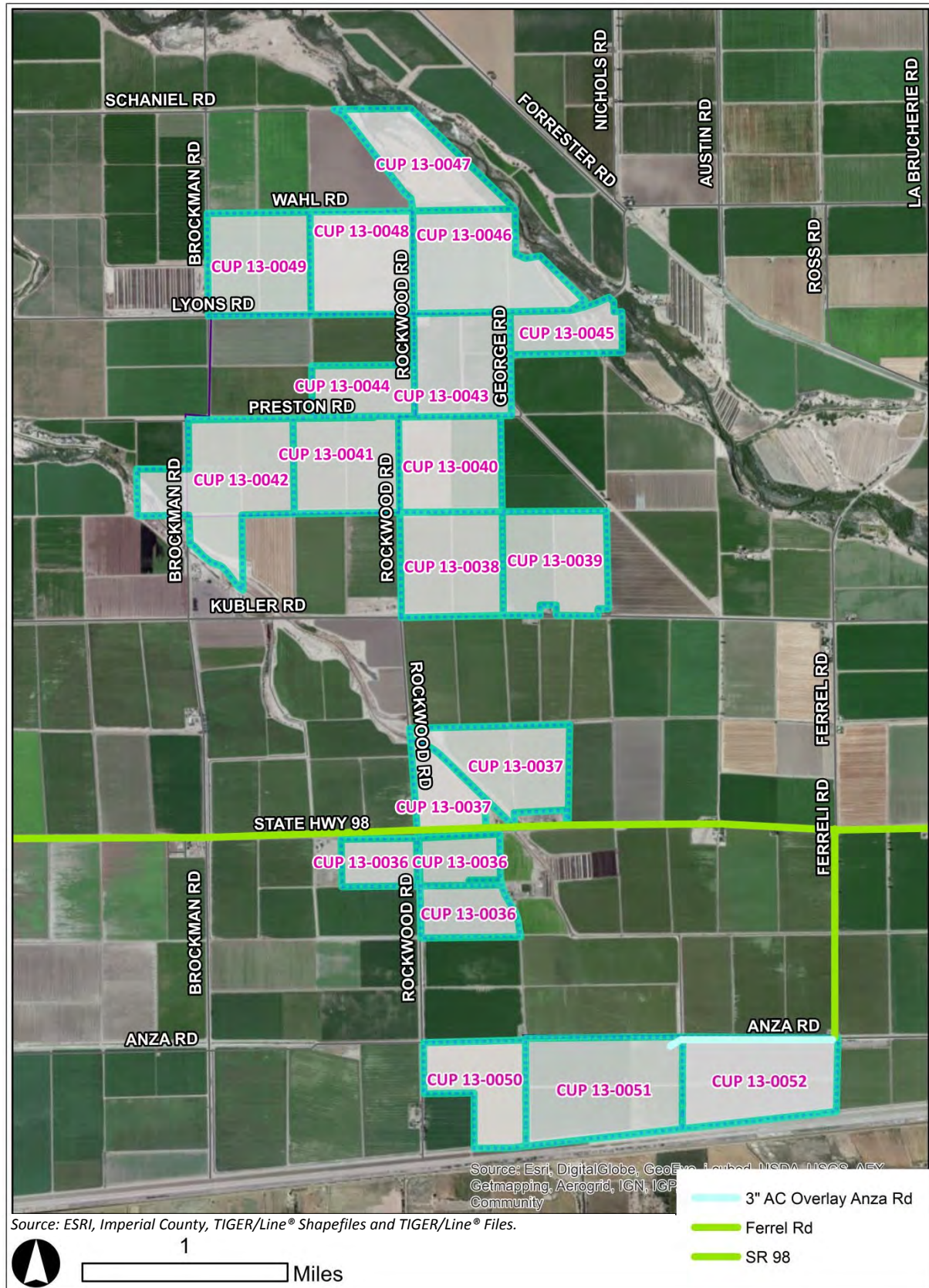
## 4.3 TRANSPORTATION AND CIRCULATION



**FIGURE 4.3-27**  
**CUP 13-0050 – ROADWAY IMPROVEMENTS**



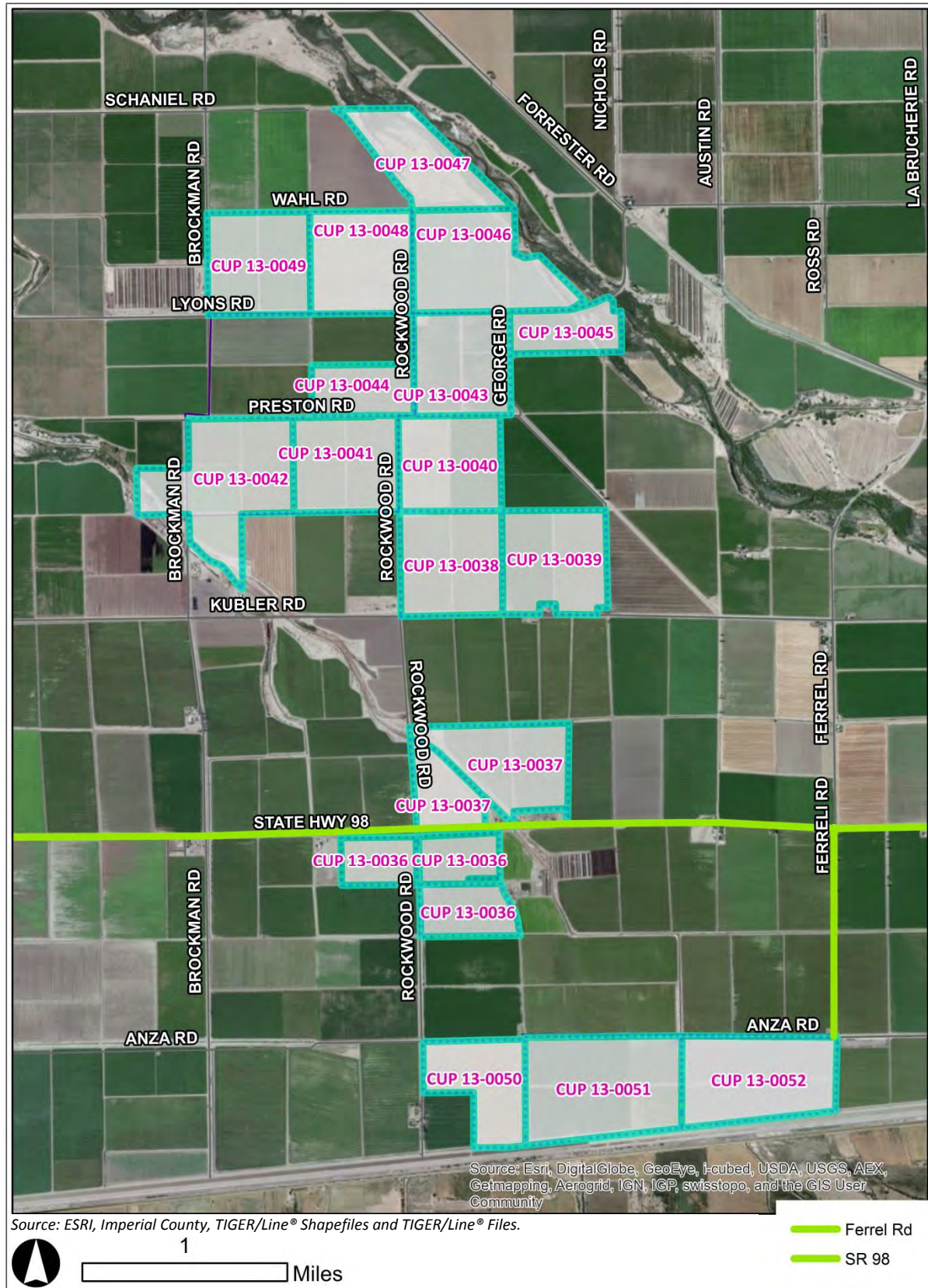
## 4.3 TRANSPORTATION AND CIRCULATION



**FIGURE 4.3-28**  
**CUP 13-0051 – ROADWAY IMPROVEMENTS**



## 4.3 TRANSPORTATION AND CIRCULATION



**FIGURE 4.3-29**  
**CUP 13-0052 – ROADWAY IMPROVEMENTS**

## 4.3 TRANSPORTATION AND CIRCULATION

assume all renewable energy projects on the cumulative list will be completed after Year 2019 and would be generating operations traffic (not construction traffic) as noted below. Most of the cumulative projects have completed technical studies including traffic generation information. However, several projects have not progressed to this point at the time this EIR was prepared. For the projects that do not have detailed traffic generation information, an estimate was calculated based on traffic generation information for similar projects. Traffic generation calculations and copies of the cumulative project descriptions, locations, traffic generation, and assignments are also included in Appendix L of the Draft Traffic Impact Analysis (**Appendix B** of this EIR). Operations traffic generation calculations are included in Appendix X of the Draft Traffic Impact Analysis (**Appendix B** of this EIR).

**Table 4.3-35** summarizes information for each cumulative project including its construction status.

**TABLE 4.3-35**  
**TRAFFIC GENERATED BY CUMULATIVE PROJECTS**

#	Project Name/Description	Existing ((Year 2013)) Status	Long-Term ((Year 2024)) Status
1	Calexico I-A - A photovoltaic solar facility generally located 6 miles west of the City of Calexico capable of producing approximately 100 megawatts of electricity.	This project was under construction at the time the traffic counts were collected; therefore, the cumulative traffic is accounted for within the existing baseline data.	This project was under construction at the time the Year 2013 traffic counts were collected; thereby this project's cumulative traffic is accounted for within the existing baseline data that was also increased by the 2.8% growth factor for ambient growth for Year 2024 conditions. Therefore, this cumulative project construction traffic as embedded in the ambient growth would be higher than the operations phase traffic for this project.
2	Calexico I-B - A photovoltaic solar facility generally located 6 miles west of the City of Calexico capable of producing approximately 100 megawatts of electricity.	The construction phase is calculated to generate 283 daily trips with 110 AM peak hour trips and 112 PM peak hour trips.	The operations phase is calculated to generate 8 daily trips with 3 AM peak hour trips and 3 PM peak hour trips.
3	Calexico II-A - A photovoltaic solar facility generally located 6 miles west of the City of Calexico capable of producing approximately 100 megawatts of electricity.	The construction phase is calculated to generate 283 daily trips with 110 AM peak hour trips and 112 PM peak hour trips.	The operations phase is calculated to generate 8 daily trips with 3 AM peak hour trips and 3 PM peak hour trips.

## 4.3 TRANSPORTATION AND CIRCULATION

**TABLE 4.3-35  
TRAFFIC GENERATED BY CUMULATIVE PROJECTS**

#	Project Name/Description	Existing ((Year 2013)) Status	Long-Term ((Year 2024)) Status
4	Calexico II-B - A photovoltaic solar facility generally located 6 miles west of the City of Calexico capable of producing approximately 100 megawatts .	The construction phase is calculated to generate 283 daily trips with 110 AM peak hour trips and 112 PM peak hour trips.	The operations phase is calculated to generate 8 daily trips with 3 AM peak hour trips and 3 PM peak hour trips.
5	Campo Verde - A photovoltaic solar facility generally located west of Drew Road and south of I-8.	This project was under construction at the time the traffic counts were collected; therefore, the cumulative traffic is accounted for within the existing baseline data.	This project was under construction at the time the Year 2013 traffic counts were collected; thereby this project's cumulative traffic is accounted for within the existing baseline data that was also increased by the 2.8% growth factor for ambient growth for Year 2024 conditions. Therefore, this cumulative project construction traffic as embedded in the ambient growth would be higher than the operations phase traffic for this project.
6	Centinela Solar Energy - A photovoltaic solar facility generally located in the vicinity of SR-98 and Drew Road capable of producing approximately 275 megawatts of electricity	This project was under construction at the time the traffic counts were collected; therefore, the cumulative traffic is accounted for within the existing baseline data.	This project was under construction at the time the Year 2013 traffic counts were collected; thereby this project's cumulative traffic is accounted for within the existing baseline data that was also increased by the 2.8% growth factor for ambient growth for Year 2024 conditions. Therefore, this cumulative project construction traffic as embedded in the ambient growth would be higher than the operations phase traffic for this project.
7	County Center II Expansion - a mixed use project of a commercial center, expansion of the Imperial County Office of Education, a Joint-Use Teacher	The total project is calculated to generate 24,069 ADT with 2,581 AM peak hour trips and 2,242 PM peak hour trips.	The total project is calculated to generate 24,069 ADT with 2,581 AM peak hour trips and 2,242 PM peak hour trips.

## 4.3 TRANSPORTATION AND CIRCULATION

**TABLE 4.3-35**  
**TRAFFIC GENERATED BY CUMULATIVE PROJECTS**

#	Project Name/Description	Existing ((Year 2013)) Status	Long-Term ((Year 2024)) Status
	Training and Conference Center, Judicial Center, County Park, Jail expansion, County Administrative Complex, Public Works Administration, and a County Administrative Complex located on the southwest corner of McCabe Road and Clark Road.		
8	IV Substation and SDG&E Ocotillo Solar - A project connecting the Imperial Irrigation District's "S" line from the Imperial Irrigation District substation to the Imperial Valley substation and a photovoltaic solar facility on approximately 100 acres located adjacent to the SDG&E Imperial Valley Substation capable of producing approximately 14 megawatts of electricity.	The combined projects are estimated at 240 ADT with 45 AM peak hour trips and 45 PM peak hour trips.	The operations phase is calculated to generate 8 daily trips with 3 AM peak hour trips and 3 PM peak hour trips.
9	Imperial Solar 1 LLC (Heber Solar Energy Facility) - A solar facility generally located in the vicinity of Dogwood Road south of East Heber Road. This project is northeast of the study area and is not anticipated to add traffic to the study area roadways.	This project is northeast of the study area and is not anticipated to add traffic to the study area roadways.	This project is northeast of the study area and is not anticipated to add traffic to the study area roadways.



## 4.3 TRANSPORTATION AND CIRCULATION

**TABLE 4.3-35**  
**TRAFFIC GENERATED BY CUMULATIVE PROJECTS**

#	Project Name/Description	Existing ((Year 2013)) Status	Long-Term ((Year 2024)) Status
10	Imperial Solar Energy Center South - A photovoltaic solar facility generally located south of SR-98 and east of Drew Road capable of producing approximately 200 megawatts of electricity. This project was under construction at the time the traffic counts were collected; therefore, the cumulative traffic is accounted for within the existing baseline data.	This project was under construction at the time the traffic counts were collected; therefore, the cumulative traffic is accounted for within the existing baseline data.	This project was under construction at the time the Year 2013 traffic counts were collected; thereby this project's cumulative traffic is accounted for within the existing baseline data that was also increased by the 2.8% growth factor for ambient growth for Year 2024 conditions. Therefore, this cumulative project construction traffic as embedded in the ambient growth would be higher than the operations phase traffic for this project.
11	Imperial Solar Energy Center West - A photovoltaic solar facility generally located east of Dunaway Road and located both north and south of I-8. The project would be capable of producing approximately 250 megawatts of electricity.	The construction phase of the project is calculated to generate 750 ADT with 306 AM peak hour trips and 315 PM peak hour trips.	The operations phase is calculated to generate 15 daily trips with 4 AM peak hour trips and 4 PM peak hour trips.
12	IRIS Solar Farm - Photovoltaic solar facility generally located north of SR-98 between Brockman Road and Weed Road capable of producing approximately 200 megawatts of electricity.	The traffic generation for this cumulative project is calculated at 556 ADT with 221 AM and 225 PM peak hour trips.	The operations phase is calculated to generate 16 daily trips with 5 AM peak hour trips and 5 PM peak hour trips.

## 4.3 TRANSPORTATION AND CIRCULATION

**TABLE 4.3-35  
TRAFFIC GENERATED BY CUMULATIVE PROJECTS**

#	Project Name/Description	Existing ((Year 2013)) Status	Long-Term ((Year 2024)) Status
13	Linda Vista - A mixed use project of 182 single family homes and a 6 acre commercial lot generally located on the west side of Clark Road between I-8 and McCabe Road.	The traffic generation for this cumulative project is calculated at 7,175 ADT with 252 AM and 676 PM peak hour trips.	The traffic generation for this cumulative project is calculated at 7,175 ADT with 252 AM and 676 PM peak hour trips.
14	Mount Signal Solar Farm I - A photovoltaic solar facility generally located south of SR-98 between Pulliam Road and Ferrell Road capable of producing approximately 200 megawatts of electricity.	This project was under construction at the time the traffic counts were collected; therefore, the cumulative traffic is accounted for within the existing baseline data.	This project was under construction at the time the Year 2013 traffic counts were collected; thereby this project's cumulative traffic is accounted for within the existing baseline data that was also increased by the 2.8% growth factor for ambient growth for Year 2024 conditions. Therefore, this cumulative project construction traffic as embedded in the ambient growth would be higher than the operations phase traffic for this project.
15	Canergy Rockwood - A chemical manufacturing project generally located northeast of Brawley.	However, this cumulative project is included because it may add up to 20 peak hour trips to I-8 in the vicinity of the project.	This project is outside of the project's traffic study area (approximately 20 miles away as a crow flies); however, this cumulative project is included because it may add up to 20 peak hour trips to I-8 in the vicinity of the project.
16	California Ethanol & Power - An electricity and bio-methane facility generally located approximately 4.5 miles south-southeast of the City of Brawley. This project is outside of the project's traffic study area (approximately 15 miles away as a crow flies).	However, this cumulative project is included because it may add up to 20 peak hour trips to I-8 in the vicinity of the project.	This project is outside of the project's traffic study area (approximately 15 miles away as a crow flies); however, this cumulative project is included because it may add up to 20 peak hour trips to I-8 in the vicinity of the project.

## 4.3 TRANSPORTATION AND CIRCULATION

**TABLE 4.3-35**  
**TRAFFIC GENERATED BY CUMULATIVE PROJECTS**

#	Project Name/Description	Existing ((Year 2013)) Status	Long-Term ((Year 2024)) Status
17	Cumulative on I-8 - Some of the remaining cumulative projects within Imperial County may add traffic to I-8.	To account for the possibility of cumulative traffic being added to I-8, 5% of the existing I-8 peak hour volume was used as cumulative background peak hour traffic on I-8.	Many of the cumulative projects do not have traffic assignments for I-8 (because they are too far away) and some cumulative projects are too small to require a traffic study; therefore, they do not have reported cumulative traffic volumes for I-8. To account for the possibility of cumulative traffic being added to I-8, five percent of the existing I-8 peak hour volume was used as cumulative background peak hour traffic on I-8.

Source: LOS 2014.

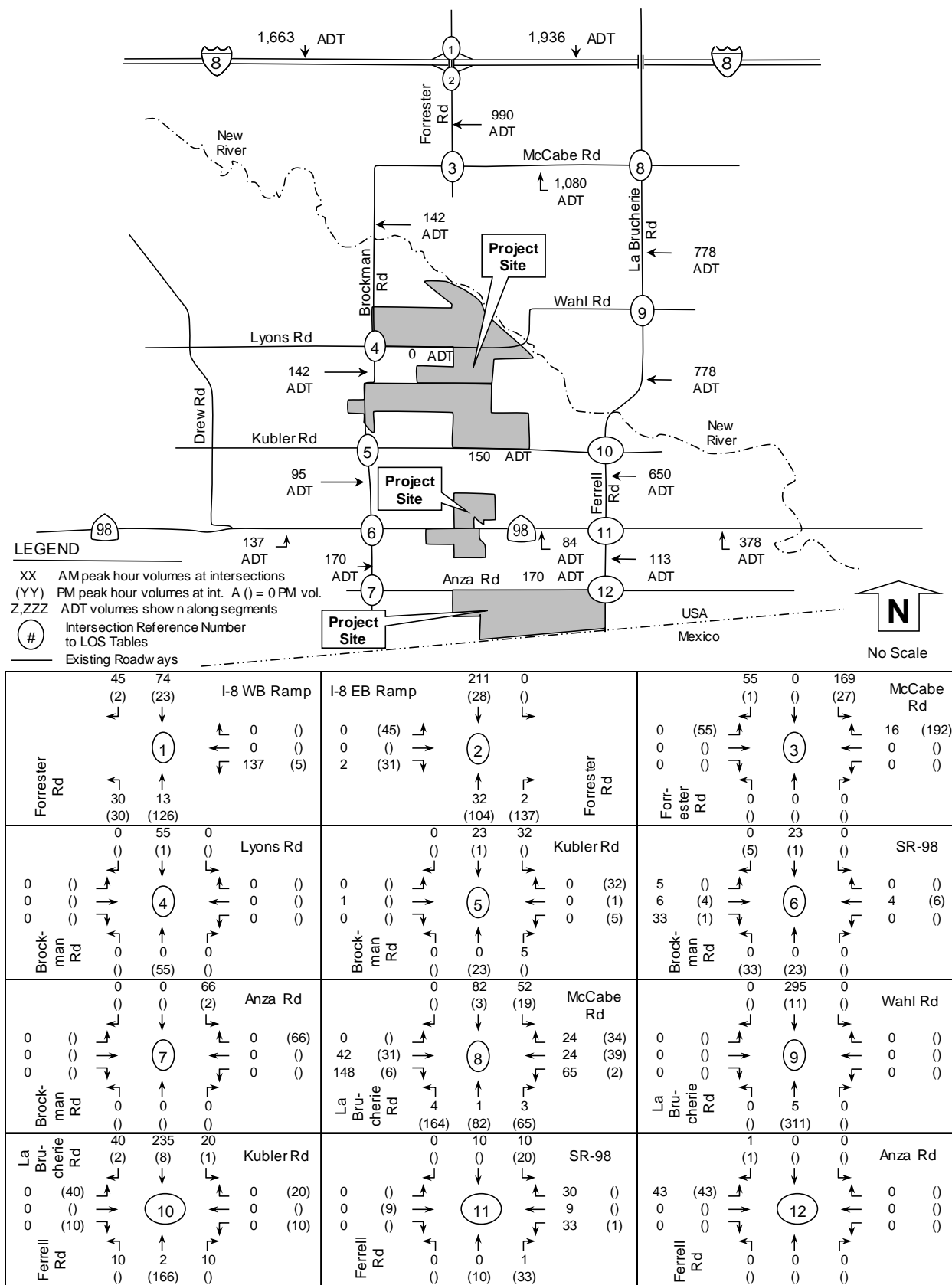
### B. METHODOLOGY

It was assumed that the cumulative projects listed above will be generating construction traffic during construction of the proposed Project in the pre-Long Term (Year 2024) Scenarios. In the Existing scenarios (Year 2013) and Near-Term (Year 2016) scenarios, some of the cumulative projects will finish construction before the proposed Project and some will finish after construction after the proposed Project. In the Mid-Term (Year 2019) Scenario, some of these cumulative projects will finish construction before the proposed Project. Most, if not all, of the cumulative solar projects will have a peak construction period that may not coincide with the proposed Project's peak construction period. There is also a possibility that some of the cumulative projects will not be built. However, this analysis assumes a conservative approach for Existing (Year 2013), Near-Term (Year 2016), and Mid-Term (Year 2019) in that all of the peak cumulative construction volumes were assumed to occur at the same time as the peak construction volumes for the proposed Project. Realistically, it is unlikely that all construction peaks will coincide. **Figure 4.3-30** shows the cumulative project (new development) volumes. The methodology for the Long Term (Year 2024) cumulative impact analysis is described in the cumulative setting discussion above.

As with the Project specific analysis above, the cumulative analysis examined four cumulative scenarios: (Year 2013), Near-Term 2016, Mid-Term (Year 2019) and Long-Term (Year 2024).

In addition, Horizon Year 2049 was selected as the horizon year because it is 30 years past the mid-point (Year 2019) of the best estimate of when the Project may be constructed. At the conclusion of the CUP term (estimated at Year 2049), the Project entitlements require the Applicant to decommission the CUPs and restore each site to farmland (i.e. pre-Project soil conditions) in accordance with the provisions of the Project's Reclamation Plan.

### 4.3 TRANSPORTATION AND CIRCULATION



Source: LOS 2014.

**FIGURE 4.3-30**

**NEAR-TERM CUMULATIVE PROJECT (NEW DEVELOPMENT) VOLUMES**

## 4.3 TRANSPORTATION AND CIRCULATION

### C. CUMULATIVE IMPACTS AND MITIGATION MEASURES

#### Cumulative Impacts to Intersection, Roadway and Freeway Segment LOS - Existing (Year 2013) With Project Construction With Cumulative Conditions

**Impact 4.3.7** Implementation of the proposed Project would contribute construction traffic to Project study area intersections, roadway and freeway segments under (Year 2013) With Project Construction With Cumulative Conditions. However, none of the intersections or segments would exceed LOS C or V/C ratios under this scenario. Therefore, cumulative impacts to study area intersections, roadway segments and freeway segments under (Year 2013) With Project Construction With Cumulative Conditions are considered **less than cumulatively considerable**.

#### Existing (Year 2013) With Project Construction With Cumulative Conditions

This analysis documents the addition of Project construction traffic onto (Year 2013) with cumulative conditions. **Figure 4.3-31** depicts (Year 2013) With Project Construction With Cumulative traffic volumes. Intersection, segment, and freeway LOS are shown in **Tables 4.3-36, Table 4.3-37** and **Table 4.3-38**.

#### Intersection LOS

**Table 4.3-36** summarizes intersection LOS under (Year 2013) With Project Construction With Cumulative conditions. (Intersection LOS calculations are included in Appendix N of the Draft Traffic Impact Analysis [Appendix B of this EIR]).

**TABLE 4.3-36  
EXISTING (YEAR 2013) WITH PROJECT CONSTRUCTION WITH CUMULATIVE INTERSECTION LOS**

Intersection & (Control) <sup>1</sup>	Movement	Peak Hour	(Year 2013) With Cumulative		(Year 2013) With Cumulative With Project			
			Delay <sup>2</sup>	LOS <sup>3</sup>	Delay <sup>2</sup>	LOS <sup>3</sup>	Delta <sup>4</sup>	Impact <sup>5</sup>
1) Forrester Road at I-8 WB (U)	Minor Leg	AM PM	13.6 12.0	B B	16.5 12.5	C B	2.9 0.5	None None
2) Forrester Road at I-8 EB (U)	Minor Leg	AM PM	13.1 18.7	B C	13.3 21.1	B C	0.2 2.4	None None
3) Forrester Road at McCabe Road (U)	Minor Leg	AM PM	11.2 14.0	B B	12.5 17.4	B C	1.3 3.4	None None
4) Brockman Road at Lyons Road (U)	Minor Leg	AM PM	10.6 10.4	B B	12.3 10.6	B B	1.7 0.2	None None
5) Brockman Road at Kubler Road (U)	Minor Leg	AM PM	11.0 9.5	B A	11.3 9.8	B A	0.3 0.3	None None
6) Brockman Road at SR-98 (U)	Minor Leg	AM PM	20.4 14.0	C B	22.7 14.7	C B	2.3 0.7	None None
7) Brockman Road at Anza Road (U)	Minor Leg	AM PM	8.9 8.9	A A	9.0 9.0	A A	0.1 0.1	None None
8) La Brucherie Road at McCabe Road (U)	Minor Leg	AM PM	11.5 15.5	B C	12.6 19.4	B C	1.1 3.9	None None
9) La Brucherie Road at Wahl Road (U)	Minor Leg	AM PM	14.3 13.9	B B	16.1 17.1	C C	1.5 3.2	None None
10) Ferrell Road at Kubler Road (U)	Minor Leg	AM PM	12.4 11.7	B B	12.7 11.7	B B	0.3 0.0	None None

## 4.3 TRANSPORTATION AND CIRCULATION

**TABLE 4.3-36**  
**EXISTING (YEAR 2013) WITH PROJECT CONSTRUCTION WITH CUMULATIVE INTERSECTION LOS**

Intersection & (Control) <sup>1</sup>	Movement	Peak Hour	(Year 2013) With Cumulative		(Year 2013) With Cumulative With Project			
			Delay <sup>2</sup>	LOS <sup>3</sup>	Delay <sup>2</sup>	LOS <sup>3</sup>	Delta <sup>4</sup>	Impact <sup>5</sup>
11) Ferrell Road at SR-98 (U)	Minor Leg	AM	16.3	C	19.2	C	2.9	None
		PM	14.5	C	16.8	C	2.3	None
12) Ferrell Road at Anza Road (U)	Minor Leg	AM	9.8	A	9.8	A	0.0	None
		PM	10.1	B	10.7	B	0.6	None

Source: LOS 2014.

Notes: <sup>1</sup> Intersection Control – (S) Signalized, (U) Un-signalized.

<sup>2</sup> Delay – HCM Average Control Delay in seconds

<sup>3</sup> LOS: Level of Service Minor Leg: approach LOS of minor/lesser roadway. All: combined LOS for all approaches.  
<sup>4</sup> is the increase in delay from project. of impact: none, direct, or cumulative.

As shown, under Existing (Year 2013) With Project Construction with Cumulative Conditions, all Project study area intersections are calculated to operate at LOS C or better. Three intersections would experience a decline in LOS from LOS B to LOS C. These include Forrester Road at I-8 which would decline to LOS C in the AM peak hour; Forrester Road at McCabe Road which would decline to LOS C in the PM peak hour; and La Brucherie Road at Wahl Road which would decline to LOS C in both the AM and PM hours. LOS of all other segments would remain unchanged under cumulative conditions. Moreover, the increases in traffic resulting from cumulative conditions would not exceed LOS standards. Therefore, the proposed Project would result in a **less than cumulatively considerable contribution** to cumulative intersection traffic. Likewise, cumulative impacts to cumulative intersection LOS would be **less than cumulatively considerable** under Existing (Year 2013) With Project Construction With Cumulative conditions.

### Roadway Segment LOS

**Table 4.3-37** summarizes roadway segment LOS for Existing (Year 2013) With Project Construction With Cumulative conditions. As shown, all segments would continue to operate above LOS C (LOS A or LOS B). No change in LOS would occur for any segment with the addition of Year 2013 cumulative traffic conditions. Therefore, the proposed Project would result in a **less than cumulatively considerable contribution** to cumulative roadway segment traffic. Likewise, cumulative impacts to cumulative roadway segment LOS would be **less than cumulatively considerable** under Existing (Year 2013) With Project Construction With Cumulative conditions.

### Freeway Segment LOS

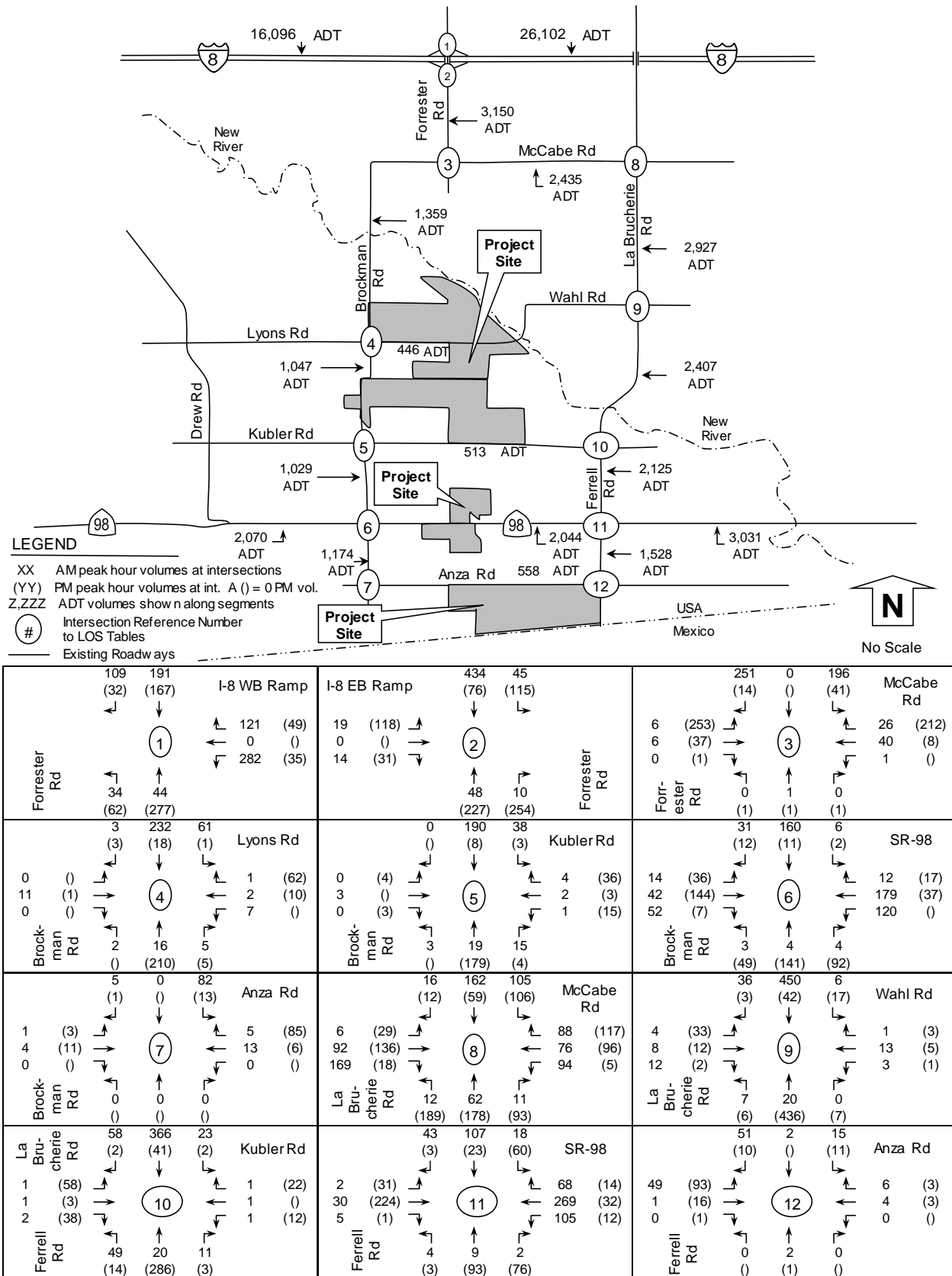
**Table 4.3-38** summarizes freeway segment LOS under Existing (Year 2013) With Project Construction With Cumulative conditions. As shown, both freeway segments were calculated to operate above LOS C (at LOS A and LOS B). Only the segment of I-8 from Drew Road to Forrester Road would experience a decline in LOS from LOS A to LOS B during the AM peak hour in the westbound direction with the addition of cumulative traffic. LOS of all other segments would be unchanged with the addition of cumulative traffic. Moreover, the increases in traffic resulting from Project construction would not exceed V/C ratios or LOS standards. Therefore, the proposed Project would result in a **less than cumulatively considerable contribution** to cumulative freeway segment traffic. Likewise, cumulative impacts to cumulative freeway segment LOS would be **less than cumulatively considerable** under Existing (Year 2013) With Project Construction With Cumulative conditions.

## 4.3 TRANSPORTATION AND CIRCULATION

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## 4.3 TRANSPORTATION AND CIRCULATION



Source: LOS 2014.

**FIGURE 4.3-31**

**EXISTING (YEAR 2013) WITH PROJECT CONSTRUCTION WITH CUMULATIVE VOLUMES**



## 4.3 TRANSPORTATION AND CIRCULATION

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## 4.3 TRANSPORTATION AND CIRCULATION

**TABLE 4.3-37**  
**EXISTING (YEAR 2013) WITH PROJECT CONSTRUCTION WITH CUMULATIVE ROADWAY SEGMENT LOS**

Roadway Segment	Classification (as built)	(Year 2013) With Cumulative				Project Daily Volume	(Year 2013) With Cumulative With Project					
		Daily Volume	LOS C Capacity	V/C	LOS		Daily Volume	LOS C Capacity	V/C	LOS	Change in V/C	Significant Impact?
<b>Anza Road</b> Brockman Road to Ferrell Road	Local (2U)	452	7,100	0.06	A	106	558	7,100	0.08	A	0.08	None
<b>Brockman Road</b> McCabe Road to Lyons Road	Major (2U)	1,093	7,100	0.15	A	266	1,359	7,100	0.19	A	0.19	None
Lyons Road to Kubler Road	Major (2U)	967	7,100	0.14	A	80	1,047	7,100	0.15	A	0.15	None
Kubler Road to SR-98	Major (2U)	923	7,100	0.13	A	106	1,029	7,100	0.14	A	0.14	None
SR-98 to Anza Road	Not Classified (2U)	1,128	7,100	0.16	A	46	1,174	7,100	0.17	A	0.17	None
<b>Forrester Road</b> I-8 to McCabe Road	Prime (2U)	2,884	7,100	0.41	B	266	3,150	7,100	0.44	B	0.44	None
<b>Kubler Road</b> Brockman Road to Ferrell Road	Major (2U)	413	7,100	0.06	A	100	513	7,100	0.07	A	0.07	None
<b>La Brucherie Road/Ferrell Road</b> McCabe Road to Wahl Road	Major (2U)	2,748	7,100	0.39	B	179	2,927	7,100	0.41	B	0.41	None
Wahl Road to Kubler Road	Major (2U)	2,327	7,100	0.33	B	80	2,407	7,100	0.34	B	0.34	None
Kubler Road to SR-98	Major (2U)	1,986	7,100	0.28	B	139	2,125	7,100	0.30	B	0.30	None
SR-98 to Anza Road	Major (2U)	1,422	7,100	0.20	A	106	1,528	7,100	0.22	A	0.22	None
<b>Lyons Road</b> Brockman Road to La Brucherie Road	Major (2U)	207	7,100	0.03	A	239	446	7,100	0.06	A	0.06	None
<b>McCabe Road</b> Forrester Road to La Brucherie Road	Major (2U)	2,369	7,100	0.33	B	66	2,435	7,100	0.34	B	0.34	None
<b>SR-98</b> Drew Road to Brockman Road	State Highway (2U)	2,037	7,100	0.29	B	33	2,070	7,100	0.29	B	0.29	None
Brockman Road to Ferrell Road	State Highway (2U)	1,984	7,100	0.28	B	60	2,044	7,100	0.29	B	0.29	None
Ferrell Road to Dogwood Road	State Highway (2U)	2,878	7,100	0.41	B	153	3,031	7,100	0.43	B	0.43	None

Source: LOS 2014.

Notes: Classification based on 1/29/08 Circulation and Scenic Highways Element.

2U = 2-lane undivided roadway. Daily volume is a 24 hour volume.

LOS: Level of Service. LOS based on actual number of lanes currently constructed.

V/C: Volume to Capacity ratio.

Impact? = type of impact (none, cumulative, or direct).

## 4.3 TRANSPORTATION AND CIRCULATION

**TABLE 4.3-38**  
**EXISTING (YEAR 2013) WITH PROJECT CONSTRUCTION WITH CUMULATIVE FREEWAY SEGMENT LOS**

Freeway Segment	I-8 Drew Road to Forrester Road				I-8 Forrester Road to Imperial Avenue			
Existing (Year 2013)								
ADT	14,400				17,600			
Peak Hour	AM		PM		AM		PM	
Direction	EB	WB	EB	WB	EB	WB	EB	WB
Number of Lanes	2	2	2	2	2	2	2	2
Capacity <sup>1</sup>	4,700	4,700	4,700	4,700	4,700	4,700	4,700	4,700
K Factor <sup>2</sup>	0.1076	0.0963	0.0917	0.1517	0.1076	0.0963	0.0917	0.1517
D Factor <sup>3</sup>	0.2616	0.7384	0.4419	0.5581	0.2616	0.7384	0.4419	0.5581
Truck Factor <sup>4</sup>	0.8376	0.8376	0.8376	0.8376	0.8376	0.8376	0.8376	0.8376
Peak Hour Volume	484	1,222	697	1,456	591	1,494	851	1,779
V/C	0.103	0.260	0.148	0.310	0.126	0.318	0.181	0.379
LOS	A	A	A	B	A	B	A	B
<b>Cumulative With Project</b>	115	292	267	172	84	419	387	153
Existing (Year 2013) With Cumulative With Project								
Peak Hour Volume	599	1,514	964	1,628	675	1,913	1,238	1,932
V/C	0.127	0.322	0.205	0.346	0.144	0.407	0.264	0.411
LOS	A	B	A	B	A	B	A	B
Increase in V/C	0.024	0.062	0.057	0.037	0.018	0.089	0.082	0.033
Impact	None	None	None	None	None	None	None	None

Source: LOS 2014.

<sup>1</sup> Capacity of 2,350 pcphpl from CALTRANS' Guide for the Preparation of Traffic Impact Studies, December 2002.

K factor from Caltrans (based on 2007 report), which is the percentage of AADT in both directions.

D factor from Caltrans (based on 2007 report), which when multiplied by K and ADT will provide peak hour volume.

truck factor from Caltrans (based on 2007 report).

Impact? = Direct, Cumulative, or None.

Overall, under Existing (Year 2013) With Project Construction With Cumulative conditions, the Project study area intersections, roadway segments and freeway segments were calculated to operate at LOS C or better with **no cumulatively considerable impacts**.

### **Cumulative Impacts to Intersection, Roadway and Freeway Segment LOS (Near-Term (Year 2016) With Project Construction With Cumulative Conditions)**

**Impact 4.3.8** Implementation of the proposed Project would contribute construction traffic to Project study area intersections, roadway segments and freeway segments under Near-Term (Year 2016) With Project Construction With Cumulative Conditions. However, none of the intersections or segments would exceed LOS C or V/C ratios under this scenario. Therefore, cumulative impacts to Project study area intersections, roadway segments and freeway segments under Near-Term (Year 2016) With Project Construction With Cumulative Conditions are considered **less than cumulatively considerable**.

### **Near-Term (Year 2016) With Project Construction With Cumulative Conditions**

This analysis documents the addition of construction traffic onto Near-Term (Year 2016) with Cumulative conditions. Near-Term (Year 2016) With Project Construction With Cumulative traffic volumes are shown

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in **Figure 4.3-32**. Intersection, segment, and freeway LOS are shown in **Tables 4.3-39**, **Table 4.3-40** and **Table 4.3-41**.

### Intersection LOS

**Table 4.3-39** summarizes intersection LOS under Near-Term (Year 2016) with Project Construction With Cumulative conditions. (Intersection LOS calculations are included in Appendix N of the Draft Traffic Impact Analysis [**Appendix B** of this EIR]).

**TABLE 4.3-39**  
**NEAR-TERM (YEAR 2016) WITH PROJECT CONSTRUCTION WITH CUMULATIVE INTERSECTION LOS**

Intersection & (Control) <sup>1</sup>	Movement	Peak Hour	(Year 2016) With Cumulative		(Year 2016) With Project			
			Delay <sup>2</sup>	LOS <sup>3</sup>	Delay <sup>2</sup>	LOS <sup>3</sup>	Delta <sup>4</sup>	Impact <sup>5</sup>
1) Forrester Road at I-8 WB (U)	Minor Leg	AM PM	14.0 12.3	B B	17.5 12.5	C B	3.5 0.2	None None
2) Forrester Road at I-8 EB (U)	Minor Leg	AM PM	13.5 20.7	B C	13.7 21.1	B C	0.2 0.4	None None
3) Forrester Road at McCabe Road (U)	Minor Leg	AM PM	11.4 14.4	B B	12.8 17.4	B C	1.4 3.0	None None
4) Brockman Road at Lyons Road (U)	Minor Leg	AM PM	10.7 10.5	B B	12.4 10.6	B B	1.7 0.1	None None
5) Brockman Rd at Kubler Road (U)	Minor Leg	AM PM	11.1 9.6	B A	11.5 9.8	B A	0.4 0.2	None None
6) Brockman Road at SR-98 (U)	Minor Leg	AM PM	20.6 14.7	C B	22.9 14.7	C B	2.3 0.0	None None
7) Brockman Road at Anza Rd (U)	Minor Leg	AM PM	8.9 8.9	A A	9.0 9.0	A A	0.1 0.1	None None
8) La Brucherie Rd at McCabe Rd(U)	Minor Leg	AM PM	12.0 17.0	B C	13.2 19.4	B C	1.2 2.4	None None
9) La Brucherie Rd at Wahl Rd (U)	Minor Leg	AM PM	15.1 14.2	C B	16.7 17.1	C C	1.6 2.9	None None
10) Ferrell Road at Kubler Rd (U)	Minor Leg	AM PM	12.6 12.0	B B	12.8 12.0	B B	0.2 0.0	None None
11) Ferrell Road at SR-98 (U)	Minor Leg	AM PM	17.6 15.4	C C	21.2 16.8	C C	3.6 1.4	None None
12) Ferrell Road at Anza Road (U)	Minor Leg	AM PM	9.8 10.2	A B	9.8 10.7	A B	0.0 0.5	None None

Source: LOS 2014. Minor Leg: approach LOS of minor/lesser roadway. All: combined LOS for all approaches.

Notes: <sup>1</sup>Control - (S) Signalized, (U) Un-signalized.

<sup>2</sup>Delay - HCM Average Control Delay in seconds.

<sup>3</sup>LOS: Level of Service.

<sup>4</sup>Delta is the increase in delay from project.

<sup>5</sup>Type of impact: none, direct, or cumulative.

As shown, under Near-Term (Year 2016) With Project Construction with Cumulative Conditions, all Project study area intersections are calculated to operate at LOS C or better. Three intersections would experience a decline in LOS from LOS B to LOS C. These include Forrester Road at I-8 which would decline to LOS C in the AM peak hour; Forrester Road at McCabe Road which would decline to LOS C in the PM peak hour; and La Brucherie Road at Wahl Road which would decline to LOS C in the PM peak hour. LOS of all other

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segments would remain unchanged under Project construction with cumulative conditions. Moreover, the increases in traffic resulting from Project construction with cumulative conditions would not exceed LOS standards. Therefore, the proposed Project would result in a **less than cumulatively considerable contribution** to cumulative intersection traffic. Likewise, cumulative impacts to cumulative intersection LOS would be **less than cumulatively considerable** under Near-Term (Year 2016) With Project Construction With Cumulative conditions.

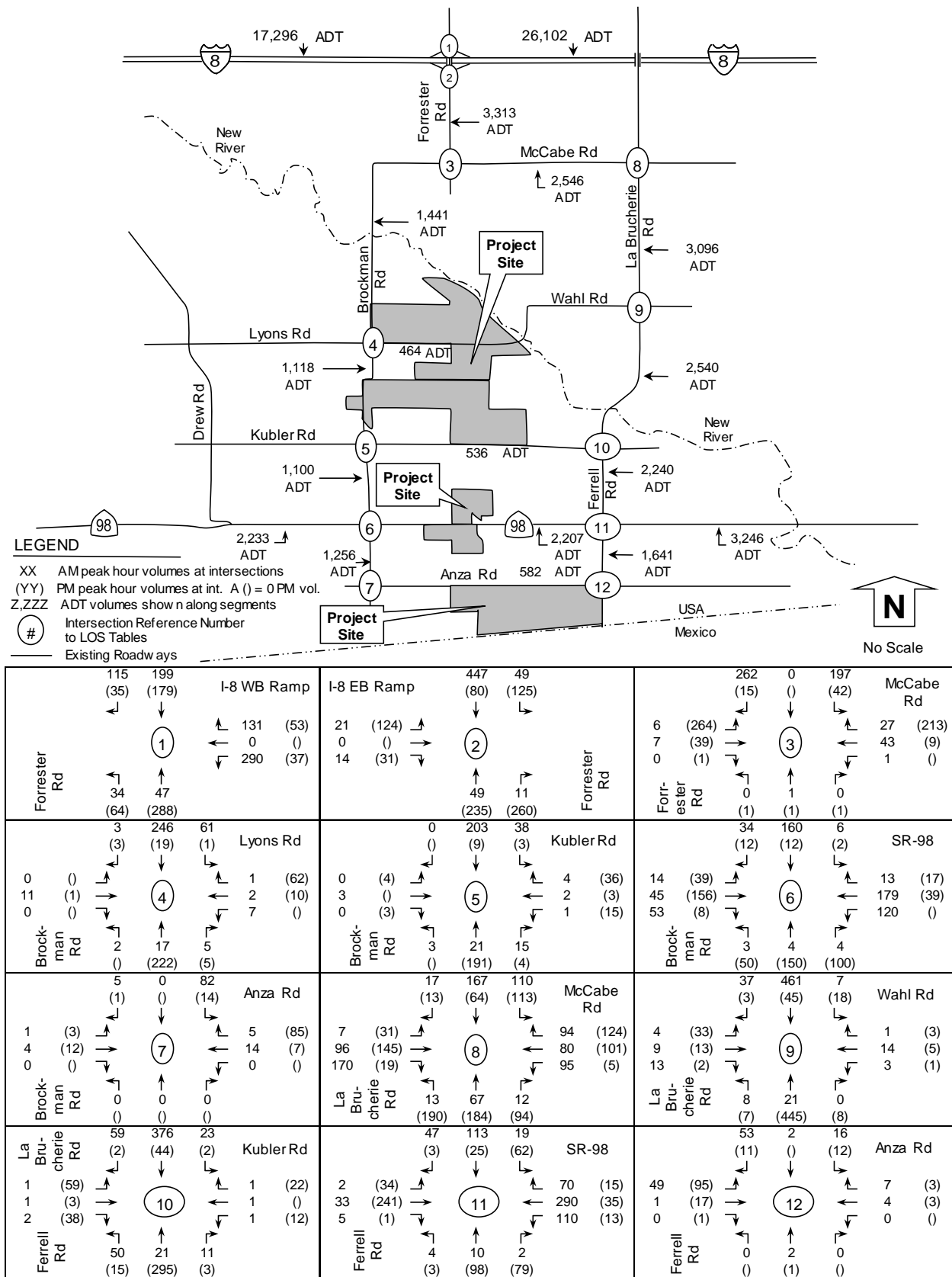
### ***Roadway Segment LOS***

**Table 4.3-40** summarizes roadway segment LOS for Near-Term (Year 2016) With Project Construction With Cumulative conditions. As shown, all segments would continue to operate above LOS C (at LOS A or LOS B). No change in LOS would occur for any segment with the addition of Near-Term (Year 2016) cumulative traffic conditions. Therefore, the proposed Project would result in a **less than cumulatively considerable contribution** to cumulative roadway segment traffic. Likewise, cumulative impacts to cumulative roadway segment LOS would be **less than cumulatively considerable** under Near-Term (Year 2016) With Project Construction With Cumulative conditions.

### ***Freeway Segment LOS***

**Table 4.3-41** summarizes freeway segment LOS under Near-Term (Year 2016) With Project Construction With Cumulative conditions. As shown, both freeway segments were calculated to operate above LOS C (at LOS A and LOS B). Only the segment of I-8 from Drew Road to Forrester Road would experience a decline in LOS from LOS A to LOS B during the AM peak hour in the westbound direction with the addition of cumulative traffic. LOS of all other segments would be unchanged with the addition of cumulative traffic. Moreover, the increases in traffic resulting from Project construction would not exceed V/C ratios or LOS standards. Therefore, the proposed Project would result in a **less than cumulatively considerable contribution** to cumulative freeway segment traffic. Likewise, cumulative impacts to cumulative freeway segment LOS would be **less than cumulatively considerable** under Near-Term (Year 2016) With Project Construction With Cumulative conditions.

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Source: LOS 2014.

**FIGURE 4.3-32**  
**NEAR-TERM (YEAR 2016) WITH PROJECT CONSTRUCTION WITH CUMULATIVE VOLUMES**

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**TABLE 4.3-40**  
**NEAR-TERM (YEAR 2016) WITH PROJECT CONSTRUCTION WITH CUMULATIVE ROADWAY SEGMENT LOS**

Roadway Segment	Classification (as built)	(Year 2016) With Cumulative				Project Daily Volume	(Year 2016) With Cumulative With Project				
		Daily Volume	LOS C Capacity	V/C	LOS		Daily Volume	LOS C Capacity	V/C	LOS	Significant Impact?
<b>Anza Road</b> Brockman Road to Ferrell Road	Local (2U)	476	7,100	0.07	A	106	582	7,100	0.08	A	None
<b>Brockman Road</b> McCabe Road to Lyons Road	Major (2U)	1,175	7,100	0.17	A	266	1,441	7,100	0.20	A	None
Lyons Road to Kubler Road	Major (2U)	1,038	7,100	0.15	A	80	1,118	7,100	0.16	A	None
Kubler Road to SR-98	Major (2U)	994	7,100	0.14	A	106	1,100	7,100	0.15	A	None
SR-98 to Anza Road	Not Classified (2U)	1,210	7,100	0.17	A	46	1,256	7,100	0.18	A	None
<b>Forrester Road</b> I-8 to McCabe Road	Prime (2U)	3,047	7,100	0.43	B	266	3,313	7,100	0.47	B	None
<b>Kubler Road</b> Brockman Road to Ferrell Road	Major (2U)	436	7,100	0.06	A	100	536	7,100	0.08	A	None
<b>La Brucherie Road/Ferrell Road</b> McCabe Road to Wahl Road	Major (2U)	2,917	7,100	0.41	B	179	3,096	7,100	0.44	B	None
Wahl Road to Kubler Road	Major (2U)	2,460	7,100	0.35	B	80	2,540	7,100	0.36	B	None
Kubler Road to SR-98	Major (2U)	2,101	7,100	0.30	B	139	2,240	7,100	0.32	B	None
SR-98 to Anza Road	Major (2U)	1,535	7,100	0.22	A	106	1,641	7,100	0.23	A	None
<b>Lyons Road</b> Brockman Road to La Brucherie Road	Major (2U)	225	7,100	0.03	A	239	464	7,100	0.07	A	None
<b>McCabe Road</b> Forrester Road to La Brucherie Road	Major (2U)	2,480	7,100	0.35	B	66	2,546	7,100	0.36	B	None
<b>SR-98</b> Drew Road to Brockman Road	State Highway (2U)	2,200	7,100	0.31	B	33	2,233	7,100	0.31	B	None
Brockman Road to Ferrell Road	State Highway (2U)	2,147	7,100	0.30	B	60	2,207	7,100	0.31	B	None
Ferrell Road to Dogwood Road	State Highway (2U)	3,093	7,100	0.44	B	153	3,246	7,100	0.46	B	None

Source: LOS 2014.

Notes: Classification based on the Imperial County General Plan, Circulation and Scenic Highways Element, January 29, 2008.

2U = 2-lane undivided roadway.

Daily volume is a 24 hour volume.

LOS: Level of Service. LOS based on actual number of lanes currently constructed.

V/C: Volume to Capacity ratio.

Impact? = type of impact (none, cumulative, or direct).



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**TABLE 4.3-41**  
**NEAR-TERM (YEAR 2016) WITH PROJECT CONSTRUCTION WITH CUMULATIVE FREEWAY SEGMENT LOS**

Freeway Segment	I-8 Drew Road to Forrester Road				I-8 Forrester Road to Imperial Avenue			
Forecasted (Year 2016)								
ADT	15,600				19,100			
Peak Hour	AM		PM		AM		PM	
Direction	EB	WB	EB	WB	EB	WB	EB	WB
Number of Lanes	2	2	2	2	2	2	2	2
Capacity <sup>1</sup>	4,700	4,700	4,700	4,700	4,700	4,700	4,700	4,700
K Factor <sup>2</sup>	0.1076	0.0963	0.0917	0.1517	0.1076	0.0963	0.0917	0.1517
D Factor <sup>3</sup>	0.2616	0.7384	0.4419	0.5581	0.2616	0.7384	0.4419	0.5581
Truck Factor <sup>4</sup>	0.8376	0.8376	0.8376	0.8376	0.8376	0.8376	0.8376	0.8376
Peak Hour Volume	524	1,324	755	1,577	642	1,621	924	1,931
V/C	0.112	0.282	0.161	0.335	0.137	0.345	0.197	0.411
LOS	A	A	A	B	A	B	A	B
<b>Cumulative With Project</b>	115	292	267	172	84	419	387	153
<b>2016 With Cumulative With Project</b>								
Peak Hour Volume	639	1,616	1,022	1,749	729	2,049	1,316	2,094
V/C	0.136	0.344	0.217	0.372	0.155	0.436	0.280	0.445
LOS	A	B	A	B	A	B	A	B
Increase in V/C	0.024	0.062	0.057	0.037	0.018	0.089	0.082	0.033
Impact	None	None	None	None	None	None	None	None

Source: LOS 2014.

Notes: <sup>1</sup> Capacity of 2,350 pcphpl from CALTRANS' Guide for the Preparation of Traffic Impact Studies, December 2002.

K factor from Caltrans (based on 2007 report), which is the percentage of AADT in both directions.

D factor from Caltrans (based on 2007 report), which when multiplied by K and ADT will provide peak hour volume.

truck factor from Caltrans (based on 2007 report).

Impact? = Direct, Cumulative, or None.

Overall, under near-term (Year 2016) With Project Construction With Cumulative conditions, the Project study area intersections, roadway segments and freeway segments were calculated to operate at LOS C or better with **no cumulatively considerable impacts**.

### **Cumulative Impacts to Intersection, Roadway and Freeway Segment LOS - Mid-Term (Year 2019) With Project Construction With Cumulative Conditions**

**Impact 4.3.9** Implementation of the proposed Project would contribute construction traffic to Project study area intersections, roadway segment and freeway segments under Mid-Term (Year 2019) With Project Construction With Cumulative Conditions. However, none of the intersections or segments would exceed LOS C or V/C ratios under this scenario. Therefore, cumulative impacts to Project study area intersection, roadway segments and freeway segments under Mid-Term (Year 2019) With Project Construction With Cumulative Conditions are considered **less than cumulatively considerable**.

### **Mid-Term (Year 2019) With Project Construction With Cumulative Conditions**

This section discusses the addition of construction traffic onto Mid-Term (Year 2019) with cumulative conditions. Mid-term (Year 2019) Cumulative Project traffic was used for this scenario. Mid-Term (Year

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2019) With Project Construction With Cumulative traffic volumes are shown in **Figure 4.3-33**. Intersection, segment, and freeway LOS are shown in **Table 4.3-42**, **Table 4.3-43** and **Table 4.3-44**.

### Intersection LOS

**Table 4.3-42** summarizes intersection LOS under Mid-Term (Year 2019) With Project Construction With Cumulative conditions. (Intersection LOS calculations are included in Appendix U of the Draft Traffic Impact Analysis [**Appendix B** of this EIR]).

**TABLE 4.3-42**  
**MID-TERM (YEAR 2019) WITH PROJECT CONSTRUCTION WITH CUMULATIVE INTERSECTION LOS**

Intersection & (Control) <sup>1</sup>	Movement	Peak Hour	(Year 2019) With Cumulative		(Year 2019) With Cumulative With Project			
			Delay <sup>2</sup>	LOS <sup>3</sup>	Delay <sup>2</sup>	LOS <sup>3</sup>	Delta <sup>4</sup>	Impact <sup>5</sup>
1) Forrester Road at I-8 WB (U)	Minor Leg	AM PM	14.6 12.6	B B	18.9 13.2	C B	4.3 0.6	None None
2) Forrester Road at I-8 EB (U)	Minor Leg	AM PM	13.9 21.2	B C	14.2 24.1	B C	0.3 2.9	None None
3) Forrester Road at McCabe Road (U)	Minor Leg	AM PM	11.7 15.0	B B	13.2 18.9	B C	1.5 3.9	None None
4) Brockman Road at Lyons Road (U)	Minor Leg	AM PM	10.8 10.6	B B	12.6 10.8	B B	1.8 0.2	None None
5) Brockman Road at Kubler Road (U)	Minor Leg	AM PM	11.2 9.7	B A	11.6 10.1	B B	0.4 0.4	None None
6) Brockman Road at SR-98 (U)	Minor Leg	AM PM	20.9 16.2	C C	23.3 17.3	C C	2.4 1.1	None None
7) Brockman Road at Anza Road (U)	Minor Leg	AM PM	9.0 9.0	A A	9.0 9.0	A A	0.0 0.0	None None
8) La Brucherie Road at McCabe Road (U)	Minor Leg	AM PM	12.5 17.4	B C	14.0 22.2	B C	1.5 4.8	None None
9) La Brucherie Road at Wahl Road (U)	Minor Leg	AM PM	15.6 14.6	C B	17.5 18.2	C C	1.9 3.6	None None
10) Ferrell Road at Kubler Road (U)	Minor Leg	AM PM	12.8 12.1	B B	13.0 12.1	B B	0.2 0.0	None None
11) Ferrell Road at SR-98 (U)	Minor Leg	AM PM	19.5 16.4	C C	24.1 19.8	C C	4.6 3.4	None None
12) Ferrell Road at Anza Road (U)	Minor Leg	AM PM	9.9 10.2	A B	9.9 10.8	A B	0.0 0.6	None None

Source: LOS 2014. Minor Leg: approach LOS of minor/lesser roadway. All: combined LOS for all approaches.

Notes: <sup>1</sup> Control - (S) Signalized, (U) Un-signalized.

<sup>2</sup> Delay - HCM Average Control Delay in seconds.

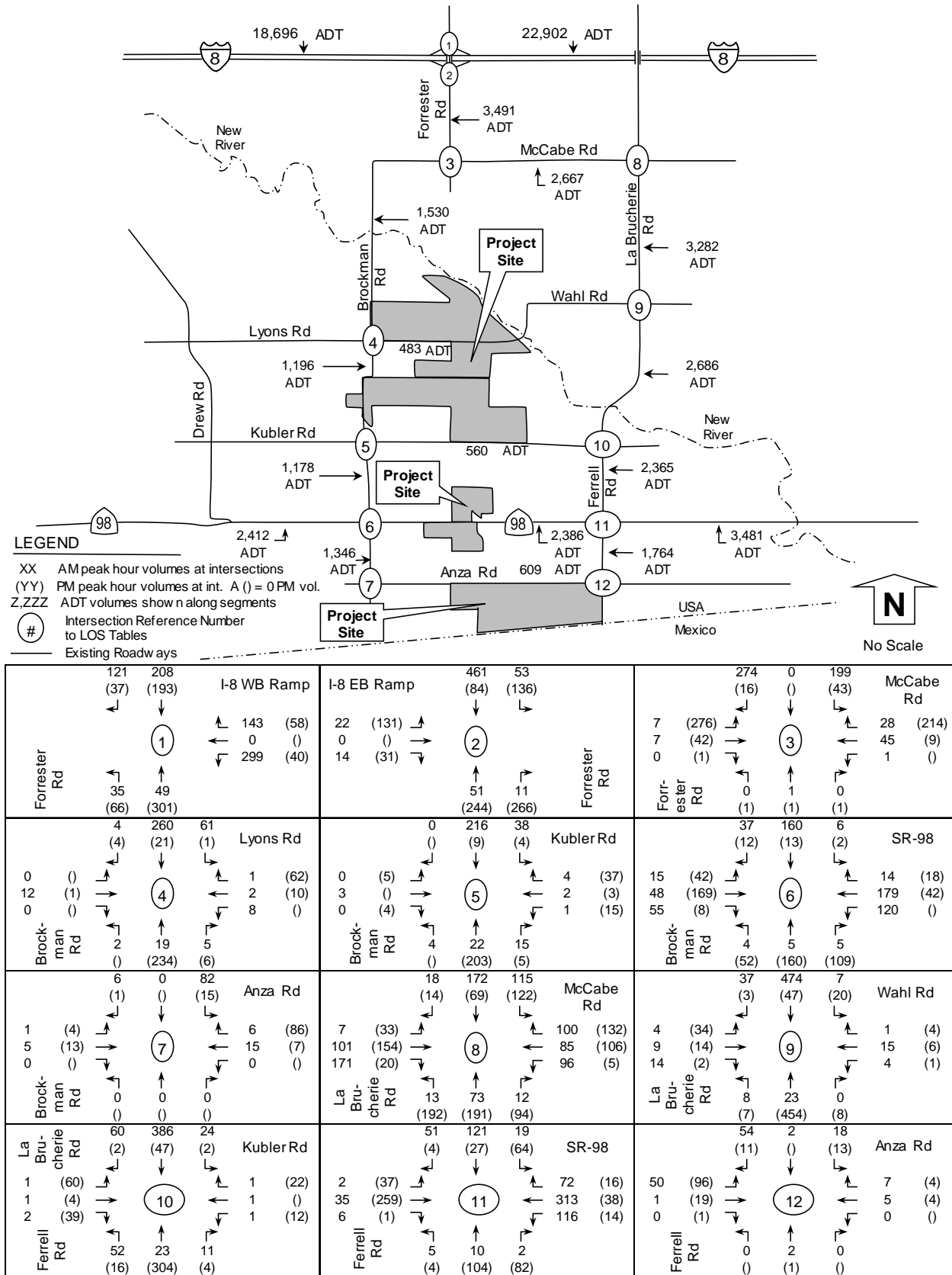
<sup>3</sup> LOS: Level of Service.

<sup>4</sup> Delta is the increase in delay from project.

<sup>5</sup> Type of impact: none, direct, or cumulative.

As shown, under Mid-Term (Year 2019) With Project Construction With Cumulative Conditions, all Project study area intersections are calculated to operate at LOS C or better. Four intersections (Forrester Road at I-8 westbound) would experience a decline from LOS B to LOS C in the AM peak hour; Forrester Road at Kubler Road would experience a decline from LOS B to LOS C in the PM peak hour; and

## 4.3 TRANSPORTATION AND CIRCULATION



Source: LOS 2014.

**FIGURE 4.3-33**

**MID-TERM (YEAR 2019) WITH PROJECT CONSTRUCTION WITH CUMULATIVE**

## 4.3 TRANSPORTATION AND CIRCULATION

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La Brucherie Road at Wahl Road which would experience a decline LOS B to LOS C in the PM peak hour. LOS of all other segments would remain unchanged under cumulative conditions. Moreover, the increases in traffic resulting from cumulative conditions would not exceed LOS standards. Therefore, the proposed Project would result in a **less than cumulatively considerable contribution** to cumulative intersection traffic. Likewise, cumulative impacts to cumulative intersection LOS would be **less than cumulatively considerable** under Mid-Term (Year 2019) With Project Construction With Cumulative conditions.

### Roadway Segment LOS

**Table 4.3-43** summarizes roadway segment LOS for Mid-Term (Year 2019) With Project Construction With Cumulative conditions. As shown, all segments would continue to operate above LOS C (at LOS A or LOS B). No change in LOS would occur for any segment with the addition of Mid-Term (Year 2019) cumulative traffic conditions. Therefore, the proposed Project would result in a **less than cumulatively considerable contribution** to cumulative roadway segment traffic. Likewise, cumulative impacts to cumulative roadway segment LOS would be **less than cumulatively considerable** under Mid-Term (Year 2019) With Project Construction With Cumulative conditions.

### Freeway Segment LOS

**Table 4.3-44** summarizes freeway segment LOS under Mid-Term (Year 2019) With Project Construction With Cumulative conditions. As shown, both freeway segments were calculated to operate above LOS C (at LOS A and LOS B) and no change in LOS would occur with the addition of cumulative traffic. Moreover, the increases in traffic resulting from Project construction would not exceed V/C ratios or LOS standards. Therefore, the proposed Project would result in a **less than cumulatively considerable contribution** to cumulative freeway segment traffic. Likewise, cumulative impacts to cumulative freeway segment LOS would be **less than cumulatively considerable** under Mid-Term (Year 2019) With Project Construction With Cumulative conditions.

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## 4.3 TRANSPORTATION AND CIRCULATION

**TABLE 4.3-43**  
**MID-TERM (YEAR 2019) WITH PROJECT CONSTRUCTION WITH CUMULATIVE ROADWAY SEGMENT LOS**

Roadway Segment	Classification (as built)	(Year 2019) With Cumulative				Project Daily Volume	(Year 2019) With Cumulative With Project				
		Daily Volume	LOS C Capacity	V/C	LOS		Daily Volume	LOS C Capacity	V/C	LOS	Significant Impact?
<b>Anza Road</b> Brockman Road to Ferrell Road	Local (2U)	503	7,100	0.07	A	106	609	7,100	0.09	A	None
<b>Brockman Road</b> McCabe Road to Lyons Road	Major (2U)	1,264	7,100	0.18	A	266	1,530	7,100	0.22	A	None
Lyons Road to Kubler Road	Major (2U)	1,116	7,100	0.16	A	80	1,196	7,100	0.17	A	None
Kubler Road to SR-98	Major (2U)	1,072	7,100	0.15	A	106	1,178	7,100	0.17	A	None
SR-98 to Anza Road	Not Classified (2U)	1,300	7,100	0.18	A	46	1,346	7,100	0.19	A	None
<b>Forrester Road</b> I-8 to McCabe Road	Prime (2U)	3,225	7,100	0.45	B	266	3,491	7,100	0.49	B	None
<b>Kubler Road</b> Brockman Road to Ferrell Road	Major (2U)	460	7,100	0.06	A	100	560	7,100	0.08	A	None
<b>La Brucherie Road/Ferrell Road</b> McCabe Road to Wahl Road	Major (2U)	3,103	7,100	0.44	B	179	3,282	7,100	0.46	B	None
Wahl Road to Kubler Road	Major (2U)	2,606	7,100	0.37	B	80	2,686	7,100	0.38	B	None
Kubler Road to SR-98	Major (2U)	2,226	7,100	0.31	B	139	2,365	7,100	0.33	B	None
SR-98 to Anza Road	Major (2U)	1,658	7,100	0.23	A	106	1,764	7,100	0.25	A	None
<b>Lyons Road</b> Brockman Road to La Brucherie Rd	Major (2U)	244	7,100	0.03	A	239	483	7,100	0.07	A	None
<b>McCabe Road</b> Forrester Road to La Brucherie Road	Major (2U)	2,601	7,100	0.37	B	66	2,667	7,100	0.38	B	None
<b>SR-98</b> Drew Road to Brockman Road	State Highway (2U)	2,379	7,100	0.34	B	33	2,412	7,100	0.34	B	None
Brockman Road to Ferrell Road	State Highway (2U)	2,326	7,100	0.33	B	60	2,386	7,100	0.34	B	None
Ferrell Road to Dogwood Road	State Highway (2U)	3,328	7,100	0.47	B	153	3,481	7,100	0.49	B	None

Source: LOS 2014.

Notes: Classification based on 1/29/08 Circulation and Scenic Highways Element.

2U = 2-lane undivided roadway.

Daily volume is a 24 hour volume.

LOS: Level of Service. LOS based on actual number of lanes currently constructed.

V/C: Volume to Capacity ratio.

Impact? = type of impact (none, cumulative, or direct).

## 4.3 TRANSPORTATION AND CIRCULATION

**TABLE 4.3-44**  
**MID-TERM (YEAR 2019) WITH PROJECT CONSTRUCTION WITH CUMULATIVE FREEWAY SEGMENT LOS**

Freeway Segment	I-8 Drew Road to Forrester Road				I-8 Forrester Road to Imperial Avenue			
Forecasted (Year 2019)								
ADT	17,000				20,800			
Peak Hour	AM		PM		AM		PM	
Direction	EB	WB	EB	WB	EB	WB	EB	WB
Number of Lanes	2	2	2	2	2	2	2	2
Capacity <sup>1</sup>	4,700	4,700	4,700	4,700	4,700	4,700	4,700	4,700
K Factor <sup>2</sup>	0.1076	0.0963	0.0917	0.1517	0.1076	0.0963	0.0917	0.1517
D Factor <sup>3</sup>	0.2616	0.7384	0.4419	0.5581	0.2616	0.7384	0.4419	0.5581
Truck Factor <sup>4</sup>	0.8376	0.8376	0.8376	0.8376	0.8376	0.8376	0.8376	0.8376
Peak Hour Volume	571	1,443	822	1,718	699	1,766	1,006	2,102
V/C	0.122	0.307	0.175	0.366	0.149	0.376	0.214	0.447
LOS	A	B	A	B	A	B	A	B
Cumulative With Project	115	292	267	172	84	419	387	153
2019 With Cumulative With Project								
Peak Hour Volume	686	1,735	1,089	1,890	783	2,185	1,393	2,255
V/C	0.146	0.369	0.232	0.402	0.167	0.465	0.296	0.480
LOS	A	B	A	B	A	B	A	B
Increase in V/C	0.024	0.062	0.057	0.037	0.018	0.089	0.082	0.033
Impact	None	None	None	None	None	None	None	None

Source: LOS 2014.

Notes: of 2,350 pcphpl from CALTRANS' Guide for the Preparation of Traffic Impact Studies, December 2002.

K factor from Caltrans (based on 2007 report), which is the percentage of AADT in both directions.

D factor from Caltrans (based on 2007 report), which when multiplied by K and ADT will provide peak hour volume.

truck factor from Caltrans (based on 2007 report).

Impact? = Direct, Cumulative, or None.

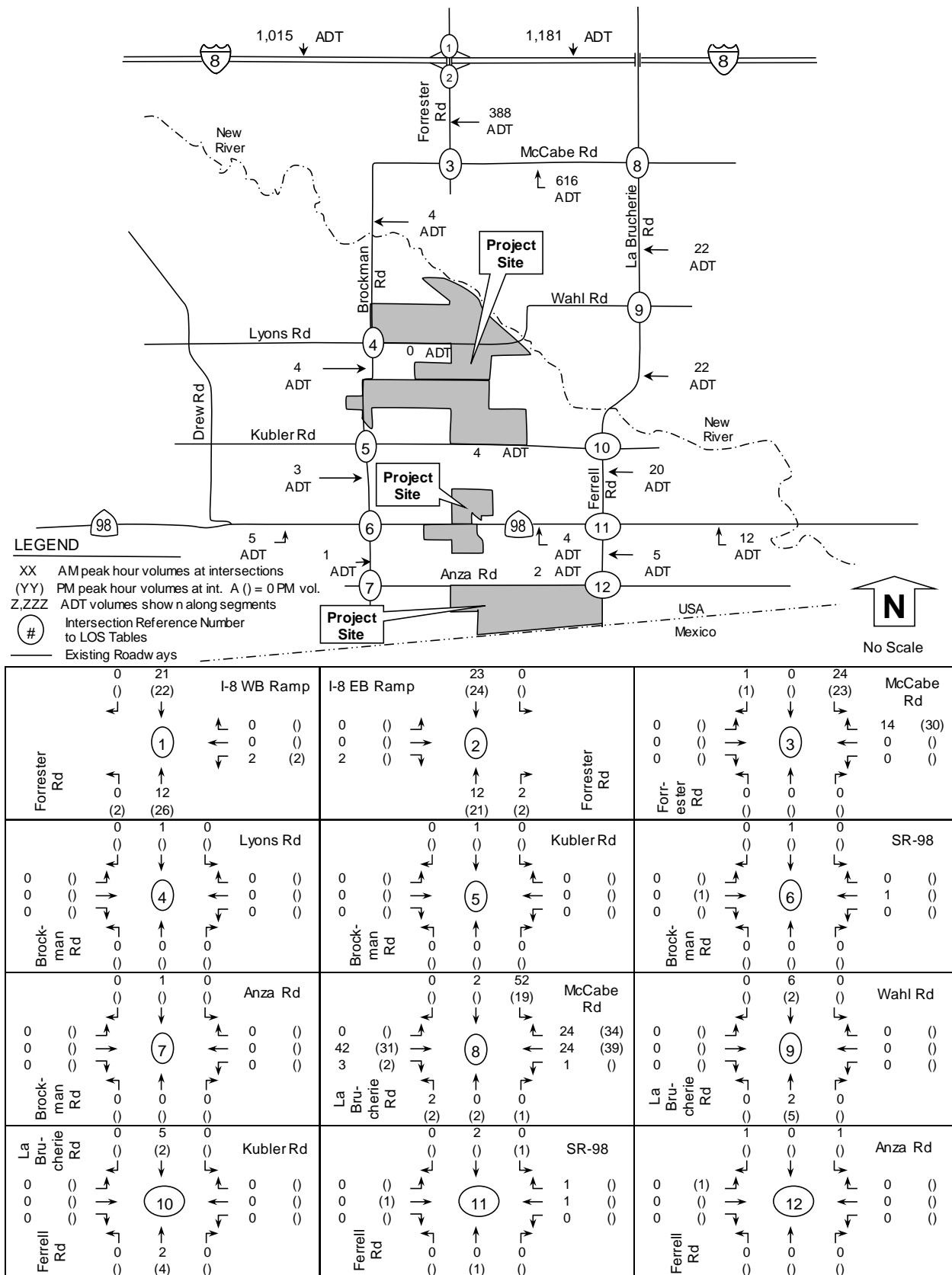
Overall, under Mid-Term (Year 2019) With Project Construction With Cumulative Conditions, the Project study area intersections, roadway segments and freeway segments were calculated to operate at LOS C or better with **no cumulatively considerable impacts**.

### **Cumulative Impacts to Intersection, Roadway and Freeway Segment LOS - Long-Term (Year 2024) With Project Construction With Cumulative Conditions**

**Impact 4.3.10** Implementation of the proposed Project would contribute construction traffic to Project study area intersections, roadway segments and freeway segments under Long-Term (Year 2024) With Project Construction With Cumulative Conditions. However, none of the intersections or segments would exceed LOS C or V/C ratios under this scenario. Therefore, cumulative impacts to Project study area intersections, roadway segments and freeway segments under Long-Term (Year 2024) With Project Construction With Cumulative Conditions are considered **less than cumulatively considerable**.

This section documents the addition of Project construction traffic onto (Year 2024) With Cumulative conditions. Long-term cumulative project traffic was used for this scenario. Traffic from the long-term cumulative list identified in **Table 4.3-34**, above, was applied to the Long-Term (Year 2024) conditions. **Figure 4.3-17** depicts the long-term cumulative project (new development) volumes.

## 4.3 TRANSPORTATION AND CIRCULATION



Source: LOS 2014.

**FIGURE 4.3-34**

**LONG-TERM CUMULATIVE PROJECT (NEW DEVELOPMENT) VOLUMES**



## 4.3 TRANSPORTATION AND CIRCULATION

Figure 4.3-35 depicts Long-Term (Year 2024) With Project Construction With Cumulative traffic volumes. Intersection, segment, and freeway LOS are shown in Table 4.3-45, Table 4.3-46 and Table 4.3-47

### Intersection LOS

Table 4.3-45 summarizes intersection LOS under Long-Term (Year 2024) With Project Construction With Cumulative conditions. (Intersection LOS calculations are included in Appendix Y of the Draft Traffic Impact Analysis [Appendix B of this EIR]).

**TABLE 4.3-45**  
**LONG-TERM (YEAR 2024) WITH PROJECT CONSTRUCTION WITH CUMULATIVE INTERSECTION LOS**

Intersection & (Control) <sup>1</sup>	Movement	Peak Hour	(Year 2024) With Cumulative		(Year 2024) With Cumulative With Project			
			Delay <sup>2</sup>	LOS <sup>3</sup>	Delay <sup>2</sup>	LOS <sup>3</sup>	Delta <sup>4</sup>	Impact <sup>5</sup>
1) Forrester Road at I-8 WB (U)	Minor Leg	AM PM	10.4 11.5	B B	11.2 11.9	B B	0.8 0.4	None None
2) Forrester Road at I-8 EB (U)	Minor Leg	AM PM	11.8 20.0	B C	12.1 22.5	B C	0.3 2.5	None None
3) Forrester Road at McCabe Road (U)	Minor Leg	AM PM	9.8 11.7	A B	10.6 14.9	B B	0.8 3.2	None None
4) Brockman Road at Lyons Road (U)	Minor Leg	AM PM	10.7 10.4	B B	12.4 10.6	B B	1.7 0.2	None None
5) Brockman Road at Kubler Road (U)	Minor Leg	AM PM	10.5 9.3	B A	11.0 10.1	B B	0.5 0.8	None None
6) Brockman Road at SR-98 (U)	Minor Leg	AM PM	17.8 15.9	C C	19.5 17.0	C C	1.7 1.1	None None
7) Brockman Road at Anza Road (U)	Minor Leg	AM PM	8.6 8.8	A A	8.7 8.8	A A	0.1 0.0	None None
8) La Brucherie Road at McCabe Road (U)	Minor Leg	AM PM	9.9 11.7	A B	10.7 12.6	B B	0.8 0.9	None None
9) La Brucherie Road at Wahl Road (U)	Minor Leg	AM PM	10.8 10.2	B B	11.3 11.2	B B	0.5 1.0	None None
10) Ferrell Road at Kubler Road (U)	Minor Leg	AM PM	10.1 10.0	B B	10.4 10.0	B B	0.3 0.0	None None
11) Ferrell Road at SR-98 (U)	Minor Leg	AM PM	18.7 15.8	C C	22.8 18.9	C C	4.1 3.1	None None
12) Ferrell Road at Anza Road (U)	Minor Leg	AM PM	9.2 9.6	A A	9.2 10.1	A B	0.0 0.5	None None

Source: LOS 2014. Minor Leg: approach LOS of minor/lesser roadway.

All: combined LOS for all approaches.

Notes: <sup>1</sup>Control - (S) Signalized, (U) Un-signalized.

<sup>2</sup>Delay - HCM Average Control Delay in seconds.

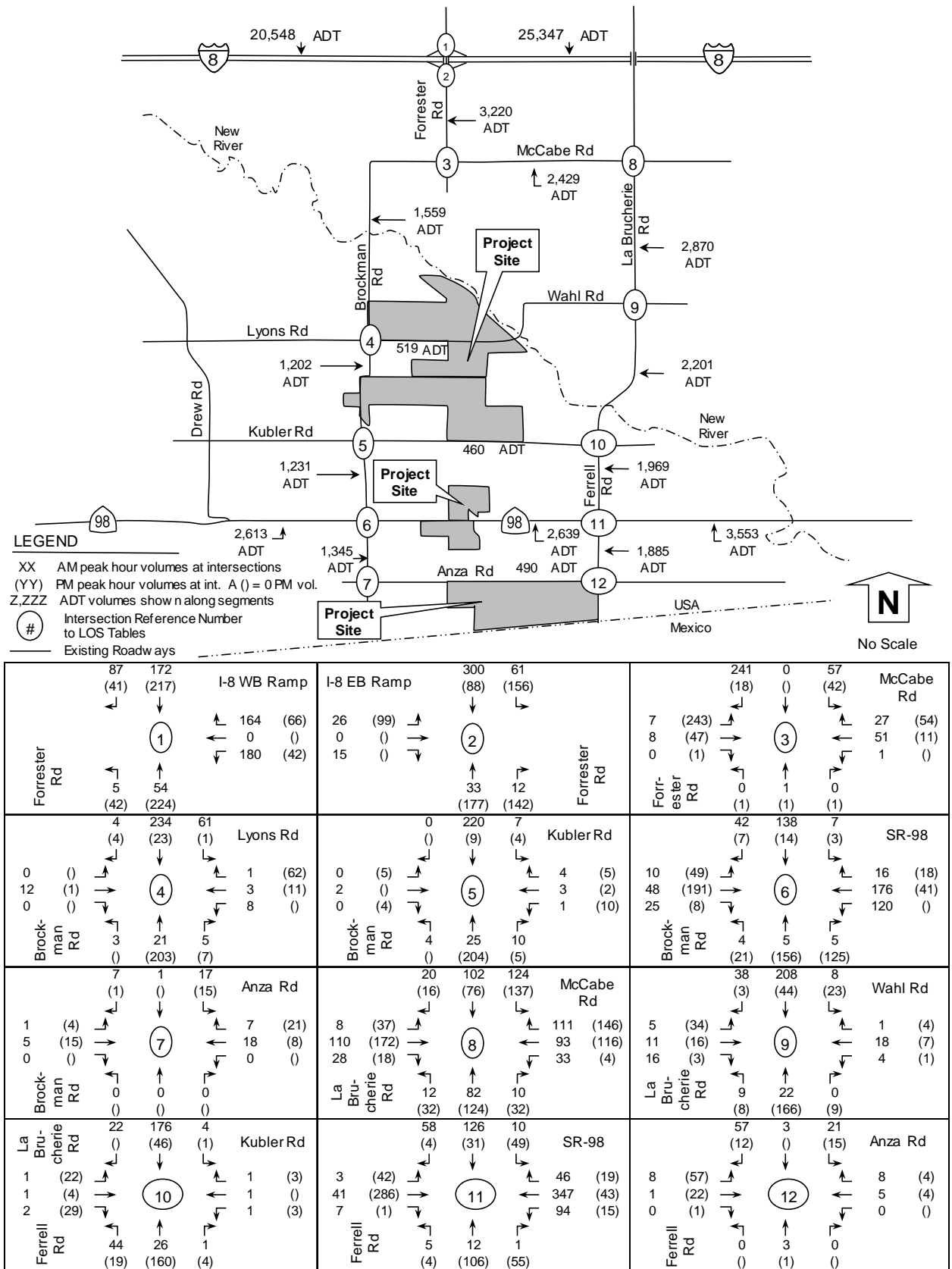
<sup>3</sup>LOS: Level of Service.

<sup>4</sup>Delta is the increase in delay from project.

<sup>5</sup>Type of impact: none, direct, or cumulative.

As shown, under Long-Term (Year 2024) With Project Construction With Cumulative Conditions, all Project study area intersections are calculated to operate at LOS C or better. Four intersections would experience a decline in LOS in either the AM or PM peak hour. These include Forrester Road at McCabe Road which would decline from LOS A to LOS B in the AM peak hour; Brockman Road at Kubler Road which would decline from LOS A to LOS B in the PM peak hour; La Brucherie Road at McCabe Road which would decline from LOS A to LOS B in the AM peak hour; and Ferrell Road at Anza Road which would decline from LOS A to LOS B in the PM peak hour. LOS along all other segments would remain unchanged under cumulative conditions. Moreover, the increases in traffic resulting from cumulative traffic would not exceed LOS standards. Therefore, the proposed Project would result in a **less than cumulatively considerable contribution** to cumulative intersection traffic. Likewise, cumulative impacts

## 4.3 TRANSPORTATION AND CIRCULATION



Source: LOS 2014.

**FIGURE 4.3-35**

**LONG-TERM (YEAR 2024) WITH PROJECT CONSTRUCTION WITH CUMULATIVE VOLUMES**

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to cumulative intersection LOS would be **less than cumulatively considerable** under Long-Term (Year 2024) With Project Construction With Cumulative conditions.

### **Roadway Segment LOS**

**Table 4.3-46** summarizes roadway segment LOS for Long-Term (Year 2024) With Project Construction With Cumulative conditions. As shown, all segments would continue to operate above LOS C (at LOS A or B). With the exception of the length of Wahl Road to Kubler Road along the La Brucherie Road/Ferrell Road segment (which would decline from LOS A to LOS B), no change in LOS would occur for any other segment with the addition of Long-Term (Year 2024) Cumulative traffic conditions. Therefore, the proposed Project would result in a **less than cumulatively considerable contribution** to cumulative roadway segment traffic. Likewise, cumulative impacts to cumulative roadway segment LOS would be **less than cumulatively considerable** under Long-Term (Year 2024) With Project Construction With Cumulative conditions.

### **Freeway Segment LOS**

**Table 4.3-47** summarizes freeway segment LOS under Long-Term (Year 2024) With Project Construction With Cumulative conditions. As shown, both freeway segments were calculated to operate at or above LOS C and no change in LOS would occur with the addition of cumulative traffic. Moreover, the increases in traffic resulting from Project construction would not exceed V/C ratios or LOS standards. Therefore, the proposed Project would result in a **less than cumulatively considerable contribution** to cumulative freeway segment traffic. Likewise, cumulative impacts to cumulative freeway segment LOS would be **less than cumulatively considerable** under Long-Term (Year 2024) With Project Construction With Cumulative conditions.

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## 4.3 TRANSPORTATION AND CIRCULATION

**TABLE 4.3-46**  
**LONG-TERM (YEAR 2024) WITH PROJECT CONSTRUCTION WITH CUMULATIVE ROADWAY SEGMENT LOS**

Roadway Segment	Classification (as built)	(Year 2024) With Cumulative				Project Daily Volume	(Year 2024) With Cumulative With Project				Impact?
		Daily Volume	LOS C Capacity	V/C	LOS		Daily Volume	LOS C Capacity	V/C	LOS	
<b>Anza Road</b> Brockman Road to Ferrell Road	Local (2U)	384	7,100	0.05	A	106	490	7,100	0.07	A	None
<b>Brockman Road</b> McCabe Road to Lyons Road	Major (2U)	1,293	7,100	0.18	A	266	1,559	7,100	0.22	A	None
Lyons Road to Kubler Road	Major (2U)	1,122	7,100	0.16	A	80	1,202	7,100	0.17	A	None
Kubler Road to SR-98	Major (2U)	1,125	7,100	0.16	A	106	1,231	7,100	0.17	A	None
SR-98 to Anza Road	Not Classified (2U)	1,299	7,100	0.18	A	46	1,345	7,100	0.19	A	None
<b>Forrester Road</b> I-8 to McCabe Road	Prime (2U)	2,954	7,100	0.42	B	266	3,220	7,100	0.45	B	None
<b>Kubler Road</b> Brockman Road to Ferrell Road	Major (2U)	360	7,100	0.05	A	100	460	7,100	0.06	A	None
<b>La Brucherie Road/Ferrell Road</b> McCabe Road to Wahl Road	Major (2U)	2,691	7,100	0.38	B	179	2,870	7,100	0.40	B	None
Wahl Road to Kubler Road	Major (2U)	2,121	7,100	0.30	B	80	2,201	7,100	0.31	B	None
Kubler Road to SR-98	Major (2U)	1,830	7,100	0.26	A	139	1,969	7,100	0.28	B	None
SR-98 to Anza Road	Major (2U)	1,779	7,100	0.25	A	016	1,885	7,100	0.27	A	None
<b>Lyons Road</b> Brockman Road to La Brucherie Road	Major (2U)	280	7,100	0.04	A	239	519	7,100	0.07	A	None
<b>McCabe Road</b> Forrester Road to La Brucherie Road	Major (2U)	2,363	7,100	0.33	B	66	2,429	7,100	0.37	B	None
<b>SR-98</b> Drew Road to Brockman Road	State Highway (2U)	2,580	7,100	0.36	B	33	2,613	7,100	0.37	B	None
Brockman Road to Ferrell Road	State Highway (2U)	2,579	7,100	0.36	B	60	2,639	7,100	0.37	B	None
Ferrell Road to Dogwood Road	State Highway (2U)	3,400	7,100	0.48	B	153	3,553	7,100	0.50	B	None

Source: LOS 2014.

Notes: Classification based on 1/29/08 Circulation and Scenic Highways Element.

2U = 2-lane undivided roadway.

Daily volume is a 24 hour volume.

LOS: Level of Service. LOS based on actual number of lanes currently constructed.

V/C: Volume to Capacity ratio.

Impact? = type of impact (none, cumulative, or direct).

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**TABLE 4.3-47**  
**LONG-TERM (YEAR 2024) WITH PROJECT CONSTRUCTION WITH CUMULATIVE FREEWAY SEGMENT LOS**

Freeway Segment	I-8 Drew Road to Forrester Road				I-8 Forrester Road to Imperial Avenue			
Forecasted Long-Term (Year 2024)								
ADT	19,500				24,000			
Peak Hour	AM		PM		AM		PM	
Direction	EB	WB	EB	WB	EB	WB	EB	WB
Number of Lanes	2	2	2	2	2	2	2	2
Capacity <sup>1</sup>	4,700	4,700	4,700	4,700	4,700	4,700	4,700	4,700
K Factor <sup>2</sup>	0.1076	0.0963	0.0917	0.1517	0.1076	0.0963	0.0917	0.1517
D Factor <sup>3</sup>	0.2616	0.7384	0.4419	0.5581	0.2616	0.7384	0.4419	0.5581
Truck Factor <sup>4</sup>	0.8376	0.8376	0.8376	0.8376	0.8376	0.8376	0.8376	0.8376
Peak Hour Volume	655	1,655	943	1,971	807	2,037	1,161	2,426
V/C	0.139	0.352	0.201	0.419	0.172	0.434	0.247	0.516
LOS	A	B	A	B	A	B	A	C
Cumulative With Project	76	103	77	125	72	169	137	131
Long-Term (Year 2024) With Cumulative With Project								
Peak Hour Volume	731	1,758	1,020	2,096	879	2,206	1,298	2,557
V/C	0.156	0.374	0.217	0.446	0.187	0.469	0.276	0.544
LOS	A	B	A	B	A	B	A	C
Increase in V/C	0.016	0.022	0.016	0.27	0.015	0.036	0.029	0.028
Impact	None	None	None	None	None	None	None	None

Source: LOS 2014.

Notes: <sup>1</sup>Capacity of 2,350 passenger cars per hour per lane (pcphpl) from CALTRANS' Guide for the Preparation of Traffic Impact Studies, December 2002.

<sup>2</sup>Latest K factor (percentage of the ADT in both directions during the peak hour) from Caltrans (based on 2007 report).

<sup>3</sup>Latest D factor (percentage of traffic in the peak direction during the peak hour) from Caltrans (based on 2007 report), which when multiplied by K and ADT will provide peak hour volume.

truck factor from Caltrans (based on 2007 report).

LOS: Level of Service. LOS based on actual number of lanes currently constructed.

V/C: Volume to Capacity ratio.

EB = eastbound; WB = westbound

Overall, under Long-Term (Year 2024) With Project Construction With Cumulative Conditions, the Project study area intersections, roadways segments, and freeway segments were calculated to operate at LOS C or better. Therefore **less than significant cumulatively considerable impacts** would occur under Long-Term (Year 2024) With Project Construction With Cumulative Conditions.

### Cumulative Increase Hazards Due to a Design Feature

**Impact 4.3.11** Implementation of the proposed Project would not require improvements or modifications to any Project study area roadways. Therefore cumulative increases in hazards due to a design feature are considered **less than cumulatively considerable**.

### FULL BUILD-OUT SCENARIO/PHASED CUP SCENARIO

#### Construction, Operation and Decommissioning

Multiple County maintained roads provide access throughout the Project area and to each CUP (refer to Figures 2.0-6 thru 2.0-22 in Chapter 2.0, Project Description). Access to each CUP will primarily be via the following paved roads: County Highway S30, Anza Road, Kubler Road, Lyons Road, and SR-98. Additionally, the Project may use County maintained unpaved roads when access from existing paved roads or roads internal to the Project boundary is unavailable. These unpaved roads would include Wahl Road, Mandrapa Road, Ferrell Road, George Road, Preston Road, and Rockwood Road. None of these roads would require

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the addition of left-turn lanes or other design features that could create a hazard. Improvements associated with other cumulative projects identified in **Table 4.3-35** would be assessed on a project-by-project basis and any design features which may be considered a hazard would be address on a project-specific level. Therefore the Project's contribution to the cumulative increases in hazards due to a design feature are **considered less than cumulatively considerable** during Project construction, operation and decommissioning. Likewise, cumulative increases in hazards due to a design feature are considered **less than cumulatively considerable** during Project construction, operation and decommissioning.

### Mitigation Measures

None required.

### Significance After Mitigation

Not Applicable.

### **Cumulative Increases in Hazards Due to a Design Feature – Damage to County-Maintained Roadways During Project Construction**

**Impact 4.3.12** Construction of the proposed Project, in combination with other cumulative projects using Project study area roadways, will require movement of heavy duty equipment and large vehicles on County roadways not designed to accommodate high volumes of overweight trucks and loads. The high volume of trips in combination with the weight of construction vehicles would deteriorate the surface of Project study area roadways. This is considered a **cumulatively considerable impact**.

### **FULL BUILD-OUT SCENARIO/PHASED CUP SCENARIO**

As described under Impact 4.3.6, above, implementation of the proposed Project has the potential to damage area roadways and other infrastructure (e.g. IID canals and drains) that are not designed to accommodate the volume or weight of traffic associated with construction. Likewise, the amount of cumulative projects in the vicinity of the Project area that would use Project study area roadways would also contribute to wear and tear on these roadways. Given the volume of trips and the weight of vehicles using these roadways, it is anticipated that the proposed Project would result in a **cumulatively considerable contribution** to damage to County-maintained roadways during construction. Likewise, the construction of either the Full Build-out Scenario or Phased CUP Scenario, in combination with other cumulative projects identified in **Table 4.3-35** that would also use Project study area roadways, would result in a **cumulative considerable impact** with regard to damage to County-maintained roadways.

The Applicant proposes to minimize use of unpaved roads to the extent feasible during construction. In addition, the Applicant has proposed that roads will be photographed prior to construction to document existing conditions. Furthermore, the Applicant proposes to repair any Project-related impacts to County roads (refer to Table 2.0-9). In addition, project-specific measures MM 4.3.6a, MM 4.3.6b, MM 4.3.6c and MM 4.3.6d have been identified to reduce the proposed Project's share of impacts.

### Significance After Mitigation

Implementation of mitigation measures MM 4.3.6a, MM 4.3.6b, MM 4.3.6c and MM 4.3.6d would address damage to County-maintained roadways attributed to construction of the proposed Project. Following implementation, the Project's contribution to damage to Project area roadways would be reduced to less than cumulatively considerable.



## 4.3 TRANSPORTATION AND CIRCULATION

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