

2.2 Study Area and Analysis Scenarios

The study area was determined by analyzing intersections to which the Project would add 50 or more peak hour trips. This TIA includes the analysis of signalized intersections, two-way stop controlled (TWSC) intersections, and all-way stop controlled (AWSC) intersections. The following 63 intersections were included in the analysis:

1. Perris Blvd/Iris Ave
2. Perris Blvd/Krameria Ave
3. N Perris Blvd/Harley Knox Blvd
4. N Perris Blvd/W Markham St
5. N Perris Blvd/Ramona Expy
6. N Perris Blvd/Morgan St
7. Evans Rd/E Rider St
8. Redlands Ave/E Rider St
9. N Perris Blvd/E Rider St
10. Redlands Ave/Placentia Ave
11. N Perris Blvd/Placentia Ave
12. Barrett Ave/W Placentia Ave
13. Indian Ave/W Placentia Ave
14. I-215 Frontage Rd/W Placentia Ave
15. I-215 NB Ramps/Placentia Ave
16. I-215 SB Ramps/Placentia Ave
17. Redlands Ave/Orange Ave
18. N Perris Blvd/Orange Ave
19. Barrett Ave/Orange Ave
20. Indian Ave/Orange Ave
21. I-215 Frontage Rd/Orange Ave
22. Redlands Ave/Citrus Ave
23. N Perris Blvd/Citrus Ave
24. Murrieta Rd/E Nuevo Rd
25. Redlands Ave/E Nuevo Rd
26. N Perris Blvd/ W Nuevo Rd
27. I-215 Frontage Rd/W Nuevo Rd
28. I-215 NB Ramps/W Nuevo Rd
29. I-215 SB Ramps/W Nuevo Rd
30. Redlands Ave/Midred St
31. N Perris Blvd/Mildred St
32. N Perris Blvd/E San Jacinto Ave
33. Indian St/Ramona Expy
34. Indian St/Morgan St
35. Indian St/Rider St
36. Perris Blvd/4th St
37. Perris Blvd/Harvest Landing Way
38. Barrett Ave/Harvest Landing Way
39. Barrett Ave/I-215 Frontage Road
40. Commercial Driveway 1, 2/Harvest Landing Way
41. Commercial Driveway 3, 4/Harvest Landing Way
42. Commercial Driveway 5/N. Perris Blvd
43. Commercial Driveway 6/Barrett Ave
44. Commercial Driveway 7/N. Perris Blvd
45. Commercial Driveway 8/N. Perris Blvd
46. Commercial Driveway 9/Existing Plaza Driveway/Orange Ave
47. Commercial Driveway 10/Orange Ave

48. Building 1 Auto Driveway 1/Orange Ave
49. Building 1 Auto Driveway 2/Orange Ave
50. Building 1 Truck Driveway/I-215 Frontage Rd
51. Building 2 Auto Driveway/Orange Ave
52. Building 2 Auto Driveway 2/Orange Ave
53. Building 2 Truck Driveway/I-215 Frontage Rd
54. Building 3 Auto Driveway/I-215 Frontage Rd
55. Building 3/4 Truck Driveway/I-215 Frontage Rd
56. Building 4/5 Auto Driveway/I-215 Frontage Rd
57. Building 5 Truck Driveway/I-215 Frontage Rd
58. Building 6 Truck Driveway/I-215 Frontage Rd
59. Building 6 Auto Driveway 1/Walmart Supercenter Driveway/Barrett Ave
60. Building 6 Auto Driveway 2/Barrett Ave
61. Building 7 Truck Driveway/I-215 Frontage Rd
62. Building 7 Auto Driveway 1/I-215 Frontage Rd
63. Building 7 Auto Driveway 2/Barrett Ave

Existing counts incorporate truck classifications (i.e., Class 1 – Passenger Vehicles, Class 2 – 2-axle work vehicles/trucks, Class 3 – 3-axle trucks, Class 4 – 4 or more axle trucks, Class 5 – recreational vehicles, and Class 6 – Busses). Passenger Car Equivalent (PCE) factors were applied to truck/bus trips to account for the fact that trucks and buses utilize more roadway capacity due to their size, reduced maneuverability and slower acceleration. The locations of the study area intersections are shown on *Figure 2.3*, and the study driveways are shown in *Figure 2.4*. Study area intersections and driveways were evaluated during the AM and PM peak hours, which are defined as the hour with the highest traffic volumes during the 7 AM to 9 AM and 4 PM to 6 PM peak commute periods. AM and PM peak hour traffic operations were evaluated for the following scenarios:

- Existing 2024 Traffic Conditions (Existing 2023 Counts + Ambient Growth)
- Opening Year I 2026 Without Project Traffic Conditions
- (Phase 1) Opening Year I 2026 with Project Traffic Conditions
- Opening Year II 2030 Without Project Traffic Conditions
- (Phase 1 + Phase 2) Opening Year II 2030 with Project Traffic Conditions
- General Plan 2045 Without Project Traffic Conditions
- General Plan 2045 With Project Traffic Conditions

EPD collected counts for most study intersections on Tuesday, May 16th, 2023. Traffic counts for intersection #39 were collected on Thursday, September 5th, 2024. Counts for the existing driveway on the north leg of intersections #46, and the east leg of intersection #59 were collected on Tuesday, July 30th, 2024. To account for the Existing 2024 traffic condition, a growth rate of three percent was applied to the counts collected in 2023. For the Opening Year I 2026 and Opening Year II 2030 traffic volumes were developed by applying an ambient growth rate of three percent per year to the counts collected and adding traffic from a nearby approved but not yet constructed developments or newly constructed developments (cumulative project) in 2024. General Plan 2045 traffic volume was forecasted by using the Riverside County travel demand forecasting model (RIVCOM), which assumes full buildout of the County of Riverside per approved General Plan of each jurisdiction within the County. All traffic volume data, RIVCOM model plots, RIVCOM volume outputs, National Cooperative Highway Research Program (NCHRP) 765 worksheets and volume adjustment worksheets are provided in Appendix B.

In addition, to the study area intersections, the following study area roadway segments were evaluated as shown on *Figure 2.3*:

1. Indian Ave between Water Ave and Orange Ave
2. Orange Ave between Indian Ave and Perris Blvd
3. Perris Blvd between Orange Ave and Citrus Ave
4. Barrett Ave between Placentia Ave and Orange Ave
5. Perris Blvd between Placentia Ave and Orange Ave
6. Perris Blvd between Rider St and Placentia Ave
7. Nuevo Rd between Perris Blvd and I-215 NB Ramps
8. I-215 Frontage Rd between Placentia Ave and Orange Ave
9. I-215 Frontage Rd between Orange Ave and Nuevo Rd
10. Orange Ave between I-215 Frontage Rd and Indian Ave
11. Nuevo Rd between I-215 NB Ramps and I-215 SB Ramps
12. Perris Blvd between Citrus Ave and Nuevo Rd
13. Placentia Ave between I-215 NB Ramps and I-215 SB Ramps
14. Placentia Ave between I-215 NB Ramps and Indian Ave
15. Placentia Ave between Indian Ave and Perris Blvd
16. Barrett Ave between Orange Ave and Harvest Landing Way
17. Barrett Ave between Harvest Landing Way and I-215 Frontage Rd
18. Harvest Landing Way between Barrett Ave and Perris Blvd
19. Indian Ave between Placentia Ave and Water Ave

EPD collected 24-Hour roadway segment counts for the study area roadway segments on December 4, 2024, when school was in session. Existing 2024 Average Daily Traffic (ADT) counts have incorporated truck classifications. Passenger Car Equivalent (PCE) factors from County of Riverside TA guidelines (2020) were applied to truck/bus trips to account for the fact that trucks and buses utilize more roadway capacity due to their size, reduced maneuverability and slower acceleration. Traffic counts are provided in *Appendix B*.

In addition to the study area intersections and study area roadway segments, queueing along Placentia Avenue & Nuevo Road at the I-215 Freeway ramp were evaluated for the following intersections:

15. I-215 NB Ramps/Placentia Ave
16. I-215 SB Ramps/Placentia Ave
28. I-215 NB Ramps/W Nuevo Rd
29. I-215 SB Ramps/W Nuevo Rd

Figure 2.3: Project Study Area

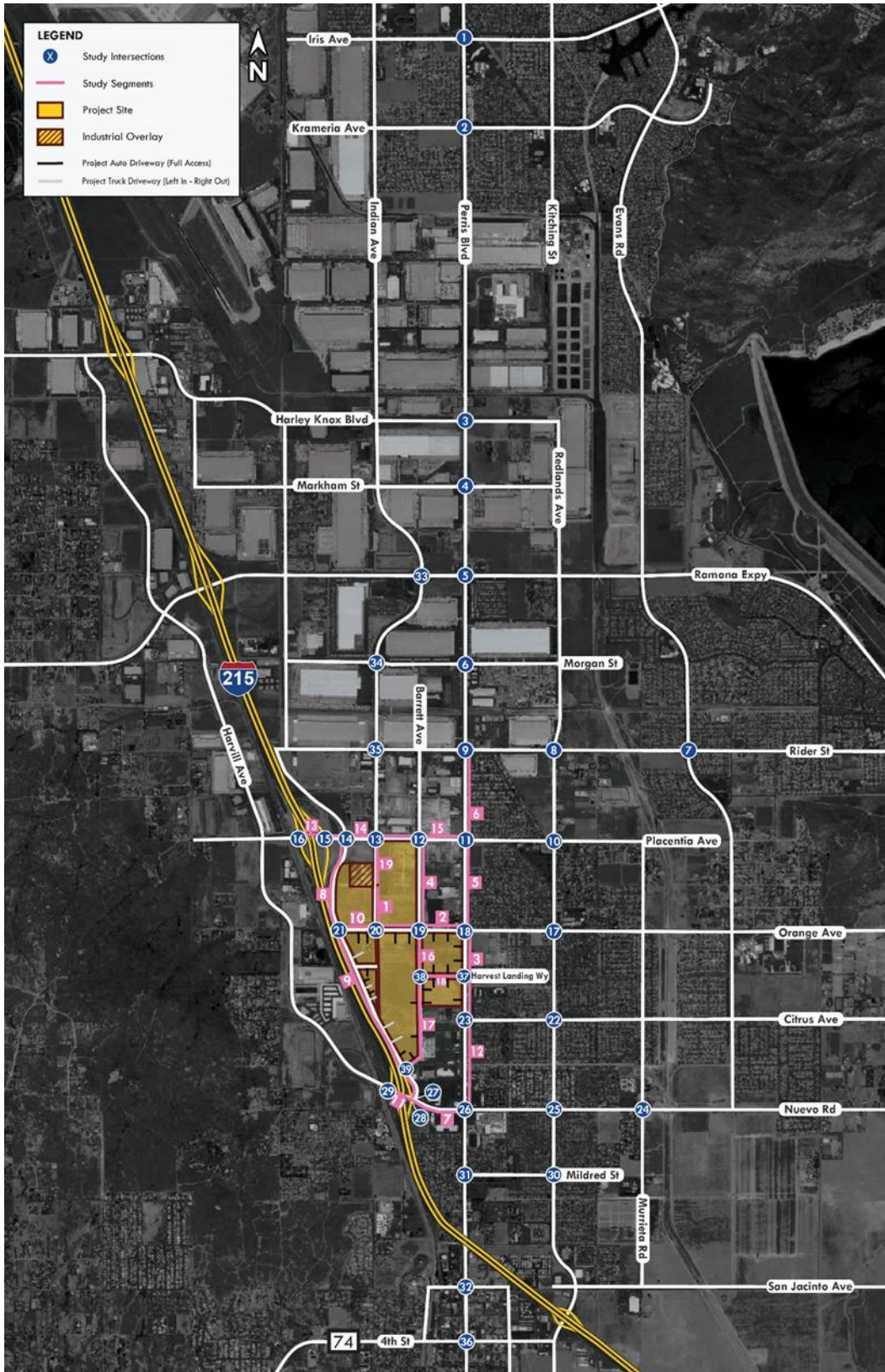
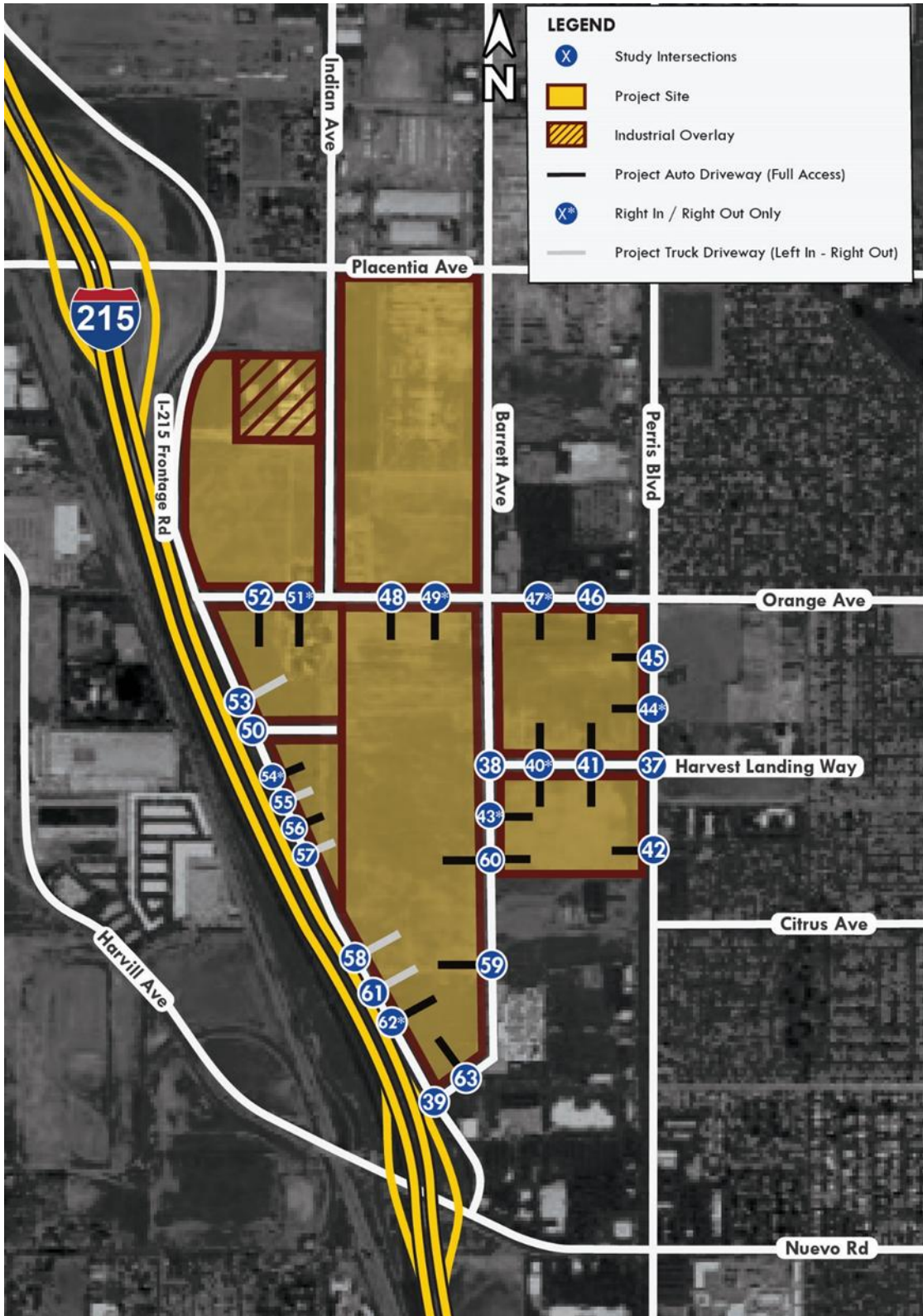


Figure 2.4: Project Study Driveways



2.3 Methodology

Intersection operations are evaluated using Level of Service (LOS), which is a measure of the delay experienced by drivers on a roadway facility. LOS A indicates free-flow traffic conditions and is generally the best operating condition. LOS F is an extremely congested condition and is the worst operating condition from the driver's perspective. In this report, LOS at signalized and unsignalized intersections is calculated using the *Highway Capacity Manual (HCM)*, 7th Edition methodology.

LOS at signalized intersections is defined in terms of the weighted average control delay for the intersection as a whole. Control delay is a measure of the increase in travel time that is experienced due to traffic signal control and is expressed in terms of average control delay per vehicle (in seconds). Control delay is determined based on the intersection geometry and volume, signal cycle length, phasing and coordination along the arterial corridor. *Table 2.3* shows the relationship between control delay and LOS. The analysis assumes an optimized analysis. Existing timing plans have not been utilized for this analysis.

Table 2.3: Relationship between Control Delay and LOS at a Signalized Intersection

LOS	Delay (Seconds per Vehicle)
A	≤ 10
B	>10 – 20
C	>20 – 35
D	>35 – 55
E	>55 – 80
F	>80

Unsignalized intersections are categorized as either all AWSC or TWSC. LOS at AWSC intersections is determined by the weighted average control delay of the overall intersection. The HCM TWSC intersection methodology calculates LOS based on the delay experienced by drivers on the minor (stop-controlled) approaches to the intersection. For TWSC intersections, LOS is determined for each minor-street movement, as well as the major-street left-turns. The relationship between delay and LOS at unsignalized intersections is shown in *Table 2.4*.

Table 2.4: Relationship between Delay and LOS an Unsignalized Intersection

LOS	Delay (seconds)
A	0-10
B	>10 – 15
C	>15 – 25
D	>25 – 35
E	>35 – 50
F	>50

Daily Roadway Segments are evaluated using roadway segment capacities to determine LOS. The capacity of a roadway is dependent on the number of lanes and the type of roadway. The roadway capacities provided in Table CE-2 of the *City of Perris General Plan Circulation Element (2022)* are for planning purposes, as capacity is affected by factors such as spacing, configuration, etc. The relationship between capacity and LOS for roadway segments is shown in Table 2.5. The currently adopted minimum LOS standard for roadway segments by the City of Perris is LOS “D”, except within the Downtown Specific Plan Area, where LOS “E” is acceptable. The Project is not in the Downtown specific plan area. This TIA is not analyzing any roadway segments within the Downtown specific plan area, either. Therefore, LOS D is the minimum acceptable LOS for all study roadway segments.

Table 2.5: Relationship between Roadway Volume and LOS at a Roadway Segment

Roadway Classification	Number of Lanes	Maximum Two-Way Average Daily Traffic (ADT)				
		LOS A	LOS B	LOS C	LOS D	LOS E
Collector	2	7,800	9,100	10,400	11,700	13,000
Collector	4	15,540	18,130	20,700	23,300	25,900
Arterial	2	10,800	12,600	14,400	16,200	18,000
Arterial	4	21,540	25,130	28,700	32,300	35,900
Arterial	6	32,340	37,730	43,100	48,500	53,900
Expressway	4	24,540	28,630	32,700	36,800	40,900
Expressway	6	36,780	42,910	49,000	55,200	61,300
Expressway	8	49,020	57,190	65,400	73,500	81,700
Freeway	4	45,900	53,550	61,200	68,900	76,500
Freeway	6	70,500	82,250	94,000	105,800	117,500
Freeway	8	96,300	112,350	128,400	144,500	160,500
Freeway	10	120,360	140,420	160,500	180,500	200,600
V/C Ratio		0.6	0.7	0.8	0.9	1

Source: City of Perris General Plan Circulation Element (2022) Table CE-2

2.4 Significance Criteria

City of Perris

Based on the *City of Perris General Plan Policy II.A*, the following target Levels of Service are to be maintained for study intersections:

- LOS "D" along all City maintained roads (including intersections) and LOS "D" along I-215 and SR 74 (including intersections with local streets and roads). An exception to the local road standard is LOS "E", at intersections of any Arterials and Expressways with SR 74, the Ramona-Cajalco Expressway or at I-215 freeway ramps.

The following target Levels of Service are to be maintained for study roadway segments:

- The current adopted minimum LOS for roadway segments by the City of Perris is LOS "D" segments except for within the Downtown Specific Plan Area in which LOS "E" is acceptable. The project is not located within the Downtown Specific Plan Area, nor are any roadway segments analyzed in this TIA within the Downtown Specific plan area. Therefore, LOS "D" is the minimum acceptable LOS for all study roadway segments.

To determine whether the addition of project-generated trips (or alternative-generated trips) results in a project traffic impact, and thus requires improvements, the analysis shall evaluate traffic impacts of the project based on the following criteria:

- A project-related traffic impact is considered direct when a study intersection operates at an acceptable Level of Service for existing conditions (without the project) and the addition of 50 or more a.m. or p.m. peak hour project trips causes the intersection delay to increase by 2 seconds or more and causes the intersection to operate at an unacceptable Level of Service for existing plus project conditions.
- A project-related traffic impact is considered direct when a study intersection operates at an unacceptable Level of Service for existing conditions (without the project) and the addition of 50 or more a.m. or p.m. peak hour project trips causes the intersection delay to increase by 2 seconds or more.
- A cumulative impact is considered direct when a study intersection is forecast to operate at an acceptable Level of Service without the project and with the addition of 50 or more a.m. or p.m. peak hour project trips causes the intersection delay to increase by 2 seconds or more and causes the intersection to operate at an unacceptable Level of Service.
- A cumulative impact is considered an indirect traffic impact when a study intersection is forecast to operate at an unacceptable Level of Service with the addition of cumulative/background traffic and the project contributes 50 or more a.m. or p.m. peak hour project trips and causes the intersection delay to increase by 2 seconds or more.

City of Moreno Valley

Based on the City of Moreno Valley Circulation Element, City recognizes that an LOS of C is optimal. However, it also allows peak hour levels of service in the LOS "D" range in certain locations. These locations include areas of high employment concentration, north/south roads in the vicinity of SR-60 or other locations in already developed areas of the City with geometric constraints that prevent LOS "C" from being achieved. *Figure 5.2-7 from the City of Moreno Valley General Plan, Final Program EIR, July 2006* depicts the LOS standards that are applicable to all segments of the Circulation Element. According to this figure, LOS "D" is the level of service standard for the two studied intersections located in the City of Moreno Valley.

According to the Transportation Impact Analysis Preparation Guide for Vehicle Miles Traveled and Level of Service Assessment, June 2020, improvements at a signalized intersection shall be identified if either of the following are met:

- Any signalized study intersection operating at acceptable LOS without project traffic in which the addition of project traffic causes the intersection to degrade to unacceptable LOS shall identify improvements to provide acceptable LOS; OR
- Any signalized study intersection that is operating at unacceptable LOS without project traffic where the project increases delay by 5.0 or more seconds shall identify improvements to offset the increase in delay.

3 BASELINE CONDITIONS

This section discusses the baseline (without Project) conditions. Baseline conditions are those conditions that exist within the study area in the without project conditions.

3.1 Existing Transportation System and Access

The characteristics of each regional access and local access to the site Project are discussed in *Table 3.1*. The existing traffic control and intersection geometrics at study area intersections are shown in *Figure 3.2*.

Table 3.1: Characteristic of Roadway System

Road Name	From	To	Direction	Current Condition					General Plan (City of Perris and Morreno Valley)	
				Speed Limit (mph)	Number of Lanes	Parking?	Sides Walk?	Bike Lane?	Number of Lanes	Classification
Iris Ave	Indian St	Perris Blvd	East-West	40	4-Lane undivided with two-way-left-turn lane	No	North Side	Yes	4	Major Arterial
Krameria Ave	Indian St	Perris Blvd	East-West	40	2-Lane undivided with two-way-left-turn lane	No	Yes	Yes	No Info	Minor Arterial
Indian St	Walnut Ave	Interstate 215 Frontage Rd	North-South	40	From Walnut Ave to Orange Ave, the road is 2-Lane undivided with two-way-left-turn lane. From Orange Ave to Interstate 215 Frontage Rd, the road is 2-Lane Undivided.	No	Yes	Yes	4	Secondary Arterial
Perris Blvd	Placentia Ave	4th St	North-South	45	From Placentia Ave to Orange Ave, the road is 4-Lane Divided. From Orange Ave to Citrus Ave, the road is 4-Lane Undivided with two-way-left-turn lane. From Citrus Ave to Nuevo Rd, the road is 6-Lane Divided. From Nueve Rd to Jarvis St, the road is 4-Lane undivided with two-way-left-turn lane. From Jarvis St to 1th st, the road is 4-Lane Divided. From 1th St to 4th st, the road is 4-Lane undivided with two-way-left-turn lane.	No	Yes	Yes	6	Major Arterial
Kitching St	Iris Ave	Crove View Rd	North-South	35	From Iris Ave to Camino Marilena, the road is 4-Lane undivided with two-way-left-turn lane. Fom Modular Way to Crove View Rd, the road is 2-Lane undivided with two-way-left-turn lane.	No	Yes	Both Sides	No Info	Major Arterial
Evans Rd	Ramona Expy	Nueve Rd	North-South	45	From Ramona Expy to Old Evan Rd, the road is 4-Lane Divided. From Old Evan Rd to Orange Ave, the road is 2-Lane undivided with two-way-left-turn lane. From Orange Ave to Nueve Rd, the road is 6-Lane Divided.	No	Yes	Both Sides	6	Major Arterial
Knox Blvd	Indian St	Redlands Ave	East-West	45	6-Lane Divided	No	Yes	Both Sides	No Info	No Info
Markham St	Indian St	Redlands Ave	East-West	35	4-Lane Divided with two-way-left-turn lane	No	Yes	NO	4	Secondary Arterial
Redlands Ave	Ramona Expy	4th St	North-South	40-50	Between Ramona EXPY and E Morgan St, the road is 3-Lane Divided. Between E Morgan St and E Rider St, the road is 4-Lane Divided. Between E Rider st and Placentia Ave, the road is 2-Lane undivided. Between Placentia Ave and E San Jacinto Ave, the road is 4-lane undivided with two-way-left-turn-lane. Between E San Jacinto Ave and 4th st, the road is the road is 5-lane undivided with two-way-left-turn-lane.	No	Yes	NO	4	Secondary Arterial
Ramona Expy	Indian St	Redlands Ave	East-West	55	6-Lane Devided	No	North Side	Yes	6	Expressway
Morgan St	Indian St	Redlands Ave	East-West	25	4-Lane undivided with two-way-left-turn lane	No	North Side	Yes	4	Secondary Arterial
Barrett Ave	Rider St	Placentia Ave	North-South	No Sign	From Rider St to Placentia Ave, the road is 2-Lane Undivided. From Placentia Ave to Orange Ave the road is 2-Lane undivided with two-way-left-turn lane.	No	West Side	No	No Info	No Info
Rider St	Indian St	Evans Rd	East-West	45	From Indian Ave to Wilson Ave, the road is 4-Lane Divided. From Wilson Ave to Evan Rd, the road is 3-Lane Divided with two-way-left-turn lane.	No	Yes	Yes	4	Secondary Arterial
Placentia Ave	Indian Ave	Redlands Ave	East-West	40	From Indian St to N Perris Blvd, the road is 5-Lane Devided. From N Perris Blvd to Redlands Ave, the road is 4-Lane Undivided with two-way-left-turn lane	No	Yes	Yes	6	Major Arterial
Orange Ave	Indian Ave	Evans Rd	East-West	25	From Indian St to Barrett Ave, the road is 2-Lane undivided. From Barrett Ave to N Perris, the road is 4-lane divided. From N Perris to Redlands Ave, the road is 4-Lane undivided with two-way-left-turn lane.	No	North Side	No	4	Secondary Arterial
Citrus Ave	Perris Blvd	Murrieta Rd	East-West	30	Between N Perris Blvd to Redlands Ave, the road is 2-Lane Divided with two-way-left-turn lane and between Redlands Ave and Willson Ave, the road is 4-Lane Divided with two-way-left-turn lane. Between Willson Ave and Murrieta Rd, the road is 2-Lane undivided.	No	Yes	Yes	2	Collector
Nuevo Rd	Perris Blvd	Murrieta Rd	East-West	25	Between N Perris Blvd to Wison Ave, the road is 4-Lane Divided with two-way-left-turn lane and between Wilson Ave and Murrieta Rd, the road is 4-Lane Divided.	No	Yes	No	6	Major Arterial
Mildred St	Perris Blvd	Redlands Ave	East-West	25	2-Lane undivided	No	Yes	No	No Info	No Info
Murrieta Rd	Placentia Ave	San Jancinto Ave	North-South	35	From Placentia Ave to Mildrad St, the road is 2-Lane undivided. From Mildrad St to E Mez Rd, the road is 2-Lane devided with two-way-left-turn lane. From E Metz Rd to San Jancinto Ave, the road is 2-Lane undivided.	East Side	No	No	2	Collector
San Jancinto Ave	Redlands Ave	Murrieta Rd	East-West	45	2-Lane Devided with two-way-left-turn lane	No	No	No	6	Major Arterial
4th St	Perris Blvd	Redlands Ave	East-West	35	4-Lane Devided with two-way-left-turn lane	No	Yes	No	6	Major Arterial
Harvill Ave	Ramona Expy	Placentia Ave	North-South	50	4-Lane Devided with two-way-left-turn lane	No	No	No	6	Major Arterial
Interstate 215 Frontage Rd	Placentia Ave	Nuevo Rd	North-South	45	2-Lane undivided	No	No	No	2	Collector
I-215	Placentia Ave	Nuevo Rd	North-South	65	6-Lane Divided	No	No	No	6	Freeway (Per City of Perris General Plan)

Figure 3.1a: Existing Intersection Lane Configuration and Traffic Control

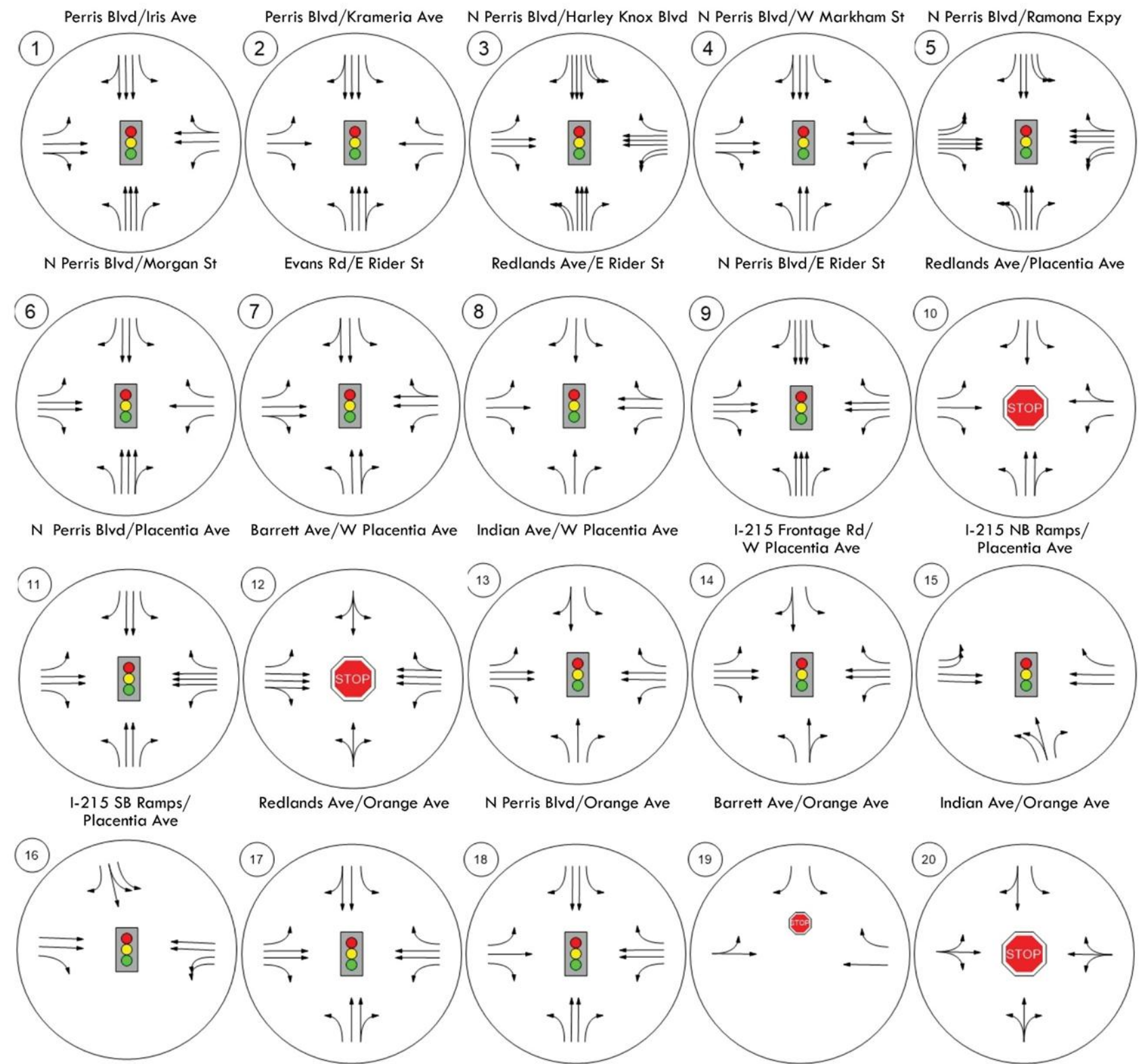
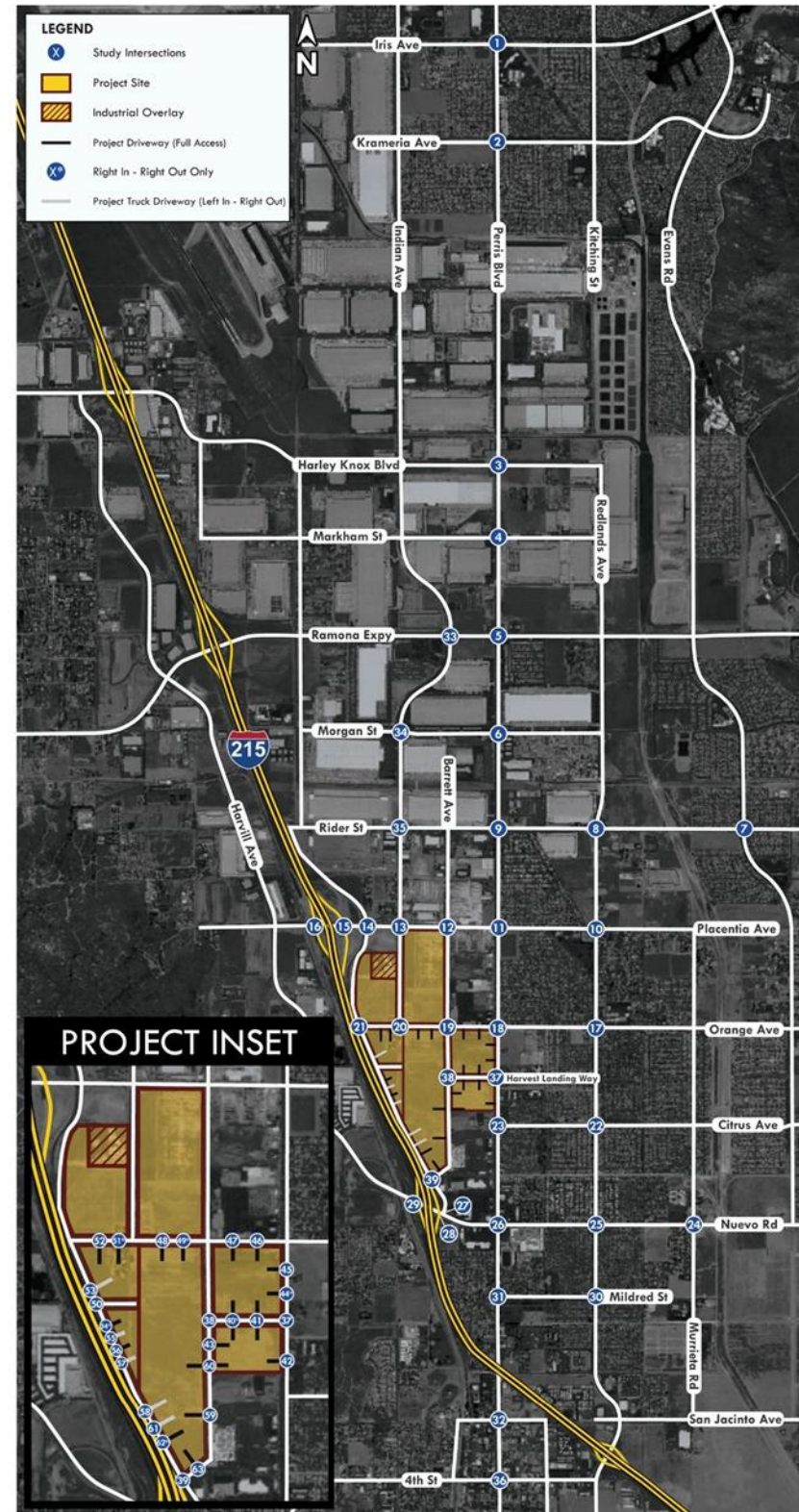


Figure 3.1b: Existing Intersection Lane Configuration and Traffic Control (Continued)

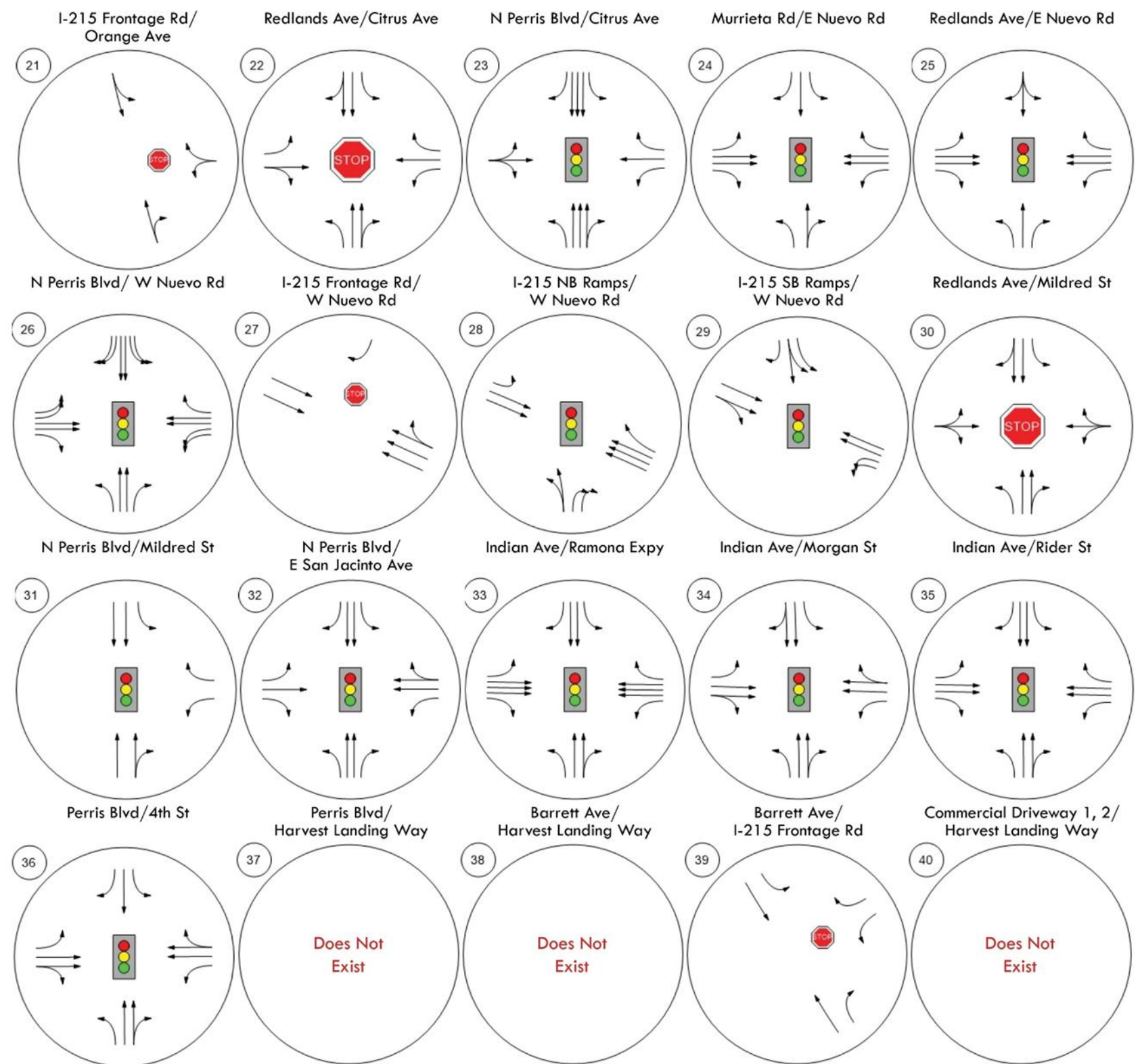
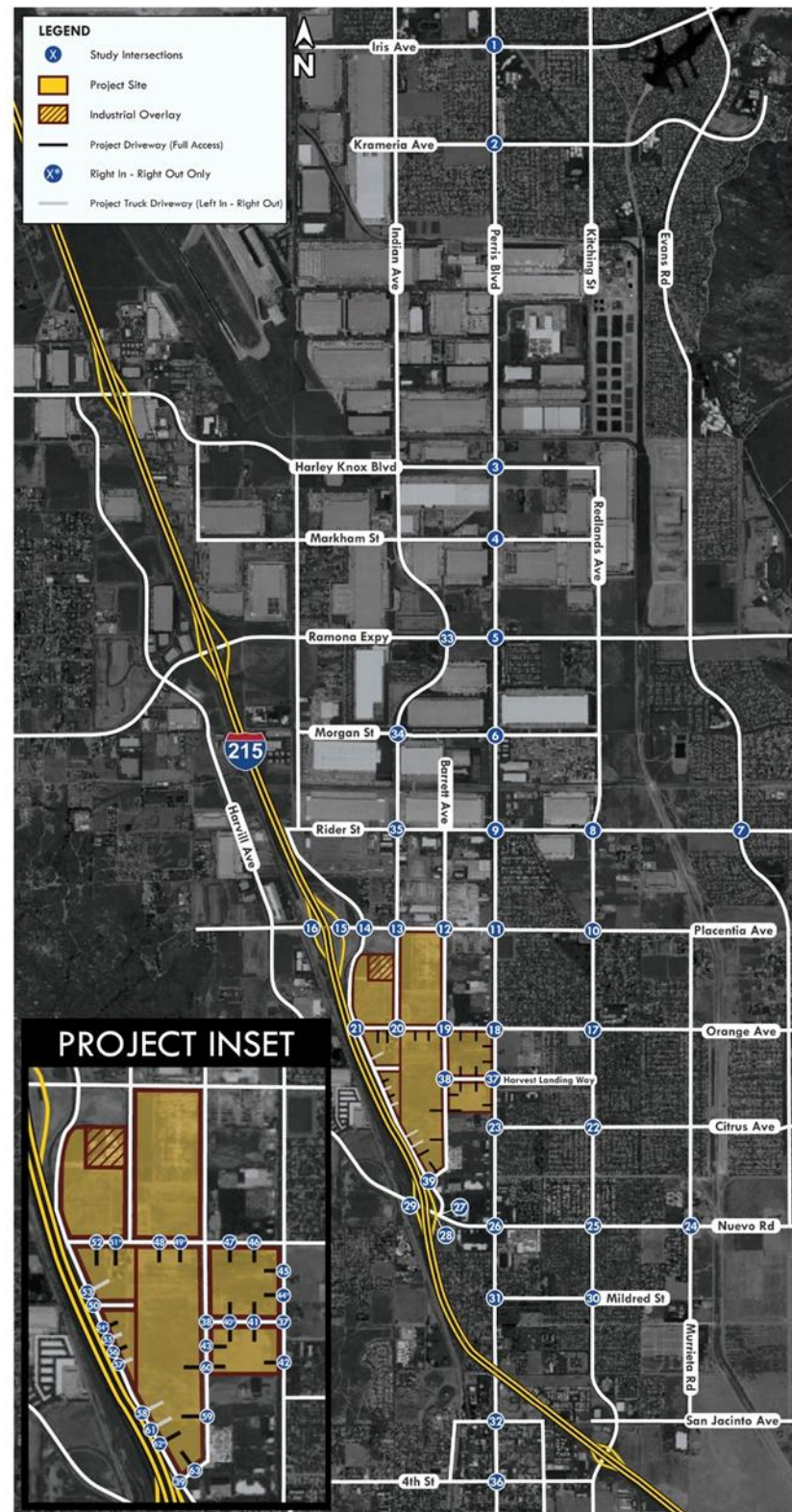


Figure 3.1c: Existing Intersection Lane Configuration and Traffic Control (Continued)

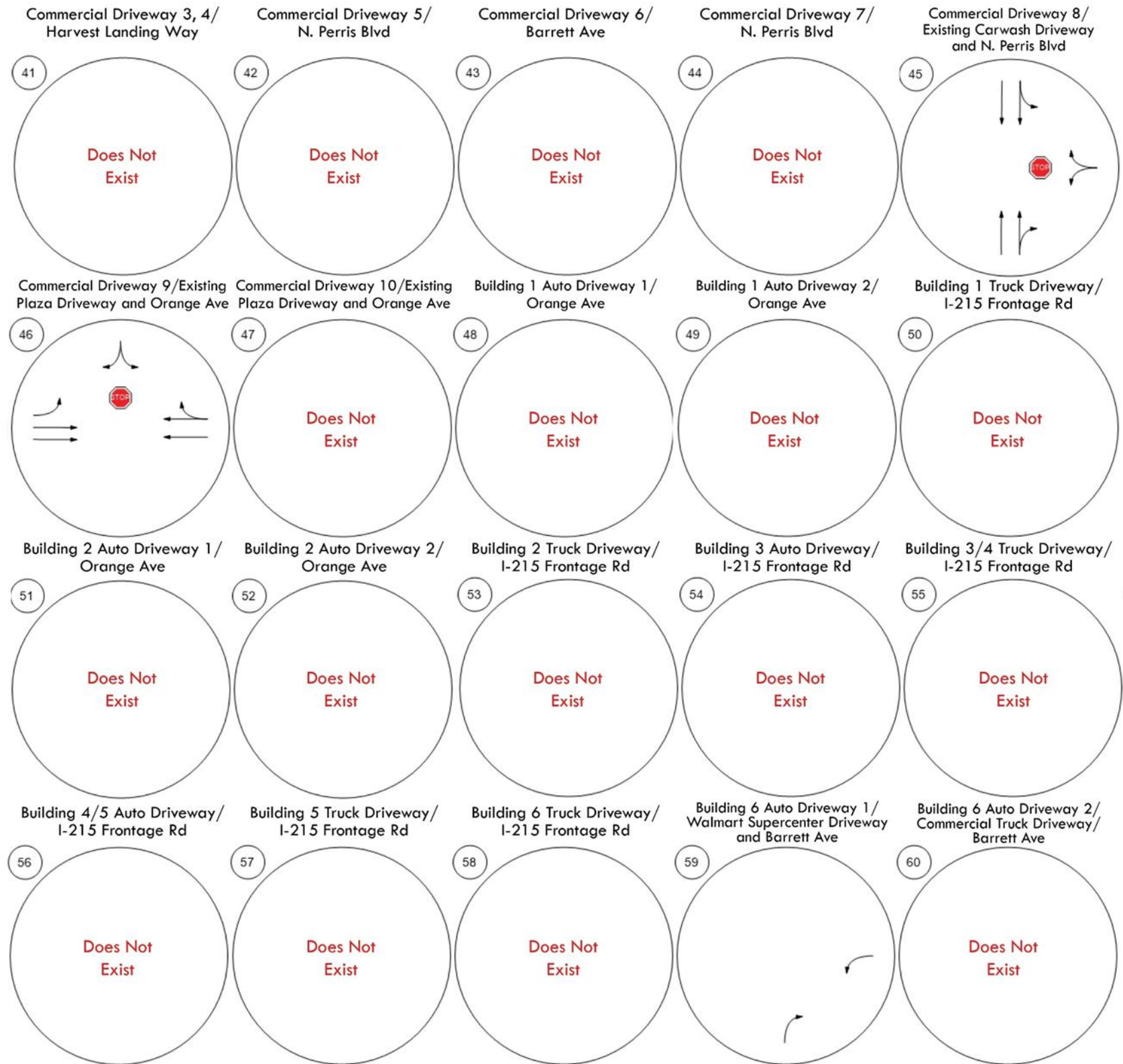
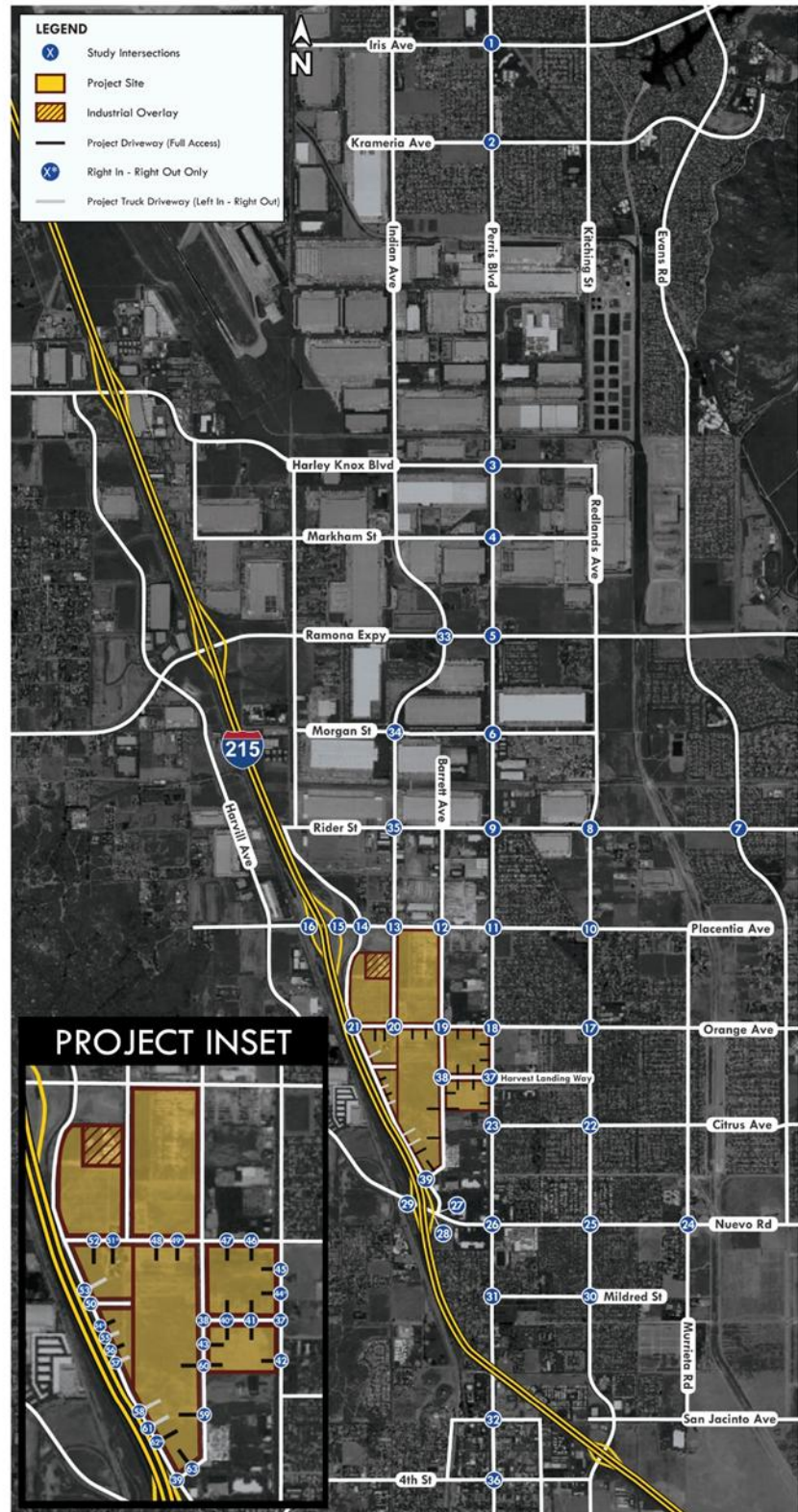
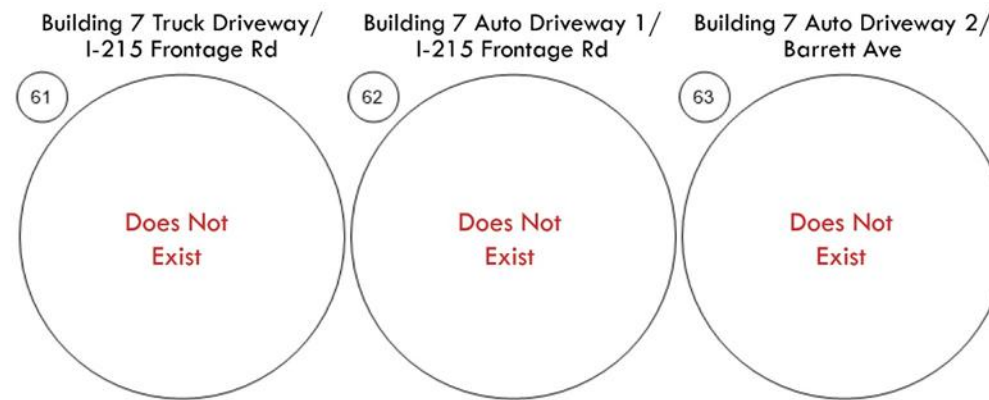
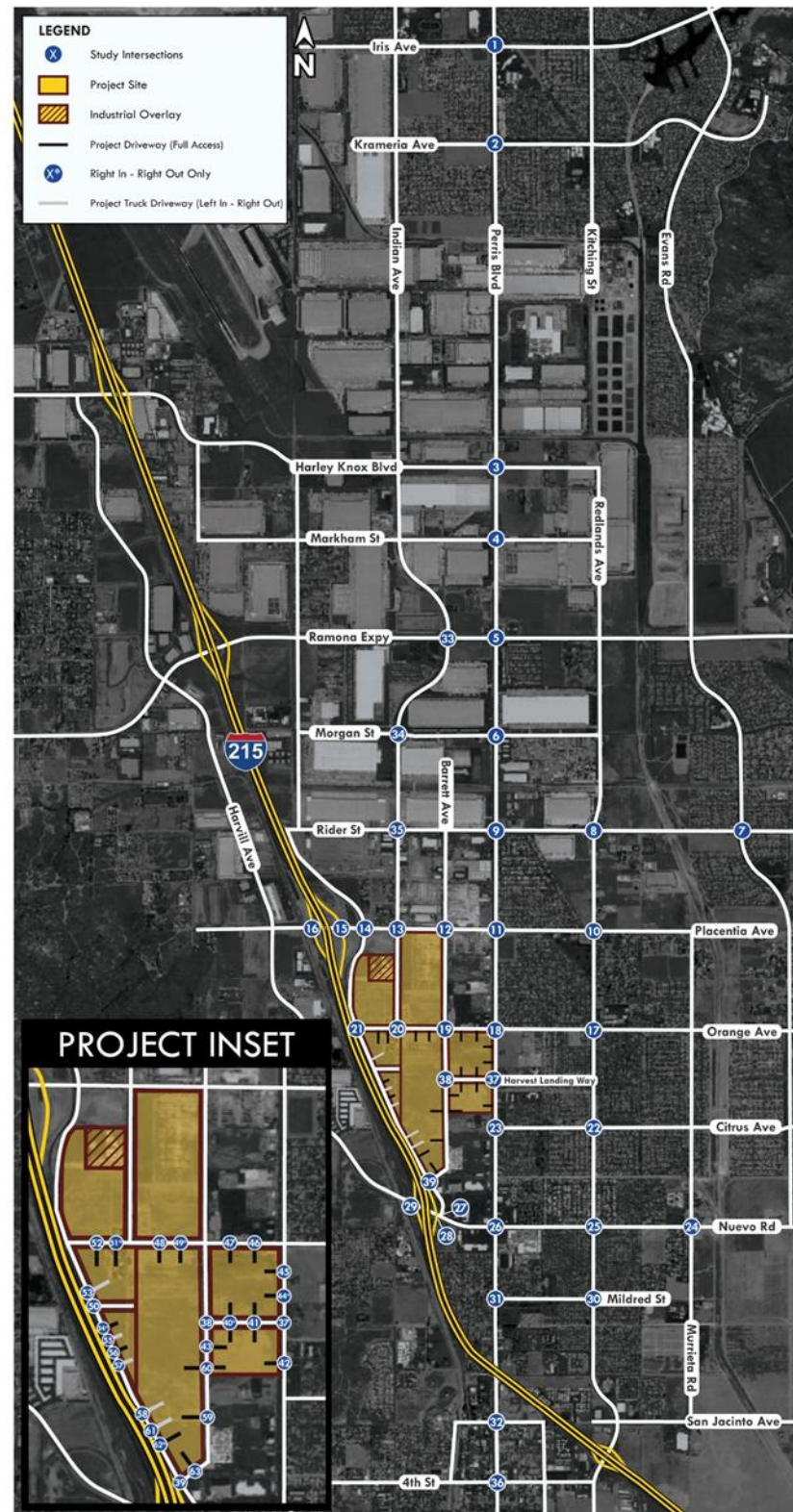


Figure 3.1d: Existing Intersection Lane Configuration and Traffic Control (Continued)



3.2 Existing 2024 Traffic Volumes and Intersection Operations

Traffic counts were collected for study intersections under the following dates:

- Traffic counts were collected for most study intersections on Tuesday, May 16th, 2023, while schools were in session.
 - Existing 2024 turning movement volumes were developed by applying a growth rate of three percent per year to the existing 2023 counts.
- Traffic counts for intersection #39 were collected on Thursday, September 5th, 2024, while schools were in session.
- Counts for the existing driveways on the north leg of intersection #46, and the east leg of intersection #59, which belong to a commercial plaza and Walmart, were collected on Tuesday, July 30th, 2024, while schools were not in session.
 - It is to be noted that since the driveways belong to commercial land uses, they are not affected by school trips when schools are in session, as their locations are not a part of typical routes used for school pick-up/drop-off.
 - Additionally, the volumes for the eastbound and westbound trips at intersection #46 were determined based on volume balancing between two adjacent intersections, #18 (Barrett Ave/Orange Ave) and #19 (Perris Blvd/Orange Ave), for which traffic counts were conducted while schools were in session.

Please note the followings regarding which intersections were included in the analysis:

- For Intersection #45, the existing car wash uses the east leg of this intersection as a full access driveway.
 - The east-leg approach and departure volumes were calculated using ITE Land Use 942 (Auto Care Center) AM and PM trip rates.
 - With the construction of the Project, a median would be installed on Perris Boulevard, which would restrict the east leg of this intersection to be RI/RO. The existing left turn approach and departure volumes are added to the following intersection turning movements as a result of left turns to and from the east leg being restricted at Intersection #45:
 - SBL approach volumes
 - SBT at Intersection #45 and Intersection #37, SB U-turn at Intersection #23, NBT at Intersection #37, and NBR at Intersection #45
 - WBL departure volumes
 - WBR at Intersection #45, NBL at Intersection #18, WB U-turn at Intersection #46, EBR at Intersection #18, and SBT at Intersection #45
- The north leg of intersection #46 serves as driveways for Discount Mini Mall, located in the northwest corner of Perris Boulevard and Orange Avenue. Therefore, intersection #46 was analyzed as a three-legged intersection.
- The north leg does not exist for intersection #59, which has no conflicting movement and would not be analyzed under baseline conditions.

Existing counts incorporate truck classifications (i.e., Class 1 – Passenger Vehicles, Class 2 – 2-axle work vehicles/trucks, Class 3 – 3-axle trucks, Class 4 – 4 or more axle trucks, Class 5 – recreational vehicles, and Class 6 – Busses). Passenger Car Equivalent (PCE) factors were applied to truck/bus trips to account for the fact that trucks and buses utilize more roadway capacity due to their size, reduced maneuverability and slower acceleration. To account for the Existing 2024 traffic condition, a growth rate of three percent was applied to the counts collected in 2023. Existing 2024 AM and PM peak hour traffic volumes at the study area intersections are shown in *Figure 3.2* and *Figure 3.3* respectively. The LOS at the existing study area intersections were determined using the HCM methodology, described previously in *Section 2.3 Methodology*. The existing LOS at the study area are shown in *Table 3.2*. As shown in *Table 3.2*, no intersections would operate at an unsatisfactory LOS in the Existing Year 2024 condition.

Traffic count sheets are provided in Appendix B. All LOS calculations are provided in Appendix C.

Table 3.2: Existing AM and PM Peak Hour Level of Service

Intersection	Jurisdiction	Control Type	Existing 2024 Conditions				LOS Standard	Satisfactory?
			AM Peak		PM Peak			
			Del ay	LOS	Del ay	LOS		
1. Perris Blvd/Iris Ave	City of Moreno Valley	Signalized	47.0	D	37.3	D	D	Yes
2. Perris Blvd/Krameria Ave	City of Moreno Valley	Signalized	30.8	C	27.7	C	D	Yes
3. N Perris Blvd/Harley Knox Blvd	City of Perris	Signalized	26.8	C	27.9	C	D	Yes
4. N Perris Blvd/W Markham St	City of Perris	Signalized	10.6	B	12.7	B	D	Yes
5. N Perris Blvd/Ramona Expy	City of Perris	Signalized	37.2	D	36.7	D	E	Yes
6. N Perris Blvd/Morgan St	City of Perris	Signalized	11.8	B	10.4	B	D	Yes
7. Evans Rd/E Rider St	City of Perris	Signalized	27.2	C	26.1	C	D	Yes
8. Redlands Ave/E Rider St	City of Perris	Signalized	26.1	C	24.6	C	D	Yes
9. N Perris Blvd/E Rider St	City of Perris	Signalized	19.1	B	22.6	C	D	Yes
10. Redlands Ave/Placentia Ave	City of Perris	All-way stop	13.7	B	12.8	B	D	Yes
11. N Perris Blvd/Placentia Ave	City of Perris	Signalized	20.5	C	17.5	B	D	Yes
12. Barrett Ave/W Placentia Ave	City of Perris	All-way stop	9.7	A	8.9	A	D	Yes
13. Indian Ave/W Placentia Ave	City of Perris	Signalized	32.4	C	26.5	C	D	Yes
14. I-215 Frontage Rd/W Placentia Ave	City of Perris	Signalized	22.1	C	20.4	C	D	Yes
15. I-215 NB Ramps/Placentia Ave	Caltrans/City of Perris	Signalized	19.3	B	19.7	B	E	Yes
16. I-215 SB Ramps/Placentia Ave	Caltrans/City of Perris	Signalized	17.3	B	17.6	B	E	Yes
17. Redlands Ave/Orange Ave	City of Perris	Signalized	25.8	C	28.1	C	D	Yes
18. N Perris Blvd/Orange Ave	City of Perris	Signalized	24.1	C	29.0	C	D	Yes
19. Barrett Ave/Orange Ave	City of Perris	Two-way stop	18.6	C	15.3	C	D	Yes
20. Indian Ave/Orange Ave	City of Perris	All-way stop	14.9	B	11.4	B	D	Yes
21. I-215 Frontage Rd/Orange Ave	City of Perris	Two-way stop	14.8	B	15.0	C	D	Yes
22. Redlands Ave/Citrus Ave	City of Perris	All-way stop	11.6	B	12.5	B	D	Yes
23. N Perris Blvd/Citrus Ave	City of Perris	Signalized	14.2	B	17.4	B	D	Yes
24. Murrieta Rd/E Nuevo Rd	City of Perris	Signalized	35.4	D	29.1	C	D	Yes
25. Redlands Ave/E Nuevo Rd	City of Perris	Signalized	23.2	C	21.4	C	D	Yes
26. N Perris Blvd/ W Nuevo Rd	City of Perris	Signalized	41.4	D	37.9	D	D	Yes
27. I-215 Frontage Rd/W Nuevo Rd	City of Perris	Two-way stop	19.9	C	26.1	D	D	Yes
28. I-215 NB Ramps/W Nuevo Rd	Caltrans/City of Perris	Signalized	16.5	B	16.9	B	E	Yes
29. I-215 SB Ramps/W Nuevo Rd	Caltrans/City of Perris	Signalized	17.8	B	18.5	B	E	Yes
30. Redlands Ave/Midred St	City of Perris	All-way stop	18.1	C	12.5	B	D	Yes
31. N Perris Blvd/Mildred St	City of Perris	Signalized	11.3	B	7.2	A	D	Yes
32. N Perris Blvd/E San Jacinto Ave	City of Perris	Signalized	21.5	C	20.0	C	D	Yes
33. Indian Ave/Ramona Expy	City of Perris	Signalized	31.5	C	37.0	D	E	Yes
34. Indian Ave/Morgan St	City of Perris	Signalized	20.5	C	17.1	B	D	Yes
35. Indian Ave/Rider St	City of Perris	Signalized	20.9	C	21.8	C	D	Yes
36. Perris Blvd/4th St	Caltrans/City of Perris	Signalized	32.8	C	34.0	C	E	Yes
37. Perris Blvd/Harvest Landing Way	City of Perris	Signalized	-	-	-	-	D	-
38. Barrett Ave/Harvest Landing Way	City of Perris	All-way stop	-	-	-	-	D	-
39. Barrett Ave/I-215 Frontage Road	City of Perris	Two-way stop	12.7	B	14.9	B	D	Yes
40. Commercial Driveway 1, 2 and Harvest Landing Way	City of Perris	Two-way stop	-	-	-	-	D	-
41. Commercial Driveway 3, 4 and Harvest Landing Way	City of Perris	Two-way stop	-	-	-	-	D	-
42. Commercial Driveway 5 and N. Perris Blvd	City of Perris	Two-way stop	-	-	-	-	D	-
43. Commercial Driveway 6 and Barrett Ave	City of Perris	Two-way stop	-	-	-	-	D	-
44. Commercial Driveway 7 and N. Perris Blvd	City of Perris	Two-way stop	-	-	-	-	D	-
45. Commercial Driveway 8 and N. Perris Blvd	City of Perris	Two-way stop	20.0	C	34.7	D	D	Yes
46. Commercial Driveway 9/Existing Plaza Driveway and Orange Ave	City of Perris	Two-way stop	16.8	C	22.1	C	D	Yes
47. Commercial Driveway 10/Orange Ave	City of Perris	Two-way stop	-	-	-	-	D	-
48. Building 1 Auto Driveway 1 and Orange Ave	City of Perris	Two-way stop	-	-	-	-	D	-
49. Building 1 Auto Driveway 2 and Orange Ave	City of Perris	Two-way stop	-	-	-	-	D	-
50. Building 1 Truck Driveway and I-215 Frontage Rd	City of Perris	Signalized	-	-	-	-	D	-
51. Building 2 Auto Driveway 1 and Orange Ave	City of Perris	Two-way stop	-	-	-	-	D	-
52. Building 2 Auto Driveway 2 and Orange Ave	City of Perris	Two-way stop	-	-	-	-	D	-
53. Building 2 Truck Driveway and I-215 Frontage Rd	City of Perris	Two-way stop	-	-	-	-	D	-
54. Building 3 Auto Driveway and I-215 Frontage Rd	City of Perris	Two-way stop	-	-	-	-	D	-
55. Building 3 Auto Driveway and I-215 Frontage Rd	City of Perris	Two-way stop	-	-	-	-	D	-
56. Building 3/4 Truck Driveway and I-215 Frontage Rd	City of Perris	Two-way stop	-	-	-	-	D	-
57. Building 5 Truck Driveway and I-215 Frontage Rd	City of Perris	Two-way stop	-	-	-	-	D	-
58. Building 6 Truck Driveway and I-215 Frontage Rd	City of Perris	Two-way stop	-	-	-	-	D	-
59. Building 6 Auto Driveway 1/Walmart Supercenter Driveway and Barrett Ave	City of Perris	Two-way stop	-	-	-	-	D	-
60. Building 6 Auto Driveway 2 and Barrett Ave	City of Perris	Two-way stop	-	-	-	-	D	-
61. Building 7 Truck Driveway and I-215 Frontage Rd	City of Perris	Two-way stop	-	-	-	-	D	-
62. Building 7 Auto Driveway 1 and I-215 Frontage Rd	City of Perris	Two-way stop	-	-	-	-	D	-
63. Building 7 Auto Driveway 2 and Barrett Ave	City of Perris	Two-way stop	-	-	-	-	D	-

Notes: Delay Reported in Seconds per Vehicle
LOS = Level of Service

Figure 3.2a: Existing AM Peak Hour PCE Traffic Volumes

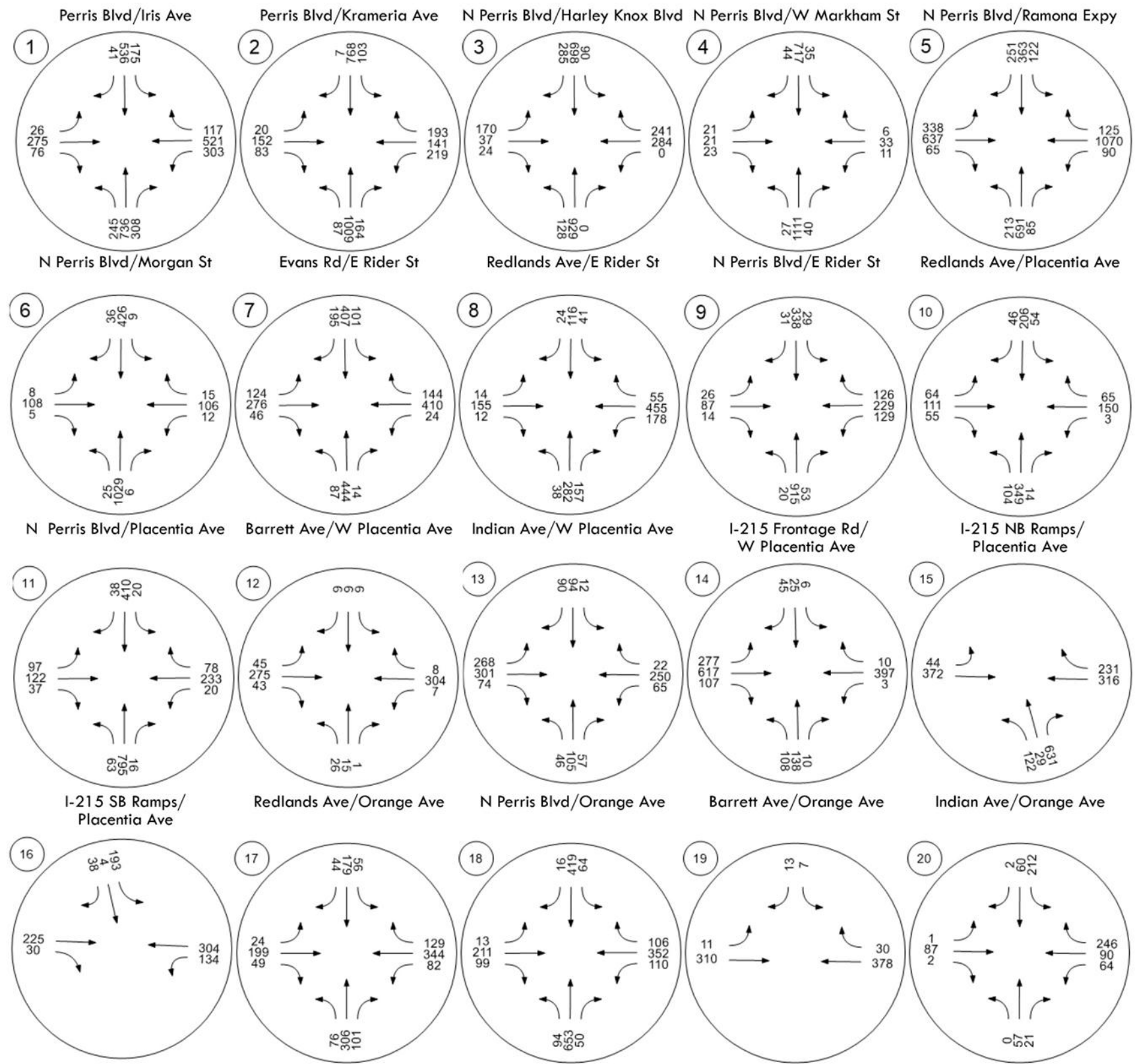
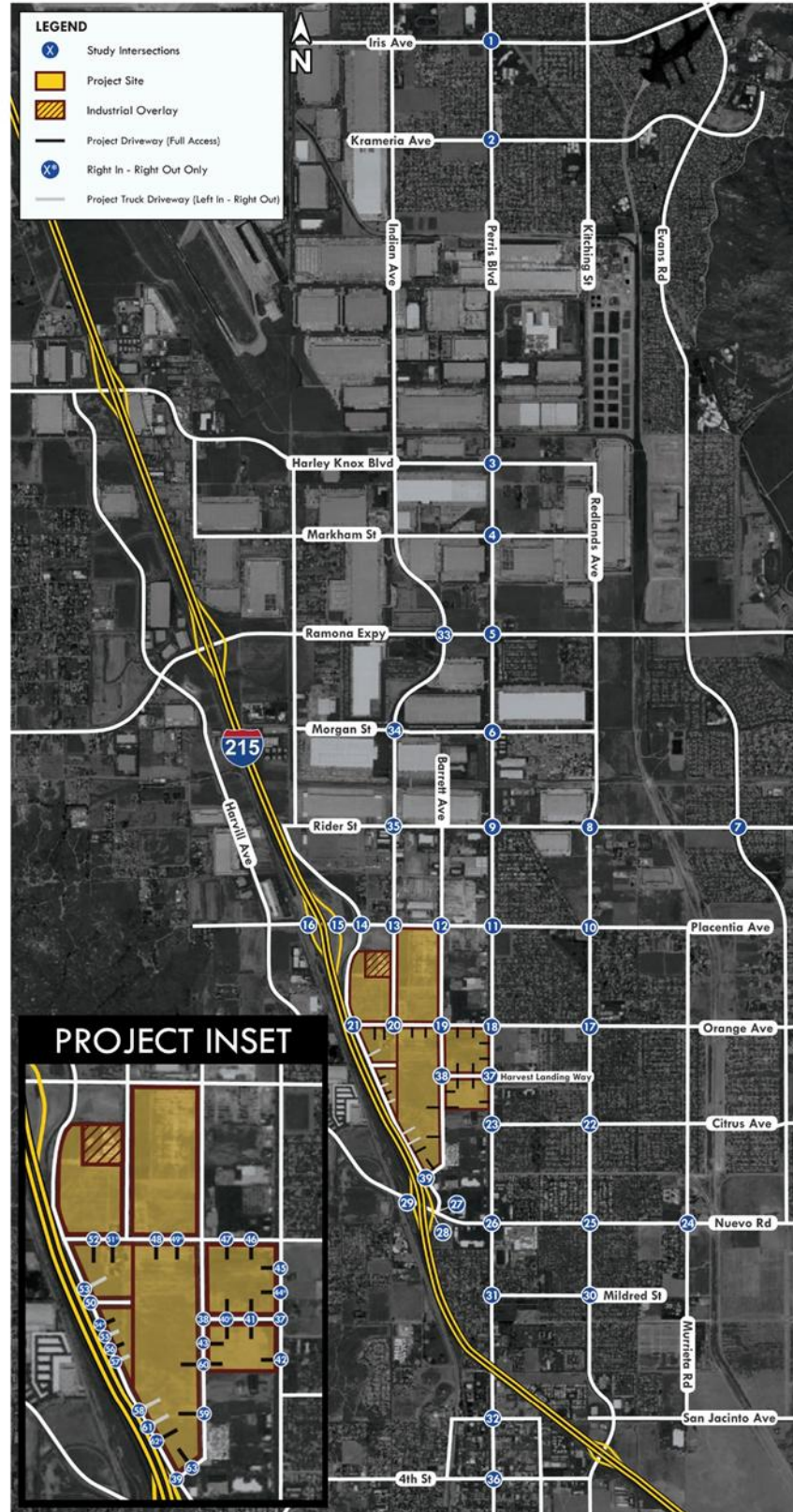


Figure 3.2b: Existing AM Peak Hour PCE Traffic Volumes (Continued)

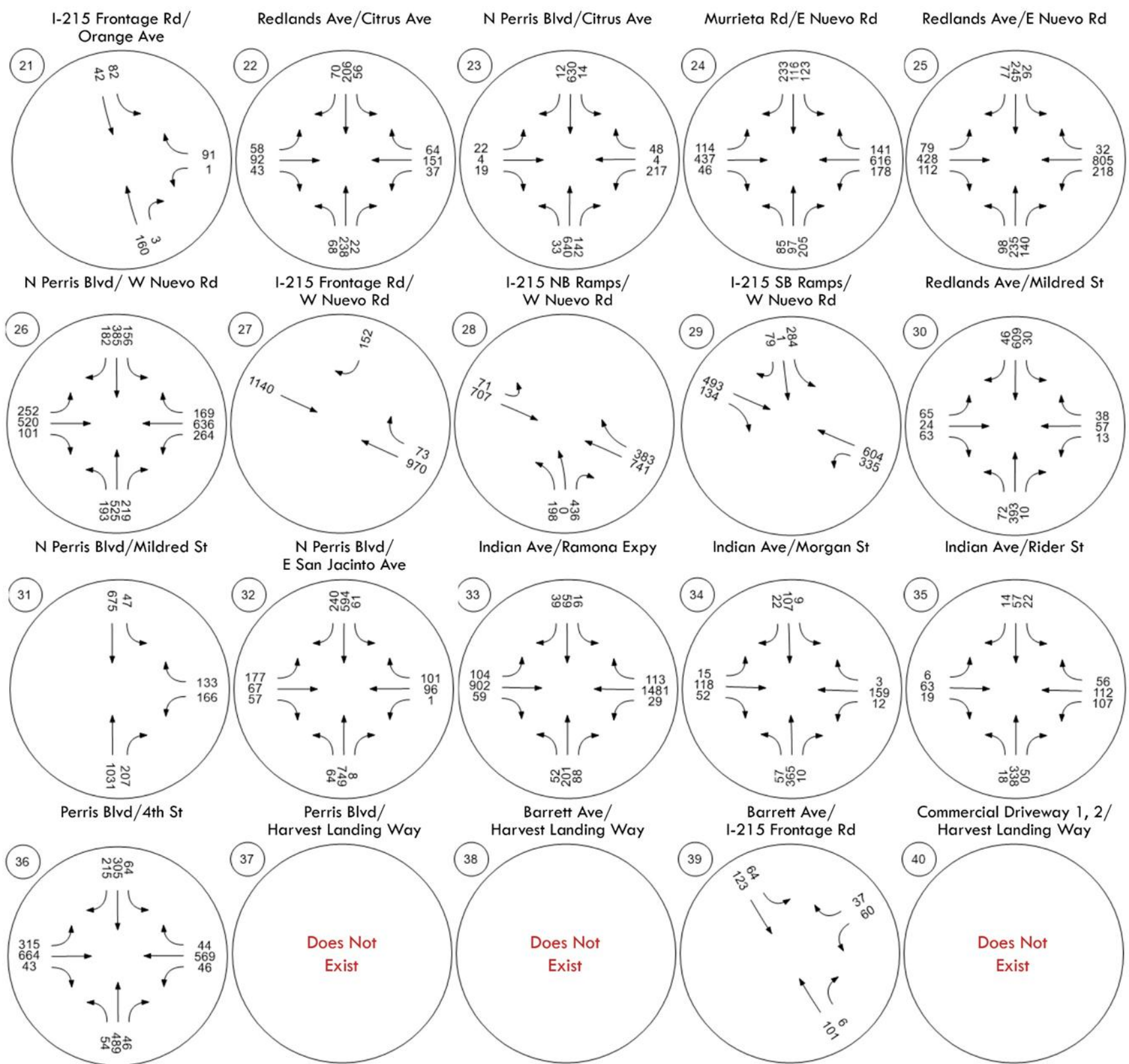
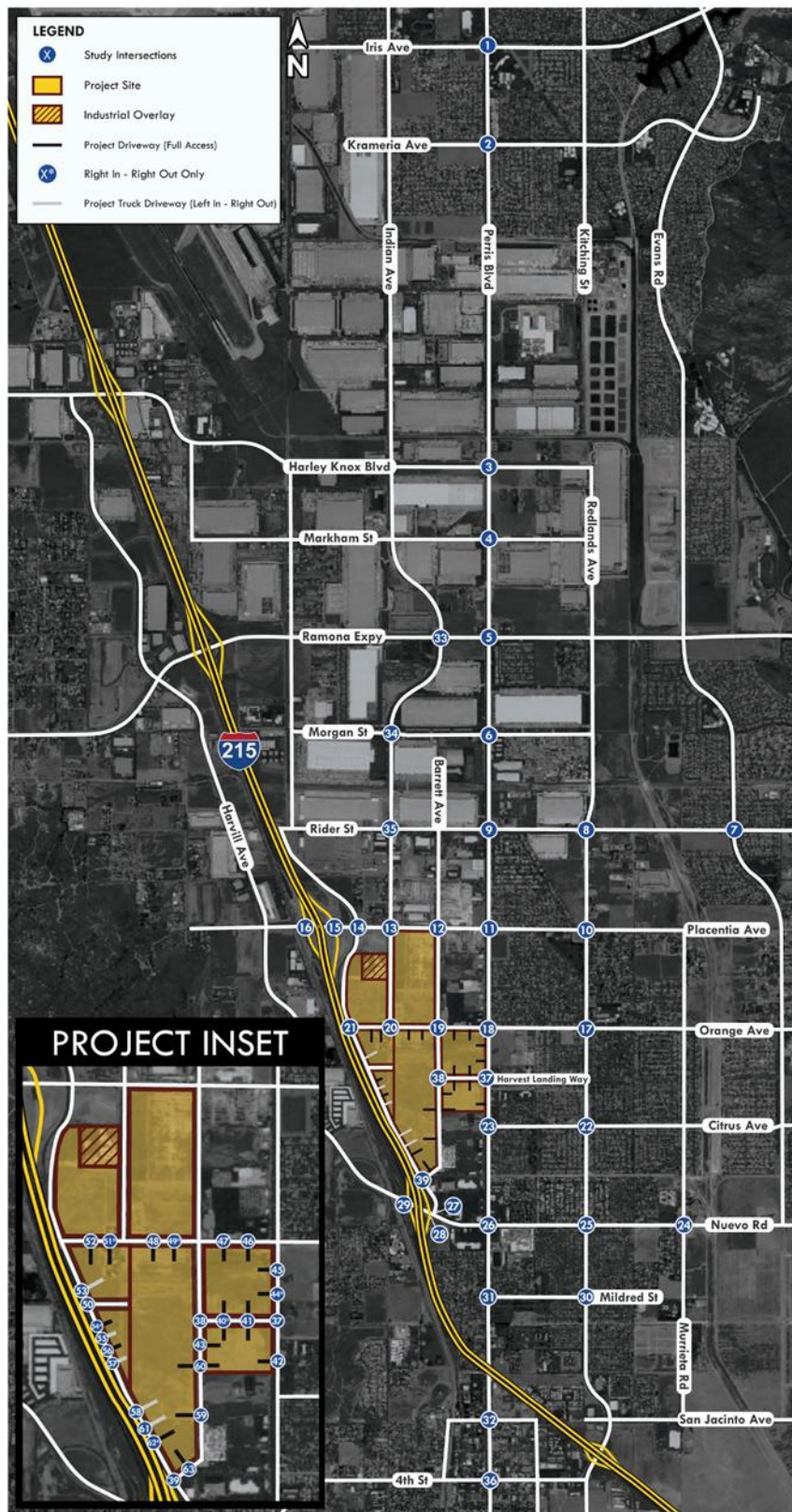


Figure 3.2c: Existing AM Peak Hour PCE Traffic Volumes (Continued)

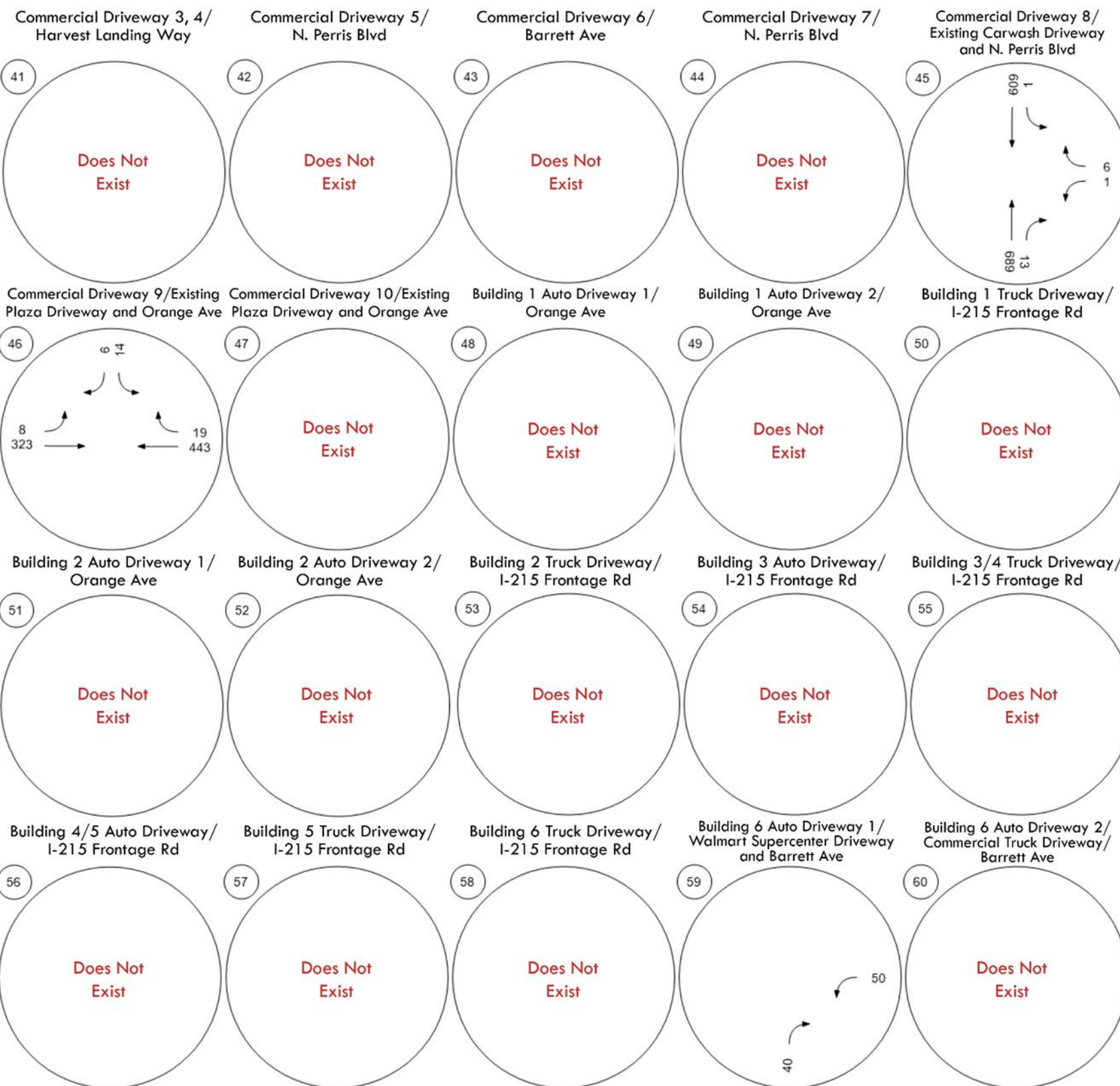
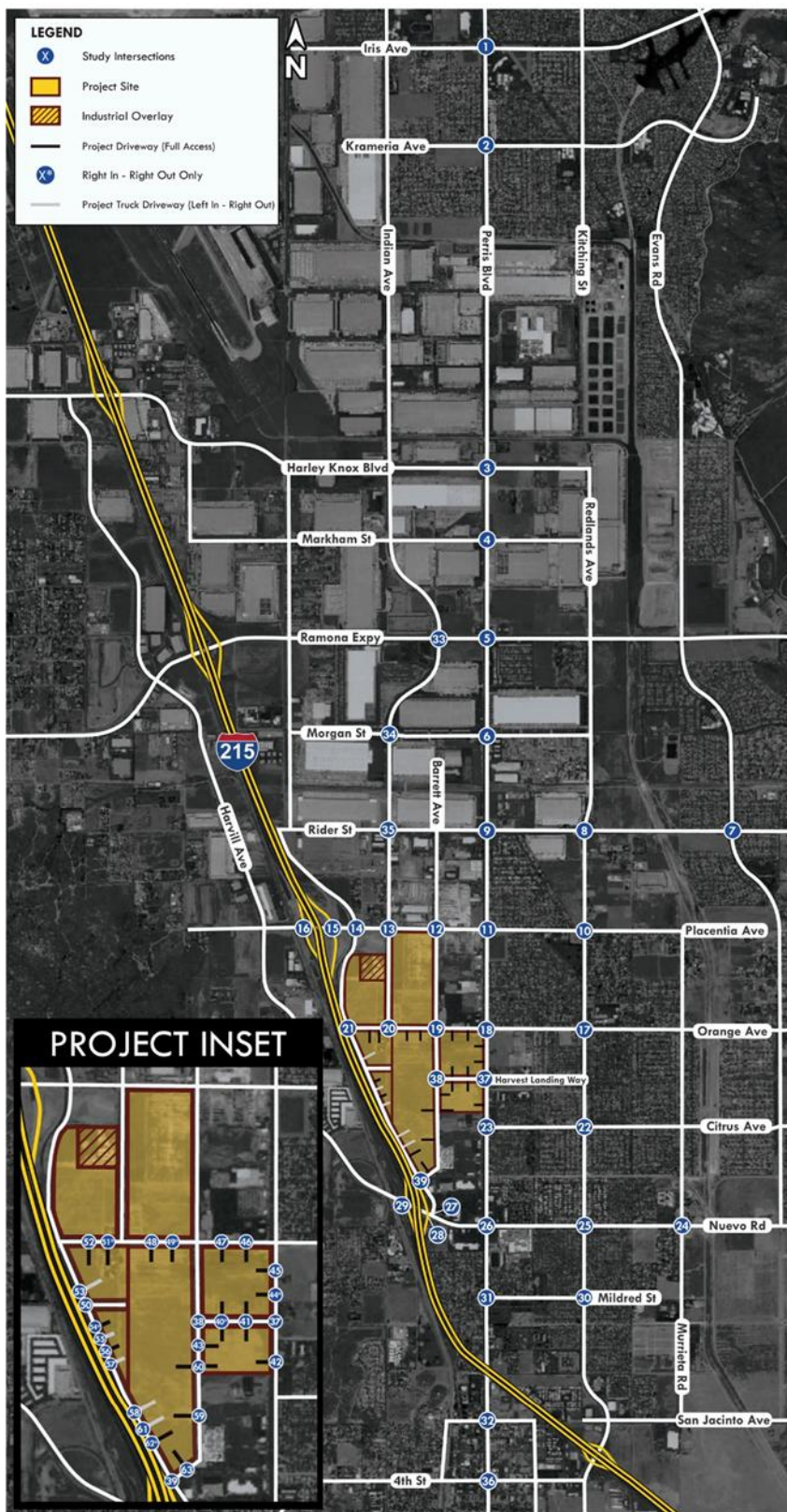


Figure 3.2d: Existing AM Peak Hour PCE Traffic Volumes (Continued)

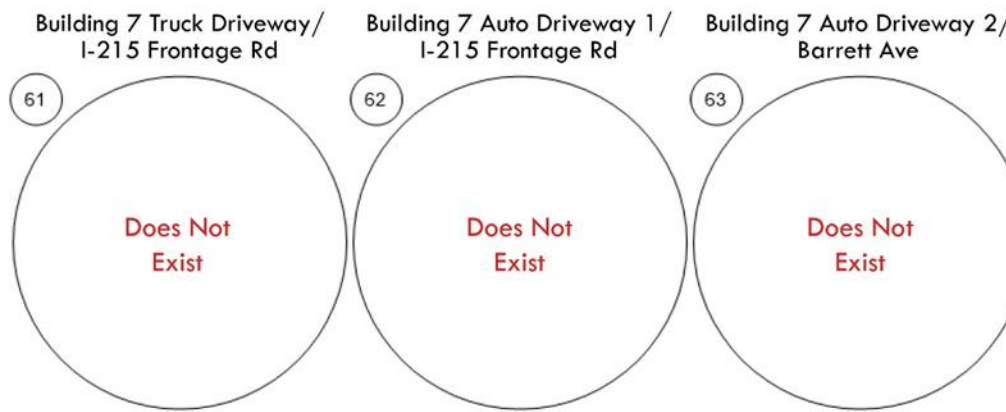
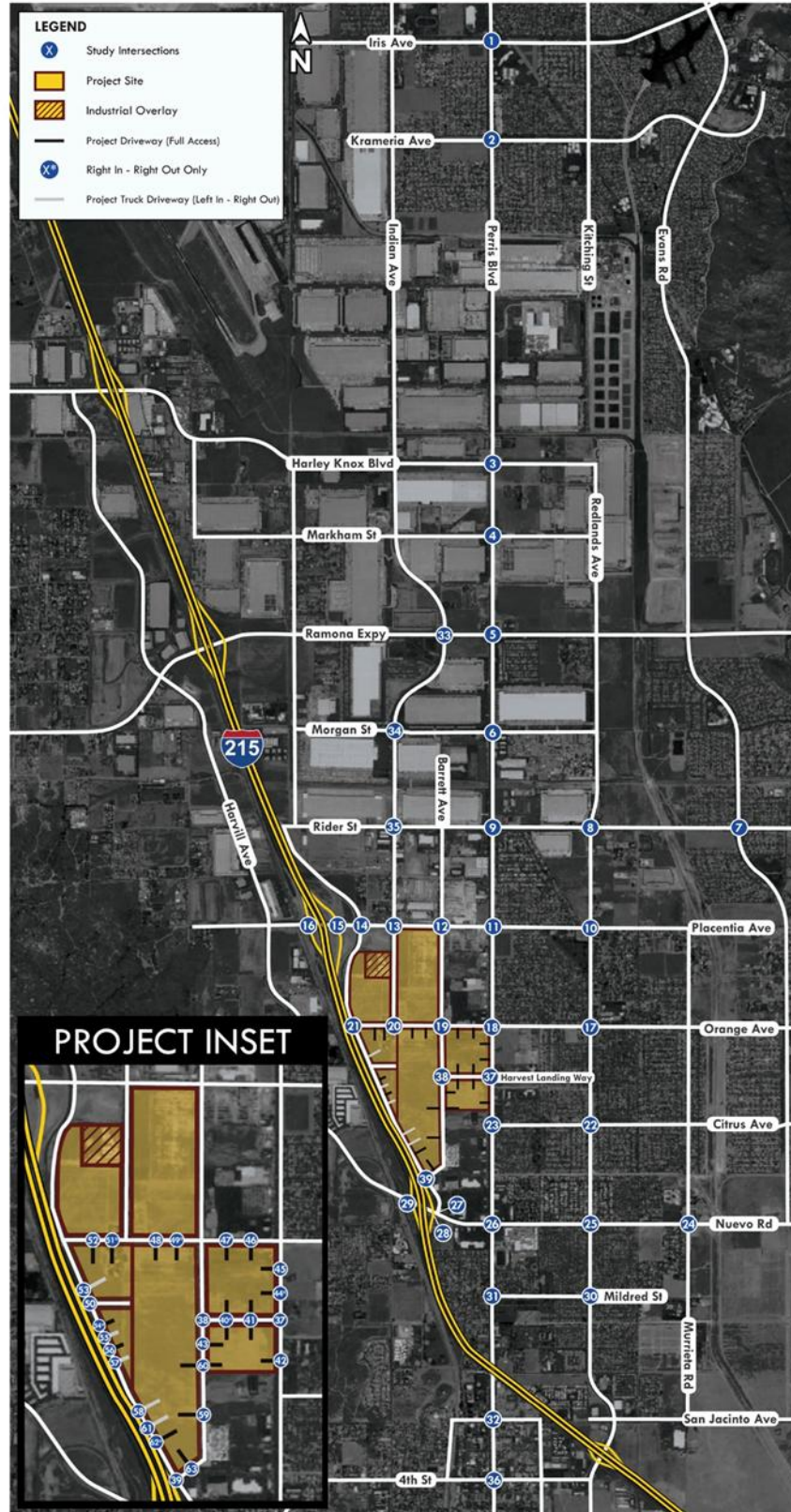


Figure 3.3a: Existing PM Peak Hour PCE Traffic Volumes

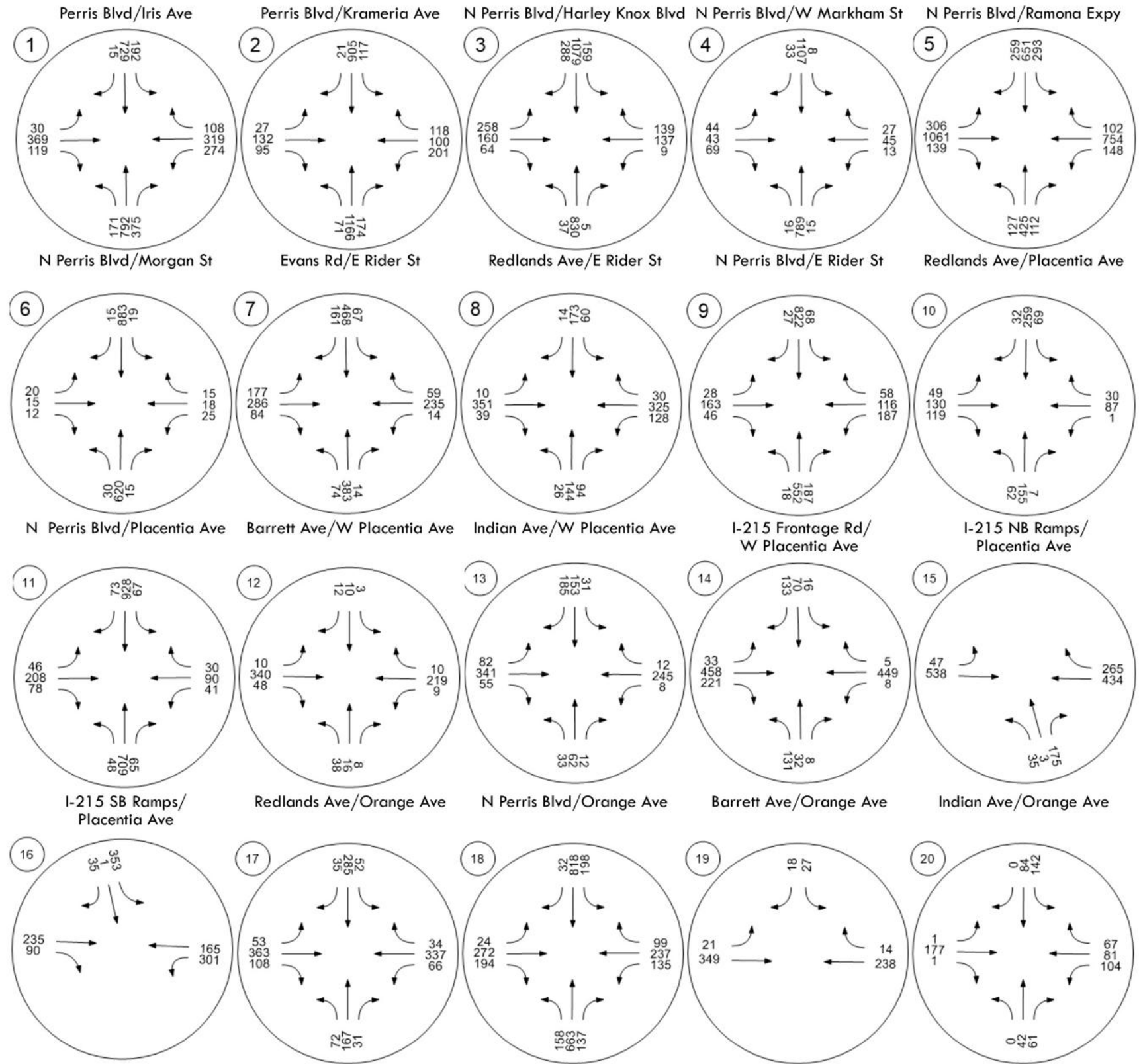
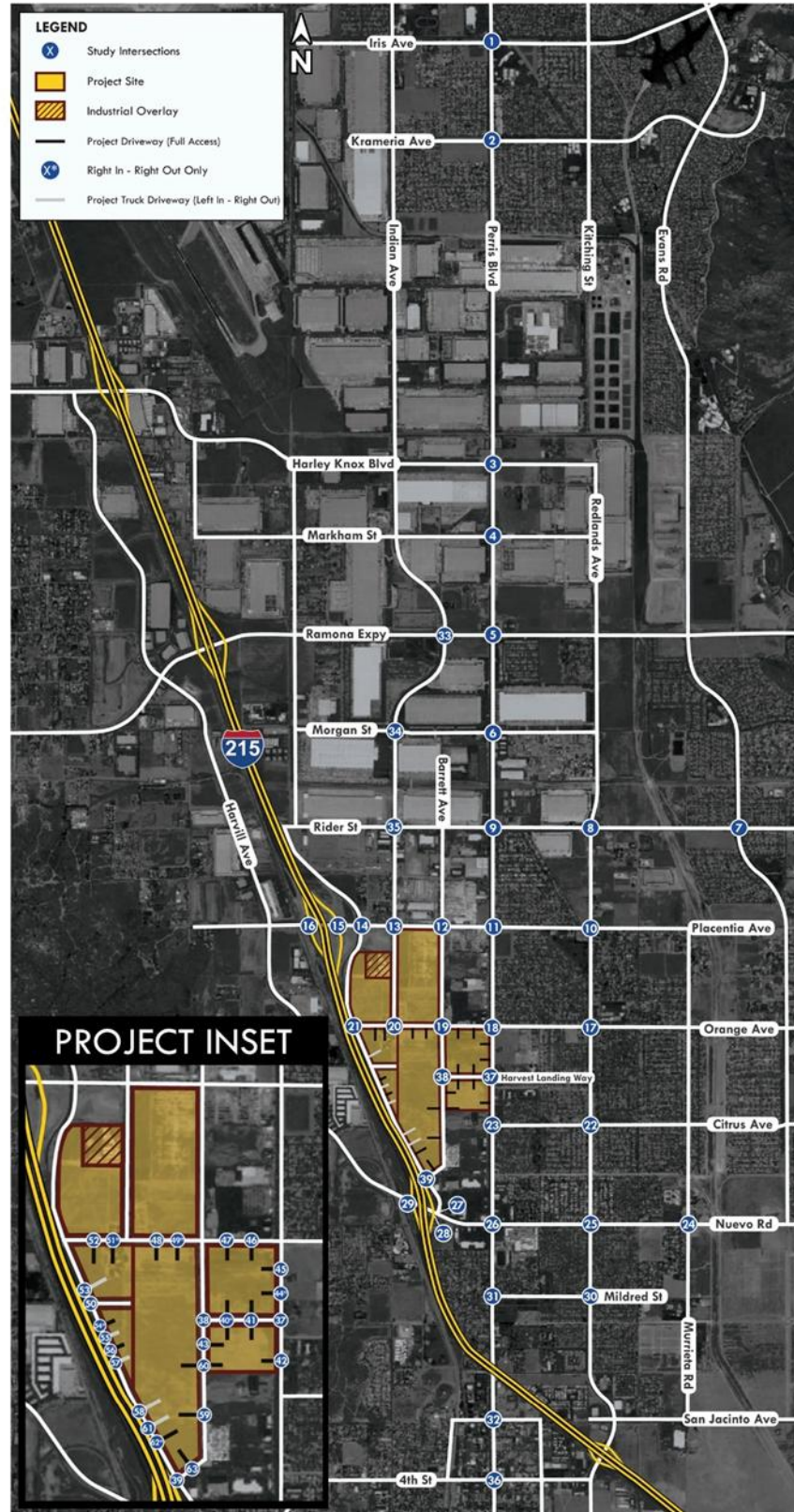


Figure 3.3b: Existing PM Peak Hour PCE Traffic Volumes (Continued)

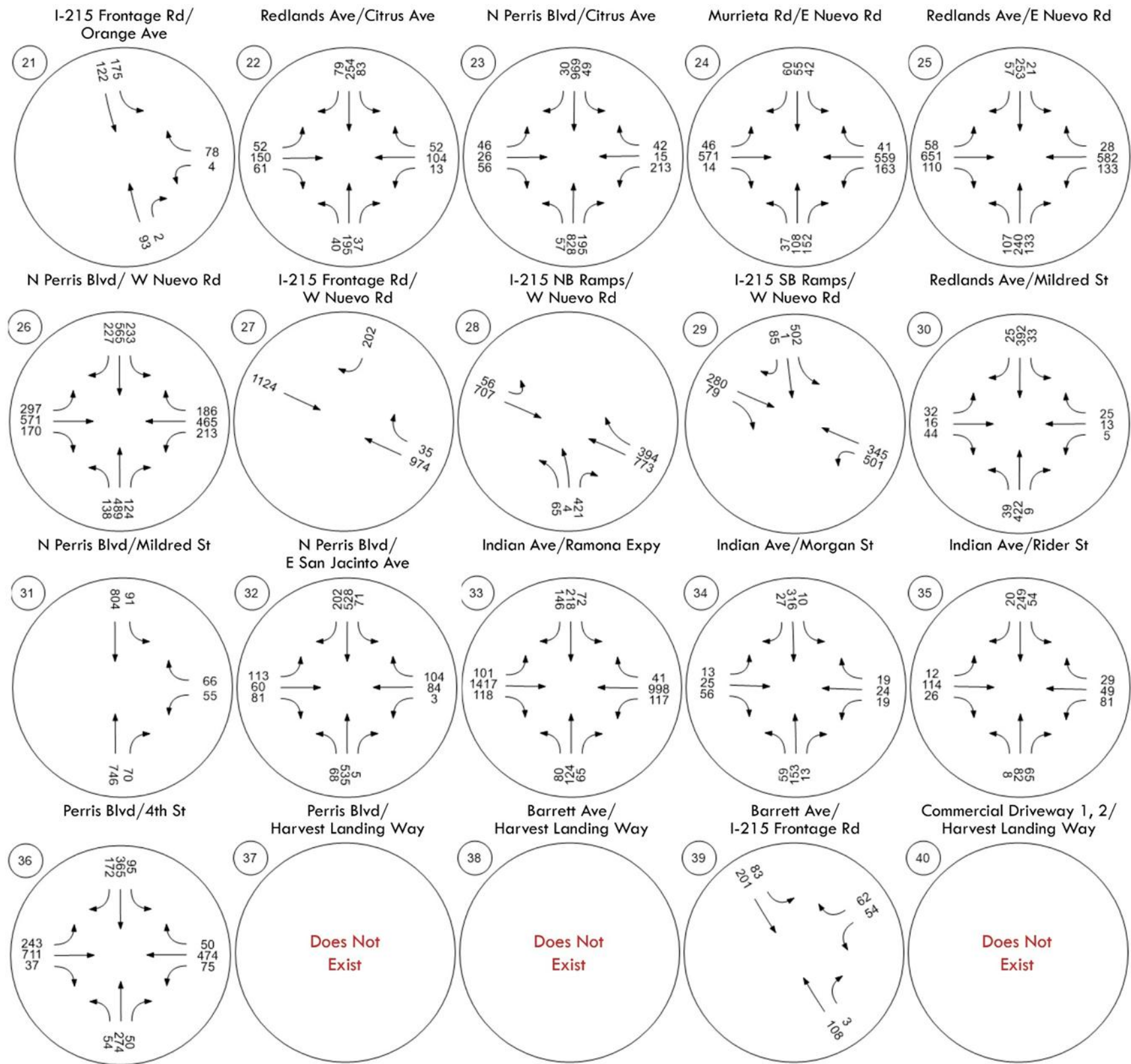
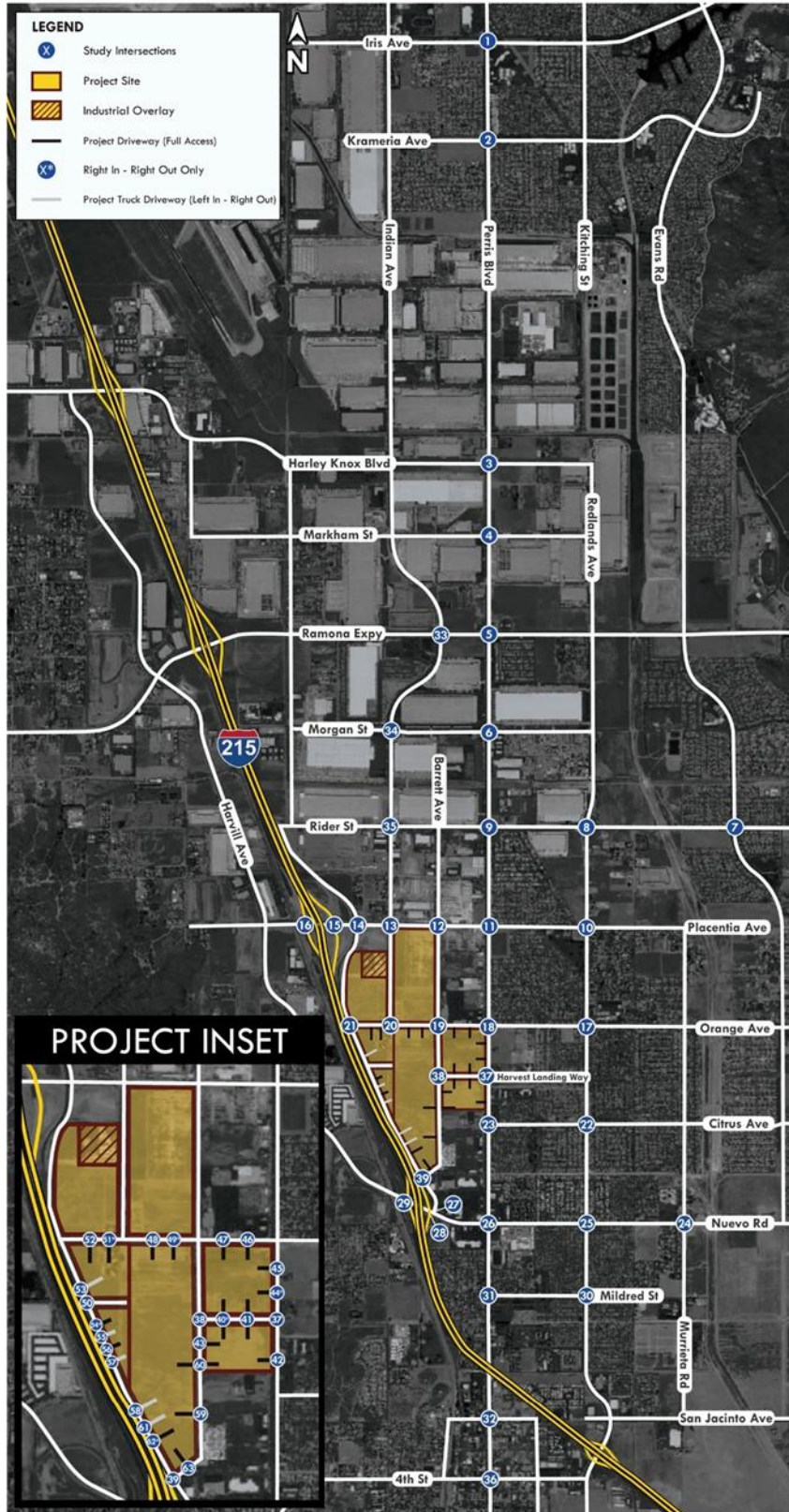
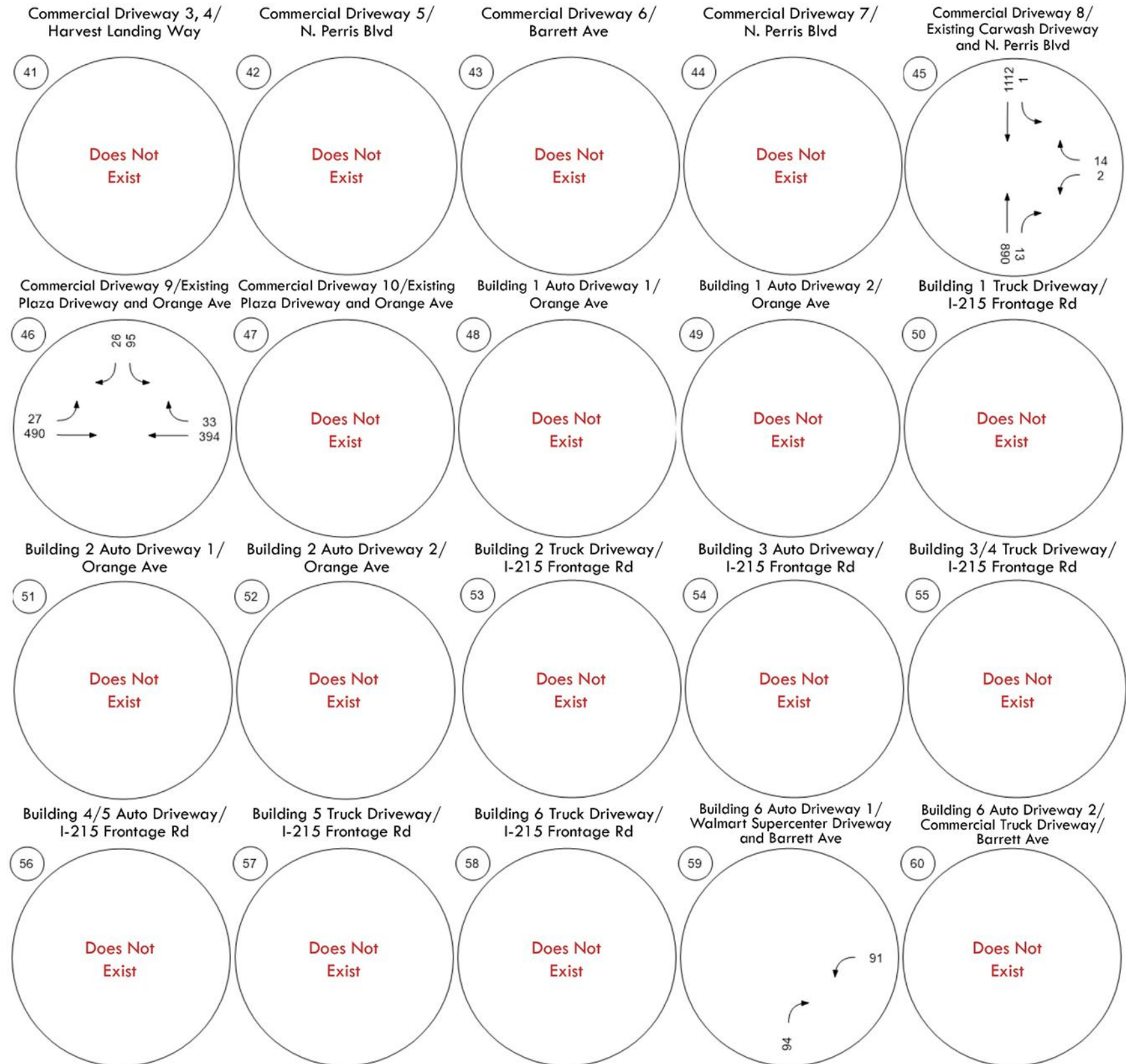
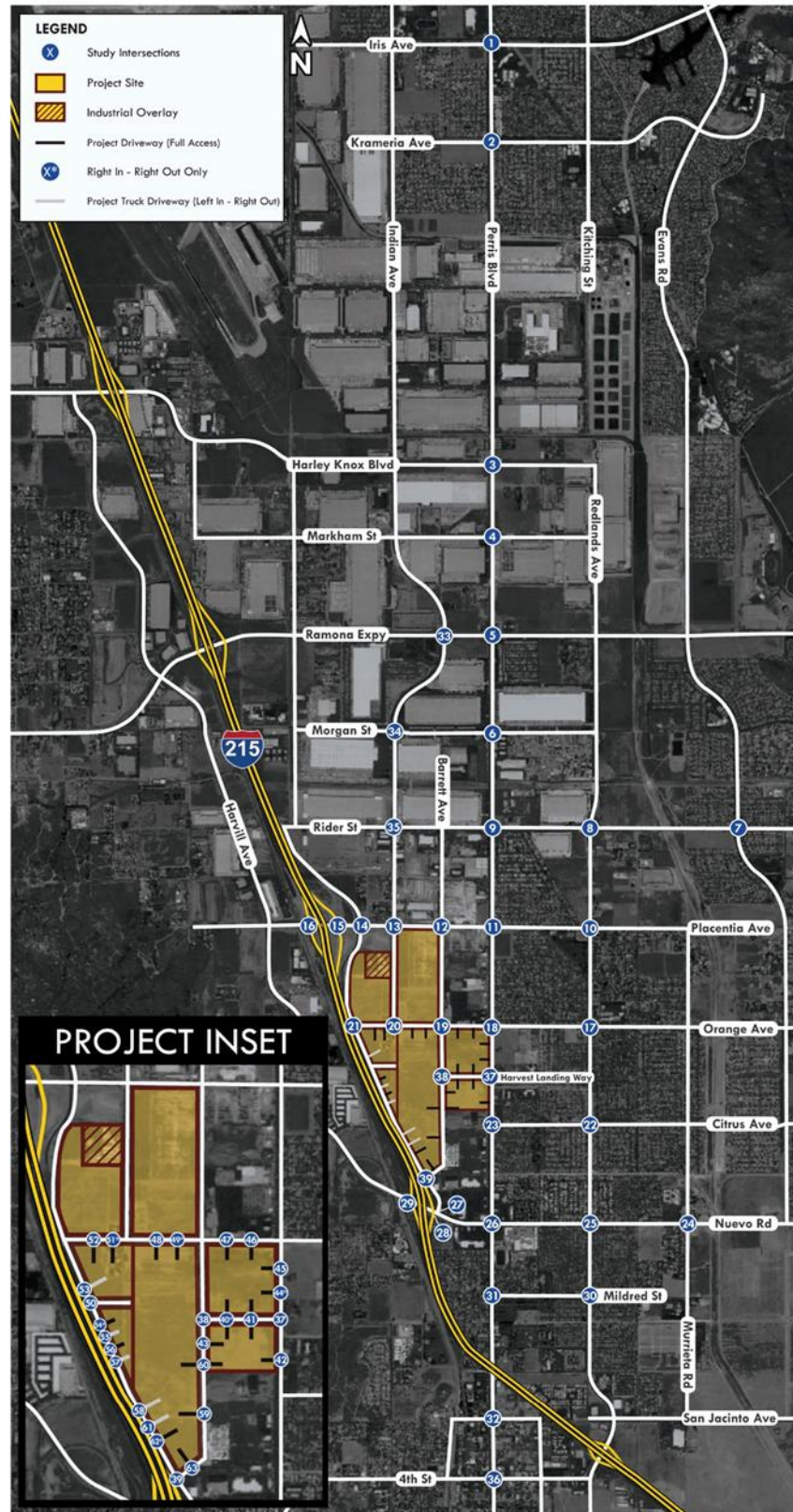


Figure 3.3c: Existing PM Peak Hour PCE Traffic Volumes (Continued)



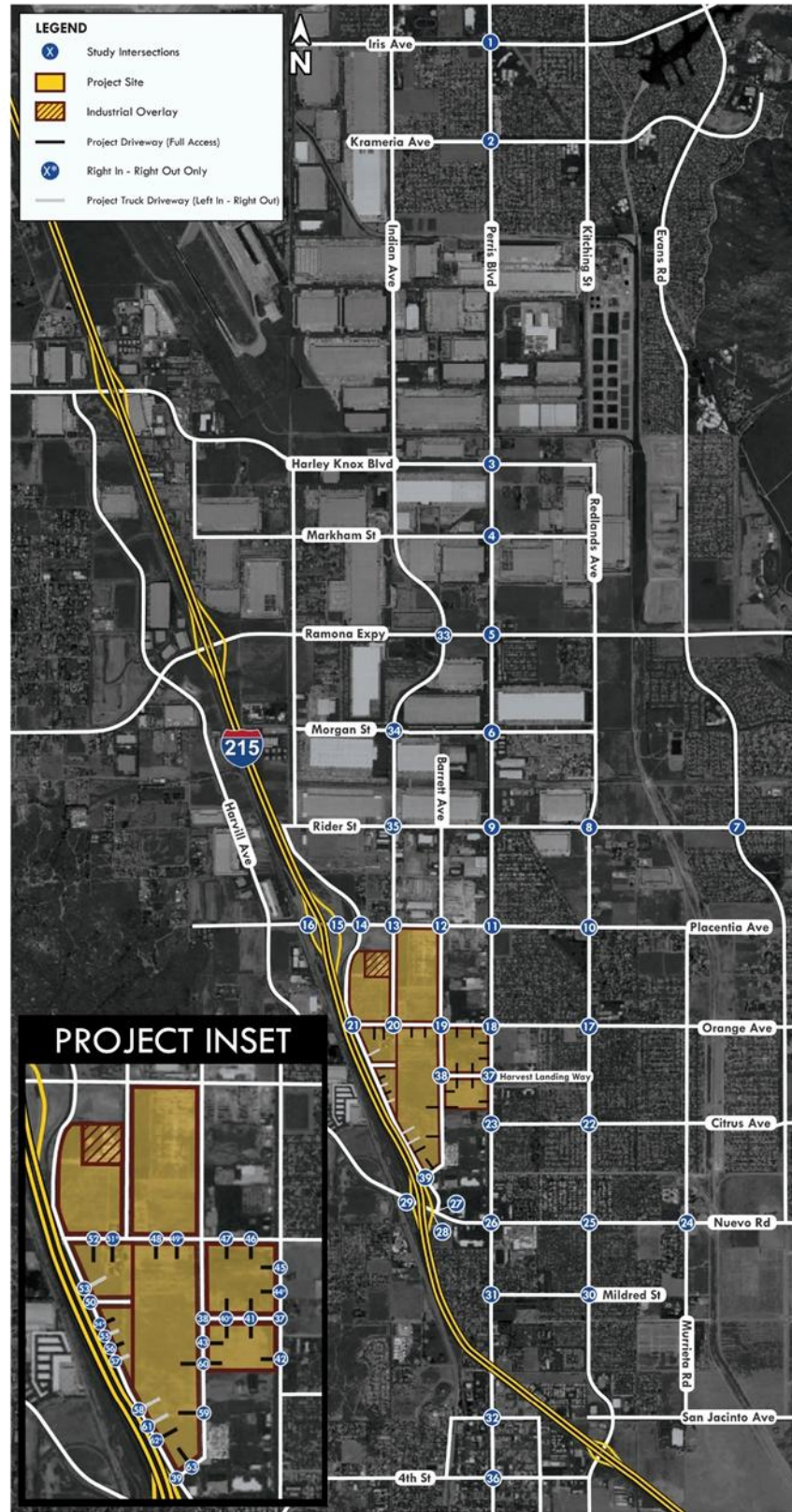
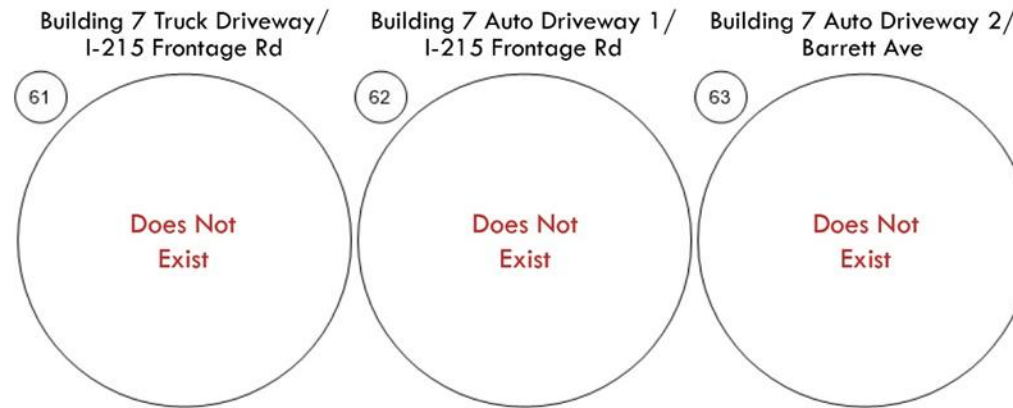


Figure 3.3d: Existing PM Peak Hour PCE Traffic Volumes (Continued)



3.2.1 Existing 2024 Intersection Queueing Analysis

A queueing analysis was conducted at four study intersections during AM and PM peak hour involving ramps along the I-215. These intersections include Intersection #15 at I-215 Northbound Ramps and Placentia Avenue, Intersection #16 at I-215 Southbound Ramps and Placentia Avenue, Intersection #28 at I-215 Northbound Ramps and West Nuevo Road, and Intersection #29 at I-215 Southbound Ramps and West Nuevo Road. The required queueing length at the study area intersections were determined using 95-percentile queue length analysis. Table 3.3 shows the queue lengths at each intersection approach. As shown in Table 3.3, no queueing deficiencies were observed under Existing 2024 conditions.

Table 3.3: Existing AM and PM Peak Hour Queueing Analysis

	Existing 2024 Conditions							
	Northbound		Southbound		Eastbound		Westbound	
	LT	RT	LT	RT	LT	RT	LT	RT
15. I-215 NB Ramps/Placentia Ave								
Storage Length Per Lane	570	570	-	-	280	-	-	390
AM Queue Length Per Lane	25	205	-	-	20	-	-	155
PM Queue Length Per Lane	5	40	-	-	20	-	-	145
16. I-215 SB Ramps/Placentia Ave								
Storage Length Per Lane	-	-	340	340	-	320	315	-
AM Queue Length Per Lane	-	-	30	10	-	15	45	-
PM Queue Length Per Lane	-	-	60	10	-	40	95	-
28. I-215 NB Ramps/W Nuevo Rd								
Storage Length Per Lane	170	170	-	-	135	-	-	200
AM Queue Length Per Lane	75	60	-	-	60	-	-	175
PM Queue Length Per Lane	25	55	-	-	45	-	-	175
29. I-215 SB Ramps/W Nuevo Rd								
Storage Length Per Lane	-	-	185	185	-	N/A	315	-
AM Queue Length Per Lane	-	-	70	30	-	220	110	-
PM Queue Length Per Lane	-	-	110	25	-	135	160	-

Notes:

LT = Left-turn Lane, RT = Right-turn Lane

Queue length reported in feet for the AM(PM) peak periods and are rounded up to the nearest increment of 5 feet.

3.2.2 Existing 2024 Roadway Segment Analysis

Traffic counts at the existing roadway segments were collected on December 4, 2024, when school was in session. Existing counts incorporate truck classifications (i.e., Class 1 – Passenger Vehicles, Class 2 – 2-axle work vehicles/trucks, Class 3 – 3-axle trucks, Class 4 – 4 or more axle trucks, Class 5 – recreational vehicles, and Class 6 – Busses). Passenger Car Equivalent (PCE) factors from County of Riverside TA guidelines (2020) were applied to truck/bus trips to account for the fact that trucks and buses utilize more roadway capacity due to their size, reduced maneuverability and slower acceleration.

Note that following three roadway segments do not exist under baseline conditions:

- #16. Barrett Ave between Orange Ave and Harvest Landing Way
- #17. Barrett Ave between Harvest Landing Way and I-215 Frontage Rd
- #18. Harvest Landing Way between Barrett Ave and Perris Blvd

It is to be noted that a portion of Segment #17 currently exists north of I-215 Frontage Rd. However, the segment only provides access to the existing commercial development between I-215 Frontage Rd and Perris Blvd and does not contribute to the traffic circulation within the City of Perris.

The LOS at the existing study roadway segments were determined using the methodology described previously in *Section 2.3 Methodology*. The existing LOS at the study roadway segments are shown in *Table 3.4*. As shown in *Table 3.4*, no roadway segments would operate at an unsatisfactory LOS in the Existing 2024 condition.